ENGINEERING CODES AND STANDARDS INDEX 2022

The Institution of Engineers, Bangladesh

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The Institution of Engineers, Bangladesh
Headquarters: Ramna, Dhaka-1000, Bangladesh

Book Name : Engineering Codes and Standards Index 2022
Author : The Institution of Engineers, Bangladesh
Edition : 2nd Edition, 2022, Dhaka, Bangladesh
Publisher : The Institution of Engineers, Bangladesh
ISBN No. : 

Engineering Codes & Standards Index-2022 PDF version on IEB Website.

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ORGANIZATION OF THE INDEX

Engineering Codes and Standards Index 2022 consists of 7 (seven) Sections corresponding to the seven divisions of IEB, written in alphabetical order, as follows:

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PREFACE TO ECSI 2022

The Institution of Engineers, Bangladesh (IEB) published the first edition of the Engineering Codes and Standards Index in 2017. This was a very initial attempt in compiling a list of national and international codes, standards, rules, regulations etc. followed by the engineering professionals of different organizations in Bangladesh in planning, design, implementation, construction, testing, monitoring, maintenance, uninstallation or demolishing of engineering infrastructures and their components. However, the first edition of the index did not include codes and standards of all the divisions of IEB.

On 2 April 2018, the Central Council of IEB formed a 21-member committee for updating the index. The committee made important additions to the index. Later the Central Council formed another committee on 1 November 2020 for the purpose of publishing the second edition of the index. Under the behest of this committee the present edition of the index has been prepared.

The most mentionable change made to this edition is inclusion of the codes and standards of the Computer Engineering Division. Thus, codes and standards of all the divisions of IEB are now included in the index. A significant number of new codes and standards are included in the new edition. To facilitate easy look up of the items, they are arranged in alphabetical order of the item names. The entries of electrical, mechanical and textile divisions are sub-divided in two subsections.

Although a concerted effort was made to collect information of all the codes and standards that are followed by the engineering community, it is felt that still there is a great scope of extending the list. For this reason, it is strongly recommended that the index is updated on a regular basis. Furthermore, along with the index, an archive of a selected codes and standards at IEB would greatly help the practicing engineers.

I would like to extend my gratitude to the IEB executive committee, Central Council, and core committee for pursuing the cause of updating this index. I gratefully acknowledge all the contributors in collecting information of codes and standards of different divisions. This time the number editorial committee members was increased by two persons. I appreciate the sincere effort made by the entire editorial committee. I apologize on behalf of the editorial committee if there is still any editorial or typographic mistake in the index.

Prof. Dr. Md. Zoynul Abedin
Team Leader, Editorial Team
Codes and Standards Committee, IEB.

PREFACE TO ECSI 2017

In order to maintain standard and good practices in planning, design, implementation, construction, testing, monitoring, maintenance, uninstallation or demolishing of engineering infrastructures and their components engineering professionals of different organizations in Bangladesh follow a large number of national and international codes, standards, rules, regulations etc. It has been long felt a necessity of an index of these codes and standards by engineers. Central Council of the Institution of Engineers, Bangladesh (IEB) formed a 21 membered Committee on 28 November 2015 for coordinating policies and issues related to codes and standards used in Bangladesh. The Committee later formed a Sub-Committee on 18 January 2016 to prepare an Engineering Codes and Standards Index (ECSI) used by engineers in Bangladesh. The Sub-Committee comprised of 11 members representing all the divisions of the IEB. Two engineers from each division acted as Contributors for the Sub-Committee in collecting lists of codes and standards being followed by different government agencies in Bangladesh. The Sub-Committee was also assisted by editorial staff engaged by the IEB.

Formal letters of request on behalf of the Institute were sent to different government agencies in Bangladesh for lists of codes and standards being followed by the agencies. Collected lists of codes and standards were later categorized in item types of particular divisions. The divisions are presented in an alphabetical order and are assigned with a divisional code. The index is presented in a tabular format for ease of looking up. Year of adoption of some of the codes and standards have been intentionally omitted with the assumption that latest version of the document will be followed in case of future revisions.

Present index (ECSI 2017) is an initial attempt in compiling such a list. In spite of our extensive efforts we could not provide an index of codes and standards for all the divisions. I believe in the next edition of the index it will be possible to include lists of codes and standards for all the divisions. There is every scope of extension of the list in future. IEB has an intension of creating an archive of all the listed documents for benefit of practicing engineers. The present index is expected to be hosted in the IEB website with hyperlinks to the official web sites of the codes and standards.

I gratefully acknowledge contribution of members of the Core Committee and the Sub-Committee for their active participation and guidance in compiling the index. I appreciate the cooperation of the Contributors during the collection of the lists of codes and standards. We tried to present the entire document in a uniform format. We regret any unintentional editorial or typographical mistakes that may still exist in the index.

Prof. Dr. Md. Zoynul Abedin
Team Leader, Editorial Team
Codes and Standards Committee, IEB.

CORE COMMITTEE ECSI 2022

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7.	Engr. Md. Anwar Hossain F/3815	Flat no.- 1A, House no.- 23/1, Talisha Alliance Road no.- 02 (Masjid Road), Old DOHS Banani, Dhaka
8.	Engr. Khandker Manjur Morshed F/4000	Flat# E-3, 24, Outer Circular Road, Motijheel, Dhaka
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10.	Engr. Nazrul Islam (Manik) F/4495	PD, Haor Flood Management & Livelihood Improvement Project, LGED, Level-11, Agargaon, Dhaka-1207

11.	Engr. Abdus Samad (Kabir) F/4617	Asstt. Director (Metrology), BSTI 116/Ka, Tejgaon I/A, Dhaka-1208
12.	Engr. Ali Mohd. Al-Mamun F/4713	Managing Director, Titas Gas T & D Co. Ltd. Kawran Bazar, Dhaka
13.	Engr. Dhirendra Chandra Debnath F/4906	9/7, Iqbal Road, Shirin Court, Appt. No.- A8, Mohammadpur, Dhaka-1207
14.	Engr. Md. Shahadat Hossain (Shiblu), PEng. F/5333	Joytun Oriole, Flat#5b, 37, North Road, Dhanmondi Kalabagan, Dhaka-1205
15.	Engr. Md. Nazrul Islam F/5777	9/7, Iqbal Road, Shirin Court, Appt. No.- A8, Mohammadpur, Dhaka-1207
16.	Dr. Engr. M. M. Siddique, PEng. F/6141	House No-1, Road No-14, Nikunja-2, Airport Road Dhaka
17.	Dr. Engr. Munaz Ahmed Noor F/6959	Professor, Civil Engineering Department BUET
18.	Dr. Engr. Md. Abdullah Al Mamun, PEng. F/8377	Addl. Chief Engineer (Tech. & Service Wing) RHD, Allenbari, Tejgaon, Dhaka-1215
19.	Engr. Md. Ashraful Alam F/8921	House No-15, Block-B, Word No-8, Khilbarirtek Main Road, Dhaka
20.	Engr. Mohammed Abul Kalam Azad F/9054	Superintending Engineer Maintenance Circle, RHD, Sarak Bhaban, Tejgaon, Dhaka
	Member Secretary and HAGS (A&F), IEB	
21.	Engr. Sheikh Tajul Islam Tuhin F/9300	House-25, Flat # 9D, Road No-14/A, Dhanmondi R/A, Dhaka-1205

CONTRIBUTING MEMBERS

Agricultural Engineering Division

Dr. Engr. Monjurul Alam F/6216	Professor, Firm Power & Machinary, Bangladesh Agricultural University, Mymensingh-2202
Engr. Md. Ziaul Hoque F/12831	Chief Engineer (Mi), BADC Jamalpur

Chemical Engineering Division

Engr. Md. Elias Hossain F/13030	House: 1/B, Road NS-1 (Main Road) Block-A, Banasree, Rampura, Dhaka-1219
Engr. Naeema Akhter Poppy M/28264	Prossimo Royal, 2/D/1, Mymensingh Road Flat No- 4/C, Poribagh, Shahbag, Dhaka-1000

Civil Engineering Division

Engr. Md. Mustafizur Rahman M/39333	6/C, Monipuri Para, Farmgate Dhaka-1215
Engr. Mohhamad Abdul Azim M/40537	Robin's Son Valley-1, 141/2, New Eskaton Road, Dhaka

Computer Engineering Division

Engr. Sonjoy Kumar Nath F-12010	3rd Floor, La, 25/1 East Merul Badda, (Near of Nimtola Mondir), Dhaka-1212
Engr. Sohag Kumar Das M/31609	Ranajitpur (Majherpara), Khanpur (9300), Thana / Upazila : Bagerhat Sadar, Dist: Bagerhat.

Electrical Engineering Division

Engr. Debabrata Das Tutul M/38973	Bidyut Bhaban (11th Floor), DPDC 1 Abdul Gani Road, Dhaka-1000
Engr. Md. Anis-Uz-Zaman M/40165	Assistant Engineer, BPDB Chittagong Power Distribution, Phase-2, BPDB, 1, Abdul Gani Road, Dhaka.

Mechanical Engineering Division

Engr. Md. Shafiqul Islam (Bidyut) F-13013	Asia Garden (1st Floor), 63/1, Lake Circus, Kalabagan, Dhaka
Engr. Md. Mazharul Islam Fakir M/37672	Flat-2d, 35, Lake Circus Kalabagan, Dhaka

Textile Engineering Division

Prof. Dr. Engr. Mahbubul Haque F/6564	Flat-6/C, 33 Free School Street Kathal Bagan Bazar Road, Dhaka-1205
Prof. Dr. Engr. Md. Abdus Shahid F/10392	Professor, Textile Engineering Department, DUET

EDITORIAL TEAM

	Team Leader	
1.	Prof. Dr. Md. Zoynul Abedin F-2127	Professor of Civil Engineering, MIST, Mirpur Cantonment, Dhaka-1216 and Professor on PRL, BUET, Dhaka-1000
	Members	
2.	Engr. Md. Abdus Salam M-7099	Flat-3B, House-50/2, Road-11, Kallyanpur, Dhaka-1207
3.	Dr. Engr. Raquib Ahsan M-18678	Prof. of Civil Engg., Bangladesh University of Engineering and Technology, Dhaka-1000
4.	Prof. Dr. Engr. Md. Mizanur Rahman F/11725	Prof. of Civil Engg., Bangladesh University of Engineering and Technology, Dhaka-1000
5.	Prof. Dr. Engr. Mohammad Mahfuzul Islam, PEng. F/9339	Professor, Department of CSE BUET, Dhaka-1000.
6.	Engr. Md. Shafiul Alam (Dollar)	15/3 Lake Circus, Kalabagan, Dhaka-1205
	Coordinator Engr. Md. Shafiul Alam (Dollar)	15/3 Lake Circus, Kalabagan, Dhaka-1205
	Editorial Staff	
	Md. Jashimuddin	AEO Academic & Publications IEB Headquarters, Ramna, Dhaka-1000
	Md. Rubel Hossain	Computer Operator IEB Headquarters, Ramna, Dhaka-1000

LIST OF ABBREVIATIONS

ACI	American Concrete Institute
IS	Indian Standards
ISO	International Organization for Standardization
DG	(Chinese Standard for Combined Harvester/Reaper)
NY	Chinese Professional Standard for Agriculture
GB	(Chinese National Standard)
CAS	Chemical Abstracts Service
CCGF	(Chinese Code for Diesel/Petrol Engine)
ASTM	American Society for Testing and Materials
BADC	Bangladesh Agricultural Development Corporation
BDS	Bangladesh Standards
BMDA	Barind Multipurpose Development Authority
BS	British Standards
DAE	Department of Agriculture Extension
IEC	International Electro technical Commission
JB/T	(Chinese Standard for Tractor, Gasket, Pump etc.)
OECD	Organization for Economic Co-operation and Development
PNS/PAES	Philippine National Standard/Philippine Agricultural and Engineering Standards
SNI	Standar Nasional Indonesia (Indonesian National Standard)
TIS	Thai Industrial Standards
CECS	Chinese Engineering Construction Standards
DIG	(A Private Company)
AGA	American Gas Association
GMM	Gas Measurement Manual
AISI	American Iron and Steel Institute
AISC	American Institute of Steel Construction
API	American Petroleum Institute
ANSI	American National Standards Institute
ASME	The American Society of Mechanical Engineers
AWS	American Welding Society
DIN	Deutsches Institut fur Normung (German Institute for Standards)
EN	European Norm
GPA	The Gas Processors Association
IEEE	Institute of Electrical and Electrical Engineers
ISA	International Society of Automation
NAAMM	National Association of Architectural Metal Manufacturers

NEN	The Royal National Netherlands Standardization Institute
NFPA	National Fire Protection Agency
MSS	Manufacturers Standardization Society
NACE	The National Association of Corrosion Engineers
IP	Ingress Protection
AS/NZS	Australian Standards/New Zealand Standards (Standards Australia/Standards New Zealand)
SIS	Swedish Institute for Standards
TP	Canada Coast guard Standards
CAN/CSA	Canadian Standards Association
SSPC	The Society for Protective Coatings
IGE	Introduction GeneraleaL'economie
MSS	Manufacturer's Standards Society
LGED	Local Government Engineering Department
PRCI	Pipeline Research Council International
AASHTO	American Association of State Highway and Transportation Officials
CNCRP	Project for Capacity Development on Natural Disaster-Resistant Technique of Construction and Retrofitting for Public Buildings in the People's Republic of Bangladesh
NTPA	National Tripartite Plan of Action on Fire Safety and Structural Integrity
BWDB	Bangladesh Water Development Board
DPP	Development Project Proposal
BAER	Bangladesh Atomic Regulatory Act
NSRC	Nuclear Safety and Radiation Control
DAP	Detailed Area Plan
CPTU	Central Procurement Technical Unit
BRTA	Bangladesh Road Transport Authority
RHD	Roads and Highways Department
IRC	Indian Road Congress
DPHE	Department of Public Health Engineering
EIA/TIA	Electronic Industries Alliance/Telecommunications Industries Association
DOE	Department of Environment
BREB	Bangladesh Rural Electrification Board
DESCO	Dhaka Electric Supply Company
BDS	Bangladesh Standards
BPDB	Bangladesh Power Development Board

VDE	Verband Deutscher Elektrotechniker
UL	Underwriters Laboratories
IRS	Indian Railway Standards
ITC	Independent Transport Commission
BV	Bureau Veritas
DNV	Det Norske Veritas
RINA	Royal Institute of Naval Architect
LR	Lloyd's Register
NK	Nippon Kaiji Kyokai
MLC	Maritime Labour Convention
LSA	Life Saving Appliances
STCW	International Convention on Standards of Training, Certification and Watch keeping for Seafarers
IEE	Institution of Electrical Engineers
MARPOL	The International Convention for the Prevention of Pollution from Ships
MEPC	Marine Environment Protection Committee
NOx	Nitrogen Oxides
HSC	High Speed Craft
DOS:ISO	Department of Shipping: Indian Shipping Ordinance
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
BSI	British Standards Institution
CEN	European Committee for Standardization
ISM	International Safety Management
ISPS	International Ship and Port Facility Security
BLU	Bulk Loading and Unloading
FSS	Fire Safety System
OSV	Offshore Supply/Service Vessel
SOLAS	Safety of Life at Sea
LY	Large Yacht
MCA	Maritime and Coastguard Agency
MGN	Marine Guidance Note
JIS	Japanese Industrial Standards
JTSC	Jute Product Sectional Committees

SECTION 01

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SECTION 01

CODES AND STANDARDS FOR AGRICULTURAL ENGINEERING

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Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.01	Chaff Cutter	-	IS 1511	Blades for manually-operated chaff cutter (second revision)
			IS 7897	Test Code for chaff cutter
			IS 7898	Manually-operated chaff cutter – specification (second revision)
			IS 11459	Specification for power-operated chaff cutter
			IS 15542	Power-operated chaff cutter – Safety requirements
01.02	Combine Harvester/Reaper	-	DG/T 014	Grain combine harvester
			DG/T 015	Corn harvester
			DG/T 025	Cotton harvester
			DG/T 052	Forage harvester
			GB / T 20790	Technical requirements for semi - fed combine harvesters
			IS 6024	Specification for guards for harvesting machines (first revision)
			IS 6025	Specification for knife sections for harvesting machines (first revision)
			IS 8122 (Part 1)	Test Code for combine harvester-thresher: Part 1 Terminology (first revision)
			IS 8122 (Part 2)	Combine harvester-thresher - Test Code: Part 2 Performance tests (first revision)

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.02	Combine Harvester/Reaper (contd.)		IS 9826	Glossary of terms relating to harvesting and threshing equipment
			IS 10378	Specification for Knife back for harvesting machines
			IS 11467	Test Code for cereal harvesting machines
			IS 15805 (Part 1)	Straw reaper - combine - Test code: Part 1 Terminology
			IS 15805 (Part 2)	Straw reaper-combine - Test code: Part 2 Performance tests
			IS 15806	Combine harvester thresher Selected performance and other characteristics Recommendations
			ISO/TC 23/SC7	Equipment for harvesting & conservation
			NY 2609	Safety signs for combine harvesters
			NY 2610	Codes of safe operation for grain combine harvesters
01.03	Diesel/Petrol Engine	-	CAS 108	Fuel specification for diesel engine performance test
			CAS 109	Fuel specification for ignition engine performance test
		-	CCGF 606.7	Code for implementation of quality supervision and spot checks for vehicle gasoline products
			DG / T 003	Agricultural Diesel Engine
			ISO 683-15	Heat-treatable steels, alloy steels and free-cutting steels – Part 15: Valve steels for internal combustion engines

Division Code : 01	Agricultural Engineering			
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.03	Diesel/Petrol Engine (contd.)		ISO 1204	Reciprocating internal combustion engines
			ISO 2710-1	Reciprocating internal combustion engines – Vocabulary – Part 1: Terms for engine design and operation
			ISO 3046-3	Reciprocating internal combustion engines – Performance – Part 3: Test measurements
			ISO 4548-1	Methods of test for full-flow lubricating oil filters for internal combustion engines – Part 1: Differential pressure/flow characteristics
			ISO 4548-15	Methods of test for full-flow lubricating oil filters for internal combustion engines – Part 15: Vibration fatigue test for composite filter housings
			ISO 15619	Reciprocating internal combustion engines – Measurement method for exhaust silencers – Sound power level of exhaust noise and insertion loss using sound pressure and power loss ratio
			ISO 19013-1	Rubber hoses and tubing for fuel circuits for internal combustion engines – Specification – Part 1: Diesel fuels
			ISO 19013-2	Rubber hoses and tubing for fuel circuits for internal combustion engines – Specification – Part 2: Gasoline fuels

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.04	Farm Implements	-	IS 619	Specification for Pruning and slashing knives, hooked and curved (second revison)
			IS 1976	Specification for Rotary paddy weeder, manually operated (second revision)
			IS 2192	Soil working equipment - Animal drawn mould board plough, fixed type - Specification (second revision)
			IS 2565	Specification for ridger, animal drawn (1st Revision)
			IS 4366 (Part 1)	Specification for agricultural tillage discs: Part 1 concave type (2nd Revision)
			IS 4366 (Part 2)	Specification for agricultural tillage discs: Part 2 Flat type (2nd Revision)
			IS 5718	Agricultural produce processing equipment - seed cleaners - test code (2nd Revision)
			IS 6288	Test Code for mouldboard ploughs
			IS 6635	Specification for tractor operated disc harrows
			IS 6638	Specification for tractor-mounted spring loaded cultivators
			IS 6690	Specification for blades for rotavator for power tillers (1st Revision)

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.04	Farm Implements (contd.)		IS 6813	Sowing equipment - Seed-cum-fertilizer drill Specification (2nd Revision)
			IS 7201 (Part 1)	Methods of sampling for agricultural machinery and equipment: Hand tools and hand operated/animal drawn equipment (1st Revision)
			IS 7230	Specification for plain spool for tractor operated disc harrows
			IS 7353	Specification for blade for tractor-operated terrace
			IS 7565 (Part 1)	Specification for tines for tractor operated cultivators: Rigid tines
			IS 7565 (Part 2)	Specification for tines for tractor operated cultivators: S-type tines
			IS 7640	Test code for disc harrows
			IS 7927	Method of field testing for manually operated paddy weeder
			IS 9164	Guide for estimating cost of farm machinery operation
			IS 9217	Test Code for agricultural discs
			IS 9813	Tractor-mounted blade terracers (1st Revision)
			IS 10225	Specification for bearing spools for tractor-operated disc harrows
			IS 10233	Specification for tractor-operated disc ploughs

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.04	Farm Implements (contd.)		IS 10239	Specification for blade for tractor-operated scraper
			IS 10254	Specification for Share for animal-drawn ridger
			IS 10691	Specification for Share for tractor-operated mouldboard ploughs
			IS 10806	Trailers for Power Tillers - Specification (first revision)
			IS 10807	Axles with brakes of trailer for power tillers
			IS 11204	Specification for Sugarcane harvesting knife
01.05	Grain Dryer	-	IS 8108 (Part 1)	Test Code for grain dryers: Part 1 Selection and preparation for test (first revision)
			IS 8108 (Part 2)	Test Code for grain dryers: Part 2 Method of tests for continuous dryers
			IS 8108 (Part 3)	Test Code for grain dryers: Part 3 Methods of tests for in-silo dryers
			IS 8420	Grain dryers – Glossary of terms (first revision)
			IS 8480	Crop Protection Equipment - Glossary of Terms (first revision)
			IS 9632	Code of practice for operation and preventive maintenance of crop protection equipment
			ISO 7183	Compressed-air dryers – Specifications and testing

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.06	Gravity Flow Irrigation Project	All civil works including • Sluices • Regulators • Canals • Steel gates • Plates	ASTM BADC Manual	American Standard of Testing Materials Bangladesh Agricultural Development Corporation
01.07	Irrigation Water Distribution System			
	a) Surface Irrigation Channel	Lined channel as per design/ Water control structures	ASTM BADC Manual	American Society for Testing and Materials Bangladesh Agricultural Development Corporation
	b) Buried Pipe (Cc/Upvc) Distribution Network	Construction of pipe line along with ancillary structures	BADC Manual BMDA Manual	Bangladesh Agricultural Development Corporation Barind Multipurpose Development Authority, Bangladesh
	c) Chinese Code For Large Sprinkler		DG/T 05	Large sprinkler
	d) Chinese Code For Light And Small Sprinkler		DG/T 040	Light and small sprinkler
01.08	Irrigation with Head Raising Technology:			
	a) Irrigation with Rubber Dam	All civil works including • Pilling • Construction of abutment • Apron • Rubber bag with specification	ASTM BADC Manual	American Society for Testing and Materials Bangladesh Agricultural Development Corporation

Division Code : 01		Agricultural Engineering	
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**
01.08	b) Irrigation with Hydraulic Elevator Dam (HED)	All civil works including • Pilling • Construction of abutment • Apron • Obstructing MS plate to raise the head of the desired level	ASTM — American Society for Testing and Materials BADC Manual — Bangladesh Agricultural Development Corporation
01.09	Minor Irrigation (Equipment Based Irrigation)		
	a) Irrigation with Deep Tube Well (DTW)	• Housing Pipe (MS) • Blind Pipe (GI/FG) • Strainer (SS/FG/uPVC) • Bail Plug and other fitting & fixing items All Civil Works: • Construction of Pump • House/Discharge Box All Electrical Works : • Submersible pump • Transformer Cables	ASTM — American Society for Testing and Materials BADC Manual — Bangladesh Agricultural Development Corporation BDS — Bangladesh Standards BMDA Manual — Barind Multipurpose Development Authority, Bangladesh BS — British Standards
	b) Irrigation with Shallow Tube Well (STW)	• Blind pipe (GI/uPVC) • Bail plug • Pumping set	BADC Manual — Bangladesh Agricultural Development Corporation

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.09	c) Irrigation with Low Lift Pump (LLP)	• Suction pipe • Delivery Pipe • Fitting & fixing materials • Pumping set	BADC Manual BMDA Manual DAE Manual	Bangladesh Agricultural Development Corporation Barind Multipurpose Development Authority, Bangladesh Department of Agricultural Extension, Bangladesh
	d) Chinese code for centrifugal pump	-	DG/T 020	Centrifugal pump
	e) Chinese code for submersible electric pump	-	DG/T 021	Submersible electric pump
	f) Chinese code for micro pump	-	DG/T 022	Micro pump
	g) Irrigation with Floating Pump (FP)	• Pontoon • Engine/ Motor • Pump • Suction pipe • Delivery pipe • Accessories	BADC Manual BS	Bangladesh Agricultural Development Corporation British Standards
01.10	On-farm Water Management (OFWM)	• Blocking, • Water Scheduling based on CWR etc.	BADC Manual BMDA Manual DAE Manual	Bangladesh Agricultural Development Corporation Barind Multipurpose Development Authority, Bangladesh Department of Agricultural Extension, Bangladesh
01.11	Potato Planter/Grader	-	IS 9856 IS 11033	Test Code for potato planters Specification for Animal drawn potato digger, Ridger type

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.11	Potato Planter/Grader (contd.)		IS 11893	Specification for Potato planter, semi-automatic
			IS 13818	Harvesting equipment - Tractor operated potato digger shakers - Test code
			IS 14603	Potato grader – Test Code
			NY/T 1415	Technical specification of quality evaluation for potato planter
01.12	Power Tiller	Tests for engine performance, natural ambient & maximum power	DG/T 002	Walking tractor
			GB/T 6229	Test method of walking tractors
			IEC 651	Sound level meters
			IS 9935	Power tiller Test Codes
			IS 9980	Guidelines for field performance and haulage tests of power tillers (1st Revision)
			IS 10282	Cage wheel for power tillers
			IS 10747	Dimensions of hitch for power tillers
			IS 11822	Methods of tests for spark arrester of agricultural tractors and power tillers
			IS 11858	Handle grip for power tiller
			IS 12036	Agricultural tractors test procedures power test for power take off
			IS 12180-1	Tractors and machinery for agriculture and forestry - Noise measurement - method of test, Part 1: Noise at the operator's position - survey method

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.12	Power Tiller (contd.)		IS 12226	Agricultural tractors power test for drawbar test procedure (1st Revision)
			IS 12239 (Part 3)	Guide for safety and comfort of operator of agricultural tractors and power tillers: Part 3 Requirements relating to power tillers
			IS 13064	Power tillers - Installation and preventive maintenance - Guidelines
			IS 13539	Power tillers - Recommendations on selected performance characteristics (1st Revision)
			IS 15925	Walk behind powered rotary tillers - Definitions, safety requirements and test procedures
			ISO 4251-1	Tyres (ply rating mark series) & rims for agricultural tractor & machinery Part :1 Tyre designation & dimension and approved rim contour
			ISO 5353	Earth moving machinery & tractors and machinery for agriculture and forestry—Seat index point
			JB/T 7282	Types & specification of oils for tractor
			OECD Code-2	OECD Standard Code for the official testing of agricultural and forestry tractor performance

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.12	Power Tiller (contd.)	-	PNS/PAES 117	Agricultural machinery-Small engine-Method of test
			SNI 0738	Quality Standard and testing method of two tractors
			TIS 787	Small size water cooled diesel engine
			TIS 1350	Walk behind tractors
01.13	Rice Transplanter	-	DG/T 008	Rice transplanter
			PNS/PAES 152	Agricultural machinery – Mechanical rice transplanter – Methods of test
			IS 9855	Glossary of terms relating to sowing, planting, fertilizers and manure application equipment
01.14	Sprayer	-	DG/T 009	Power sprayer
			DG/T 010	Boom sprayer
			IS 1970	Hand operated compression knapsack sprayer(5th Revision)
			IS 1971	Crop Protection Equipment - Hand operated stirrup-type sprayer - Specification (5th Revision)
			IS 3062:	Crop Protection Equipment - Rocker sprayer Specification (4th Revision)
			IS 3906	Hand-operated knapsack sprayer (4th Revision)

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.14	Sprayer (contd.)	-	IS 7593 (Part 1)	Specification for Power operated pneumatic sprayer cum-duster: Part 1 Knapsack type (1st Revision)
			IS 8548	Test Code for power-operated hydraulic sprayer
			IS 10134	Methods of tests for manually operated sprayers (1st Revision)
			IS 11313	Hydraulic power sprayers - Specification (1st Revision)
			IS 11429	Methods for calibration of sprayers
			IS 15918	Equipment for crop protection - Sprayers - Connection Threading (Adoption of ISO 4102:1984)
			IS 15920	Equipment for crop protection -Sprayers nozzles- colour coding identification
			IS 15921	Equipment for crop protection - Air assisted Sprayers - Dimension of nozzle, swivel nuts (Adoption of ISO 14710:1996)
			IS 15923 (Part 1)	Equipment for crop protection - Drift classification of spraying equipment: Part 1 Classes (Adoption of ISO 22369-1:2006)

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.14	Sprayer (contd.)		IS 15924	Equipment for crop protection - Methods for field measurement of spray drift (Adoption of ISO 22866:2005)
			ISO/TC 23/SC6	Equipment for crop protection, Sprayers - Connection threading Safety - Sprayers and liquid fertilizer distributors
01.15	Thresher Drip Irrigation Kit		CECS 213	Technical specification for automatic fire-extinguishing rotating sprinkler systems
			DIG G77AS	Drip irrigation kit
			DIG Corp G77AS	Drip watering kit with anti-siphon
			ISO/TC 23/SC18	Irrigation and drainage and systems
			NY/T 1361	Agricultural irrigation equipment, Micro sprinkling hose
01.16	Thresher		DG/T 033	Thresher
			IS 3327	Specification for pedal-operated paddy thresher (1st Revision)
			IS 6284	Test Code for power thresher for cereals (2nd Revision)
			IS 6320	Specification for power thresher, Hammer mill type (first revision
			IS 9019	Code of practice for installation, operation and preventive maintenance of power threshers
			IS 9020	Safety requirements for power thresher

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.16	Thresher (contd.)		IS 11234	Test Code for power thresher for groundnut
			IS 11691	Specification for power thresher, spike tooth type
			IS 11787	Specification for paddy dehusker, rubber roll type
			NY 2801	Safety operation procedure of maneuver thresher
01.17	Tractor	-	BIS - IS 4468: PART 1	Agricultural wheeled tractors - Rear-mounted three point linkage: Part 1 Categories 1, 2 3 & 4 (4th Revision)
			Code 2	OECD Standard code for official testing of agricultural and forestry tractor performance
			Code 3	OECD Standard code for official testing of protective structures on agricultural and forestry tractors (dynamic test)
			Code 4	OECD Standard code for official testing of protective structures on agricultural and forestry tractors (static test)
			Code 5	OECD Standard Code for the official measurement of noise at the driving position(s) of agricultural and forestry tractors
			Code 6	OECD Standard Code for official testing of front-mounted protective structures on narrow-track agricultural and forestry tractors

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.17	Tractor (contd.)		Code 7	OECD Standard Code for official testing of rear-mounted protective structures on narrow-track agricultural and forestry tractors
			Code 8	OECD Standard Code for official testing of protective structures on agricultural and forestry track laying tractors
			Code 9	OECD Standard Code for official testing of protective structures for tele-handlers (testing of falling-object and roll-over protective structures fitted to self- propelled variable reach all-terrain trucks for agricultural use)
			Code 10	OECD Standard code for official testing of falling object protective structures on agricultural and forestry tractors
			DG/T 001 2011	Agricultural wheeled and crawler tractors
			IS 4905	Methods for random sampling
			IS 4931	Agricultural tractors - Rear mounted power take off Types 1, 2 and 3 (3rd Revision)
			IS 5994	Agricultural tractors and power tillers (FAD 11)
			IS 6483	Tractors and machinery for agriculture and forestry Linch pins and spring pins - Dimensions and requirements (2nd Revision)

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.17	Tractor (contd.)		IS 6840	Code of practice for preventive maintenance of agricultural wheeled tractor
			IS 6847	Code of practice for installation of agricultural wheeled tractor (1st revision)
			IS 8213	Agricultural tractor trailers - Specification
			IS 8265	Agricultural tractors - Guards for power take-off (PTO) drive-shafts (2nd revision)
			IS 9253	Guidelines for field performance and haulage test of agricultural tractors (1st revision)
			IS 9864	Guidelines for stocking spare parts of agricultural tractors
			IS 9869	Technical requirements for power take-off pulley assembly for agricultural tractors with type 1 PTO shaft
			IS 9939	Glossary of terms relating to agricultural tractors and power tillers
			IS 10273	Guidelines for declaration of power and specific fuel consumption and labelling of agricultural tractors (1st Revision)
			IS 10743	Method for determination of center of gravity of agricultural tractors
			IS 11081	Agricultural tractors - Half cage wheel - Specification (1st Revision)

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.17	Tractor (contd.)		IS 11442	Method of test for operator's field of vision of agricultural tractors (1st Revision)
			IS 11821(Part 1)	Method of test and acceptance conditions for protective structures of agricultural tractros: Part 1 Dynamic test (1st Revision)
			IS 11821(Part 2)	Method of test and acceptance conditions for protective structures of agricultural tractors: Part 2 Static test (1st Revision)
			IS 11859	Agricultural tractors - Turning and clearance diameters - Methods of test
			IS 12036	Agricultural tractors—Test procedures— Power tests for power take off (1st Revision)
			IS 12061	Agricultural tractors— Braking performance — Method of test (1st Revision)
			IS 12062	Method for measurement of exhaust smoke emitted by agricultural tractors
			IS 12180	Method for noise measurement of agricultural tractors
			IS 12207	Recommendations on selected performance characteristics of agricultural tractors
			IS 12224	Method of test for hydraulic power and lifting capacity of agricultural tractors

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.17	Tractor (contd.)		IS 12226	Agricultural tractors—Power tests for drawbar—Test procedure (1st Revision)
			IS 12239 (Part 1)	Guide for safety and comfort of operator of agricultural tractors and 1996 power tillers: Part 1 General requirements (1st Revision)
			IS 12239 (Part 2)	Tractors and machinery for agriculture and forestry Technical means for ensuring safety Part 2: Tractors ((1st Revision)
			IS 12953	Drawbar for agricultural tractors - Link type Specification
			ISO 730-2	Agricultural wheeled tractors - Three-point linkage: Part 2 Category 1 N (Narrow Hitch) (3rd Revision))
			ISO 789-1:2018	Agricultural tractors - Test procedures -Part 1: Power tests for power take-off
			ISO 789-2:2018	Agricultural tractors - Test procedures -Part 2: Rear three-point linkage lifting capacity
			ISO 789-3:2018	Agricultural tractors - Test procedures - Part 3: Turning and clearance diameters
			ISO 789-4:2018	Agricultural tractors - Test procedures - Part 4: Measurement of exhaust smoke

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.17	Tractor (contd.)		ISO 789-5:2018	Agricultural tractors - Test procedures - Part 5: Partial power PTO -- Non-mechanically transmitted power
			ISO 789-6:2018	Agricultural tractors - Test procedures - Part 6: Centre of gravity
			ISO 789-7:2018	Agricultural tractors - Test procedures - Part 7: Axle power determination
			ISO 789-8:2018	Agricultural tractors - Test procedures - Part 8: Engine air cleaner
			ISO 789-9:2018	Agricultural tractors - Test procedures - Part 9: Power tests for drawbar
			ISO/OECD 789-10	Agricultural tractors - Test procedures - Part 10: Hydraulic power at tractor/implement interface
			ISO 789-11	Agricultural tractors -Test procedures -Part 11: Steering capability of wheeled tractors
			ISO 789-12	Agricultural tractors - Test procedures - Part 12: Low temperature starting
			ISO 789-13:2018	Agricultural tractors - Test procedures - Part 13: Vocabulary and specimen test report
			ISO 3600	Tractors and machinery for agriculture and forestry - Powered lawn and garden equipment – Operators manuals - Content and presentation (2nd Revision)

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.17	Tractor (contd.)		ISO 3767-1	Tractors and machinery for agriculture and forestry, powered lawn and garden equipment - Symbols for operator controls and other displays part 1 : Common Symbols (2nd Revision)
			ISO 3767-2	Tractors and machinery for agriculture and forestry, powered lawn and garden equipment - Symbols for operator controls and other displays : Part 2 Symbols for agricultural tractors and machinery (1st Revision)
			ISO 3463:2006	Tractors for agriculture and forestry -Roll-over protective structures (ROPS) - Dynamic test method and acceptance conditions
			ISO 3776-2:2013	Tractors and machinery for agriculture - Seat belts - Part 2: Anchorage strength requirements
			ISO 3776-3:2009	Tractors and machinery for agriculture - Seat belts - Part 3: Requirements for assemblies
			ISO 3789	Guidelines for location and operation of operator controls on agricultural tractors and machinery (first revision)
			ISO 3965:1990	Agricultural wheeled tractors -Maximum speeds - Method of determination

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.17	Tractor (contd.)		ISO 5007	Agricultural wheeled tractors - Operator's seat - Laboratory measurement of transmitted vibration
			ISO 5008	Agricultural wheeled tractors and field machinery - Measurement of whole body vibration of the operator
			ISO 5673	Agricultural tractors and machinery - Power take-off drive shafts and position of power-input connection (first revision)
			ISO 5676	Tractors and machinery for agriculture and forestry - Hydraulic coupling - Braking circuits
			ISO 5721	Agricultural tractors - Operator's field of vision - Test procedures (1st Revision)
			ISO 6489-1	Agricultural vehicles - Mechanical connections between towed and towing vehicles: Part 1 Dimensions of hitch hooks (2nd Revision)
			ISO 6489-3	Agricultural vehicles - Mechanical connections on towing vehicles - Part 3: Tractor drawbar (1st Revision)
			ISO 8759-1	Agricultural wheeled tractors - Front mounted equipment : Part 1 Power take-off and three point linkage

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.17	Tractor (contd.)		ISO 8759-2	Agricultural Wheeled Tractors - Front-mounted Equipment : Part 2 Stationary Equipment Connections
			ISO/TC 23 /SC2	Common Tests for Agricultural tractors - Test procedures
			ISO/TC 23/SC3	Tractors and agricultural machinery - Seat belts anchorage location requirements/ Safety and Comfort
			ISO/TR 3778	Agricultural tractors - Maximum actuating forces required to operate controls (first revision)
			SAE J 2708	OECD Standard Code for agricultural tractor test
01.18	Lawn Mower		IS 9575	Power lawn mower, pedestrian-controlled cylinder (reel) type
			IS 9581	Safety and operational requirements for pedestrian- Mar 2009 controlled cylinder (reel) power lawn mowers
			ISO/TC 23/SC13	Powered lawn and garden equipment
01.19	Maize Sheller		IS 7051	Specification for power maize shellers
			IS 7052	Test code for power maize shellers
01.20	Rice Milling/Processing Machine		IS 8440	Test code for paddy cleaners

Division Code : 01		Agricultural Engineering		
Item No.	**Item Description**	**Components**	**Codes/Standards/Acceptability Criteria/Test**	
01.20	Rice Milling/Processing Machine (contd.)		IS 9049	Agricultural produce milling machinery - paddy dehusker, rubber roll type - Test code (1st Revision)
			IS 9555	Rice polisher - Specification (2nd Revision)
			IS 9981	Agricultural produce processing equipment - Glossary of terms (1st Revision)
			IS 10048	Rice grader - Specification (2nd Revision)
			IS 10507	Paddy separator - Specification (1st Revision)
			IS 10520	Agricultural produce milling machinery - Emery stones for burr flour mills - Specification (1st Revision)
			IS 11032	specification for rotary screen-type pre cleaner
			IS 12064	Code of practice for paddy parboiling
			IS 12411	Specification for paddy dehusker, centrifugal type
			IS 12792	Agricultural Produce Milling Machinery - Mini Rice Mill Specification
			ISO 3971	Symbols and flow diagram for rice milling

SECTION 02

CODES AND STANDARDS FOR CHEMICAL ENGINEERING

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.01	Cathodic Protection Materials	-	ASTM A518	Standard specification for corrosion-resistant high-silicon iron castings
			ASTM G97	Standard test method for laboratory evaluation of magnesium sacrificial anode test specimens for underground applications
			ISO 15589-1	Petroleum and natural gas industries – Cathodic protection of pipeline transportation systems
02.02	City Gate Station (CGS), Regulating and Metering Station (RMS) and Town Bordering Station (TBS)	-	ACI 214	Recommended practice for evaluation of strength test results of concrete
			ACI 301	Specifications for structural concrete for buildings
			ACI 302.1R	Guide for concrete floor and slab construction
			ACI 304R	Guide for measuring, mixing, transporting and placing concrete
			ACI 305R	Hot weather concreting
			ACI 308	Standard practice for curing concrete
			ACI 309	Guide for consolidation of concrete
			ACI 315	Manual of standard practice for detailing reinforced concrete structures
			ACI 318	Building code requirements for reinforced concrete
			ACI 347	Recommended practice for concrete formwork

Division Code : 02			**Chemical Engineering**	
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	-	ACI 613	Recommended practice for design of concrete mixes
			ACI 614	Recommended practice for measuring, mixing and placing concrete
			AGA Report No. 3	Orifice metering of natural gas and other related hydrocarbon fluids
			AGA Report No. 5	Fuel gas energy metering
			AGA Report No. 7	Turbine metering
			AGA Report No. 8	Compressibility factor of natural gas and related hydrocarbon gases
			AGA, GMM Part 9	Gas measurement manual, part 9, design of meter and regulator stations
			AISI 304	18 Cr-8 Nil steel
			AISC M011	Manual of steel construction allowable stress design
			ANSI A40.8	Safety requirements for plumbing
			ANSI A58	Minimum design loads in building and other structures (for wind loading)
			ANSI B2.1	Pipe threads (except dry seal)
			ANSI B16.1	Cast iron pipe flanges and flanged fittings
			ANSI B16.11	Forged steel fittings, socket welded and threaded
			ANSI B16.21	Non-metallic gaskets for pipe flanges
			ANSI/ASME B16.34	Valves-flanged, threaded, and welding end

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	-	ANSI/ASME B16.5	Pipe flanges and flanged fittings
			ANSI/ASME B16.9	Factory made wrought butt-welding fittings
			ANSI/ASME B31.8	Gas transmission and distribution piping systems
			API Spec. 5L	Specification for line pipe
			API Spec. 6D	Specification for pipeline valves
			API 527	Seat tightness of pressure relief valves
			API 600	Steel gate valves, flange and butt welding ends
			API 602	Compact gate valves
			API 1104	Specifications for welding pipelines and related facilities
			API 2000	Venting atmospheric and low-pressure storage tanks (non-refrigerated and refrigerated), (third edition)
			API 2031	Combustible gas detector systems and environmental/ operational factors influencing their performance
			API RP 500	Recommended practice for classification of locations for electrical installation at pipeline transport facilities
			API RP520 Part-I	Recommended practice for design and installation of pressure relieving systems

Division Code : 02		**Chemical Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	-	API RP 520 Part-II	Recommended practice for sizing, selection and installation of pressure relieving devices
			API RP 521	Guide for pressure relieving and de-pressuring system
			API RP 550	Recommended practice: Manual on installation of refinery instruments and control systems
			API RP 750	Recommended practice for management of process hazards
			API RP 1102	Recommended practice for liquid petroleum lines crossing highways.
			ASME Section VIII	American Society of Mechanical Engineers boiler and pressure vessel code division 1
			ASME Section IX	Qualification standard for welding and brazing procedures, welders, brazers, and welding and brazing operators
			ASTM A36	Structural steel
			ASTM A53	Specification for pipe, steel, black and hot-dipped, zinc-coated, welded and seamless
			ASTM A105	Forged carbon steel for piping components
			ASTM A106	Seamless carbon steel pipe for high temperature service

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	-	ASTM A123	Standard specification for zinc (hot-dip galvanised) coatings on iron and steel products
			ASTM A153	Specification for zinc coating (hot-dip) on iron and steel hardware
			ASTM A185	Welded steel wire fabric for concrete reinforcement steel
			ASTM A194	Specification for carbon and alloy steel nuts for bolts for high pressure and high temperature service
			ASTM A269	Specification for seamless and welded austenitic stainless steel tubing for general service
			ASTM A307	Standard specification for carbon steel bolts and studs, 60000 psi tensile strength
			ASTM A312	Specification for seamless and welded austenitic stainless steel pipe
			ASTM A325	High strength bolts for structural steel joints, including suitable nuts and washers
			ASTM A370	Mechanical testing of steel products
			ASTM A385	Recommended practice providing for high-quality zinc coatings (hot-dip)

Division Code : 02			**Chemical Engineering**	
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	-	ASTM A435	Straight beam ultrasonic examination of steel plates for pressure
			ASTM A490	Specification for high-strength bolts, classes 10.9 and 10.9.3 for structural steel joints
			ASTM A501	Hot formed welded and seamless carbon steel structural tubing
			ASTM A615	Specification for deformed and plain billet-steel bars for concrete reinforcement
			ASTM A694	Specification for carbon and alloy steel forging for pipe flanges, fittings for high pressure transmission services
			ASTM A860	Specification for wrought high-strength low-alloy steel butt-welding fittings
			ASTM B209M	Specification for aluminum alloy sheet and plate
			ASTM B221M	Specification for aluminum alloy shape
			ASTM C33	Specification for concrete aggregates
			ASTM C76	Reinforced concrete culvert, storm drain and sewer pipe
			ASTM C143	Test for slump of Portland cement concrete
			ASTM C150	Specification for Portland cement

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	-	ASTM C173	Test for air content of freshly mixed concrete by the volumetric method
			ASTM C177	Test method for steady state heat flux measurements and thermal transmission properties
			ASTM C260	Specification for air-entraining admixtures for concrete
			ASTM C547	Specification for mineral fiber preformed pipe insulation
			ASTM C552	Specification for cellular glass thermal insulation
			ASTM C591	Specification for unfaced preformed rigid cellular urethane thermal insulation
			ASTM C592	Specification for mineral fiber blanket insulation and blanket type pipe insulation (materiel mesh covered)
			ASTM E329	Recommended practice for inspection and testing agencies for concrete, steel and bituminous materials as used in construction.
			ASTM G57	Standard method for field measurement of soil resistivity using the wenner four - electrode method
			AWSD1.1	Structural welding code

Division Code : 02		**Chemical Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	--	BS 1904	Industrial platinum resistance thermometer
			DIN 3381	Safety devices for gas supply installations operating at working pressures up to 100 bar; pressure relief governors and safety shut-off devices
			DIN 7971	Slotted pan head tapping screws
			DIN 17245	Ferritic steel castings with elevated temperature properties - technical delivery conditions
			DIN 52616	Testing of thermal insulation materials; determination of thermal conductivity by means of a heat-flow meter
			EN 50020	Electrical apparatus for potentially explosive atmospheres: intrinsic safety
			EN 50022	Low voltage switch gear and control gear for industrial use; mounting rails; top hat rails 35 mm wide for snap-on mounting of equipment
			EN 55011	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ism) radio frequency equipment
			EN 55013	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	-	EN 55014	Limits and methods of measurement of radio disturbance characteristics of electrical motor operated and thermal appliances for household and similar purposes, electric tools and similar electric apparatus
			EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment.
			EN 55020	Immunity from radio interference or broadcast receivers and associated equipment
			EN 55022	Limits and methods of measurement of radio interference characteristics of information technology equipment
			GPA 2166	Obtaining natural gas samples for analysis by gas chromatograph
			GPA 2172	Calculation of gross heating value, relative density and compressibility factor for natural gas
			GPA 2261	Analysis for natural gas and similar gaseous mixtures by chromatograph
			IEC 44	Instrument transformers
			IEC 76	Power transformers
			IEC 79-10	Electrical apparatus for explosive gas atmospheres, part 10: classification for hazardous areas

Division Code : 02		**Chemical Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	-	IEC 146, 146A & 14-2	Semiconductor rectifiers and converters
			IEC 157-1	Low-voltage switchgear and control-gear
			IEC 185	Current transformers
			IEC 364-5-54	Electrical installations of buildings, part 5: selection and erection of electrical equipment, chapter 54: Earthing arrangements and protective conductors
			IEC 417 B	Graphical symbols for use on equipment index, survey and compilation of the single sheets
			IEC 529	Classification of degrees of protection provided by enclosures
			IEC 726	Dry type power transformers
			IEC 801-1	Electromagnetic compatibility for industrial process measurement and control equipment; part 1: general introduction
			IEC 801-2	Electromagnetic compatibility for industrial process measurement and control equipment; part 2: electrostatic discharge requirements
			IEC 801-3	Process measurement and control equipment; part 3: radiated electromagnetic field requirements. Electromagnetic compatibility for industrial

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	-	IEC 801-4	Electromagnetic compatibility for industrial process measurement and control equipment; part 4: electrical fast transient/ burst requirements
			IEC 947-2	Circuit breakers
			IEEE 587	Guide for surge voltage in low-voltage AC power circuits
			ISA S5.1	Instrumentation symbols and identification
			ISA S5.2	Binary logic diagrams for process operations
			ISA S5.3	Graphic symbols for distributed control/shared display instrumentation, logic and computer systems
			ISA S12.13 Part II	Installation, operation and maintenance of combustible gas detectors
			ISA S20	Specification forms for process measurement and control instruments, primary elements and control valves
			ISO 6976	Specification for calculation of calorific value, density and relative density of natural gas
			NAAMM A202.1	Metal bar grading manual
			NEN-EN-50014	Electrical apparatus for potentially explosive atmospheres: general requirements
			NFPA 70	National Electrical Code (NEC)

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Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.02	CGS/RMS/TBS (contd.)	-	NFPA 72	Standard for the installation, maintenance, and use of protective signaling systems
			NFPA 72E	Standard on automatic fire detectors
			NFPA 101	Life safety code
			NFPA 493	Standard for intrinsically safe apparatus and associated apparatus for use in class (i), (ii) and (iii), division 1 hazardous locations
			MSS SP 44	Steel pipe line flanges
			MSS SP72	Ball valves with flanged or butt-welding ends
			MSS SP75	Specification for high test wrought butt-welding fittings
			MSS SP84	Steel valves-socket welding and threaded ends
			NACE RP0169	Control of external corrosion on underground or submerged metallic piping systems
			Regulations (Standards - 29 CFR) Part 1910	OSHA standard subpart D walking-working surfaces
02.03	Coating and Wrapping Material	-	Abel IP 170	Determination of flash point - Abel closed-cup method
			ASTM D257	Test methods for d-c resistance or conductance
			ASTM D638	Test methods for tensile properties of plastics

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Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.03	Coating and Wrapping Material (contd.)	-	ASTM D792	Method of test for specific gravity and density of plastics by displacement
			ASTM D870	Method for water immersion test of organic coatings on steel
			ASTM D882	Test method for tensile properties of thin plastic sheeting
			ASTM D1000	Methods of testing pressure-sensitive adhesive coated tapes used for electrical insulation
			ASTM D1002	Test method for strength properties of adhesives in shear by tension loading (metal-to-metal)
			ASTM D1084	Test method for viscosity of adhesives
			ASTM D1200	Standard test method for viscosity by ford viscosity cup
			ASTM D1289	Standard specification for faced rigid cellular polyisocyanurate thermal insulation board
			ASTM D2240	Test method for rubber property durometer hardness
			ASTM D2671	Methods of testing heat shrinkable tubing for electrical use
			ASTM E28	Tests method for softening point by ring and ball apparatus

Division Code : 02		**Chemical Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.03	Coating and Wrapping Material (contd.)	-	ASTM E398	Test method for water vapor transmission rated of sheet materials using a rapid technique for dynamic measurement
			ASTM G14	Test method for impact resistance of pipeline coatings (failing weight test)
			ASTM G17	Test method for penetration resistance of pipeline coatings (blunt rod)
			ASTM G42	Test method for cathodic disbanding of pipeline coatings subjected to elevated temperatures
			AS/NZS 4352	Tests for coating resistance to cathodic disbonding
			DIN 30672	Coating for corrosion protection tapes and heat shrinkable products for pipelines for operational temperatures up to 50°c
			DIN 53122	Determination of the water vapor transmission rate of plastic film, rubber sheeting, paper, board and other sheet materials by gravimetry
			DIN 53495	Testing of plastics: determination of water absorption
			DIN 53515	Determination of tear strength of rubber elastomers and plastic film using graves angle test piece with nick

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Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.03	Coating and Wrapping Material (contd.)	-	ISO 1515	Paints and varnishes - determination of volatile and non-volatile matter
			ISO 9000/ 9001/9002	Quality system
			SIS-05-5900	Pictorial surface preparation standards for painting steel
			TP-206	Alyeska test - tape shear test
02.04	Corrosion	Pipeline External Corrosion	ANSI/NACE SP0502-2008	Pipeline external corrosion direct assessment methodology
			ISO 9223	Classification of the corrosivity of atmospheres
			ISO 9224	Guiding values for the corrosivity categories of atmospheres
			ISO 9225	Aggressively of atmospheres—methods of measurement of pollution data
			ISO 9226	Corrosivity of atmospheres—methods of determination of corrosion rates of standard specimens for the evaluation of corrosivity
02.05	CWC Coating	-	ASTM C39	Standard test method for compressive strength of cylindrical concrete specimens
			ASTM C42	Standard test method for obtaining and testing drilled cores and sawed beams of concrete
			ASTM C497	Standard test methods for concrete pipe, manhole sections, or tile

Division Code : 02		**Chemical Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.05	CWC Coating (contd.)	-	ASTM C670	Standard practice for preparing precision and bias statements for test methods for construction materials
			BS 12	Specification for Portland cement
			BS 682	Elastomeric seals: materials requirements for seals used in pipes and fittings carrying gas and hydrocarbon fluids
			BS 812	Testing aggregates: method for determination of aggregate impact value
			BS 882	Specification for aggregates from natural sources for concrete
			BS 1881 Part 4	Testing concrete
			BS 3184	Methods of test for water for making concrete (including notes on the suitability of the water)
			BS 8110	Structural use of concrete
02.06	FBE Coating	-	API 5L	Specification for line pipe
			CAN/CSAZ245.20M92	External fusion bond epoxy coating for steel pipe
			SIS-05-5900	Pictorial surface preparation standards for painting steel surfaces
			SSPC-SP10	Near white blast cleaning
02.07	Fittings	-	API Spec. 5L	Specification for line pipe
			API RP 5L5	American Petroleum Institute recommended practice for marine transport of line pipe

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.07	Fittings (contd.)	-	API RP 5L1	American Petroleum Institute recommended practice for railroad transport of line pipe
			ANSI/ASME B1.1	Unified inch screw threads
			ANSI/ASME B16.25	Butt welding ends
			ANSI/ASME B16.34	Valves-flanged, threaded, and welding end
			ANSI/ASME B16.47	Large diameter steel flanges
			ANSI/ASME B16.5	Pipe flanges and flanged fittings
			ANSI/ASME B16.9	Factory made wrought butt-welding fittings
			ANSI/ASME B31.1	Power piping
			ANSI/ASME B31.3	Process piping
			ANSI/ASME B31.4	Pipeline transportation systems for liquids and slurries
			ANSI/ASME B31.8	Gas transmission and distribution piping systems
			ANSI/ASME B36.10	Welded and seamless wrought steel pipe
			ANSI B18.2.1	Square and hex bolts and screws
			ANSI B18.2.2	Square and hex nuts
			ASME B40.100	Pressure gauges and gauge attachments
			ASME Section VIII	American Society of Mechanical Engineers boiler and pressure vessel code division 1
			ASME Section IX	Boiler and pressure vessel code, welding and brazing qualifications

Division Code : 02		**Chemical Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.07	Fittings (contd.)	-	ASTM A194	Standard specification for carbon steel, alloy steel, and stainless steel nuts for bolts for high pressure or high temperature service, or both
			ASTM A370	Mechanical testing of steel Products.
			ASTM D256	Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics
			ASTM D570	Standard Test Method for Water Absorption of Plastics
			ASTM D638	Test Methods for Tensile Properties of Plastics
			ASTM D651	Tensile Strength of Molded Electrical Insulating
			ASTM E23	Standard Test Methods for Notched Bar Impact Testing of Metallic Materials
			BS 1560	Circular flanges for pipes, valves and fittings (Class designated). Steel, cast iron and copper alloy flanges. Specification for steel flanges
			BS 3292	Specification for direct reading hygrometers
			BS 4515	Specification for welding of steel pipelines on land and offshore. Carbon and carbon manganese steel pipelines.
			BS EN 60529:1992	Degrees of protection provided by enclosures (IP code)
			IGE TD6	Introduction Generale A L'economie

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.07	Fittings (contd.)	-	MSSSP6	Manufacturer's standards society-standard finished for contact faces of pipe flanges and connecting end flanges of valves and fittings
			MSSSP 44	Steel pipe line flanges
			MSSSP 55	Quality standard for steel castings for valves, flanges, fittings, and other piping components - visual method for evaluation of surface irregularities
			SIS 05 59 00	Pictorial surface preparation standards for painting steel surfaces
02.08	Fixed Equipment Integrity Management	Inspection, Testing & Preventive Maintenance of Pressure Vessel & Tanks	ANSI/NB-23	National Board Inspection Code, 2007 Edition
			API 510	In-service inspection, rating, repair, and alteration
			API 570	Piping Inspection Code, 2nd Edition
			API 575	Guidelines and methods for inspection of existing atmospheric and low-pressure storage tanks, second edition
			API 650	Welded steel tanks for oil storage
			API 653	Tank inspection, repair, alteration, and reconstruction, third edition
			API PUBL 581	Risk-based inspection – Base resource document

Division Code : 02			**Chemical Engineering**	
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.08	Fixed Equipment Integrity Management (contd.)		API RP 576	Inspection of pressure-relieving devices, 2nd Edition
			API RP 579	Fitness-for-service, 2nd Edition
			API RP 580	Risk-based inspection, 1st Edition
			ASME Section VIII: Division 1	Rules for construction of pressure vessels, 2007 Edition
			ASME Section VIII: Division 2	Rules for construction of pressure vessels—alternative rules, 2007 Edition
			ASME B31.3	Process piping, 2004 Edition
			ASME B31.4	Pipeline transportation systems for liquid hydrocarbons and other liquids, 2006 Edition
			ASME B31.8	Gas transmission and distribution piping systems
			ASNT SNT-TC-1A	Personnel qualification and certification in nondestructive testing
02.09	Induction Bend	-	API 5L	Specification for line pipe
			API 5LW	Transportation of line pipe on barges and marine vessels
			ASME B16.49	Factory-made wrought steel butt welding induction bends for transportation and distribution systems
			ASME B31.8	Gas transmission and distribution piping systems
			ASME V	Non-destructive examination
			ISO 3138	Specification for line pipe

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.09	Induction Bend (contd.)	-	ISO 12094	Ultrasonic testing for detection of laminar defects.
02.10	Line Pipe (Piping Material)	Process and Utility Piping Systems, Including Pipeline Riser Facilitates	API 5L	Specification for line pipe
			API 6A	Valves and well head equipment
			API 6D	Pipeline valves
			API 6FA	Fire test for valves (trunnion ball valves)
			API 6FB	Fire test for end connections
			API 15LR	Low pressure fiberglass line pipe
			API Std.594	Wafer type check valves
			API Std.598	Valve inspection and test
			API Std.600	Steel gate valves, flanged or buttweld ends3
			API Std.601	Metallic gaskets for raised face pipe flanges and flanged connections (double-jacketed, corrugated and spiral-wound)
			API Std.602	Compact steel gate valves
			API Std.607	Fire test of soft seated quarter turn valves
			API Std.609	Lug and wafer -type butterfly valves
			API RP 14E	Design and installation of offshore production platform piping systems

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Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.10	Line Pipe (Piping Material) (contd.)		ASTM A53	Pipe, steel, black and hot-dipped, zinc-coated, welded and seamless
			ASTM A105	Carbon steel forgings for piping applications
			ASTM A106	Seamless carbon steel pipe for high temperature service
			ASTM A182	Forged or rolled alloy steel pipe flanges, forged fittings and valves and
			ASTM A193	Alloy steel and stainless steel bolting metrarials for high temperature service
			ASTM E 92	Test method for vickers hardness of metallic materials
			ASTM E 94	Standard guide for radiographic examination
			ASTM E 112	Standard test methods for determining average grain size
			ASTM E165	Test method for liquid penetrant inspection
			ASTM G48	Test method for pitting and crevice corrosion resistance of stainless steel and related alloys using ferric chloride solution
			BS 5996	Specification for the acceptance level for internal imperfection in steel plate, strip and wide flats, based on ultrasonic testing
			BS 6755	Testing of valves

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.10	Line Pipe (Piping Material) (contd.)	-	BS 6755 Part 1	Production pressure testing requirements
			BS 6755 Part 2	Fire type-testing requirements
			ISO 3183	Specification for the acceptance criteria & inspection
02.11	LPE Coating	-	API 5L	Specification for line pipe
			ASTM D570	Test method for water absorption in plastics: method for conditioning plastics and electrical
			ASTM D618	Test method for brittleness temperatures of plastics and elastomers by impact
			ASTM D638	Test methods of flow rates of thermoplastics by extrusion plastometer
			ASTM D746	Test method for brittleness temperature of plastics and elastomers by impact
			ASTM D1238	Test method for flow rates of thermoplastics by extrusion plastometer
			ASTM D1475	Test method for density of paint, varnish, lacquer and related products
			ASTM D1505	Test method for density of plastics by the density-gradient technique
			ASTM D1525	Test method for vicat softening temperature of plastics
			ASTM D1693	Test method for environmental stress-cracking of ethylene plastics

Division Code : 02		**Chemical Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.11	LPE Coating (contd.)	-	ASTM D2240	Test method for rubber property-durometer hardness
			ASTM D3895	Test method for oxidative induction time of polyolefin by thermal analysis
			CAN/CSA-Z245.21-M92	External polyethylene coating for pipe
			DIN 30670	Polyethylene coating pipe for steel pipes & fittings
			SSPC-SP10	Near white blast cleaning
			SIS-05-5900	Pictorial surface preparation standards for painting steel surfaces
02.12	Pig Traps	-	API Spec. 5L	Specification for line pipe
			API Spec. 6D	Specification for pipeline valves
			ANSI/ASME B16.5	Pipe flanges and flanged fittings
			ANSI/ASME B16.47	Large diameter steel flanges
			ANSI/ASME B31.3	Process piping
			ANSI/ASME B31.4	Pipeline transportation systems for liquids and slurries
			ANSI/ASME B31.8	Gas transmission and distribution piping systems
			ASME V	Non-destructive examination
			ASME Section VIII	American society of mechanical engineers boiler and pressure vessel code division 1
			ASTM A106	Seamless carbon steel pipe for high temperature service

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.12	Pig Traps (contd.)	-	ASTM A 234	Piping fittings of wrought carbon steel and alloy steel for moderate and elevated temperatures
			ASTM A 275/A 275M	Standard practice for magnetic particle examination of steel forgings
			ASTM A333	Seamless and welded steel pipe for low-temperature service
			MSS SP44	Steel pipeline flanges
			MSS SP75	Specification for high test wrought butt-welding fittings
			NACE MR0175	Supplied stress cracking resistant metallic materials for oil field equipment
02.13	Pipeline	Inspection Code	API 570	In-service Inspection, Rating, Repair, and Alteration of Piping Systems
02.14	River Crossing	-	API Spec. 5L	Specification for line pipe
			API 1104	Specifications for welding pipelines and related facilities
			ANSI/ASME B36.10	Welded and seamless wrought steel pipe
			ANSI/ASME B31.8	Gas transmission and distribution piping systems
			PRCI RP 227-9424	Installation of pipelines by horizontal directional drilling
02.15	Sub-Soil Investigation	-	ASTM C127	Standard test method for relative density (specific gravity) and absorption of coarse aggregate

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.15	Sub-Soil Investigation (contd.)	-	ASTM D422-63	Standard test method for particle-size analysis of soils
			ASTM D854	Standard test methods for specific gravity of soil solids by water pycnometer
			ASTM D1586	Standard test method for standard penetration test (SPT) and split-barrel sampling of soils
			ASTM D2216	Standard test methods for laboratory determination of water (moisture) content of soil and rock by mass
			ASTM D3441	Standard test method for mechanical cone penetration testing of soils
			ASTM D 4318-10	Standard test methods for liquid limit, plastic limit, and plasticity index of soils
			ASTM D7400-08	Standard test methods for downhole seismic testing
			ASTM G57-06	Standard test method for field measurement of soil resistivity using the wenner four-electrode method
02.16	Structural Integrity Management	Floating Facilities, and Onshore Structures and Structural Components	API RP 2A WSD	Recommended practice for planning, designing and constructing fixed offshore platforms—working stress design, 21st Edition
			API RP 2 SIM	Recommended Practice for Structural Integrity Management of Fixed Offshore Platforms

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Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.16	Structural Integrity Management (contd.)		ISO 19902	Petroleum and natural gas industries — fixed steel offshore structures, First Edition 2005
02.17	Tank	-	API 653	Tank inspection, repair, alteration, and reconstruction
02.18	Valves	-	ANSI/ASME B16.25	Butt welding ends
			ANSI/ASME B16.47	Large diameter steel flanges
			ANSI/ASME B16.5	Pipe flanges and flanged fittings
			ANSI/ASME B16.9	Factory made wrought butt-welding fittings
			ANSI/ASME B31.3	Process piping
			ANSI/ASME B31.8	Gas transmission and distribution piping systems
			ASME Section VIII	American Society of Mechanical Engineers boiler and pressure vessel code division 1
			ASME Section IX	Boiler and pressure vessel code, welding and brazing qualifications
			ANSI B16.10	Face-to-face and end-to-end dimensions of valves
			ANSI B16.11	Forged fittings, socket welding and threaded
			ANSI B16.25	Butt welding ends
			ANSI B16.34	Valves-flanged, threaded, and welding end
			ANSI B18.2.1	Square and hex bolts and screws.
			ANSI B18.2.2	Square and hex nuts
			API Spec. 6D	Specification for pipeline valves

Division Code : 02		**Chemical Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.18	Valves (contd.)	-	API Spec. 5L	Specification for line pipe
			API 6FA	American petroleum institute recommended practice for fire test for valves
			API RP 14B	Design, installation, operation, test, and redress of subsurface safety valve systems
			API RP 14C	Recommended practice for analysis, design, installation, and testing of basic surface safety systems for offshore production platforms
			API 599	Steel and ductile iron plug valves
			API 607	Fire test for soft-seated quarter-turn valves
			ASTM E18	American society for testing and materials Rockwell hardness and Rockwell superficial hardness of metallic materials
			MSS SP 6	Manufacturer's standards society-standard finished for contact faces of pope flanges and connecting end flanges of valves and fittings
			MSS SP 25	Standard marking system for valves, fittings, flanges, and unions
			MSS SP 44	Steel pipe line flanges

Division Code : 02		Chemical Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/Acceptability Criteria/Test**	
02.18	Valves (contd.)	-	MSS SP 55	Quality standard for steel castings for valves, flanges, fittings, and other piping components - visual method for evaluation of surface irregularities
			MSS SP 84	Steel valves-socket welding and threaded ends

SECTION 03

CODES AND STANDARDS FOR CIVIL ENGINEERING

Division Code : 03		**Civil Engineering**	
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**
03.01	Air Quality	-	DOE Standard — Environment Conservation Rules 1997
03.02	Bridge	**Live Load**	**AASHTO LRFD Bridge / Design Specification 2012**
		Vehicular Live Load	Section 3.6.1.1
		Design Vehicular Live Load	Section 3.6.1.2
		Application of Design Vehicular Live Loads	Section 3.6.1.3
		Fatigue Load	Section 3.6.1.4
		Rail Transit Load	Section 3.6.1.5
		Pedestrian Loads	Section 3.6.1.6
		Loads on Railings	Section 3.6.1.7
		Dynamic Load Allowance	Section 3.6.2
		Centrifugal Forces	Section 3.6.3
		Braking Force: BR	Section 3.6.4
		Vehicular Collision Force:	Section 3.6.5
		Water Load	**AASHTO LRFD Bridge / Design Specification 2012**
		Static Pressure	Section 3.7.1
		Buoyancy	Section 3.7.2
		Stream Pressure	Section 3.7.3
		Wave Load	Section 3.7.4
		Change in Foundations Due to Limit State for Scour	Section 3.7.5
		Wind Load	Section 3.8
		Earthquake Load	Section 3.10
		Earth Pressure	Section 3.11
		Friction Force	Section 3.13
		Vessel Collision	Section 3.14
		Dead Load	Section 3.5
		Load Factors and Combinations	Section 3.4

Division Code : 03			**Civil Engineering**	
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.03	Building	All	BNBC	Bangladesh National Building Code
		Materials	ASTM	American Society for Testing and Materials
		RCC Structures	ACI-318	American Concrete Institute
		Steel Structures	AISC-360	American Institute of Steel Construction
		Steel Structures	AISI-Cold-Formed Steel Design Manual	American Iron and Steel Institute
		Steel Structures	MBMA-Metal Building Systems Manual	Metal Building Manufacturers Association
		Structural System Requirements	**Building Code Requirements for Structural Concrete (ACI 318-14)**	
		Materials	Section 4.2	
		Design loads	Section 4.3	
		Structural system and load paths	Section 4.4	
		Structural analysis	Section 4.5	
		Strength	Section 4.6	
		Serviceability	Section 4.7	
		Durability	Section 4.8	
		Sustainability	Section 4.9	
		Structural integrity	Section 4.10	
		Fire resistance	Section 4.11	
		Requirements for specific types of construction	Section 4.12	
		Construction and inspection	Section 4.13	
		Strength evaluation of existing structures	Section 4.14	

Division Code : 03			**Civil Engineering**
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**
03.03	Building (Contd.)	**Loads**	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Load factors and combinations	Section 5.3
		Structural Analysis	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Modeling assumptions	Section 6.3
		Arrangement of live load	Section 6.4
		Simplified method of analysis for nonprestressed continuous beams and one-way slabs	Section 6.5
		First-order analysis	Section 6.6
		Elastic second-order analysis	Section 6.7
		Inelastic second-order analysis	Section 6.8
		Acceptability of finite element analysis	Section 6.9
		ONE-WAY SLABS	Section 7.3
		Design limits	Section 7.4
		Required strength	Section 7.5
		Reinforcement limits	Section 7.6
		Reinforcement detailing	Section 7.7
		Two-Way Slabs	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Design limits	Section 8.3
		Required strength	Section 8.4
		Design strength	Section 8.5
		Reinforcement limits	Section 8.6
		Reinforcement detailing	Section 8.7
		Nonprestressed two-way joist systems	Section 8.8

Division Code : 03			**Civil Engineering**
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**
03.03	Building (Contd.)	Lift-slab construction	Section 8.9
		Direct design method	Section 8.10
		Equivalent frame method	Section 8.11
		Beams	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Design limits	Section 9.3
		Required strength	Section 9.4
		Design strength	Section 9.5
		Reinforcement limits	Section 9.6
		Reinforcement detailing	Section 9.7
		Nonprestressed one-way joist systems	Section 9.8
		Deep beams	Section 9.9
		Columns	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Design limits	Section 10.3
		Required strength	Section 10.4
		Design strength	Section 10.5
		Reinforcement limits	Section 10.6
		Reinforcement detailing	Section 10.7
		Walls	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Design limits	Section 11.3
		Required strength	Section 11.4
		Design strength	Section 11.5
		Reinforcement limits	Section 11.6
		Reinforcement detailing	Section 11.7
		Alternative method for out-of-plane slender wall analysis	Section 11.8
		Diaphragms	**Building Code Requirements for Structural Concrete (ACI 318-14)**

Division Code : 03			**Civil Engineering**
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**
03.03	Building (Contd.)	Design limits	Section 12.3
		Required strength	Section 12.4
		Design strength	Section 12.5
		Reinforcement limits	Section 12.6
		Reinforcement detailing	Section 12.7
		Foundations	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Shallow foundations	Section 13.3
		Deep foundations	Section 13.4
		Plain Concrete	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Design limits	Section 14.3
		Required strength	Section 14.4
		Design strength	Section 14.5
		Reinforcement limits	Section 14.6
		Beam-Column and Slab-Column Joints	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Transfer of column axial force through the floor system	Section 15.3
		Detailing of joints	Section 15.4
		Connections Between Members	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Connections of precast members	Section 16.2
		Connections to foundations	Section 16.3
		Horizontal shear transfer in composite concrete flexural members	Section 16.4
		Brackets and corbels	Section 16.5

Division Code : 03			**Civil Engineering**
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**
03.03	Building (Contd.)	**Anchoring To Concrete**	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		General requirements for strength of anchors	Section 17.3
		Design requirements for tensile loading	Section 17.4
		Design requirements for shear loading	Section 17.5
		Interaction of tensile and shear forces	Section 17.6
		Required edge distances, spacings, and thicknesses to preclude splitting failure	Section 17.7
		Installation and inspection of anchors	Section 17.8
		Earthquake-Resistant Structures	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Ordinary moment frames	Section 18.3
		Intermediate moment frames	Section 18.4
		Intermediate precast structural walls	Section 18.5
		Beams of special moment frames	Section 18.6
		Columns of special moment frames	Section 18.7
		Joints of special moment frames	Section 18.8
		Special moment frames constructed using precast concrete	Section 18.9
		Special structural walls	Section 18.10
		Special structural walls constructed using precast concrete	Section 18.11

Division Code : 03			**Civil Engineering**
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**
03.03	Building (Contd.)	Diaphragms and trusses	Section 18.12
		Foundations	Section 18.13
		Members not designated as part of the seismic force-resisting system	Section 18.14
		Concrete: Design and Durability Requirements	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Concrete design properties	Section 19.2
		Concrete durability requirements	Section 19.3
		Grout durability requirements	Section 19.4
		Steel Reinforcement Properties, Durability, and Embedments	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Nonprestressed bars and wires	Section 20.2
		Prestressing strands, wires, and bars	Section 20.3
		Structural steel, pipe, and tubing for composite columns	Section 20.4
		Headed shear stud reinforcement	Section 20.5
		Provisions for durability of steel reinforcement	Section 20.6
		Embedments	Section 20.7
		Strength Reduction Factors	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Strength reduction factors for structural concrete members and connections	Section 21.2

Division Code : 03			**Civil Engineering**
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**
03.03	Building (Contd.)	**Sectional Strength**	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Design assumptions for moment and axial strength	Section 22.2
		Flexural strength	Section 22.3
		Axial strength or combined flexural and axial strength	Section 22.4
		One-way shear strength	Section 22.5
		Two-way shear strength	Section 22.6
		Torsional strength	Section 22.7
		Bearing	Section 22.8
		Shear friction	Section 22.9
		Strut and Tie Models	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Design strength	Section 23.3
		Strength of struts	Section 23.4
		Reinforcement crossing bottle-shaped struts	Section 23.5
		Strut reinforcement detailing	Section 23.6
		Strength of ties	Section 23.7
		Tie reinforcement detailing	Section 23.8
		Strength of nodal zones	Section 23.9
		Serviceability Requirements	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Deflections due to service-level gravity loads	Section 24.2
		Distribution of flexural reinforcement in one-way slabs and beams	Section 24.3
		Shrinkage and temperature reinforcement	Section 24.4

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**
03.03	Building (Contd.)	Permissible stresses in prestressed concrete flexural members	Section 24.5
		Reinforcement Details	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Minimum spacing of reinforcement	Section 25.2
		Standard hooks, seismic hooks, crossties, and minimum inside bend diameters	Section 25.3
		Development of reinforcement	Section 25.4
		Splices	Section 25.5
		Bundled reinforcement	Section 25.6
		Transverse reinforcement	Section 25.7
		Post-tensioning anchorages and couplers	Section 25.8
		Anchorage zones for post-tensioned tendons	Section 25.9
		Construction Documents and Inspection	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Design criteria	Section 26.2
		Member information	Section 26.3
		Concrete materials and mixture requirements	Section 26.4
		Concrete production and construction	Section 26.5
		Reinforcement materials and construction requirements	Section 26.6
		Anchoring to concrete	Section 26.7
		Embedments	Section 26.8
		Additional requirements for precast concrete	Section 26.9

Division Code : 03			**Civil Engineering**
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**
03.03	Building (Contd.)	Additional requirements for prestressed concrete	Section 26.10
		Formwork	Section 26.11
		Concrete evaluation and acceptance	Section 26.12
		Inspection	Section 26.13
		Strength Evaluation of Existing Structures	**Building Code Requirements for Structural Concrete (ACI 318-14)**
		Analytical strength evaluation	Section 27.3
		Strength evaluation by load test	Section 27.4
		Reduced load rating	Section 27.5
		Bangladesh National Building Code (2015)	
		General Building Requirements, Control and Regulation	Volume 1
		Fire Protection	Volume 1
		Building Material	Volume 1
		Structural Design	Volume 2
		Construction Practices and Safety	Volume 3
		Building Services	Volume 3
		Alternation, Addition to and Change of Use of Existing Building	Volume 3
		Signs and Outdoor Display	Volume 3
03.04	Building Assessment and Retrofitting	All	ASCE/SEI 41-17 Seismic Evaluation and Retrofitting of Existing Buildings

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.04	Building Assessment and Retrofitting (contd.)		ASCE/SEI 41-13	Seismic Evaluation and Retrofitting of Existing Buildings
		RCC Structure	ACI 369	Standard Requirements for Seismic Evaluation and Retrofit of Existing Concrete Buildings
		RCC Structure	ACI 562-16	Code Requirements for Assessment, Repair, and Rehabilitation of Existing Concrete Structures and Commentary
			BNBC	Bangladesh National Building Code
			CNCRP	Manual for Seismic Evaluation of Existing Reinforced Concrete Buildings
				Manual for Seismic Retrofit Design of Existing Reinforced Concrete Buildings

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.04	Building Assessment and Retrofitting (contd.)		NTPA Guideline	National Tripartite Plan of Action on Fire Safety and Structural Integrity in Garment Sector of Bangladesh
03.05	Culvert	-	AASHTO LRFD	American Association for State Highway and Transportation Officials
			ACI	American Concrete Institute
			ASTM	American Society for Testing and Materials
			LGED Manual	Local Govt. Engineering Department
03.06	Dam	-	BWDB Manual	Bangladesh Water Development Board
		-	LGED	Local Govt. Engineering Department
03.07	Deep Tube Well	• All Civil works • Cable • Electrical works • Fittings • G.I pipe • HDPE pipe • MS pipe	ASTM	American Society for Testing and Materials
			BDS	Bangladesh Standard
			BNBC	Bangladesh National Building Code

Division Code : 03			**Civil Engineering**	
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.07	Deep Tube Well (contd.)	• Power Transformer • PTW Housing pipe • Pump motor • Rebar • Sluice valve • Strainer • uPVC pipes	BS DPHE ISO 4427-2:2007	British Standard Department of Public Health Engineering International Standard Organization
03.08	Economic Planning	-	DPP Manual	Development Project Proposal Manual of Bangladesh Planning Commission
03.09	Elevated Road/Fly Overs/Subway	-	ACI ASTM BDS BS IS	American Concrete Institute American Society for Testing and Materials Bangladesh Standard British Standard Indian Standard
03.10	Embankment/ Polder/Dyke	-	BWDB Manual	Bangladesh Water Development Board
03.11	Irrigation	-	ACI 318R	American Concrete Institute

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.11	Irrigation (contd.)		ASTM	American Society for Testing and Materials
			BWDB Manual	Bangladesh Water Development Board
03.12	Jute Geotextile for Soil Erosion Control of Hill Slope & River Bank and Rural Road Construction		BDS 1909 : 2016	Development and Application of Potentially Important Jute Geo-Textiles
03.13	Landfill	-	ASTM D1556	Standard test method for density and unit weight of soil in place
03.14	Nuclear Power Plant	-	BAER Act 2012	Bangladesh Atomic Energy Regulatory Act 2012
			NSRC Rules 1997	Nuclear Safety and Radiation Control Rules 1997
03.15	Overhead Water Tank	-	ACI	American Concrete Institute
			ASTM	American Society for Testing and Materials
			BDS	Bangladesh Standard
			BNBC	Bangladesh National Building Code
			BS	British Standard
			IS	Indian Standard

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.16	Physical Planning	-	DAP	Detail Area Plan Metro Plan
03.17	Procurement	-	CPTU	Public Procurement Act 2006 Public Procurement Rules 2008
03.18	Road Geometric Design	Geometric Design of Roads	AASHTO	A Policy on Geometric Design of Highways and Streets 2011, 6th Ed
			BRTA	Bangladesh Road Sign Manual (Volume-1,2), Bangladesh Road Transport Authority 2000
			RHD	Geometric Design Standard Manual (Revised 2005), Roads And Highways Department, Bangladesh
03.19	Road Pavement Design	(a) Flexible Pavement	AASHTO	Guide for Design of Pavement Structure - 4th Ed 1998
			Austroads	Pavement Design : A Guide to the Structural Design of Road Pavements (2004)

Division Code : 03			**Civil Engineering**	
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.19	Road Pavement Design (contd.)			Pavement Design for Light Traffic – A Supplement to Austroads Pavement Design Guide (2006)
			LGED	Road Design and Pavement Standards of LGED (2018)
			RHD	Pavement design guide for RHD, 2005
			Road Note 31	A Guide to the Structural Design of Bituminous Surface Roads in Tropical and Sub-Tropical Countries, TRL, UK
			IRC	Tentative Guidelines for the Design of Flexible Pavements (IRC:37-2012)
			JRA	Japan Road Association Manual for Asphalt Pavement (1989)
				Maintenance Guidebook for Road Pavement (2013)

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.19	Road Pavement Design (contd.)	(b) Rigid Pavement	AASHTO	Guide for the Design of Pavement Structures, 1993
			Austroads	Pavement design : A Guide to the Structural Design of Road Pavements (2004)
				Pavement Design for Light Traffic – A Supplement to Austroads Pavement Design Guide (2006)
			LGED	Road Design and Pavement Standards of LGED (2018)
			IRC	Guidelines for the Design of Plain Jointed Rigid Pavements for Highways (IRC:58-2011)
				Guidelines for Design and Construction of Cement Concrete Pavements for Low Volume Roads (IRC SP:62-2014)

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.19	Road Pavement Design (Contd.)		PCA	Portland Cement Association (PCA) Procedure for Concrete Highways and Street Pavements (1984)
				Portland Cement Association (PCA) Thickness Design for Concrete Highway and Street Pavements (1984)
			RHD	Pavement design guide for RHD, 2005
			Road Note 29	A guide to the Structural Design of Flexible or Rigid Pavements for New Roads, TRL, UK
03.20	Sanitation and Drainage	-	BNBC DPHE	Bangladesh National Building Code
				Bangladesh Sanitation Strategy
03.21	Schedule of Items	-	BWDB	Schedule of rates, BWDB
			LGED	Schedule of rates, LGED
			PWD	Schedule of rates, PWD
03.22	Sub-Soil Investigation / Foundation Design	-	ACI	American Concrete Institute

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.22	Sub-Soil Investigation / Foundation Design (contd.)		ASTM	American Society for Testing and Materials
			BNBC	Bangladesh National Building Code
			BWDB Manual	Bangladesh Water Development Board
03.23	Tower	• Transmission Tower • Telecommunication Tower /Pole • Electric Pole • Spun Prestressed Concrete Pole	ASCE 10-97	Design Of Latticed Steel Transmission Structural
			BPDB	Bangladesh Power Development Board Specification
			BSEN 100Y: 200Y	Mobile Access and Working Towers Made of Prefabricated Elements
			DESCO	Dhaka Electric Supply Company Specification
			EJA/TIA 222	Structural Steel Standards for Steel Antenna Towers and Supporting Structural Standard
			REB 450	Rural Electrification Board Specification

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptance Criteria/Test**	
03.24	Waste Treatment Plant	-	ACI	American Concrete Institute
			ASTM	American Society for Testing and Materials
			BDS	Bangladesh Standard
			BNBC	Bangladesh National Building Code
			BS	British Standard
			IS	Indian Standard
03.25	Water Quality and Water Treatment Plant	-	DOE Rule	Environment Conservation Rules 1997
03.26	Water Reservoir	-	ACI	American Concrete Institute
			ASTM	American Society for Testing and Materials
			BDS	Bangladesh Standard
			BNBC	Bangladesh National Building Code
			BS	British Standard
			IS	Indian Standard

SECTION 04

CODES AND STANDARDS FOR COMPUTER ENGINEERING

Division Code: 04		**Computer Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.01	Application Architecture Standards	Selection of Software Development Lifecycle	ARM_SDLC_1	Project heads should define the SDLC model from either waterfall or iterative
			ARM_SDLC_2	Selection and use of one application development methodology for the entire duration of the project
			ARM_SDLC_3	To change the selected methodology, a proper change request procedure should be followed
			ARM_SDLC_4	Follow ISO/IEC/IEEE 24765 standard for systems and software engineering
			ARM_SDLC_5	Follow IEEE standard 12207 for software life cycle processes
			ARM_SDLC_6	Follow IEEE standard 1517 to reuse processes
04.02	Android	Technology / Framework	Android Software Development ToolKit (SDK)	The android SDK includes a comprehensive list of development tools including a debugger, libraries, emulator, documentation, tutorial and sample code. Android studio is the official IDE, however the framework allows developer to user other IDEs (IntelliJ IDEA, NetBeans IDE).
		Technology / Framework	Native Development ToolKit (NDK)	The NDK may be best described as a companion tool to the SDK which allows for implementing parts of the code using native code languages such as C and C++. It is based on command-line tools and requires invoking them manually to build, deploy and debug the apps. It is normally suggested for usage in CPU intensive applications such as game engines, signal processing and physics simulation

Division Code: 04		**Computer Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.02	Android (contd.)	Language	Java	Java is a class-based, object-oriented computer programming language that is designed to be platform independent and secure. The Android SDK relies heavily on standard Java libraries (data structure, math, graphics, networking, etc.)
04.03	Business Architecture Standards	Business Process Modeling Notation (BPMN)	BUS.PRC.001	BPMN defines a Business Process Diagram (BPD), which is based on a flowcharting technique tailored for creating graphical models of business process operations. Modeling in BPMN uses set of diagrams with a small set of graphical elements to assist business users, as well as developers, to understand the flow and the process.
		Business Process Execution Language (BPEL)	BUS.PRC.002	This is an XML based language which is used to define enterprise business processes with web services. The key objective of BPEL is to standardize the format of business process flow definition so that the departments can work together seamlessly using web services. Therefore, BPEL focuses on web service interfaces specifically. There is no standard graphical notation for BPEL. Instead, BPMN is used as a front end tool to capture BPEL process descriptions.
		Unified Modeling Language (UML)	BUS.PRC.003	It is a tool which helps in visualizing architectural blue prints such as activities, individual components of a system, interaction of entities, user interface etc.

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.04	Business Process Interoperability	Business process interoperability	EGIF.BPI.001	UMLv2.3 is a language for specifying, constructing, and documenting the artifacts of software-intensive systems
			EGIF.BPI.002	SoaML extends the unified modeling language (UML) to enable the modeling and design of services within a service-oriented architecture.
			EGIF.BPI.003	BPMN 2.0 provide a notation that is readily understandable by all business users, from the business analysts that create the initial drafts of the processes, to the technical developers responsible for implementing the technology that will perform those processes, and finally, to the business people who will manage and monitor those processes.
			EGIF.BPI.004	BPEL4WS - Business process execution language for web services - a language for the specification of business processes and business interaction protocols.
04.05	Cloud	Authentication and Authorization	TRM.CLO.001	RFC 5246 Secure Sockets Layer (SSL)/ Transport Layer Security (TLS)
		Authentication and Authorization	TRM.CLO.002	RFC 3820: X.509 Public Key Infrastructure (PKI) Proxy Certificate Profile
		Authentication and Authorization	TRM.CLO.003	RFC5280: Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile
		Authentication and Authorization	TRM.CLO.004	RFC 5849 OAuth (Open Authorization Protocol)

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.05	Cloud (contd.)	Authentication and Authorization	TRM.CLO.005	ISO/IEC 9594-8:2008 | X.509 Information technology -- Open Systems Interconnection -- The Directory: Publickey and attribute certificate frameworks
		Authentication and Authorization	TRM.CLO.006	ISO/IEC 29115 | X.1254 Information technology - Security techniques -- Entity authentication assurance framework
		Authentication and Authorization	TRM.CLO.007	OpenID Authentication
		Authentication and Authorization	TRM.CLO.008	eXtensible Access Control Markup Language (XACML)
		Authentication and Authorization	TRM.CLO.009	Security Assertion Markup Language (SAML)
		Confidentiality	TRM.CLO.010	RFC 5246 Secure Sockets Layer (SSL)/ Transport Layer Security (TLS)
		Confidentiality	TRM.CLO.011	Key Management Interoperability Protocol (KMIP)
		Confidentiality	TRM.CLO.012	XML Encryption Syntax and Processing
		Integrity	TRM.CLO.013	XML signature (XMLDSig)
		Identity management	TRM.CLO.014	Service Provisioning Markup Language (SPML)
		Identity management	TRM.CLO.015	Web Services Federation Language (WSFederation) Version 1.2
		Identity management	TRM.CLO.016	WS-Trust 1.3
		Identity management	TRM.CLO.017	Security Assertion Markup Language (SAML)
		Identity management	TRM.CLO.018	OpenID Authentication 1.

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.05	Cloud (contd.)	Security Monitoring and Incident Response	TRM.CLO.019	ISO/IEC WD 27035-1 Information technology -- Security techniques -- Information security incident management -- Part 1: Principles of incident management
		Security Monitoring and Incident Response	TRM.CLO.020	ISO/IEC WD 27035-3 Information technology -- Security techniques -- Information security incident management -- Part 3: Guidelines for CSIRT operations
		Security Monitoring and Incident Response	TRM.CLO.021	ISO/IEC WD 27039; Information technology -- Security techniques -- Selection, deployment and operations of intrusion detection systems
		Security Monitoring and Incident Response	TRM.CLO.022	ISO/IEC 18180 Information technology - Specification for the Extensible Configuration Checklist Description Format (XCCDF) Version 1.2 (NIST IR 7275)
		Security Monitoring and Incident Response	TRM.CLO.023	X.1500 Cybersecurity information exchange techniques
		Security Monitoring and Incident Response	TRM.CLO.024	X.1520: Common vulnerabilities and exposures
		Security Monitoring and Incident Response	TRM.CLO.025	X.1521 Common Vulnerability Scoring System
		Security Monitoring and Incident Response	TRM.CLO.026	PCI Data Security Standard

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.05	Cloud (Contd.)	Security Controls	TRM.CLO.027	Cloud Controls Matrix Version 1.3
		Security Controls	TRM.CLO.028	ISO/IEC 27001:2005 Information Technology - Security Techniques Information Security Management Systems Requirements
		Security Controls	TRM.CLO.029	ISO/IEC WD TS 27017 Information technology -- Security techniques -- Information security management - Guidelines on information security controls for the use of cloud computing services based on ISO/IEC 27002
		Security Controls	TRM.CLO.030	ISO/IEC 27018 Code of Practice for Data Protection Controls for Public Cloud Computing Services
		Security Controls	TRM.CLO.031	ISO/IEC 1st WD 27036-4 Information technology - Security techniques - Information security for supplier relationships - Part 4: Guidelines for security of cloud services
		Security Policy Management	TRM.CLO.032	ISO/IEC 27002 Code of practice for information security management
		Security Policy Management	TRM.CLO.033	eXtensible Access Control Markup Language (XACML)
		Availability	TRM.CLO.034	ISO/PAS 22399:2007 Societal security - Guideline for incident preparedness and operational continuity management
		Service interoperability	TRM.CLO.035	IEEE P2301, Draft Guide for Cloud Portability and Interoperability Profiles (CPIP)
		Service interoperability	TRM.CLO.036	IEEE P2302, Draft Standard for Intercloud Interoperability and Federation (SIIF)

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.05	Cloud (contd.)	Service interoperability	TRM.CLO.037	Y.3520 Cloud computing framework for end to end resource management (ITU)
		Service interoperability	TRM.CLO.038	OASIS Cloud Application Management Platform (CAMP)
		Service interoperability	TRM.CLO.039	OASIS Topology and Orchestration Specification or Cloud Applications (TOSCA),Version 1.0 Committee Specification Draft 06 / Public Review Draft 01
		Service interoperability	TRM.CLO.040	Open Cloud Computing Interface (OCCI)
04.06	Coding Standards	Coding standards	ARM_COS_1	Select the programming language appropriately to meet the documented requirements of the system
			ARM_COS_2	Indent code for better readability
			ARM_COS_3	Establish a maximum line length for comments and code to avoid horizontal scrolling of editor window
			ARM_COS_4	Use space after each comma, operators, values and arguments
			ARM_COS_5	Break large, complex sections of code into smaller comprehensible modules/ functions
		Coding standards	ARM_COS_6	Arrange and separate source code between files
			ARM_COS_7	Choose and stick to naming convention
			ARM_COS_8	Avoid elusive names that are open to subjective interpretation
			ARM_COS_9	Do not include class names in the name of class properties

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.06	Coding Standards (contd.)		ARM_COS_10	Use the verb-noun method for naming routines
			ARM_COS_11	Append computation qualifiers (Avg, Sum, Min, Max, Index) to the end of a variable name where appropriate
			ARM_COS_12	Use customary opposite pairs in variable names
			ARM_COS_13	use mixed-case formatting to simplify reading
			ARM_COS_14	Boolean variable names should contain Is which implies Yes/No or True/False values
			ARM_COS_15	Avoid using terms such as Flag when naming status variables, which differ from Boolean variables in that they may have more than two possible values
			ARM_COS_16	Even for a short-lived variable that may appear in only a few lines of code, still use a meaningful name. Use single-letter variable names, such as i, or j, for short-loop indexes only.
			ARM_COS_17	Develop a list of standard prefixes for the project to help developers consistently name variables
			ARM_COS_18	For variable names, include notation that indicates the scope of the variable
			ARM_COS_19	Constants should be all uppercase with underscores between words
			ARM_COS_20	Wrap built-in functions and third-party library functions with your own wrapper functions
			ARM_COS_21	Report error message and recover or fail gracefully
			ARM_COS_22	Provide useful error messages

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.06	Coding Standards (contd.)	Coding standards	ARM_COS_23	When modifying code, always keep the commenting around it up to date
			ARM_COS_24	At the beginning of every routine, it is helpful to provide standard, boilerplate comments, indicating the routine's purpose, assumptions, and limitations
			ARM_COS_25	Avoid adding comments at the end of a line of code
			ARM_COS_26	To conserve resources, be selective in the choice of data type to ensure the size of a variable is not excessively large.
			ARM_COS_27	Keep the scope of variables as small as possible to avoid confusion and to ensure maintainability
			ARM_COS_28	When writing classes, avoid the use of public variables. Instead, use procedures to provide a layer of encapsulation and also to allow an opportunity to validate value changes.
			ARM_COS_29	Do not open data connections using a specific user's credentials. Connections that have been opened using such credentials cannot be pooled and reused, thus losing the benefits of connection pooling.
04.07	Data Architecture Standards: Data Management	Data Access Services	DAT.DM.001	Use DBMS that supports JDBC latest version for java based applications. As ODBC drivers are implemented by various vendors, it would be advisable to identify DBMS that support the latest stable version of the ODBC.

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.07	Data Architecture Standards: Data Management (contd.)	Data Access Services	DAT.DM.002 -	Use DBMS that supports ODBC for non-Java based applications.
		Data Query Language Reference Site : www.iso.org	DAT.DM.003 -	Support for SQL: 2003 standards defined in ISO/IEC 9075. SQL: 2003 is the fifth revision of SQL used by relational database.
		Data Query Language Reference Site : www.iso.org	DAT.DM.004 -.	Support for SQL: 2008 standards defined in ISO/IEC 9075. SQL:2008 is the latest 2008 revision of SQL used by relational database
		Data Indexing	DAT.DM.005	There is no technical standard for compliance. Please refer to Best Practices for more information.
		Data Tuning	DAT.DM.006	There is no technical standard for compliance. Please refer to Best Practices for more information.
		Data Clustering	DAT.DM.007	There is no technical standard for compliance. Please refer to Best Practices for more information.
		Data Integrity	DAT.DM.008	There is no technical standard for compliance. Please refer to Best Practices for more information.
04.08	Data Center	Physical Site Layout, Cabling Infrastructure, Tiered Reliability, Environmental Factors	TRM.DC.001	Design data center in accordance to TIA 942 standards.
		Physical Site Layout All physical rooms and areas within the data center	TRM.DC.002	Design data center with ample space for expansion to meet the growing demands. Locate the data center at a physically safe area.

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.08	Data Center (contd.)		TRM.DC.003	Implement 24/7 physical security monitoring through CCTV Surveillance
		Physical Site Layout All physical rooms and areas within the data center		Monitoring (e.g. Closed-circuit television (CCTV) /Automated Security Intrusion Alarm/Biometric/Motion Detector) with minimally an intrusion response exercise annually.
		Physical Site Layout Computer/Server Room	TRM.DC.004	Standardize use of 19-inch 42U racks which aids better cabling management and for cold/ hot air aisle efficiency. All racks should have perforated doors for front and back for front-in and back-out cross-air movement.
		Physical Site Layout Computer/Server Room	TRM.DC.005	Install man-trap access to computer room as an additional barrier to prevent unauthorized access to the computer room.
		Physical Site Layout All physical rooms and areas within the data center	TRM.DC.006	Conduct a risk assessment before building or implementing a data center. Implement appropriate controls to mitigate identified risks.
		Physical Site Layout All physical rooms and areas within the data center	TRM.DC.007	Separate the location of disaster recovery site from the primary data center.
		Physical Site Layout All physical rooms and areas within the data center	TRM.DC.008	Ensure smoke detection and fire suppression systems are in place and tested on periodic basis.

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04.08	Data Center (contd.)	Physical Site Layout All physical rooms and areas within the data center	TRM.DC.009	Design data center with ample space for growth.
		Physical Site Layout All physical rooms and areas within the data center	TRM.DC.010	Locate the data center at a physically safe area.
		Cabling Infrastructure Backbone Cabling	TRM.DC.011	Use Fibre Optic Cable (FOC) for backbone cabling.
		Cabling Infrastructure Horizontal Cabling	TRM.DC.012	Use Category 6 for horizontal cabling.
		Tiered Reliability Data Centre Tiers	TRM.DC.013	Design and operate at minimum Tier II and where possible to have Tier III data center or higher.
		Environmental Factors Power/Cooling	TRM.DC.014	Carry out a detailed capacity requirements study for space, power and cooling.
		Environmental Factors Power/Cooling	TRM.DC.015	Implement “hot” and “cold” aisle setup for effective cooling.
04.09	Data Exchange Interoperability	Data exchange interoperability	EGIF.DEI.001	XML and XML schemas should be used for data integration.
			EGIF.DEI.002	UML, RDF and XML for data modelling and description languages.
			EGIF.DEI.003	XSLT v2.0 - XSL Transformations - a language for transforming XML documents into other XML documents.

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04.09	Data Exchange Interoperability (Contd.)	Data exchange interoperability	EGIF.DEI.004	Compliance with JMS for all J2EE MOM.
			EGIF.DEI.005	An XML and CSV output should be provided for forms data entry.
			EGIF.DEI.006	ISO/IEC 11179-3:2013 for specification and standardization of data / meta data elements.
			EGIF.DEI.007	ANSI HL7 Health Level Seven Standard Version 2.4 - Application Protocol for Electronic Data Interchange in Healthcare Environments.
			EGIF.DEI.008	ebXML Standard Message Service Specification Version 2.0 for security and reliability extensions to SOAP.
			EGIF.DEI.009	ISO15022 - XML Design rules to support design of message types and specific information flows.
			EGIF.DEI.010	UN/EDIFACT - Electronic Data Interchange for Administration, Commerce, and Transport. The United Nations EDI standard.
			EGIF.DEI.011	XBRL Meta Model v2.1.1 - eXtensible Business Reporting Language - an XML language for business reporting.
			EGIF.DEI.012	XMI - XML Metadata Interchange Format. An open information interchange model.
			EGIF.DEI.013	XSL v1.0 - eXtensible Stylesheet Language - A family of recommendations for describing stylesheets for XML document transformation and presentation.

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04.09	Data Exchange Interoperability (Contd.)		EGIF.DEI.014	ER Diagrams - Entity-Relationship diagram - a diagramming notation used in data modeling for relational data bases.
			EGIF.DEI.015	XML schema Parts 0-2:2001 - An XML-based language for defining the structure of XML documents and for specifying data types for attribute values and element content.
			EGIF.DEI.016	ISO 3166 Code Lists - 2-letter and 3-letter country code representation standard.
			EGIF.DEI.017	ISO 8601 - Date and time representation standard.
			EGIF.DEI.018	WCO Data Model Version 3.0
04.10	Data Security	Encryption	DAT.DS.001 -	Use cryptographic techniques for encryption of sensitive data. The reference standards for cryptography include Triple Data Encryptions Standard (3DES), Advance Encryption Standard (AES).
		Network	DAT.DS.002-	Databases should not be accessible directly from external network (non-government network).
		Database	DAT.DS.003 -	Use RDBMS with security controls to ensure aggregation (value of disclosed data) and inference (confidentiality).
		Database	DAT.DS.004 -	Use RDBMS that supports the following security controls: Data access as an intended privilege (b) Key management and encryption

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04.10	Data Security (contd.)			(c) Integrity constrains such as domain constraints, attribute constraints, relation constraints, and database constraints (d) High availability implementation, backup, restoration and data replication (e) Database log and policy enforcement
		Data Destruction	DAT.DS.005 -	Data destruction shall be done using degaussing (NIST 800-88 guidelines for Media Sanitisation), data overwriting (Bruce chneier algorithm, DOD 5220.22-M, Peter Gutmann Secure Deletion) and physical
04.11	Data Storage, Backup and Archival	Data Storage, Backup and Archival	DAT.DBA.001 -	Data Archiving shall support integrity checking through hashing, audit logging and regulatory compliance.
		Data Storage, Backup and Archival	DAT.DBA.002 -	Strict security policies should be established for archived data to prevent unauthorised access and data loss.
		Data Storage, Backup and Archival	DAT.DBA.003 -	Use ISO 15489-1 for records management.
		Data Storage, Backup and Archival	DAT.DBA.004 -	Use the Dublin Core metadata element set for resource description based on ISO 15836.
		Data Storage, Backup and Archival	DAT.DBA.005 -	Use portable document format for document management based on ISO 32000-1.
		Data Storage, Backup and Archival	DAT.DBA.006 -	Use ISO/TR 18492 for long-term preservation of electronic document-based information.
		Data Storage, Backup and Archival	DAT.DBA.007 -	Use Open Archival Information System (OAIS) to establish a system for archiving information for both digitalized and physical. This framework is based on ISO 14721.

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04.12	Extract, Transform, Load (ETL)	ETL	DAT.ETL.001 -	ETL tools should be used in scenarios where large amounts of data need to be moved, transformed, enriched, and/or merged from multiple data sources to a target source. An example of this is the loading of data from source systems into a data warehouse
		ETL	DAT.ETL.002 -	ETL processes should be scheduled so that they do not impact the operations and end users of the source systems they are extracting from
		ETL	DAT.ETL.003 -	The ETL process should encourage to move the data from the source to the ETL environment quickly and should access the source only once. The target architecture should ensure re-use of a single data copy from production sources to minimize resource utilization on the source system
		ETL	DAT.ETL.004 -	The artefacts of ETL processes (e.g., scripts, SQL code, data mappings, etc.) should be kept in a repository and managed so that lineage of the data produced from those processes is traceable
		ETL	DAT.ETL.005 -	ETL processes should encourage use of a centralized metadata repository to ensure data quality and integrity.
		ETL	DAT.ETL.006-	ETL processes should provision for a facility to perform standard centralized data quality checks with required and optional checks which may be decided by the target system

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04.12	Extract, Transform, Load (ETL) (contd.)	ETL	DAT.ETL.007 -	ETL processes should provision for a storage mechanism for clean data thus eliminating the need for new processes to re-source data recheck values or re-compute derived values.
04.13	Industry Data Exchange Standards	Data Exchange	DAT.IDES.001	Use Extensible Markup Language (XML 1.0 or XML1.1) as a preferred data exchange standard.
		Data Exchange	DAT.IDES.002	Support the following standards for exchange of textual data: (a) Extensible Markup Language (XML 1.0 or XML 1.1) for most applications (b) Support Comma Separated Value (CSV) for legacy applications
		Data Exchange	DAT.IDES.003	Support the following standards for exchange of image data: (a) Joint Photographic Experts Group (JPEG) for photography images 04(b) Graphics Interchange Format (GIF) for internet images due to its small size and support for animation (c) Tagged Image File Format (TIFF) for scanned Images (d) Portable Network Graphic (PNG) for internet images which require increased colour depth compared to GIF
		Data Exchange	DAT.IDES.004	Support the following standards for exchange of video and audio data: (a) Moving Pictures Expert Group (MPEG-1 to MPEG-4) for most audio and video applications (b) 3rd Generation Partnership Project (3GPP and 3GPP2) for audio and video over 3G mobile Networks

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04.13	Industry Data Exchange Standards (Contd.)	Data Exchange	DAT.IDES.005	Support the file transfer through client file transfer and Server File transfer – FTP server
		Data Exchange	DAT.IDES.006	Web Service Description Language is an XML based interface definition language that is used describing the functionality offered by a web service
		Data Exchange	DAT.IDES.007	Web Services Security (WS-Security, WSS) is an extension to SOAP (Simple Object Access protocol) to apply security to Web services
		Data Exchange	DAT.IDES.008	Use XML Metadata Interchange (XMI) as a XML Integration framework for defining, interchanging, manipulating and integrating XML data and objects.
		Data Exchange	DAT.IDES.009	Use xPath 2.0, an XML path language for selecting nodes from an XML document.
		Data Exchange	DAT.IDES.010	Use XQuery 1.0 to design query collections for XML data.
		Data Exchange	DAT.IDES.011	Use XSLT 2.0 for transforming XML documents into other XML documents.
		Data Exchange	DAT.IDES.012	Message queues and mailboxes are software-engineering components used for inter-process communication (IPC), or for inter-thread communication within the same process
		Data Exchange	DAT.IDES.013	A directory service is a software system that stores, organizes, and provides access to information in a computer operating system's directory

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04.14	iOS	Tools (IDE)	XCode	Xcode is Apple's powerful integrated development environment for creating apps for Mac, iPhone, and iPad. Xcode includes the Instruments analysis tool, iOS Simulator, and the latest SDKs for iOS and OS X. The Xcode interface seamlessly integrates code editing, UI design with Interface Builder, testing, and debugging, all within a single window. The embedded Apple LLVM compiler underlines coding mistakes as you type, and is even smart enough to fix the problems automatically.
		Language	Objective-C	Objective-C is a general-purpose, object-oriented programming language primarily used for writing software for OSX and iOS. It's a superset of the C programming language and provides object-oriented capabilities and a dynamic runtime. Objective-C inherits the syntax, primitive types, and flow control statements of C and adds syntax for defining classes and methods. It also adds language-level support for object graph management and object literals while providing dynamic typing and binding, deferring many responsibilities until runtime. Objective-C is inherent in iOS SDK.
		Language	SWIFT	Swift is a new programming language for writing iOS, OS X, watchOS, and tvOS apps that builds on the best of C and Objective-C. Swift adopts safe programming patterns and adds modern features to make programming easier, more flexible, and more secure.

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04.14	iOS (contd.)			SWIFT is a multi-paradigm, compiled programming language created by Apple Inc. for iOS, OS X, watchOS and tvOS development. Swift is intended to be more resilient to erroneous code, with a faster compiler and new Fix-it suggestions, while being faster, more expressive and easier to understand for the developer. It also sports syntax improvements providing greater control and flow over the code and allows for interoperability with Objective-C. It is built with the LLVM compiler framework included in Xcode 6 and later and uses the Objective-C runtime, allowing C, Objective-C, C++ and Swift code to run within a single program. Objective-C is in inherent in iOS SDK (XCode) and would be made available Open Source supporting iOS, OS X and Linux.
04.15	Metadata Management	Metadata Management	DAT.MM.001 -	Element : Element description
		Metadata Management	DAT.MM.002 -	Creator : Person or organization primarily responsible for creating the intellectual content of the resource-e.g., authors in the case of written documents, and artists, photographers, etc. in the case of visual resources
		Metadata Management	DAT.MM.003 -	Publisher: The entity (e.g., agency, including unit/branch/section) responsible for making the resource available in its present form, such as a publishing house, a university department, or a corporate entity.

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04.15	Metadata Management (contd.)	Metadata Management	DAT.MM.005 -	Rights Management: A rights management statement or an identifier that links to a rights management statement.
		Metadata Management	DAT.MM.006 -	Title: The name given to the resource, usually by the creator or publisher.
		Metadata Management	DAT.MM.007 -	Subject: The topic of the resource. Typically, this will be expressed as keywords or phrases that describe the subject or content of the resource. Controlled vocabularies and formal classification schemes are encouraged.
		Metadata Management	DAT.MM.008 -.	Date : A date associated with the creation or availability of the resource
		Metadata Management	DAT.MM.009 -	Identifier: A string or number used to uniquely identify the resource. Examples for networked resources include URLs, Purls, and URNs. ISBN or other formal names can be used.
		Metadata Management	DAT.MM.010 -	Description : A textual description of the content of the resource, including abstracts in the case of document-like objects or content descriptions in the case of visual resources.
		Metadata Management	DAT.MM.011 -	Source: The work, either print or electronic, from which this object is derived (if applicable). Source is not applicable if the present resource is in its original form.
		Metadata Management	DAT.MM.012 -	Language: The language of the intellectual content of the resource.

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04.15	Metadata Management (contd.)	Metadata Management	DAT.MM.013 -	Relation : Relationship to other resources-e.g., images in a document, chapters in a book, or items in a collection
		Metadata Management	DAT.MM.014 -	Coverage: Spatial locations and temporal duration characteristic of the resource.
		Metadata Management	DAT.MM.015 -	Type: The category of the resource, such as home page, novel, poem, working paper, technical report, essay, or dictionary.
		Metadata Management	DAT.MM.016 -	Format: The data format of the resource, used to identify the software and possibly hardware that might be needed to display or operate the resource-e.g., postscript, HTML, TXT, JPEG, or XML.
04.16	Metadata, Spatial Data Management, Enterprise Schema and BI	Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.001 -	Use XML Schemas 1.0 and above to manage and overall Enterprise Schema.
		Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.002 -	Use Metadata Object Facility (MOF) to define, manipulate and integrate metadata and data in a platform independent manner.
		Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.003 -	Support Resource Description Framework (RDF) framework for describing and interchanging metadata based on resource, properties and statements definitions.
		Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.004 -	Support Common Warehouse Metamodel (CWM) to enable interchange of warehouse and BI metadata between warehouse tools, warehouse platforms and warehouse Metadata repositories in distributed heterogeneous environments.

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04.16	Metadata, Spatial Data Management, Enterprise Schema and BI (contd.)	Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.005 -	Support Common Warehouse Metamodel Metadata Interchange Patterns to add semantic context to the interchange of Metadata in terms of recognised sets of objects or object patterns.
		Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.006 -	Use the set of standards produced by ISO/TC 211 that supports the understanding and usage of geographic information.
		Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.007 -	Support Open Geospatial Consortium (OpenGIS) Simple Feature that provides a way for application to access spatial data in RDBMS. There are three standards available – CORBA, SQL and OLE/COM.
		Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.008 -	Use Open GIS Geography Markup Language Encoding Standard (GML 2, GML 3) for transfer and storage of geographic information.
		Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.009 -	Support Open GIS Web Map Service (WMS), Web Feature Services (WFS) and Web Coverage Service (WCS) specifications which specify protocols that provide uniform access by HTML clients to maps rendered by WMS enabled map servers on the internet.
		Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.010 -	Support Open GIS Catalogue Services Interface Standards (CAT) to publish and search collections of descriptive information (metadata) about geospatial data, services and related resources.

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04.16	Metadata, Spatial Data Management, Enterprise Schema and BI (contd.)	Metadata, Spatial data Management, Enterprise Schema and BI	DAT.MSEB.011 -	Support Open GIS Keyhole Markup Language (KML) Service for geographic visualisation, including annotation of maps and images.
04.17	Networks	WAN, LAN, WLAN All technology components	TRM.NW.001	Use TCP/IP as standard network protocol for all government agencies.
		WAN, LAN, WLAN All technology components	TRM.NW.002	All devices in LAN and WAN infrastructure shall support IPv6 standards (128 bits for addressing).
		WAN Network Communication Devices	TRM.NW.003	Support Open Shortest Path First (OSPF, OSPF2, Multi-path OSPF) for core switch.
		WAN Network Communication Devices/ Network Security Devices	TRM.NW.004	Support Internet Protocol Security (IPSec) for secure exchange packets at IP layer and IKE (Internet Key Exchange) for key exchange.
		WAN Network Communication Devices/ Network Security Devices	TRM.NW.005	Support Secure Sockets Layer (SSLv3) for mutual authentication between a client and server.
		WAN Network Communication Devices/ Network Security Devices	TRM.NW.006	Support SSH for secure remote login, secure file transfer and secure TCP/IP and X11 forwarding.
		WAN Network Communication Devices/ Network Security Devices	TRM.NW.007	Support IEEE 802.11i to enhance 802.11 Medium Access Control (MAC) for higher security and authentication mechanisms.

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04.17	Networks (contd.)	WAN Network Security Devices	TRM.NW.008	Certified to Common Criteria EAL-4 (Evaluation Assurance Level) for firewall.
		WAN Network Security Devices	TRM.NW.009	Authenticate using two factor authentication methods such as Token or One-time Password (RFC 2289).
		WAN Transport Method	TRM.NW.010	Support Multi-Protocol Label Switching (MPLS).
		WAN Transport Method	TRM.NW.011	Support H.320 for audio, video and graphical communications.
		LAN Network Communication Devices / Network Interface Card (NIC)	TRM.NW.012	Support any of the following: (a) IEEE 802.3u-100Base T (for Fast Ethernet over twisted pair cables) (b) IEEE 802.3u-100BaseFx (for fast Ethernet over optical fibre) (c) IEEE 802.3ab (1 Gbps over Cat5e/6 cabling system) (d) IEEE 802.3z (for Gigabit Ethernet over fibre and cable).
		LAN Network Communication Devices	TRM.NW.013	Support Dynamic Host Configuration Protocol (DHCP) for dynamic IP addresses assignment to devices.
		LAN Network Communication Devices	TRM.NW.014	Support IEEE 802.1w (Rapid Spanning Tree Protocol) to provide rapid reconfiguration capability.
		LAN Network Communication Devices	TRM.NW.015	Support IEEE 802.3ad for link aggregation for edge switch.
		LAN Network Communication Devices	TRM.NW.016	Support IEEE 802.3x to define full duplex operation and flow control on 100Mbps Ethernet network for edge switch.

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04.17	Networks (contd.)	LAN Network Communication Devices	TRM.NW.017	Support Virtual Router Redundancy Protocol (VRRP) to eliminate the single point of failure inherent in the static default routed environment for core switch.
		LAN Network Communication Devices	TRM.NW.018	Support Differentiated Service (DiffServ) to provide QoS to the traffic for core switch.
		LAN Network Communication Devices	TRM.NW.019	Support IEEE 802.1q for Virtual LAN (VLAN).
		LAN Network Communication Devices	TRM.NW.020	Support 1000Base-LH (Long Haul) to provide gigabit speed over distance between 70 and 100km.
		LAN Network Communication Devices	TRM.NW.021	Support IEEE802.3af for edge switches supporting devices which require twisted pair cables (e.g. IP Phone Clients and wireless LAN access points).
		LAN Network Communication Devices	TRM.NW.022	Support IEEE 802.3ae to support operating speed of 10Gbps Ethernet over fibre for core switch.
		LAN Structured Cabling System	TRM.NW.023	Use Unshielded Twisted Pair (UTP) Category 6 for Structured Cabling System based on ANSI/TIA/EIA-568-B.2-1.
		LAN Structured Cabling System	TRM.NW.024	Use fibre cables to interconnect network devices and backbone connections for Structured Cabling system as described by TIA/EIA 568. Multimode fibre is used for short distance transmissions with LED based fibre optic equipment. Single-mode fibre is used for long distance transmissions with laser diode based fibre optic transmission equipment. Physical layer standards for optical fibre are:

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04.17	Networks (contd.)			(a) Support 1000Base-SX (short wavelength laser) to provide gigabit speed over maximum distance of 220m (for 62.5 micron multimode fibre) and 550m (for 50 micron multimode fibre). (b) Support 1000Base-LX (long wavelength laser) to provide gigabit speed over maximum distance of 550m (for 50 and 62.5 micron multimode fibre). upto five km single mode with 9 micron fibre
		LAN Structured Cabling System	TRM.NW.025	Use Commercial Building Telecommunications Cabling Standard 2001 based on ANSI/TIA/EIA 568-B.
		LAN Structured Cabling System	TRM.NW.026	Use Generic Cabling for Customer Premises (International Standards) 2002 based on ISO/IEC 11801.
		LAN Structured Cabling System	TRM.NW.027	Use Generic Cabling Systems (CENELEC Standards) 2002 based on EN 50173.
		LAN Structured Cabling System	TRM.NW.028	Use Generic Universal Cabling Infrastructure with support voice and data applications based on ISO/IEC 11801, ISO/IEC 11801, 14763-1, 14763-2, 14763-3, IEC 61935-1, TIA/EIA 568-B, EN50173, TIA/EIA 606-A, IEC332-1
		LAN Structured Cabling System	TRM.NW.029	Use Commercial Building Standard for Telecommunications Pathways and Spaces 2004.

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04.17	Networks (contd.)	LAN Structured Cabling System	TRM.NW.030	Build and install cables based on ISO/IEC 18010 standards of Information Technology - Pathways and Spaces for Customer Premises Cabling.
		LAN Structured Cabling System	TRM.NW.031	Test cables after installation based on TIA/ EIA-568-B and IEC 61935 standards.
		LAN Free Space Optics (FSO)	TRM.NW.032	Support Class 1 or Class 3 (excluding Class 3B) laser for FSO.
		WLAN All technology components	TRM.NW.033	Implement WLAN that supports any of the following standards: (a) Wi-Fi Protected Access (WPA) (b) WPA2 (c) Advanced Encryption Standard (AES) (d) Mobile Virtual Private Networks (VPNs).
		WLAN Wireless Access Point (AP)/ Access Controller	TRM.NW.034	Support IEEE 802.11a for 54 Mbps high speed wireless LAN and 5 GHz range.
		WLAN Wireless Access Point (AP)/ Access Controller	TRM.NW.035	Support IEEE 802.11g for 54 Mbps high speed wireless LAN and 2.4 GHz range.
		WLAN Wireless Access Point (AP)/ Access Controller	TRM.NW.036	Support IEEE 802.11n for 54 Mbps high speed wireless LAN up to 600 Mbps (with 2.4 GHz and 5 GHz range).
		IP Telephony and Video Conferencing IP-Telephony Gateway	TRM.NW.037	Support H.323 for converting between voice and data transmission formats and for managing connections between telephony endpoint and Real-Time Transport Protocol (RTP).

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04.17	Networks (contd.)	IP Telephony and Video Conferencing IP-Telephony Gateway	TRM.NW.038	Support H.248 for controlling media gateways on Internet Protocol (IP) network and Public Switched Telephone Network (PSTN).
		IP Telephony and Video Conferencing IP-Telephony Gateway	TRM.NW.039	Support RTP for end-to-end network transmission of real-time data, such as audio, video or simulation data, over multicast or unicast network services.
		IP Telephony and Video Conferencing IP-Telephony Gateway	TRM.NW.040	Support Real Time Streaming Protocol (RTSP) for control over the delivery of data with real-time properties.
		IP Telephony and Video Conferencing IP-Telephony Gateway	TRM.NW.041	Support H.263 for compression algorithm and optimization for lower data rates.
		IP Telephony and Video Conferencing IP-Telephony Gateway/ IP Phone Client	TRM.NW.042	Use Session Initiation Protocol (SIP) to manage IP telephony sessions. SIP is an application-layer control (signalling) protocol for creating, modifying, and terminating sessions with one or more participants. These sessions include Internet telephone calls, multimedia distribution, and multimedia conferences.
		Network Management Fault Management / Performance Monitoring and Management	TRM.NW.043	Use Simple Network Management Protocol (SNMP) v2 and above as the main management protocol suite.

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04.17	Networks (contd.)	IP Telephony and Video Conferencing IP-Telephony Gateway	TRM.NW.044	Use IP Telephony where possible.
		IP Telephony and Video Conferencing IP-Telephony Gateway	TRM.NW.045	Use video conferencing system for collaboration where possible.
		Network Management Fault Management / Performance Monitoring and Management	TRM.NW.046	Use network management tools to manage LAN.
04.18	Platforms	Servers Processor, Operating System (OS), Random Access Memory (RAM), Hard Disk (HDD), Load Balancer	TRM.PLA.001	There is no technical standard for compliance. Use rack-optimised server for efficient space management.
		Servers Processor, Operating System (OS), Random Access Memory (RAM), Hard Disk (HDD), Load Balancer	TRM.PLA.002	Use High-end servers to support critical business operations. Use Low-end servers for simple non-critical business operations.
		Servers Operating System (OS)	TRM.PLA.003	Support virtualisation technologies and allow multiple operating system instances concurrently on a single physical server.

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04.18	Platforms (contd.)	Clients Processor, Operating System (OS), Random Access Memory (RAM), Hard Disk (HDD), Load Balancer	TRM.PLA.004	There is no technical standard for compliance.
		Clients Processor, Operating System (OS), Random Access Memory (RAM), Hard Disk (HDD)	TRM.PLA.005	Use portable computers where possible to enhance mobility and productivity.
		Clients Operating System (OS)	TRM.PLA.006	Ensure operating system is certified and designed to run under the vendor hardware platform. Please refer to the enterprise licensing agreement for client operating system established by ITA for agencies.
		Peripherals Peripheral Devices	TRM.PLA.007	There is no technical standard for compliance.
		Storage and Backup Storage Area Network (SAN)/ Networked Attached Storage (NAS)	TRM.PLA.008	Support fibre channel for concurrent communication among workstations, servers and other peripherals for Storage Area Network (SAN) and Direct Attached Storage (DAS).
		Storage and Backup Networked Attached Storage (NAS)	TRM.PLA.009	Support Ethernet (IEEE 802.3) for NAS.

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.18	Platforms (contd.)	Storage and Backup Networked Attached Storage (NAS)	TRM.PLA.010	Support Common Internet File System (CIFS) for file sharing for NAS.
		Storage and Backup Networked Attached Storage (NAS)	TRM.PLA.011	Support Network Data Management Protocol (NDMP) for controlling backup, recovery, and other transfers of data between primary and secondary storage for NAS.
		Storage and Backup Networked Attached Storage (NAS)	TRM.PLA.012	Support Network File System (NFS) for distributed file system for NAS.
		Storage and Backup Storage Area Network (SAN)	TRM.PLA.013	Support Internet Small Computer System Interface (iSCSI) to provide block-level access to remote devices for SAN.
		Storage and Backup Storage Area Network (SAN)	TRM.PLA.014	Support Fibre Channel over TCP/IP (FCIP) for connecting remote FC SANs.
		Storage and Backup Backup System	TRM.PLA.015	There is no technical standard for compliance. Please refer to Architecture Design Considerations or Best Practices for more information.
		Platform Management and Security Server Management/ Client Management	TRM.PLA.016	Support Directory Enabled Networking (DEN) to map service and policy to directory.

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.18	Platforms (contd.)	Platform Management and Security Client Management	TRM.PLA.017	Support Desktop Management Interface (DMI) standards to collect information about a computer environment for desktop management.
		Platform Management and Security Server Management	TRM.PLA.018	Support Web-Based Enterprise Management (WBEM) to enable server management through web-enabled application.
		Platform Management and Security Server Management	TRM.PLA.019	Support Alert Standard Format (ASF) to define OS-absent alerting for preventive monitoring.
		Platform Management and Security Platform Security	TRM.PLA.020	Support hardened operating system.
		Platform Management and Security Platform Security	TRM.PLA.021	Support Trusted Platform Module (TPM) for authenticating mobile computing device.
		Storage and Backup Storage Area Network (SAN)	TRM.PLA.022	Use SAN for enterprise storage solution. Please refer to Paragraph 4.6.4(a) for SAN solution guidance.
		Storage and Backup Backup System	TRM.PLA.023	Implement enterprise-wide backup solution. Please refer to Paragraph 4.6.4(a) for backup solution guidance.
04.19	Presentation	Presentation	EGIF.PRT.001	WCAG 2.0 guidelines and associated success criteria should be met by all websites and web portals (http://www.w3.org/TR/WCAG20/)

Division Code: 04		**Computer Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.19	Presentation (contd.)		EGIF.PRT.002	W3C web and mobile guidelines and best practices (http://www.w3.org/Mobile/)
04.20	Requirement Elicitation	Requirement elicitation	ARM_REQ_1	The project team must gather business and system requirements
			ARM_REQ_2	The project team must establish and document business requirements
			ARM_REQ_3	A requirement should be traceable back-ward to requirements and the stakeholders that motivated it
			ARM_REQ_4	On successful completion a sign-off must be obtained for requirements and design document
04.21	Security	Security	EGIF.SEC.001	WS-Security to ensure security of messages transmitted between web services components
			EGIF.SEC.002	WS-I Basic Security Profile Version 1.0 to ensure security of messages transmitted between web services
			EGIF.SEC.003	X.509 international standard for digital signature certificates
			EGIF.SEC.004	SAML v1.1 - Security Assertions Markup Language (SAML) is a XML-based framework for web services that enable exchange of authentication and authorization information.
			EGIF.SEC.005	S/MIME ESS Version 3 is a standard that extends the MIME specifications to support signing and encryption of email transmitted across internet

Division Code: 04		**Computer Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.21	Security (contd.)		EGIF.SEC.006	XML-DSIG is a XML compliant syntax used for representing the signature of web resources and procedures for computing and verifying such signatures
		ISO 27001		Information security management
		ISO 20000		Service management system (SMS)
		ISO 22301		Business Continuity Management
		NIST SP 800-12		Computer security and control
		NIST SP 800-14		Security principles
		NIST SP 800-26		IT Security
		NIST SP 800-37		Guide for Applying the Risk Management Framework
		NIST SP 800-53 rev4		Security and Privacy Controls
		PCI DSS		Payment Card Industry Data Security Standard for management of credit cards
		COBIT		Control Objectives for Information and related Technology (COBIT) - information security framework
		SABSA		Enterprise security architecture framework
		SOX		Sarbanes-Oxley Act of 2002 (SOX) act is also known as the public company accounting reform and investor protection act. SOX requirements indirectly compel management to consider information security controls on systems across the organization in order to comply with SOX.

Division Code: 04		**Computer Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.21	Security (contd.)	ITIL - Security management		based on ISO 17799-is of particular relevance to the application of the information security principles
04.22	Services	Services	EGIF.SRV.001	Use of SOAP v1.1/1.2 for web service invocation and communication
			EGIF.SRV.002	Description of all web services using WSDL V2.0. The web services description language describes web services in a way that other systems can consume the services
			EGIF.SRV.003	WS-I Basic Profile 1.1 or Web Services interoperability profile is a set of non-proprietary web services specifications along with clarifications and amendments to those specifications that promote interoperability.
			EGIF.SRV.004	WS-I simple SOAP binding profile v1.0 defines the use of XML envelopes for transmitting messages and places constraint on their use.
			EGIF.SRV.005	WS-I Attachments Profile 1.0 defines MIME multipart / related structure for packaging attachments with SOAP messages.
			EGIF.SRV.006	Registration of all web services using Universal Description, Discovery and Integration (UDDI v3) registry.
			EGIF.SRV.007	Use of hypertext transfer protocol (HTTP v1.1) and HTTPS as the application level communications protocol for web services.

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.22	Services (contd.)		EGIF.SRV.008	Use of LDAP v3-compliant directory for authentication, authorization, and storage of identity profiles and ID management information
			EGIF.SRV.009	Use of ebXML Message Service Specifications v2.0, ebXML Registry Information Model v3.0 and ebXML Registry Services Specifications v3.0 as an addition to UDDI registry.
			EGIF.SRV.010	Use of SSL v3.0 for encryption
			EGIF.SRV.011	Use of integration adaptors across organizations
			EGIF.SRV.012	Selection of adaptors that are certified by the application or middleware solution
			EGIF.SRV.013	Domain Name Service (DNS) is a service for mapping between domain names and IP addresses
			EGIF.SRV.014	Dublin Core Standard is an extensible metadata element set intended to facilitate discovery of electronic resources.
			EGIF.SRV.015	OAI harvesting protocol version 2 from Open Archives Initiative supports access to web-accessible material through interoperable repositories for metadata sharing, publishing and archiving.
			EGIF.SRV.016	RDF - Resource Description Framework is a method for specifying syntax of metadata used to exchange meta data by W3C
			EGIF.SRV.017	ODRLv2.0 - Open Digital Rights Language supports use of digital assets in the publishing, distribution and consumption of content, applications and services

Division Code: 04			**Computer Engineering**	
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.22	Services (contd.)		EGIF.SRV.018	XrML v2.0 or eXtensible rights Markup Language is XML-based language for digital rights management (DRM)
			EGIF.SRV.019	OpenGIS Web Map Service Interface Standard (WMS) for GIS systems (http://www.opengeospatial.org /standards/wms)
04.23	Software Design	Software design	ARM_SDD_1	Project team must follow IEEE standard 1069 for Information technology - system design
			ARM_SDD_2	The project team must document the software design as per IEEE 1016
			ARM_SDD_3	Follow ISO/IEC 42010 for architecture description
			ARM_SDD_4	Project team should use notations for static and dynamic views
			ARM_SDD_5	On successful completion a sign-off must be obtained for requirements and design document
04.24	Software Maintenance	Software maintenance	ARM_SOM_1	Follow ISO/IEC standard 14764 for software maintenance
			ARM_SOM_2	Follow IEEE standard 1219 and 14764 for process of software maintenance
04.25	Technology Architecture Standards	Technology	EGIF.TECH.001	Within the GoB, use intrinsic security provided by Bangladesh Computer Council Intranet (Info Sarkar and Bangla Government Networks) should be considered for all Government offices.
			EGIF.TECH.002	National Data Center should be considered for hosting of Government data. Exceptions for establishing DC / DR for independent entities will be made on case-to-case basis.

Division Code: 04		Computer Engineering		
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.25	Technology Architecture Standards (contd.)		EGIF.TECH.003	All entities should adhere to BD-CIRT guidelines
			EGIF.TECH.004	For inter-ministry system related information exchange, it is recommended to use NEA Bus for secured transfer.
			EGIF.TECH.005	For all Government transactions requiring citizen online identity verification, NEA bus based authentication services should be used.
		Internet and Intranet Access Browser/Mobile-Browser	TRM.SRV.001	Use Hypertext Transfer Protocol (HTTP) or Secured Hypertext Transfer Protocol (HTTPS) for access over Internet/ Intranet.
		Internet and Intranet Access Browser/Mobile-Browser	TRM.SRV.002	Use Hypertext Markup Language (HTML).
		Internet and Intranet Access Browser/Mobile-Browser	TRM.SRV.003	Use Extensible Hypertext Markup language (XHTML) as the markup language for creating web applications wherever possible. XHTML is a family of XML markup languages that mirror or extend versions of the existing widely used Hypertext Markup Language (HTML). The only essential difference between XHTML and HTML is that XHTML must be well formed XML while HTML does not impose strict XML compliance.
		Internet and Intranet Access Electronic Mail (Email)	TRM.SRV.004	Use Simple Mail Transfer Protocol (SMTP) as the standard protocol used for mail exchange amongst clients and servers. BCC has established the email systems for Government of Bangladesh officers and it is essential for all Government officers to leverage the infrastructure instead of using private email service providers considering information security.

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.25	Technology Architecture Standards (contd.)	Internet and Intranet Access Protocols	TRM.SRV.005	Use Hypertext Transfer Protocol Secure (HTTPS) for transactions that need to be secured over the Internet. Avoid use of transactional e-services unless these e-services are authenticated and encrypted. http://w3.org/TR/xhtm
		Internet and Intranet Access Protocols	TRM.SRV.006	Use Wireless Access Protocol (WAP) as the mobile Internet technology which allows mobile phone access to Internet sites. WAP is an open international standard for application layer network communications in a wireless communication environment. Its main use is to enable access to Mobile Web from a mobile phone or PDA.
		Internet and Intranet Access Protocols	TRM.SRV.007	Use Wireless Transport Layer Security (WTLS) for micro browsers.
		Telephony Short Message Service (SMS)	TRM.SRV.008	There is no technical standard for compliance.
		Telephony Interactive Voice Response (IVR)	TRM.SRV.009	There is no technical standard for compliance.
		Telephony Facsimile (Fax)	TRM.SRV.010	There is no technical standard for compliance.
		Internet and Intranet Access Browser/Mobile-Browser	TRM.SRV.011	Support latest versions of widely adopted browser(s) including Internet Explorer (IE) - version 6 Chrome FireFox Safari Opera etc.
		Internet and Intranet Access	TRM.SRV.012	The browser shall support security controls such as

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.25	Technology Architecture Standards (contd.)	Browser/Mobile-Browser		download Active Controls, Java permissions, cache deletion, disable cookies, HTTPS and SSL.
		Internet and Intranet Access Browser/Mobile-Browser	TRM.SRV.013	Provide multiple modes of accessing government services (e.g. kiosks and mobile phone).
		Telephony Interactive Voice Response (IVR)	TRM.SRV.014	Implement IVR system as an alternative to Browser for access to government services.
04.26	Testing Standards	Testing standards	ARM_TST_1	Follow ISO/IEC/IEEE standard 29119 for software testing
			ARM_TST_2	Follow ISO/IEC standard 15288 and 12207 for system engineering standards include process for verification and validation
			ARM_TST_3	Follow IEEE 1008, BS 7925 standard for testing
			ARM_TST_4	Follow IEEE 829, 1028 for software review techniques
04.27	Website Guidelines	Software maintenance	WEB.DES.001	Website should be registered under 'gov.bd' domain
			WEB.DES.002	The link to other websites and portal should open in a new tab or a new window
			WEB.DES.003	Content should be free from spelling and grammatical errors
			WEB.DES.004	The content should not be discriminative/ offensive
			WEB.DES.005	A policy should be prevalent in department for review of content to be published on website
			WEB.DES.006	The website should provide option for content translated in at least English language

Division Code: 04		**Computer Engineering**		
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
04.28	Windows Phone (Mobile Service Delivery Platform Standards)	Technology	Microsoft .NET Compact Framework	The Microsoft .NET Compact Framework (.NET CF) is a version of the .NET Framework that is designed to run on Windows CE based mobile/embedded devices such as PDAs, mobile phones, factory controllers, set-top boxes, etc. The .NET Compact Framework uses some of the same class libraries as the full .NET Framework and also a few libraries designed specifically for mobile devices such as Windows CE Input Panel.
		Tool	Microsoft Visual Studio IDE	Microsoft Visual Studio is an integrated Development Environment (IDE) created by Microsoft and is used to develop computer programs for Microsoft Windows and web sites, web applications and web services.
		Language	Visual C#, Visual Basic, or Visual C++	Visual C# is an implementation of the C# language by Microsoft. Visual Studio supports Visual C# with a full-featured code editor, compiler, project templates, designers, code wizards, a powerful and easy-to-use debugger, and other tools. The .NET Framework class library provides access to many operating system services and other useful, well-designed classes that speed up the development cycle significantly.

SECTION 05

CODES AND STANDARDS FOR ELECTRICAL ENGINEERING

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A01	Alarm	-	DIN 276:456	Fire detection and alarm system
			IEC 60839	Alarms and electronic security systems
05.A02	Amplifiers	-	IEC 61290	Optical amplifiers-Test methods
			IEC 61291	Optical amplifiers
			IEC/TR 61292	Optical amplifiers
05.A03	Audio Recording	-	IEC 60908	Audio recording compact disc, digital audio system
			IEC 61120	Digital audio tape recorder reel to reel system, using 6, 3 mm magnetic tape for professional use
			IEC TS 60899	Sampling rate and source encoding for professional digital audio recording compact disc digital audio system
05.A04	Auto Re-closure (ACR)	-	ANSI/IEEE C37.60	High voltage switchgear and control-gear
			ANSI/IEEE C37.85	Safety requirements for X Radiation limits for AC high voltage
05.A05	Battery	-	IEC-60146	Semiconductor converters-General requirements and line commutated converters-Part 1-1: Specification of basic requirements
05.A06	Battery Charger	-	IEC 60335-2-29	Household similar electrical appliances safety part 2 Particulars requirement for battery charger
			IEC 61851	Electric vehicle conductive charging System

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A07	Cable	-	BS 6004	PVC Insulated and PVC Sheathed Cables for Voltage up to 300/500 Volt
			IEC 502-1	Quality Assessment-Organic Light Emitting Diode Elements
			IEC 60228	Conductors of Insulated Cables
		Voltage Grade 0.6/1(1.2)kV	1EC60502-1	**Single core cables-PVC insulated & PVC Sheathed**
				1.Unormoured (YY)
				2. Round Al wire armored (YRaY)
				Single core cables - XLPE insulated & PVC Sheathed
				1.Unormoured (2XY)
				2. Round Al wire armored (2XRaY)
				Core cables - PVC insulated & PVC Sheathed
				1.Unormoured
		Voltage Grade 0.6/1(1.2)kV	1EC60502-1	**Core cables - XLPE insulated & PVC Sheathed**
				1.Unormoured (2XY)
				Core cables - PVC insulated & PVC Sheathed
				1.Unormoured (YY)
				2. Round Galvanized steel wire armored (YRGY)
				3. Flat Galvanized steel wire armored (YFGY)
				Core cables - XLPE insulated & PVC Sheathed
				1.Unormoured (2XY)
				2.Round Galvanized steel wire armored (2XRGY)

Division Code : 05		**Electrical Engineering**	
Sub-Section: A- Electrical			
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**
05.A07	Cable (contd.)		3. Flat Galvanized steel wire armored (2XFGY) **1/2 core cables - PVC insulated & PVC Sheathed** 1.Unormoured (YY) 2. Round Galvanized steel wire armored (YRGY) 3. Flat Galvanized steel wire armored (YFGY) **1/2 core cables - XLPE insulated & PVC Sheathed** 1.Unormoured (2XY) 2. Round Galvanized steel wire armored (2XRGY) 3. Flat Galvanized steel wire armored (YFGY) **core cables - XLPE insulated & PVC Sheathed** 1.Unormoured (2XY) 2. Round Galvanized steel wire armored (2XRGY) 3. Flat Galvanized steel wire armored (2XFGY) **1/2 core Concentric neutral PVC insulated Cables (YCY)** 1EC60502-2 Power cables with extruded

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A07	Cable (Contd.)			insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV)
			1EC 60949	Calculation of thermally permissible short circuit current
		Voltage Grade 3.5/6kV	BDS 901:85 & VDE 0271	**3 core PVC insulated, Copper shielded (NYSY)**
		Voltage Grade 0.6/1 kV	BDS 901:85 & VDE 0271	**Multicore control cables (NYY-1)**
				PVC Insulated & PVC sheathed unarmored
				Single core, cables (NYY)
				Two core, PVC sheathed cables (NYY)
				Three core, PVC sheathed cables (NYY)
				Four core, PVC sheathed cables (NYY)
				PVC Insulated & PVC sheathed armored cables
				3 core (NYFGbY)
				3 1/2 core cable. (NYFGbY)
				4 core Cable (NYFGbY)
				Self-supporting Ariel cables
				Twin Core (NYMT)
				Three Core (NYMT)
				Four Core (NYMT)
		Voltage Grade 450/750V	BDS 900:2000	Single Core PVC Insulated Cable (BYA)
				Flat cable- PVC Insulated PVC Sheathed

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A07	Cable (Contd.)			Twin Core (BYFY)
				Three Core (BYFY)
				Four Core (BYFYE)
				Single Core- PVC Insulated PVC Sheathed cables (BYM)
				PVC Insulated PVC Sheathed twisted round cables
				Twin Core (BYM)
				Three Core (BYM)
				Four Core (BYM)
		Voltage Grade 250/440V	BS 2004	Single core PVC insulated cables (IYAL)
				Single core cables-PVC insulated & PVC Sheathed (IYAL)
				Tween core PVC Sheathed Flat cable (IYAL)
				Service drop cables 600/1000V (IYFY)
				Duplex Cables
				Quadruplex Cables
			BS 2004	**Flexible Cable**
				1. Single core, PVC insulated
				2.Twin Core twisted (without sheath)
				3.Twin core, PVC sheathed
				4. Three core. PVC sheathed
				5. Four core, PVC sheathed
		Voltage Grade 200V	BS 2004	PVC sheathed Welding Cables

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A07	Cable (Contd.)	Voltage Grade 600/1000 V	BS 2004	PVC insulated Flexible Cables, Single core, PVC sheathed cables (NYYF) Two core, PVC sheathed cables (NYYF) Three core, PVC sheathed cables (NYYF) Four core, PVC sheathed cables (NYYF)
		-	EN 50265	Cables have to be flame-retardant testing
			EN 60332	Tests on electric and optical fibre cables under fire condition
			EN 60811	Insulating and sheathing materials of electric cables and optical cables
			IEC 60096	Radio frequency (coaxial cables)
			IEC 60189	Cables have to be flame-retardant testing
			IEC 60331	Marine and offshore cables
			IEC 60800	Heating cables with a rated voltage of 300/500 V for comfort heating and prevention of ice formation
			IEC 60794-1-2-F5A	Optical fibre cable tensile tester
			IEC 61196	Communication (coaxial cables)
			IEC 61423	Cables for heating purposes
05.A08	Cable (Optical fiber)	-	DIN 276:444	Cable routing systems
			EN 60793	Cables with optical fibres
			IEC 60794	Optical fiber cables

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A09	Capacitors	-	IEC 60110	Power capacitors for induction heating installations
			IEC 60252	AC Motor capacitors
			IEC 60358	Coupling capacitors and capacitor divider
			IEC 60384	Fixed capacitors for use in electronic equipment
			IEC 61076	Connectors for electrical equipment product requirements
			IEC 61921	Power capacitors low voltage power factor correction banks
05.A10	Charge Controller	-	IEC 62093	Balance of system components for photovoltaic systems- Design qualification natural environments
			IEC 62509	Battery charge controllers for photovoltaic systems- Performance and functioning
05.A11	Circuit Breaker	-	IEC 60934	Circuit-breakers for equipment (CBE)
			IEC 62271-1	High voltage switchgear and control gear Part 1: Common specification
05.A12	Conductor	-	ASTM B1	Standard specification for hard-drawn copper wire
			ASTM B2	Standard specification for medium-hard-drawn copper wire
			ASTM B3	Standard specification for soft and annealed copper wire
			ASTM B230	Standard specification for aluminum for 1350-H19 wire for electrical purposes

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A12	Conductor (contd.)		ASTM B231	Standard specification for concentric-lay-stranded aluminum 1350 conductors
			ASTM B232	Standard specification for concentric-lay-stranded aluminum conductors, coated-steel reinforced (ACSR)
			ASTM B398	Standard specification for aluminum-alloy 6201-T81 & 6201-T83 wire for electrical purposes
			ASTM B399	Standard specification for concentric-lay-stranded aluminum-alloy 6201-T81 conductors
			ASTM B609	Standard specification for aluminum 1350 round wire, annealed and intermediate tempers, for electrical purposes
			BDS 1036	AAC (Stranded all aluminium conductor), specifications/ratings
			BDS 1037	Aluminium conductor steel reinforced (ACSR) specification
			BS 215-1	Specification for aluminium conductor, steel reinforced for overhead power transmission, aluminium stranded conductor
			BS 6485	PVC-covered conductors for overhead power lines
			IEC 60228	International standard for conductors of insulated cables
			IEC 62271-207	High voltage switchgear and control gear Part 207: Seismic qualification for gas insulated switchgear assemblies for rated voltage above 52 kV

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A13	Connectors	-	EN 50250	Conversion adaptors for industrial use
			EN 60998-1/-2	Connecting devices for low voltage circuit for household and similar purpose-Part1
			IEC 60130-1	Connectors for frequencies below 3 MHZ, Part 1: General requirements and measuring methods
			IEC 60169	Radio frequency connectors
			IEC 60498	High voltage coaxial connectors used in nuclear instrumentation
			IEC 61076	Connectors for electrical equipment-product requirement
			IEC 61984	Connectors-safety requirements and tests
			IEC TR 61602	Connectors used in the field of audio, video and audiovisual engineering
05.A14	Current Transformer	-	IEC 60044-1	Instrument transformers Part 1
			IEC 61869-1&2	Instrument transformers Part 1: General Requirements Part2 :Additional requirements for Current Transformer
05.A15	Drop Out Fuse Cutout (DOFC)	-	IEC 60282-2	High Voltage Fuses Part 2: Expulsion fuses
05.A16	Energy Meter	-	IEC 62053-21	Electricity metering equipment (a.c)-particular requirements-part 21: Static meter for active energy (classes 1 and 2)

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A16	Energy Meter (contd.)		IEC 62053-22	Electricity metering equipment (a.c)-particular requirements-part 22: Static meter for active energy (classes 0,2 and 0,5S)
			IEC 62054	Electricity metering (AC) tariff and load control
			IEC 62055-31:2017	Electricity metering-payment systems
			IEC/TR 60736	Testing equipment for electrical energy meters
05.A17	Fuses	-	EN 60127	Miniature fuses
			EN 60269	Standard for low voltage power fuses
05.A18	Insulator	-	BS 916	Specification for black bolts, screws and nuts, hexagon and squire with B.S.W
			BS 3288	Insulator and conductor fittings for overhead power lines, performances and general requirements
			IEC 60383	Insulators for overhead lines with a nominal voltage above 1000 V Part 1: Ceramic or Glass insulator unit for A.C systems
			IEC 60437	Radio interference test on high voltage insulators
			IEC 60575	Thermal-Mechanical performance test and Mechanical performance test on string insulator units
05.A19	Inverter	-	IEC 61000-6-2	Electromagnetic compatibility (EMC)-Part 6-2: Generic standards immunity for industrial environments

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A19	Inverter (contd.)	-	IEC 61000-6-4	Electromagnetic compatibility (EMC)-Part 6-4: Generic standards – Emission standard for industrial environment
			IEEE 1547	Standards interconnecting distributed resources with electric power systems
			UL 1741	Test items and new coming fault ride through for greed connected new energy test requirements
05.A20	Isolator	-	IEC 60129	Alternating current dis-connectors and earthling switches
05.A21	11 KV Capacitor Bank	-	IEC 60871-2014	Shunt capacitors for a.c. power systems having a rated voltage above 1000 V
05.A22	Lamp	-	IEC 60357	Tungsten halogen lamps (non-vehicle) performance specification
			IEC 60434	Air craft electrical filament lamps
			IEC 60921	Ballast for tubular fluorescent Lamps-performance requirements
05.A23	Lightening Arrester	-	IEC 60282-2	High voltages fuses Part 2: Expulsion fuses
05.A24	Medical Equipment	-	IEC 60580	Medical electrical equipment - Dose area product meters
			IEC 60601-1	Medical electrical equipment - Part 1: General requirements for basic safety and essential performance

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A24	Medical Equipment (contd.)		IEC 60976	Medical electrical equipment - Medical electron accelerators - Functional performance characteristics
			IEC 61262	Medical electrical equipment - Characteristics of electro optical X-Ray image intensifiers
			IEC/TR 61289	High frequency surgical equipment operation and maintenance
05.A25	Photovoltaic (PV) Modules	-	IEC 60891	Procedures for temperature and irradiance corrections to measure I-V characteristics
			IEC 60904-5	Determination of the equivalent cell temperature (ECT) of PV devices by the open-circuit voltage method
			IEC 61215-1	Terrestrial photovoltaic (PV) modules- Design qualification and type approval-Part 1: Test requirements
			IEC 61701	Salt mist corrosion testing of PV modules
			IEC 61730	Photovoltaic (PV) module safety qualification
05.A26	Plugs and Sockets	-	IEC 60884	Plugs and socket outlets for household and similar purposes
			EN 60309-1	Plugs, socket-outlets and couplers for industrial purposes
			EN 60320 C 14	Inlet AC power socket with up to 15 A/ 250 V AC

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A26	Plugs and Sockets (contd.)		EN 61210	Connecting devices-flat quick-connect terminations for electrical copper conductors
05.A27	Potential Transformer	-	IEC 60044-2	Instrument transformers Part 2: Inductive voltage
05.A28	Printed Board	-	IEC 61188	Printed boards and printed board assemblies - Design and use
05.A29	Radar	-	IEC 62388	Maritime navigation and radio communication equipment and systems - Shipborne radar
05.A30	Radio Therapy Equipment	-	IEC 61217	Radio therapy - Coordinates movements and scales
			IEC 61267	Medical diagnostic X-Ray equipment radiation conditions for use in the determination of characteristics
05.A31	Safety (Electrical)	-	IEC 61558-1:2018	Safety of transformers, reactors, power supply units and combinations thereof
			IS 659	Safety code for air-conditioning
			IS 732	Code of practice for electrical wiring installations
			IS 807	Code of practice for design, manufacturing, erection and testing of cranes and hoists
			IS 816	Code of practice for safely and health requirements in electric and gas welding and cutting operations
			IS 818	Code of practice for safety and health requirements in electric and gas welding and cutting operations
			IS 1641	Code of practice for fire safety of

Division Code : 05		**Electrical Engineering**	
Sub-Section: A- Electrical			
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**
05.A31	Safety (Electrical) (contd.)	-	buildings: General principles and fire grading and classification
			IS1644 Code of practice for fire safety of buildings: personal hazard
			IS1646 Code of practice for ;ire safety of building (general): Electrical
			IS 1860 Code for practice for installation, operation and maintenance of electric passenger and good lifts
			IS 1886 Code of practice for installation and maintenance of transformers
			IS 2148 Flameproof of enclosures of electrical apparatus
			IS 2171 Portable fire extinguishers, DCP (cartridge type)
			IS 2189 Code of practice for selection, installation and maintenance of automatic fire detection and alarm system
			IS 2206 Flameproof electric lighting fittings
			IS 2305 Code of practice for the protection of buildings and allied structures against lightning
			IS 2493 Lighting, fittings, well-glass, for use underground in mines (non-flame proof type)
			IS 2512 Batteries(lead-acid) for miners cap lamp
			IS 2772 Transformers, mining, non-flameproof, for use below ground
			IS 2878 Portable fire extinguishers, carbon dioxide type

Division Code : 05		**Electrical Engineering**		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A31	Safety (Electrical) (contd.)		IS 3034	Electrical generating an: distributing stations.
			IS 3043	Code of practice for earthing
			IS 3070	Lighting arrestors for AC systems
			IS 3072	Code of practice for installation and maintenance of Switchgear,
			IS 3151	Electrical safety code for earthing transformer
			IS 3696	Code of safety for ladders and scaffoldings
			IS 40P1	Safety code for blasting and related drilling operations
			IS 4155	Glossary of terms relating to chemical and radiation hazards
			IS 4160	Switch socket outlets, interlocking.
			IS 4209	Code of safety for chemical laboratories
			IS 4648	Electrical layout in residential buildings, guide
			IS 4756	Safety code for tunneling work
			IS 4850	Lighting arrestors for ac systems, expulsion type, application guide
			IS 5121	Safety code for piling and other deep foundations
			IS 5950	Cables, shot firing
			IS 6305	Safety code for power industrial trucks
			IS 6619	Semiconductor rectifier equipment, safety code

Division Code : 05			**Electrical Engineering**	
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A31	Safety (Electrical) (contd.)		IS 7620	Medical Electrical Equipment - general and Safety.
			IS 7631	Stability tests for pallets stockers and high lift platform trucks (pedestrian and rider controlled)
			IS 7689	Guide for control of undesired static electricity
			IS 7693	Electrical apparatus for use in explosive gas atmospheres, oil-immersed
			IS 7724	Electrical equipment for use in explosive atmospheres, sand filled protection
			IS 7733	Electrical wiring installation in hospitals code of practice
			IS 7969	Safety code for handling and storage of building materials
			IS 8940	Code of practice for maintenance and care of industrial safety equipment for eye and face protection
			IS 8945	Electrical measuring instruments for explosive gas atmospheres
			IS 9623	Recommendations for the selection, use and maintenance of respiratory protective devices
			IS 9836	Electrical and electronic equipment for coal exploders.
			IS 9858	Electronic measuring apparatus, safety requirements
			IS 9937	Specification for portable methanometer (electrical type)
			IS 13415	Code of safety for protective barriers in and around building
			IS 111478	Radiation safety requirement

Division Code : 05		Electrical Engineering		
Sub-Section: A- Electrical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.A32	Satellite	-	IEC 61319	Interconnections of satellite receiving equipment
05.A33	Semi-conductor	-	IEC 60747 IEC 60748	Semi-conductor devices Semi-conductor devices-integrated circuits.
05.A34	Switch	-	DIN 276:444 EN 60669 IEC 60669	Switch and plug devices Button and switches Switches for household and similar fixed electrical installations
05.A35	Switchgear	-	EN 50298, EN 60439-1 IEC 62271-1	Enclosures for low-voltage switchgear combinations High voltage switchgear and control gear Part 1: Common specification
05.A36	Transformer	-	EN 61558 IEC 60076 IEC 60726	Transformers, power supply Online collection- Power transformers Dry type power transformer
05.A37	Turbine (Gas and Steam)	-	IEC 60045 IEC 60953-1	Steam turbines - Part 1: Specifications Rules for steam turbine thermal acceptance test part-1
05.A38	Washing Machine	-	IEC 60456	Clothes Washing Machines for household use methods for measuring the performance
05.A39	Wire	-	DIN 276:444 IEC 60034-18-21 IEC 60318	Cables and wires Functional evaluation of insulation systems test procedures for wire ward windings thermal evaluation and classification Specification for particulars of winding wires

Division Code : 05		**Electrical Engineering**		
Sub-Section: B- Telecommunication				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.B01	Automatic Transfer Switch (ATS) panel		IEC 60947-6-1	Low-voltage switchgear and control gear
05.B02	Ethernet		IEEE 802.3ba	Media Access Control Parameters, Physical Layers and Management Parameters for 40Gb/s and 100 Gb/s operation
05.B03	G-PON		G.984.1/2/3/4	The interface should comply with ITU-T
05.B04	IMS		ETSI TR 180 001 ETSI TS 182 006 ETSI TS 182 012 ETSI ES 282 001 ETSI ES 282 007	NGN IP Multimedia Subsystem (IMS); IMS-based PSTN/ISDN Emulation Sub-system-Functional Architecture NGN Functional Architecture IP Multimedia Subsystem(IMS) Functional Architecture
05.B05	LAN Switch		IEEE 802.1d IEEE 802.3x IEEE 802.1w IEEE 802.2	Spanning Tree Protocol Flow control Rapid Spanning Tree Protocol Logical Link Control
05.B06	Optical Network Unit (ONU)		IEEE802.11b/ 802.11g IEEE 802.11n	Govern wireless networking transmission methods. wireless-networking standard that uses multiple antennas to increase data rates
05.B07	Optical Transport Network (OTN)		G.661	Definitions and test methods for the relevant generic parameters of optical amplifier devices and subsystems

Division Code : 05		Electrical Engineering		
Sub-Section: B- Telecommunication				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.B07	Optical Transport Network (OTN) (contd.)		G.662	Generic characteristics of optical amplifier devices and subsystems
			G.663	Application related aspects of optical amplifier devices and subsystems
			G.667	Characteristics of adaptive chromatic dispersion compensators
			G.671	Transmission characteristics of optical components and subsystems
			G.672	Characteristics of multi-degree reconfigurable optical add/drop multiplexers
			G.681	Function characteristics of interoffice and long-haul line systems using optical amplifier, including optical multiplexing
			G.692	Optical interfaces for multichannel systems with optical amplifiers
			G.693	Optical interfaces for intra-office systems
			G.696.1	Longitudinally compatible intra-domain DWDM applications
			G.697.1	Spectral grids for WDM applications: DWDM frequency grid
			G.707	Network node interface for the synchronous digital hierarchy (SDH)

Division Code : 05			**Electrical Engineering**	
Sub-Section: B- Telecommunication				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
05.B07	Optical Transport Network (OTN) (contd.)		G.783	Characteristics of synchronous digital hierarchy(SDH) equipment functional blocks
			G.798	Characteristics of optical transport network hierarchy(SDH) equipment functional blocks
			G.806	Characteristics of transport equipment- Description methodology and generic functionality
			G.825	The control of jitter and wander within digital networks which are based on the Synchronous Digital Hierarchy (SDH)
05.B08	PE Router		IEEE802.3ae	10G: Characteristics of Ethernet interface meet the standard
			IEEE802.3-2002	Characteristics of Ethernet interface meet the standard
05.B09	Voice or data over digital carriers such as T1 and E1		G.703	ITU-T standard 2016 for transmitting voice or data over digital carriers such as T1 and E1

SECTION 06

CODES AND STANDARDS FOR MECHANICAL ENGINEERING

Division Code: 06		**Mechanical Engineering**	
Sub-Section: A- Mechanical			
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**
06.A01	Adapter, Bend, Connectors, PVC Pipe, Reducer, Robo Screen, Sand Trap, Straight Coupling, Stainless Steel Strainer	• Compression Test • Cross joints • Dimension Test • End Condition • Flattening Test • Hardness Test • Heat Reversion Test • Impact Strength Test • Modulus of Elasticity Test • Percentage Elongation Test • Pressure • Resistance to Acetone Test • Resistance to Sulfuric Acid Test • Socket Depth • Specific Gravity Test • Tee and Y joints • Tensile Strength Test • Tension Test • Water Absorption Test	BS 2782 Methods for testing plastics BS 3505 Specification for unplasticized polyvinyl chloride (uPVC) pressure pipes for cold potable water. BS 4346-1 Joint and fifing for use with uPVC pressure pipes injection moulded uPVC fittings for solved welding for use with pressure pipes BS 4514 Specification for unplasticized PVC soil and ventilating pipes, fittings and accessories ISO 2505 Thermoplastics pipes industrial reversion Test Method ISO 3127 Thermoplastics pipes determination of resistance to external blows round the clock method. ISO 3472 uPVC pipes specification and determination of resistance to acetone ISO 4422 Pipes & fittings made of u PVC for water supply ISO 119221 Thermoplastics pipes for the conveyance of fluids - Standard Used: Manufacturer's Specifications

Division Code: 06		Mechanical Engineering		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A02	Air-conditioning System	Installation of Air-Conditioning and Ventilating Systems	NFPA 90A	Standard test methods for the installation of air conditioning and ventilating systems
06.A03	Air Release Valve (ARV)		BS EN 1074-4	Valves for water supply. Fitness for purpose requirements and appropriate verification tests-Air valves
06.A04	Bail Plug		API 5L, Grade-B, ERW	Round steel pipes
06.A05	Bearing Pad	• 0.2% Proof Load • Abrasion • Accelerated aging • Adhesion Strength • Aging @ $100^{O}C$ for 4 day • Ash Content • Compressive Strain • Creep Deflection • Dimension • Elastomer Content • Grade Evaluation Test • Hardness • Heat Persistence Test • Liquid test	ASTM D297 ASTM D395 ASTM D412 ASTM D429	Standard test method for rubber products- chemical Analysis. Standard test method for rubber property compression set; and described in test method Standard test methods for vulcanized rubber and thermoplastic elasto meters-tension ASTM Standard test method for rubber property - Adhesion to rigid substrates

Division Code: 06		**Mechanical Engineering**	
Sub-Section: A- Mechanical			
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**
06.A05	Bearing Pad (contd.)	• 70°C for 4 day • Low Temperature Brittleness • Max. compression set at 100°C for 24 hours • Maximum change in hardness • Minimum Elongation at Break • Minimum Tensile Strength • Peel Strength/ Vulcanized Bond • Shear Modulus Test • Short term Duration Compression • Strength Test Breaking Load • Tear Strength • Tensile Strength • Test of Steel Laminates • Ultimate Elongation • Vulcanized bond test (peel strength)	ASTM D573 Standard test Method for rubber detrition in air oven ASTM D2240 Test Method designed to test the depth of an indentation in the material being tested ASTM D4014 Specification for plain and steel laminated elastomeric bearings for bridges

Division Code: 06		**Mechanical Engineering**		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A06	Bulk Water Meter (BWM)		ISO-4064/01ML R49 /MLD	Water meters for cold potable water and hot water. – Part-1: Metrological and technical requirements
06.A07	Cast Iron Pipe	-	BS 416	Specification for cast iron, spigot and socket seal waste band ventilating pipes.
06.A08	Conveyer Rubber Belt	• Longitudinal direction • Transverse strength • Carrying capacity • Diameter of pulleys • Diametrical Compression Test (width of belt thickness, ply Number, cover thickness) • Hole location tests • Nylon Fabric belt tensile strength • Specific Weight	ASTM D2240 BDS 1200 (part-1)	Test Method designed to test the depth of an indentation in the material being tested Bangladesh Standard

Division Code: 06		**Mechanical Engineering**		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A08	Conveyer Rubber Belt (contd.)	• Test of Full Thickness Percentage Elongation in Longitudinal Direction • Test of Hardness • Unit weight (kg/m2) of surface • Working Strength		
06.A09	Data Logger (Conventional & GSM Data Logger)		ISO-4064	Water meters for cold potable water and hot water. – Part-1: Metrological and technical requirements
06.A10	Domestic Water Meter (DWM)		ISO-4064/01ML	Water meters for cold potable water and hot water. – Part-1: Metrological and technical recruitments
06.A11	Fiber Glass Strainer	• Axial Compression Test • Axial Tension Test • Diametrical Compression Test • Dimension • Post Boiling Test • Pre Boiling Test	ASTM D2105 ASTM D2412	Standard test Method for longitudinal tensile properties of fiber glass Testing standard used to determine the stiffness and load deflection of plastic pipes.

Division Code: 06		Mechanical Engineering		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A12	Fire-Fighting Equipment (Fire Door), Hose, Extinguisher, Fire Pump Etc.	• Extinguisher • Fire- pumps • Fire resistance rating Sprinkler system • Fire-door • Fire-water tube • Flow-test • Hose pipe • Riser • Smoke density • System design • Test of installation	ASTM BNBC NFPA - -	American Society for Testing and Materials Bangladesh National Building Code National Fire Protection Association Fire service rule 1961; Fire Resist and Extinguish Act 2003
06.A13	Fish Plate	• Compressive strength • Cross breaking strength • Flexural modulus • Impact strength • Melting point • Shear strength • Specific gravity • Tensile strength • Yield strength • Acidity	ASTM A370 BS 2782	Mechanical test methods for steel Methods for testing plastics

Division Code: 06		Mechanical Engineering		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A13	Fish Plate (contd.)	• Ash content and carbon residue viscosity grade of oil		
06.A14	Fuel	• Calorific value of coal • Calorific value of liquid fuel, gas • Carbon residue • Coal • Copper strip corrosion • Cu-corrosion • Density / specific gravity • Fire point of liquid fuels • Flash point • Gray king coal swelling index • Kinematic viscosity • Moisture content • Proximate analysis of coal • Rust inhibitor • Sulphated ash • Total acid no/value • Total base no • Viscosity of oils (viscosity index) • Water content	ASTM D92 ASTM D95 ASTM D97 ASTM D130 ASTM D189 ASTM D240 ASTM D445 ASTM D482 ASTM D1298	Standard test method for flash and fire points by Cleveland open cup tester Standard test method for water in petroleum products and bituminous materials by distillation Standard test method for pour point of petroleum products Standard test method for detection of copper corrosion from petroleum products by the copper strip test Standard test method for Conradson carbon residue of petroleum products Standard specification for chromium and chromium nickel stainless steel plate, heat and strip for pressure vessels and for general applications Standard test method for kinetic viscosity of transparent and opaque liquids Standard test method for Ash from petroleum products Standard test method for density, relative density or API gravity of crude petroleum and liquid petroleum products by hydrometer method

Division Code: 06		Mechanical Engineering		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A14	Fuel (contd.)	• Water content in ppm • Water separability	ASTM D1401	Standard test method for water separability of petroleum oils and synthetic fluids.
			ASTM D1826	Standard test method for calorific (heating) valve of Gases in natural gas range by continuous Recording calorimeter
			ASTM D2270	Standard practice for calculating viscosity index from kinematic viscosity at 40^0c
			ISO 3448	Industrial liquid lubricants
06.A15	Fumigation sheet	• Elongation (%) • Tear strength (N) • Temp. stability (length + width) 15000 + 15000 • Tensile strength (N/50mm)	ASTM D4533	Standard test method for trapezoid tearing strength of geotextiles.
			ASTM D5035	Breaking force and Elongation of textile fabrics (Strip Method)
06.A16	Gate Valve		BS 5163-1&2	Resilient seated wedge gate valve
06.A17	G.I. Pipe	• Bending test • Bursting pressure test • Dimension test • End condition • Galvanizing test • Hydrostatic pressure test • Weight test	BS 1387	Specification for screwed and socketed steel tubes and tubular and for plain end steel tubes suitable for welding or for screwing to BS 21 Pipe threads
06.A18	G.I. sheet	• Bend test • Dimension test (includes pitch,	ASTM A70	Standard specifications for carbon steel plates for stationary boilers and other pressure vessels

Division Code: 06		**Mechanical Engineering**		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A18	G.I. sheet (contd.)	depth, thickness and gauge) • Zinc coating test	BS 729 BS 4360	Specification for hot dip galvanized coatings on iron and steel Specification for wieldable structural steels
06.A19	Glass Filled Nylon	-	ASTM D638 ASTM D785 BS 2782 IS 10102	Standard test Method for tensile properties of plastics Standard test method for Rockwell hardness of plastics and electrical insulating materials. Part-5 Tem 23± 23± 2 C: methods of testing plastics optical and color properties, weathering Technical supply conditions for rivets
06.A20	Grooved Rubber Pad	• Hardness test • Test of elongation at break • Test of modulus (relaxed) test of compression set • Test of tension set • Test of tensile strength	IRS T-37	Indian Railway Standard: Grooved rubber sole plates 4.5 mm thick.
06.A21	HDPE Pipes Fittings	• Butt Fusion Reducer • Electro Fusion Reducer	ISO 4427-2:2007	Plastics piping systems-Polyethylene (PE) pipes and fittings for water supply-part 2: Pipes

Division Code: 06		**Mechanical Engineering**		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A21	HDPE Pipes Fittings (contd.)	• Electrofusion Coupler • Butt Fusion Stub End • Saddle • Ferrule • Float Valve • Compression Coupler Butt Fusion End Cap	ISO 4427-3:2007	Plastics piping systems-Polyethylene (PE) pipes and fittings for water supply-part 3: fittings
06.A22	High Tension Wire/ Cable	• Elongation • Elongation at rupture • Extra for grips • Grade • Modulus of elasticity Test • Proof load • Stress/strain curve • Stress/strain separate • Tensile strength • Test of diameter • Test of unit weight • Test of yield strength (at 1% extension under load) • Ultimate strength	IS 1785 (part 1)	Plain hard drawn steel wire for prestressed concrete, Part 1: Cold drawn stress-relieved wire
06.A23	Hose Pipe	Working pressure test	-	Standard Used: Supplier's Specification Standard Used: WASA Specifications

Division Code: 06		**Mechanical Engineering**	
Sub-Section: A- Mechanical			
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**
06.A24	Insulation	• R-value • Thermal conductivity • Thermal conductivity and R-value • Water absorption	- Standard Used: Supplier's specifications
06.A25	Lift (Elevator)	• Car • Hoist way • Machine/drive system • Control system • Safety system	ASME A90.1 Safety standard for belt manlift ASME A18 Safety standard for platform lifts and stairway chairlifts BNBC Bangladesh National Building Code EN 81-20 Safety rules for the construction and installation of lifts- Lifts for the transport of persons and goods. Passenger and goods passenger lifts EN 81-50 Safety rules for the construction and installation of lifts- Examinations and tests- Part 50: Design rules, calculations, examinations and tests of lift component NFPA 101 Life safety code is the most widely used source for strategies to protect people based on

Division Code: 06		**Mechanical Engineering**	
Sub-Section: A- Mechanical			
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**
06.A26	M. S. Housing Pipe	• Dimension test • External hydrostatic pressure test • Internal hydrostatic pressure test • Strength test (axial tension) • Strength test (compression)	- Manufacturer's specification
06.A27	M. S. Deformed Bar (Rod)/deformed sheet	• Percent elongation • Dimension test • Impact test • Tensile strength • Ultimate strength • Unit weight per kg. Yield strength	ASTM A505 Standard specification for steel, sheet and strip, alloy, hot rolled and cold rolled, general requirements ASTM A370 Standard test methods and definitions for mechanical testing of steel products ASTM A615 Standard specification for deformed and plain carbon-steel bars for concrete reinforcement in cut-lengths and coils BDS ISO 6935 Bangladesh standard steel for the reinforcement of concrete

Division Code: 06		**Mechanical Engineering**	
Sub-Section: A- Mechanical			
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**
06.A28	Motor Test	• 10 kW < P 25 kW (100 hr + Performance) • 25 kW < P 50 kW (100 hr + Performance) • Power (P) 10 kW (100 hr + Performance) • P > 50 kW (100 hr + Performance motor for vertical hollow shaft)	IEEE Std 112 Standard test procedure for polyphase induction motors and generators
06.A29	Motor Vehicle	• Comparison of local made spare parts (destructive test) • Mechanical motor cycle • Properties between colored & without colored alloy wheel of motor cycle • Comparison of mechanical properties between colored & without colored alloy wheel of motor cycle	- Emission standards, Department of Environment, Bangladesh

Division Code: 06		**Mechanical Engineering**		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A29	Motor Vehicle (contd.)	• Four Wheeler (Pickup / Van up to 1500kg) • Minibus (Pickup / Van up to 2000kg) • Bus (Track / Van up to 5000kg.)		
06.A30	Non-Return Valve	-	BS 5153	Non-rising stem resilient seated gate valve with signal
06.A31	Nuts and Bolts	• Percent elongation • Compressive strength • Diamond strength • Modulus of elasticity • Poisson's ratio	ASTM A370	Standard test methods and definitions for mechanical testing of steel products
06.A32	Pressure Reducing Valve (PRV)		BS EN 1074-5	Valves for water supply. Fitness for purpose requirements and appropriate verification tests-part 5: Control valves
06.A33	Pressure Sustaining Valve (PSV)		BS EN 1074-5	Valves for water supply. Fitness for purpose requirements and appropriate verification tests-part 5: Control valve
06.A34	Pump Test	• Submersible pump (A) with variable voltage	- -	Manufacturer's specification IDCOL, Bangladesh specified standard (Solar Pump)

Division Code: 06		**Mechanical Engineering**	
Sub-Section: A- Mechanical			
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**
06.A34	Pump Test (contd.)	(280-440VAC) • Submersible pump (A): Q>2 cusec, H>150 ft / 45.7 m • Submersible pump (B) with variable voltage (280-440VAC) • Submersible pump (B): Q >2 cusec, H>150 ft / 45.7 m • Tensile Strength Test • Test of Dimension • Tightening Torque Test • Yield strength test • Centrifugal pump: 2 < Q 5 cusec, H 100 ft / 30.5 m • Centrifugal pump: Q 2 cusec, H • 100 ft / 30.5 m • Fire lighting pumps • High head (H > 100 ft / 30.5 m) multistage centrifugal pump • Solar Pump Submersible pump star-delta starter, main switch test	NFPA 20 Standard for the installation of stationary pumps for fire protection - Manufacturer's specification - IDCOL, Bangladesh specified standard (Solar Pump) NFPA 20 Standard for the installation of stationary pumps for fire protection

Division Code: 06		**Mechanical Engineering**		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A35	PVC Water Stopper	• Aged percent elongation test • Aged tensile strength • Cold brittleness • Compression set for 24 hours at $100^{O}c$ • Hardness • Heat persistence • Including aging • Percentage elongation • Specific gravity • Stiffness in flexure • Tensile strength	ASTM D395 ASTM D412 ASTM D573 ASTM D2240	Standard test method for rubber property compression set; and described in test method Standard test methods for vulcanized rubber & Thermoplastics elastomers Tension Standard test Method for rubber detrition in air oven Test Method designed to test the depth of an indentation in the material being tested
06.A36	Reinforcing Plate	• Compression set for 10/100/1000 hours • Elongation at break • Minimum tensile strength • Rail / Steel clippers • Relaxation cost % for 10 hours • Yield strength	-	Standard Used: Supplier's specifications
06.A37	Rubber Sheets	• Percent elongation test • Compression set • Hardness test • Specific gravity	ASTM D395 BS 903 Part A 2	Standard test method for rubber property compression set Physical testing of rubber. Determination of tensile stress strain properties

Division Code: 06		Mechanical Engineering		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A37	Rubber Sheets (contd.)	test • Tensile strength test • Tension set • Test of modulus	IRS T-37 IRS T-47	Indian Railway Standard: Grooved rubber sole plates 4.5 mm thick. Indian Railway Standard: Grooved rubber sole plates 6.0 mm thick.
06.A38	Sluice Valve, Other Valves	Pressure test (gland and seat)	BS 5150 BS 5163	Specification for cast iron gate valves Specification for permanently key operated cast iron gate valves for water work purposes
06.A39	Steel Products	• Bend test • Dimension test • Hardness • Modulus of elasticity • Pressure test • Tensile strength test • Test of elongation • Test of thickness • Ultimate elongation • Ultimate strength • Yield strength test	ASTM A70 ASTM A370 ASTM A500 ASTM E18 ASTM E290 BS 4360	Standard specifications for carbon steel plates for stationary boilers and other pressure vessels Standard test methods and definitions for mechanical testing of steel products Standard specification for cold-formed welded and seamless carbon steel structural tubing Standard test methods for Rockwell hardness of metallic materials Standard test methods for bend testing of material for ductility Specification for weldable structural steels
06.A40	Steel Strips	• Dimension test • Tensile and yield strength • Ultimate elongation	ASTM A370	Standard test methods and definitions for mechanical testing of steel products

Division Code: 06		**Mechanical Engineering**		
Sub-Section: A- Mechanical				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.A41	Steel Tube	• Flange Test • Flattening Test • Hydrostatic Pressure Test • Reverse Bending Test	ASTM A370	Standard test methods and definitions for mechanical testing of steel products
06.A42	Well Casing		API 5L, Grade-B, ERW	Round steel pipes
06.A43	Welding Electrode	Elongation test	API 1104	Standard for welding pipelines and related facilities
06.A44	Welding Procedure	• Face band test • Neck band test • Root band test • Tensile strength test • Tensile strength test	API 1104	Standard for welding pipelines and related facilities
06.A45	Well Screen		ASTM 167;74,	Standard Specification for stainless and heat resiting chromium-nickel steel plate, sheet and strip

Division Code : 06		Mechanical Engineering		
Sub-Section: B- Naval Architecture and Marine Engineering				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.B01	Air-Conditioning	-	ISO 7547	Ships and marine technology- Air-conditioning and ventilation of accommodation spaces - Design conditions and basis of calculations
			ISO 8864	Air-conditioning and ventilation of wheelhouse on board ships- Design conditions and basic of calculations
06.B02	Cabling	-	ANSI/TIA/ EIA-568-B	Commercial building telecommunication cabling standard
			IEC 61156-5	Multicore and symmetrical pair/ quad cables for digital communication-Part 5: Symmetrical pair/quad cables with transmission characteristics up to 1000 MHz-Horizontal floor wiring-Sectional specification
			IEC 61156-6	Multicore and symmetrical pair/ quad cables for digital communication-Part 5: Symmetrical pair/quad cables with transmission characteristics up to 1000 MHz-Work area wiring-Sectional specification
			ISO/IEC 11801	Generic cabling for customer premises

Division Code : 06		**Mechanical Engineering**		
Sub-Section: B- Naval Architecture and Marine Engineering				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.B03	Carrying Capacity and Registration	-	ITC	International Convention on Tonnage Measurement of Ships
06.B04	Cathodic Protection Materials	-	ASTM A518	Standard specification for corrosion-Resistant high-silicon iron castings
			ASTM G97	Standard test method for laboratory evaluation of magnesium sacrificial anode test specimens for underground applications
06.B05	Class Notations	-	BV Rules	Part E: Additional class notations
			DNV-GL	Part VI- Additional class notations
			RINA	Part F: Additional class notations
06.B06	Class Ship Building (Hull and Stability)	-	BV Rules	Part B: Hull and stability
			DNV-GL	Part III- Hull
			LR	Part III- Ship structure (General), Part IV: Ship structure (Ship types), IMO Regulations
			NK Rules	Part: U (Intact stability) Part W: Load lines Part CS: Hull construction and equipment of small ships
			RINA	Part B: Hull and stability

Division Code : 06		**Mechanical Engineering**		
Sub-Section: B- Naval Architecture and Marine Engineering				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.B07	Class Ship Building (Surveys and Classification)	-	BV Rules	Part A: General rules Part B: Class surveys Part I: Polar class ships and ice class ships Part O: Work-Ships Part P: Mobile offshore drilling units and special purpose barges Part PS: Floating offshore facilities for crude oil / petroleum gas production, storage and offloading Part T: Submersibles
			DNV-GL	PART I: General regulations
			LR	Part I- Regulations Part VII: Other ship types and system Part VIII: Rules for ice and cold operation
			RINA	Part A: Classification and surveys
06.B08	Crews	-	MLC 2006 (ILO)	Maritime Labour Convention, 2006 – International Labour Organization
			LSA Code	Life Saving Appliances Code
			STCW	International Convention on standards of training, certification and watch keeping for seafarers
06.B09	Electrical, Installation, Automation, Fire Protection Detection and Extinction	-	BV Rules	Part C: Machinery, electricity, automation and fire protection
			Class NK	Part R

Division Code : 06		**Mechanical Engineering**		
Sub-Section: B- Naval Architecture and Marine Engineering				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.B09	Electrical, Installation, Automation, Fire Protection Detection and Extinction (contd.)		DNV-GL	Part IV- System and Component
			LR	Part VI- Control, Electrical and Fire
06.B10	Electrical Wiring	-	AS/NZS 3000	Australian/New Zealand wiring rules
			BS 7671	Requirements for electrical installations. IET wiring regulations
			IEC 60364	Low voltage electrical installations - Part 1: Fundamental principles, assessment of general characteristics, definition
			IEE	Wiring regulations
06.B11	Environment and Environ Protection	-	MARPOL	International Convention for the Prevention of Pollution from Ships
			MEPC	Marine Environment Protection Committee
			NOx Technical Code	Technical code on control and emission of nitrogen oxide from marine diesel engine
06.B12	Equipment	-	Class NK	Rules and guidance for the survey and construction of steel ships - Part L: Equipment
06.B13	High Speed Vessel	-	HSC 2000	International code of safety for high speed craft
06.B14	Inland Ship Building, Ship Construction	-	DOS: ISO	Department of Shipping: Indian Shipping Ordinance

Division Code : 06		Mechanical Engineering		
Sub-Section: B- Naval Architecture and Marine Engineering				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.B14	Inland Ship Building, Ship Construction (contd.)		Jahaj Nirman Bidimala 2001, Bangladesh	Rules and guidance for the survey and construction of inland waterway ships
06.B15	Machinery	-	BV Rules	Part C: Machinery, electricity, automation and fire protection
			Class NK	Part C: Hull construction and equipment Part D: Machinery installations
			DNV-GL	Part IV: System and component
			LR	Part V: Main and auxiliary machinery
			RINA	Part C: Machinery, systems and fire protection
06.B16	Materials	-	Class NK	Part K
			DNV-GL	Part II- Materials and Welding
			LR	Part II-Rules for Manufacture, Testing and Certification of Materials
			RINA	Part D: Materials and Welding
06.B17	Pipe	-	ANSI	American National Standards Institute
			API	American Petroleum Institute
			ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
			ASME	American Society of Mechanical Engineers
			ASTM	American Standard for Testing and Materials

Division Code : 06		**Mechanical Engineering**		
Sub-Section: B- Naval Architecture and Marine Engineering				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.B17	Pipe (contd.)		BSI	British Standards Institution
			CEN	European Committee for Standardization
			DIN	Deutsches Institut für Normung
			ISO	International Organization for Standardization
06.B18	Security and Management	-	ISM	International Safety Management Code for the Management and Operation of Ships
			ISPS	International Ship and Port Facility Security
06.B19	Service	-	BV Rules	Part D: Service notations
			DNV-GL	Part V: Ship types; Part VII: Fleet in service
			RINA	Part E: Service notations
06.B20	Ship Recycling	-	ISO 30000	Ships and marine technology - Ship recycling management systems -
			ISO 30002	Specifications for management systems for safe and environmentally sound ship recycling
			ISO 30003/ ISO 30004	Ships and marine technology - Ship recycling management systems
			ISO 30005	Information control for hazardous materials in the manufacturing chain of shipbuilding and ship operations

Division Code : 06		Mechanical Engineering		
Sub-Section: B- Naval Architecture and Marine Engineering				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.B20	Ship Recycling (contd.)		ISO 30007	Ships and marine technology - Measures to prevent asbestos emission and exposure during ship recycling
06.B21	Ship Safety	-	BLU Code	International Maritime Organization
			FSS Code	International Code for Fire Safety System
			IGF Code	International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuels
			OSV Code	Code of Safe Practice for the Carriage of Cargoes and Persons by Offshore Supply Vessels
			SOLAS	International Convention for the Safety of Life at Sea
06.B22	Sports Ship,Yacht	-	LY2	The Large Yacht Code (version-2)
			LY3	The Large Yacht Code (version-3)
			MCA	Maritime and Coastguard Agency
			MGN 280 (M)	Construction standards for small vessels sports use
06.B23	Steel Grade	-	ASTM A131	Standard Specification for Structural Steel for Ships
			EN 10025 (93)	General Structural Steel
			ISO 630	Structural Steel
			ISO 4950	High yield strength flat steel product
			JIS G 3106	Rolled steel for welded structure

Division Code : 06		**Mechanical Engineering**		
Sub-Section: B- Naval Architecture and Marine Engineering				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria /Test**	
06.B24	Vibration	-	ISO 10055	Mechanical vibration - Vibration testing requirements for shipboard equipment and machinery components
			ISO/DIS 20154	Ships and marine technology - Guidelines on vibration isolation design methods for shipboard auxiliary machinery
			ISO 20283-2	Mechanical vibration - Measurement of vibration on ships - Part 2: Measurement of structural vibration
			ISO 20283-4	Mechanical vibration - Measurement of vibration on ships - Part 4: Measurement and evaluation of vibration of the ship propulsion machinery
			ISO 2923	Measurement of noise on board vessels
06.B25	Welding	-	Class NK	Part M
			DNV-GL	Part II- Materials and Welding, AWS
			RINA	Part D: Materials and Welding

SECTION 07

CODES AND STANDARDS FOR TEXTILE ENGINEERING

Division Code: 07		Textile Engineering		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A01	Capital Machineries (JTSC-12)	-	BDS 1252	Specification for Pabna type semi-automatic handloom
			BDS 1328	Narsingdi type semi-automatic handloom
			BDS 1746	Power reeling machine
07.A02	Jute Mills Spares and Accessories (JTSC-04)	-	BDS 1172	Jute Broad Loom Shuttle
			BDS 1208	Shuttle for Hessian and Sacking loom
			BDS 1209	High Speed Jute Bobbin
			BDS 1210	Pitch-Bound Wire Reeds for Jute looms
			BDS 1211	Loom Pickers
			BDS 1212	Recommendation on shape and dimensions of Jute Loom Pickers
			BDS 1213 (Part 1)	Specification for spool centres (cylindrical and conical) for jute spool winding machines
			BDS 1213 (Part 2)	Specification for spool centres (cylindrical and conical) for jute precision winding machines
			BDS 1214	Card and gill pins for use in jute industry- Specification
			BDS 1218	Accessories for use in shuttle for jute looms
			BDS 1219	Picks sticks (arms) for over pick jute looms
			BDS 1232	Bobbin carrier for jute spinning frame
			BDS 1257	Faller bars
			BDS 1258	Faller screws

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A02	Jute Mills Spares and Accessories (JTSC-04) (contd.)	-	BDS 1259	Spindle for jute cop winding machine
			BDS 1295	Cotton cambs
			BDS 1296	Inset mail wire healds
			BDS 1297	Boards for lay races
			BDS 1298	Box back blanks
			BDS 1299	Blanks for lay blocks
			BDS 1300	Blanks for swells
			BDS 1324	Loom (fly) spindle
			BDS 1325	Flyer spindle
			BDS 1326	Flyers for jute spinning frame
		-	BDS 1327	Faller bar slides for jute drawing frame
			BDS 1398	Heald wire
			BDS 1400	Steel wire for reeds
			BDS 1401	Shuttle for automatic cop changing jute looms
			BDS 1451	Specification for rollers for drawing and spinning frames in jute mill
			BDS 1486	Dead spindle
			BDS ISO 8116-2 & 4	Textile machinery and accessories - Beams for winding
07.A03	Jute Products (JTSC-01)	-	BDS 813	Bangladesh hessian, Part-1, General
			BDS 837	Bangladesh hessian, Part-2
			BDS 839	Jute bags for packing cement
			BDS 905	Hessian, bags
			BDS 929	Jute corn sacks/bags

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A03	Jute Products (JTSC-01) (Contd.)	-	BDS 983	Determination of breaking load (strength) of jute yarn
			BDS 984	Jute canvas, Part-1, General requirement
			BDS 985	Jute canvas, Part-2, Fine, 660 gm/m^2
			BDS 1023	Bangladesh hessian, Part-3; 213 gm/m^2 and 270 gm/m^2 at 16 percent contract regain
			BDS 1024	Bangladesh hessian, Par-4; 245 gm/m^2 at 16 percent contract regain
			BDS 1050	Hessian sand bags, un- proofed and proofed
			BDS 1072	Jute fabric for fertilizer bag
			BDS 1073	Laminated jute bags for packing fertilizers
			BDS 1091	Method for determination of seam strength of jute fabrics including their laminates
			BDS 1173	Glossary of terms relating to jute products
			BDS 1861	Specification for Bangladesh hessian – Part VI, 298 g/m^2 at 16 percent contact regains.
			BDS 1865	Textiles - Jute and jute based bags – Method for drop test
			BDS 1880	Textiles -Jute Bags for packing 50kg Sugar -Specification
			BDS 1887	Specification for jute bags for packing urea
			BDS 1907	Methods for determination of bitumen content in laminated jute bags
			BDS 1909	Specification for jute geotextiles

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A04	Man-Made Fibre and Products (JTSC-14)	-	BDS ISO 2076	Textiles-Mane-made fibres-Generic names
			BDS ISO 9862	Geotextiles-Sampling and preparation of test specimens
			BDS ISO 9863-1	Geosyntheties - Determination of thickness at specified. Pressures - Part 1: Single layers
			BDS ISO 9863-2	Geotextiles- and geotextile-related products- Determination of thickness at specified pressures- Part 2: Procedure for determination of thickness of Single layers of multilayer products
			BDS ISO 9864	Geosynthetics- Test method for the determination of mass per unit area of geotextiles and geotextile-related products
			BDS ISO 10318	Geosynthetics-Terms and definitions
			BDS ISO 10319	Geotextiles- Wide Width tensile test
			BDS ISO 10320	Geotextiles- Identification of site
			BDS ISO 10321	Geotextiles- Tensile test for Joints/Seams by wide- width method
			BDS ISO 10722	Geosynthetics- Index test procedure for the evaluation of mechanical damage under repeated loading-Damage caused by granular material

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A04	Man-Made Fibre and Products (JTSC-14) (Contd.)	-	BDS ISO 11058	Geotextiles- and geotextile-related products- Determination of water permeability characteristics normal to the plane, without load
			BDS ISO 12236	Geosynthetics- Static puncture test (CBR test)
			BDS ISO 12956	Geotextiles- and geotextile-related products- Determination of characteristic opening size
			BDS ISO 12957-1	Geotextiles- Determination of friction characteristic Part 1: Direct shear test
			BDS ISO 12957-2	Geotextiles- Determination of friction characteristic Part 2: Inclined plane test
			BDS ISO 12958	Geotextiles- and geotextile-related products- Determination of water flow capacity in their plane
			BDS ISO/TR 12960	Geotextiles and geotextile-related products- Screening test method for determining the resistance to liquids
			BDS ISO 13426-1	Geotextiles and geotextile-related products- Strength of internal structural junctions- part 1: Geocells
			BDS ISO 13426-2	Geotextiles and geotextile-related products- Strength of internal structural junctions- part 2: Geocomposites
			BDS ISO 13427	Geotextiles and geotextile-related products- Abrasion damage simulation (sliding block test)

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A05	Textile Products (JTSC-02)	-	BDS ISO 13428	Geotextiles - Determination of the protection efficiency of a geosynthetic against impact damage
			BDS ISO 13431	Geotextiles and geotextile-related products- Determination of tensile creep and creep rupture behaviour
			BDS ISO 13433	Geotextiles- Dynamic perforation test (cone drop test)
			BDS ISO/TR 13434	Geotextiles and geotextile-related products- Geotextiles on durability
			BDS ISO 13437	Geotextiles and geotextile-related products- Method for installing and extracting samples in soil, and testing specimens in laboratory
			BDS ISO 13438	Geotextiles and geotextile-related products-Screening test method for determining the resistance to oxidation.
			BDS ISO 105-F01	Textiles - Tests for colour fastness- Part F01: Specification for wool adjacent fabric
			BDS ISO 105-F03	Textiles - Tests for colour fastness-Part F03: Specification for polyamide adjacent fabric
			BDS ISO 105-F04	Textiles - Tests for colour fastness-Part F04: Specification for polyester adjacent fabric
			BDS ISO 105-F05	Textiles - Tests for colour fastness-Part F05: Specification for acrylic adjacent fabric
			BDS ISO 1107	Fishing nets – Netting – Basic terms and definition

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A05	Textile Products (JTSC-02) (Contd.)	-	BDS ISO 2959	Textiles - Woven fabric descriptions
			BDS ISO 8498	Woven fabric - Descriptions of defects- vocabulary
			BDS ISO 8499	Knitted fabric - Descriptions of defects- vocabulary
			BDS ISO 9354	Textiles - Weaves - Coding system and examples
			BDS ISO 11224	Textiles – Non-wovens - Web formation and bonding - Vocabulary
07.A06	Textile Mill Accessories (JTSC-11)	-	BDS 438	Weaving loom working width
			BDS 440	Diameters of drafting rollers for cotton fibre
			BDS 1376	Classification of terms for shuttle
			BDS 1452	Picking nose, boss and shell for looms
			BDS 1453	Picking cone and bolt for looms
			BDS 1454	Shuttles for plain cotton looms and its accessories
			BDS 1455	Textile machinery and accessories - Spinning machines definition of side
			BDS 1458	Textile machinery and accessories - Drafting arrangements for spinning machines - Terminology
			BDS 1839 (Part -1)	Bobbin and pirns used in textile mills Wooden flyer bobbins
			BDS 1839 (Part -2)	Bobbin and pirns used in textile mills Wooden warp bobbins for rabbeth spindles

Division Code: 07		Textile Engineering		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS1839 (Part -3)	Textile machinery and accessories- Bobbins and pirns Plastic flyer bobbins
			BDS ISO 92	Textiles machinery and accessories- spinning machinery definitions of side (left or right)
			BDS ISO 93-1	Textiles machinery and accessories- cylindrical sliver cans-part 1: main definitions
			BDS ISO 93-2	Textiles machinery and accessories- cylindrical sliver cans-part 2: spring bottoms
			BDS ISO 94	Textiles machinery and accessories-spindle gauges for ring spinning and ring – doubling frames
			BDS ISO 98	Textiles machinery and accessories - Spinning preparatory and spinning machines - covering characteristics of top rollers
			BDS ISO 108	Textile machinery and accessories - Weaving looms- Definition of left and right sides
			BDS ISO 109	Textile machinery - Working widths of weaving machines
			BDS ISO 142	Textiles machinery and accessories - Weaving preparatory machines - Definition of left and right sides
			BDS ISO 143	Textile machinery and accessories - Weft pirns for automatic looms
			BDS ISO 342	Textiles machinery and accessories - Worsted and woollen cards - Working Width

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 344	Textiles machinery and accessories - Spinning machinery - Flyer bobbins
			BDS ISO 363-1	Textile machinery and accessories - Flat steel healds with closed end loops - Part 1: Dimensions of healds manufactured of rolled steel wire
			BDS ISO 363-2	Textile machinery and accessories - Flat steel healds with closed end loops - Part 2: Dimensions of healds manufactured of hardened strip steel
			BDS ISO 364	Textile machinery and accessories - Twin wire healds for weaving machines with heald frames
			BDS ISO 365	Textile machinery and accessories - Twin wire healds with inset mail for Jacquard weaving
			BDS ISO 366-1	Textiles machinery and accessories - Reeds - Part 1: Pitch bound reeds dimensions. Main dimensions for section wires for metallic code clothing - Part 1: Foot without interlocking or interchanging
			BDS ISO 366-2	Textile machinery and accessories - Reeds - Part 2: Metal reeds with plate baulk - Dimensions and designation
			BDS ISO 366-3	Textile machinery and accessories - Reeds - Part 3: Dimensions & designation of metal reeds with double-spring baulk

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 366-4	Textile machinery and accessories - Reeds - Part 4: Dimensions and designation of plastic - Bound metal reeds
			BDS ISO 366-5	Textile machinery and accessories - Reeds - Part 5: Dimensions and designation of profile capsules
			BDS ISO 368	Spinning preparatory, spinning and doubling (twisting) machinery - Tubes for ring spinning doubling and twisting spindles. taper 1:38 and 1:64
			BDS ISO 441	Textile machinery and accessories-Drop wires for warp stop motions for weaving machines without automatic drawing-in
			BDS ISO 476	Textiles machinery and accessories-Pirn winding machines- Vocabulary
			BDS ISO 477	Textiles machinery and accessories-cone and cheese winding machines- Vocabulary
			BDS ISO 570	Textile machinery and accessories - Heald carrying rods for healds with closed "o"-shaped end loops
			BDS ISO 572	Textile machinery and accessories-Shuttles for pirn changing automati looms-Dimensions
			BDS ISO 575	Textiles machinery and accessories- Transfer cone - Half angle of the cone 4 degrees 20’
			BDS ISO 576	Textile machinery and accessories - Paper patterns for dobbies-Dimensions

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 1150	Textile machinery and accessories - Drop wires for warp stop motions for weaving machines with automatic drawing
			BDS ISO 1586	Textile machinery and accessories - Shuttles - Terms and designation in relation to the position of the shuttle eye
			BDS ISO 1809	Textiles machinery and accessories - Types of formers for yarn packages -Nomenclature
			BDS ISO 1865	Textile machinery and accessories - Serrated bars for mechanical warp stop motions - Designation of dimensions, and dimensions of cross-section
			BDS ISO 2012	Textile machinery and accessories - Cone sectional warping machines - Maximum usable width
			BDS ISO 2187	Spinning preparatory machinery, spinning and doubling (twisting) machinery - List of equivalent terms
			BDS ISO 2205	Textiles machinery and accessories - Drafting arrangements for spinning machines - Terminology
			BDS ISO 2544	Textile machinery and accessories - Warping machinery - Preparation of warp for weaving - Vocabulary
			BDS ISO 2572	Textiles machinery and accessories - Card gauges

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 2748	Textile machinery and accessories -Lingoes for jacquard weaving
			BDS ISO 3914-1	Textiles machinery and accessories- Cylindrical tubes - Part 1: Recommended main dimensions
			BDS ISO 3914-2	Textiles machinery and accessories - Cylindrical tubes - Part 2: Dimensions tolerances and designation of tubes for open-end spinning machines
			BDS ISO 3914-3	Textiles machinery and accessories- cylindrical tubes-Part 3: Dimensions tolerances and designation of tubes for tape yarns
			BDS ISO 3914-4	Textiles machinery and accessories- cylindrical tubes-Part 4: Dimensions tolerances and designation of tubes for textured yarns
			BDS ISO 3914-5	Textiles machinery and accessories - Cylindrical tubes - Part 5: Dimensions tolerances and designation of tubes for continuous spin-drawn synthetic filament yarns
			BDS ISO 3914-6	Textiles machinery and accessories - Cylindrical tubes - Part 6: Dimensions tolerances and designation of tubes for cross-wound packages in winding and twisting
			BDS ISO 3914-7	Textiles machinery and accessories - Cylindrical tubes - Part 7: Dimensions tolerances and designation of perforated tubes for cheese dyeing

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 4105	Textiles machinery and accessories - Wires for flexible card clothing
			BDS ISO 5232	Graphical symbols for textiles machinery
			BDS ISO 5233	Textiles machinery and accessories - Bottom fluted rollers for drafting systems
			BDS ISO 5234	Textiles machinery and accessories - metallic card clothing - Definition dimensions, types and mounting
			BDS ISO 5238-1	Textiles machinery and accessories - Packages of yarns and intermediate products - Part 1: Terminology
			BDS ISO 5238-2	Textiles machinery and accessories - Packages of yarns and intermediate products - Part 2: Forms of winding
			BDS ISO 5239	Textiles machinery and accessories - Winding - Basic terms
			BDS ISO 5240	Textiles machinery and accessories - Warp creels - Main dimensions
			BDS ISO 5243	Textile machinery and accessories - Numbering of heald frames and drop wire bars in a loom
			BDS ISO 5247-1	Textile machinery and accessories -weaving machines - Part 1: Vocabulary & classification
			BDS ISO 5247-2	Textile machinery and accessories -weaving machines - Part 2: Accessories - Vocabulary

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 5247-3	Textile machinery and accessories -Weaving machines - Part3: Parts of the machine - Vocabulary
			BDS ISO 6170	Spinning machinery - Condenser rubbers for cards
			BDS ISO 6173	Open-end spinning machines – Vocabulary
			BDS ISO 6176	Textile machinery and accessories - Warp sizing machines - Maximum usable width
			BDS ISO 6177	Textile machinery - Cloth rollers - Terminology & main dimensions
			BDS ISO 8114	Textiles machinery and accessories - Spindles for Ring - Spinning and doubling machinery - List of equivalent terms
			BDS ISO 8116-1	Textiles machinery and accessories - Beams for winding - Part 1: General vocabulary
			BDS ISO 8116-2	Textiles machinery and accessories - Beams for winding - Part 2: Warper's beams
			BDS ISO 8116-3	Textiles machinery and accessories - Beams for winding - Part 3: Weaver's beams
			BDS ISO 8116-4	Textiles machinery and accessories - Beams for winding - Part 4: Quality classification of flanges for weaver's beams, Warper's beams and sectional beams

Division Code: 07		**Textile Engineering**		
Sub-Section: A- Textile				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 8116-5	Textiles machinery and accessories - Beams for winding - Part 5: Sectional beams for warp knitting machines
			BDS ISO 8116-6	Textiles machinery and accessories - Beams for winding - Part 6: Beams for ribbon weaving and ribbon knitting
			BDS ISO 8116-7	Textiles machinery and accessories - Beams for winding - Part 7: Beams for dyeing slivers, rovings and yarns
			BDS ISO 8116-8	Textiles machinery and accessories - Beams for winding - Part 8: Definitions of run-out tolerances and methods of measurement
			BDS ISO 8116-9	Textiles machinery and accessories - Beams for winding - Part 9: Dyeing beams for textile fabrics
			BDS ISO 8489-1	Textile machinery and accessories - Cones for cross winding - Part 1: Recommended main dimensions
			BDS ISO 8489-2	Textile machinery and accessories - Cones for cross winding - Part 2: Dimensions, tolerances and designation of cones with half angle 3 degrees 30’

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07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 8489-3	Textile machinery and accessories - Cones for cross winding - Part 3: Dimensions, tolerances and designation of cones with half angle 4 degrees 20’
			BDS ISO 8489-4	Textile machinery and accessories - Cones for cross winding - Part 4: Dimensions, tolerances and designation of cones with half angle 4 degrees 20’ for winding for dyeing purposes
			BDS ISO 8489-5	Textile machinery and accessories - Cones for cross winding - Part 5: Dimensions, tolerances and designation of cones with half angle 5 degrees 57’
			BDS ISO 9902-1	Textiles machinery noise test code - Part 1: General requirements
			BDS ISO 9902-2	Textiles machinery noise test code - Part 2: Spinning preparatory and spinning machinery
			BDS ISO 9902-4	Textiles machinery noise test code - Part 4: Yarn processing, cordage and rope manufacturing machinery
			BDS ISO 9902-5	Textile machinery - Noise test code - Part 5 : Weaving and knitting preparatory machinery

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07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 9902-6	Textile machinery - Noise test code - Part 6: Fabric manufacturing machinery
			BDS ISO 9903-1	Textiles machinery and accessories main dimensions for section wires for metallic code clothing - Part 1: Foot without interlocking or interchanging
			BDS ISO 9903-2	Textiles machinery and accessories - Main dimensions for section wires for metallic card clothing - Part 2: Foot with interchanging
			BDS ISO 9904	Textiles machinery and accessories - Steel pins for spinning preparatory and spinning machinery
			BDS ISO 9947	Textiles machinery and accessories - Two-for-one twisters vocabulary
			BDS ISO 10458	Textile machinery - Square bars for winding devices relating to dyeing and finishing machines - Dimensions
			BDS ISO 11111-1	Textiles Machinery - Safety requirements - Part 1: Common requirements
			BDS ISO 11111-2	Textiles machinery - Safety requirements - Part 2: Spinning preparatory and spinning machines
			BDS ISO 11111-4	Textiles machinery - Safety requirements - Part 4: Yarn processing, cordage and rope manufacturing machines

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 11659-1	Textiles machinery and accessories -Machine - Parts in contact with textile processing oils - Part 1: Determination of anticorrosive effect upon steel
			BDS ISO 11659-2	Textiles machinery and accessories - Machine parts in contact with textile processing oils - part 2: Determination of the impact on polymeric materials
			BDS ISO 11659-3	Textiles machinery and accessories - Machine parts in contact with textile processing oils - Part 3: Determination of the impact on lacquers
			BDS ISO 11676	Textiles machinery and accessories - Pattern disks and pattern chains for warp knitting machines - Vocabulary and symbols
			BDS ISO 13553	Textile machinery and accessories - Weaver's beams - Specification for connections for automation of beam changing
			BDS ISO 13754	Textiles machinery and accessories - Hexagon nuts and slotted nuts for spinning and twisting spindles
			BDS ISO 14500	Textile machinery and accessories - Harness for Jacquard weaving machines - Vocabulary
			BDS ISO 15228	Textile machinery and accessories - Profile reeds for air jet weaving machines - Dimensions

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07.A06	Textile Mill Accessories (JTSC-11) (Contd.)	-	BDS ISO 16853 7	Textiles machinery sliver cans, rectangular - Main dimensions and tolerances
			BDS ISO 16854	Textiles machinery - Ring twisting machines - Vocabulary
			BDS ISO 16875	Textiles machinery - Ring spinning machines - for cotton spinning vocabulary
			BDS ISO 20725	Textiles machinery - Condensers for cotton spinning - Vocabulary and principles of construction
			BDS ISO 20726	Textiles machinery - Hopper feeders for cotton spinning - Vocabulary and principles of construction
			BDS ISO 20727	Textiles Machinery - Mixing Bale openers for cotton spinning - Vocabulary and principles of construction
07.A07	Textile Test Methods (JTSC-05)	-	BDS 8	Testing of cotton yarn
			BDS 9	Inspection of cotton yarn grey
			BDS 22	Inspection of cotton hosiery yarn
			BDS 23	Inspection of cotton fabrics grey
			BDS 24	Methods of testing of woven cotton fabric
			BDS 39	Textiles - Fastness of dyes on textiles to soap washing
			BDS 49	Testing fastness of dyes on textiles to acid milling
			BDS 43	Textiles- Tests for colour fastness- Part E02: Colour fastness to sea water

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07.A07	Textile Test Methods (JTSC-05) (contd.)	-	BDS 53	Testing fastness of dyes on textiles to acid chlorination
			BDS 70	Textiles- Tests for colour fastness- Part E06: Colour fastness to spotting: Alkali
			BDS 71	Textiles- Tests for colour fastness- Part E05: Colour fastness to spotting: Acid
			BDS 72	Textiles- Tests for colour fastness- Part E07: Colour fastness to spotting: Water
			BDS 73	Testing fastness of dyes on textiles to sublimation
			BDS 79	Testing fastness of dyes on textiles to several agencies
			BDS 83	Determination of breaking load (tensile strength) and elongation of woven cotton fabrics
			BDS 84	Evaluating of moisture content in textile materials
			BDS 91	Determination of starch in yarns and fabrics
			BDS 92	Removal of added matter from textiles
			BDS 94	Evaluating shrinkage of fabrics on immersion in cold water
			BDS 95	Determination of shrinkage in woven cotton and linen fabrics on laundering
			BDS 118	Determination of irregularity of yarn by variabilities of one-inch weights
			BDS 121	Determination of shrinkage in woven rayon and synthetic fibre, fabrics on washing

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS 152	Determination of lea strength and lea count of spun yarns
			BDS 164	Determination of resistance of textiles to attack by microorganism
			BDS 165	Determination of relative humidity in the atmosphere
			BDS 166	Testing of knitted textile fabrics
			BDS 174	Test for shrinkage of knitted cotton fabrics on laundering
			BDS 198	Methods of determination of wettability of cotton fabrics
			BDS 199	Testing and tolerances for cotton sewing threads
			BDS 200	Testing and tolerances for woolen yarn
			BDS 201	Test for shrinkage of knitted rayon fabrics on laundering
			BDS 202	Testing and tolerances thereof for cotton and cotton rayon fabrics
			BDS 203	Evaluating relaxation and felting shrinkage of stabilized woollen knitted fabrics on laundering
			BDS 250	Method of test for stiffness of fabrics
			BDS 251	Method of testing and tolerances for certain wool and part wool fabrics
			BDS 268	Methods of test for curl in textile fabrics
			BDS 276	Method for determination of scouring loss in grey and finished cotton textile material

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS 638	Evaluating bursting strength of fabrics by ball- burst test
			BDS ISO 811	Determination of resistance of fabrics to penetration by water (Hydrostatic head test)
			BDS 815	Determination of correct invoice mass (weight) of textiles
			BDS 958	Method for determination of nep count in cotton
			BDS 1067	Recommended Sl units for textiles
			BDS 1068	Integrated conversion table for replacing traditional yarn numbers by rounded values in tex system.
			BDS 1069	Conversion factors and conversion tables for yarn counts
			BDS 1093	Methods for sampling of cotton fabrics for determination of physical characteristics
			BDS 1121	Methods of testing viscose rayon staple fibres
			BDS 1128	Method for sampling of cotton yarn for determination of characteristics, namely skein breaking load and twist
			BDS 1129	Method of fibre sampling for testing
			BDS 1222	Method for conditioning of textiles
			BDS 1294	Methods for determination of water soluble matter in textile materials
			BDS 1378	Method for identification of textiles fibre

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS 1404	Method for textiles estimation of moisture, total size or finished ash and fatty matter in grey and finished cotton textile materials.
			BDS 1634	Textiles- Tests for colour fastness- Part E03: Colour fastness to chlorinated water
			BDS 1635	Textiles-Oil Repellency-Hydrocarbon resistance test
			BDS 1719	Methods for quantitative chemical analysis of binary mixtures of polyester fibre with cotton as regenerated cellulose
			BDS 1720	Recommended methods for the removal of non-fibrous matter prior to quantitative analysis
			BDS 1730	Methods for quantitative chemical analysis of binary mixtures of acrylic and certain other fibres
			BDS 1731	Methods for quantitative chemical analysis of ternary mixtures of viscose rayon, cotton and protein fibres
			BDS 1747	Textiles fabrics - Commercial moisture regain - Specification
			BDS 1748	Method for quantitative chemical analysis of binary mixtures of acetate and certain other fibres
			BDS 1749	Method for quantitative chemical analysis of ternary mixtures of protein fibres, polyamides and certain other fibres
			BDS 1831	Method for estimation of residual starch in cotton fabrics after desizing

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS 1848	Method for determination of absorbency of absorbent textile materials
			BDS 1857 (Part 1)	Method for estimation of common preservatives on Textiles - Part 1
			BDS 1857 (Part 2)	Textiles - Estimation of common preservatives - Part 2
			BDS 1921	Specification for preservative treatments of textiles
			BDS 1922	Textiles-Method for determination of flammability of blankets
			BDS ISO 105-A01	Textiles- Tests for colour fastness- Part A01:General principles of testing
			BDS ISO 105-A02	Textiles- Tests for colour fastness- Part A02:Grey Scale for Assessing Change in Colour Principles of Testing
			BDS ISO 105-A03	Textiles- Tests for colour fastness- Part A03:Grey scale for assessing staining
			BDS ISO 105-A04	Textiles- Tests for colour fastness- Part A04: Method for the instrumental assessment of the degree of staining of adjacent fabrics
			BDS ISO 105-A06	Textiles- Tests for colour fastness- Part A06: Instrumental determination of 1/1 standard depth of colour
			BDS ISO 105-A08	Textiles- Tests for colour fastness- Part A08: Vocabulary used in colour measurement

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 105-B01	Textiles- Tests for colour fastness- Part B01: Colour fastness to light: Day light
			BDS ISO 105-B02	Textiles- Tests for colour fastness- Part B02: Colour fastness to artificial light: Xenon arc fading lamp test
			BDS ISO 105-B03	Textiles- Tests for colour fastness- Part B03: Colour fastness to weathering: Outdoor exposure
			BDS ISO 105-B04	Textiles- Tests for colour fastness- Part B06: colour fastness to artificial weathering: Xenon arc fading lamp
			BDS ISO 105- B08	Textiles - Tests for colour fastness -Part B08: Quality control of blue wool reference material 1 to 7
			BDS ISO 105-B10	Textiles - Tests for colour fastness - Part B10: Artificial weathering - Exposure to filtered xenon-arc radiation
			BDS ISO 105-C01	Textiles- Tests for colour fastness- Part C01: Colour fastness to washing test:1
			BDS ISO 105-C02	Textiles- Tests for colour fastness- Part C02: Colour fastness to washing test:2
			BDS ISO 105-C03	Textiles- Tests for colour fastness- Part C03: Colour fastness to washing test:3
			BDS ISO 105-C04	Textiles- Tests for colour fastness- Part C04: Colour fastness to washing test:4

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 105-C05	Textiles- Tests for colour fastness- Part C05: Colour fastness to washing test: 5
			BDS ISO 105-C06	Textiles- Tests for colour fastness- Part C06: Colour fastness to domestic and commercial laundering
			BDS ISO 105-C08	Textiles- Tests for colour fastness- Part C08: Colour fastness to domestic and commercial laundering using a non-phosphate reference detergent incorporating a low temperature bleach activator
			BDS ISO 105-C09	Textiles- Tests for colour fastness- Part C09: Colour fastness to domestic and commercial laundering- Oxidative bleach response using a non-phosphate reference detergent incorporating a low temperature bleach activator
			BDS ISO 105-C10	Textiles- Tests for colour fastness- Part C10: Colour fastness to washing with soap or soap and soda
			BDS ISO 105-D01	Textiles- Tests for colour fastness- Part D01: Colour fastness to dry cleaning
			BDS ISO 105-E01	Textiles- Tests for colour fastness- Part E01: colour fastness to water
			BDS ISO 105-E04	Textiles- Tests for colour fastness- Part E04: Colour fastness to water to perspiration
			BDS ISO 105-E08	Textiles- Tests for colour fastness- Part E08: Colour fastness to hot: Water

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 105-E09	Textiles- Tests for colour fastness- Part E09: Colour fastnes to Potting
			BDS ISO 105-E10	Textiles- Tests for colour fastness- Part E10: Colour fastness to decatizing
			BDS ISO 105-E11	Textiles- Tests for colour fastness- Part E11: Colour fastness to steaming
			BDS ISO 105-E12	Textiles- Tests for colour fastness- Part E12: Colour fastness to milling: Alkaline milling
			BDS ISO 105-E13	Textiles- Tests for colour fastness- Part E13: Colour fastness to acid felting: Severe
			BDS ISO 105-E14	Textiles- Tests for colour fastness- Part E14: Colour fastness to acid felting: Mild
			BDS ISO 105-G01	Textiles- Tests for colour fastness- Part G01: Colour fastness to nitrogen oxides
			BDS ISO 105-G02	Textiles- Tests for colour fastness- Part G02: Colour fastness to burnt-gas fumes
			BDS ISO 105-G03	Textiles- Tests for colour fastness- Part G03: Colour fastness to ozone in the atmosphere
			BDS ISO 105-G04	Textiles- Tests for colour fastness- Part G04: Colour fastness to oxides of nitrogen in the atmosphere at high humidities
			BDS ISO 105-J01	Textiles- Test for colour fastness- Part J01: General principles for measurement of surface colour

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 105-J02	Textiles- Test for colour fastness- Part J02: Instrumental assessment of relative whiteness
			BDS ISO 105-J03	Textiles- Tests for colour fastness- Part J03: Calculation of colour differences
			BDS ISO 105-J05	Textiles- Test for colour fastness- Part J05: Method for instrumental assessment of the colour inconstancy of a specimen with change in illuminant
			BDS ISO 105-N01	Textiles- Tests for colour fastness- Part N01: Colour fastness to bleaching: Hypochlorite
			BDS ISO 105-N02	Textiles- Tests for colour fastness- Part N02: Colour fastness to bleaching: Peroxide
			BDS ISO 105-N03	Textiles- Tests for colour fastness- Part N03: Colour fastness to bleaching: Sodium chloride (mild)
			BDS ISO 105-N04	Textiles- Tests for colour fastness- Part N04: colour fastness to nleaching: Sodium Chlorite (severe)
			BDS ISO 105-N05	Textiles- Tests for colour fastness- Part N0 5: Colour fastness to stoving
			BDS ISO 105-P01	Textiles- Tests for colour fastness- Part P01: Colour fastness- to dry heat (*excluding pressing*)

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 105- P02	Textiles- Tests for colour fastness- Part P02: Colour fastness to pleating: Steam pleating
			BDS ISO 105-S01	Textiles- Tests for colour fastness- Part S01: Colour fastness to vulcanization :Hot air
			BDS ISO 105- S02	Textiles- Tests for colour fastness- Part S02: Colour fastness to vulcanization sulfur monochloride
			BDS ISO 105-S03	Textiles- Tests for colour fastness- Part S03: Colour fastness to vulcanization open steam
			BDS ISO 105-X01	Textiles- Tests for colour fastness- Part X01: Colour fastness to carbonizing: Aluminum chloride
			BDS ISO 105-X02	Textiles- Tests for colour fastness- Part X02: Colour fastness to carbonizing: Sulfuric acid
			BDS ISO 105- X04	Textiles- Tests for colour fastness- Part X04: Colour fastness to mercerizing
			BDS ISO 105- X05	Textiles- Tests for colour fastness- Part X05: Colour fastness to organic solvents
			BDS ISO 105- X06	Textiles- Tests for colour fastness- Part X06: Colour fastness to soda boiling
			BDS ISO 105- X07	Textiles- Tests for colour fastness- Part X07: Colour fastness to cross-dyeing: Wool

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 105- X08	Textiles- Tests for colour fastness- Part X08: Colour fastness to degumming
			BDS ISO 105- X09	Textiles- Tests for colour fastness- Part X09: Colour fastness to formaldehyde
			BDS ISO 105- X10	Textiles- Tests for colour fastness- Part X10: Assessment of migration of textile colour into polyvinyl chloride coatings
			BDS ISO 105- X11	Textiles- Tests for colour fastness- Part X11: Colour fastness to hot pressing
			BDS ISO 105-X12	Textiles- Tests for colour fastness- Part X12: Colour fastness to rubbing
			BDS ISO 105- X13	Textiles- Tests for colour fastness- Part X13: Colour fastness of wool dyes to processes using chemical means for creasing, pleating and setting
			BDS ISO 105- X14	Textiles- Tests for colour fastness- Part X14: Colour fastness to acid chlorination of wool: Sodium dichloroisocyanurate
			BDS ISO 105-X16	Textiles- Tests for colour fastness- Part X16: Colour fastness to rubbing-small areas
			BDS ISO 105-X18	Textiles – Tests for colour fastness – Part X18: Assessment of the potential to phenolic yellowing of materials
			BDS ISO 105- Z01	Textiles- Tests for colour fastness- Part Z01: Colour fastness to metals in the Dye-bath: Chromium salts

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 105- Z02	Textiles- Tests for colour fastness- Part Z02: Colour fastness to metals in the Dye-bath: Iron and copper
			BDS ISO 105- Z03	Textiles- Tests for colour fastness- Part Z03: Intercompatibility of basic dyes for acrylic fibres
			BDS ISO 105- Z04	Textiles- Tests for colour fastness- Part Z04: Dispersibility of disperse dyes
			BDS ISO 105- Z05	Textiles- Tests for colour fastness- Part Z05: Determination of the dusting behaviour of dyes
			BDS ISO 105- Z06	Textiles- Tests for colour fastness- Part Z06: Evaluation of dye and pigment migration
			BDS ISO 105 Z07	Textiles- Tests for colour fastness- Part Z07: Determination of application solubility and solution stability of water soluble dyes
			BDS ISO 105 Z08	Textiles- Tests for colour fastness- Part Z08: Determination of solubility and solution stability of reactive dyes in the presence of electrolytes
			BDS ISO 105 Z09	Textiles- Tests for colour fastness- Part Z09: Determination of cold water solubility of water-soluble dyes
			BDS ISO 105 Z10	Textiles- Tests for colour fastness- Part Z10: Determination of relative colour strength of dyes in solution

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 105 Z11	Textiles- Tests for colour fastness- Part Z11: Evaluation of speckiness of colorant dispersions
			BDS ISO 139	Textiles –Standard atmospheres for conditioning and testing
			BDS ISO 675	Textiles - Woven fabrics - Determination of dimensional change on commercial laundering near the boiling point
			BDS ISO 811	Textiles Fabric - Determination of resistance to water penetration-hydrostatic pressure test
			BDS ISO 1144	Textiles - Universal system for designating linear density (Tex system)
			BDS ISO 1833-1	Textiles - Quantitative chemical analysis-part 1: General principles of testing
			BDS ISO 1833-2	Textiles – Quantitative chemical analysis-part 2: Ternary fibre mixtures
			BDS ISO 1833-3	Textiles – Quantitative chemical analysis-part 3: Mixtures of acetate and certain other fibres (Method using acetone)
			BDS ISO 1833-4	Textiles - Quantitative chemical analysis -- Part 4: Mixtures of certain protein and certain other fibres (Method using hypochlorite)
			BDS ISO 1833-5	Textiles - Quantitative chemical analysis - Part 5: Mixtures of viscose, cupro or modal and cotton fibres (Method using sodium zincate)

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 1833-7	Textiles - Quantitative chemical analysis -- Part 7: Mixtures of polyamide and certain other fibres (Method using formic acid)
			BDS ISO 1833-8	Textiles - Quantitative chemical analysis - Part 8: Mixtures of acetate and triacetate fibres (Method using acetone)
			BDS ISO 1833-11	Textiles - Quantitative chemical analysis -- Part 11: Mixtures of cellulose and polyester fibres (Method using sulfuric acid)
			BDS ISO 1833-12	Textiles - Quantitative chemical analysis -- Part 12: Mixtures of acrylic, certain modacrylics, certain chloro, certain elastanes and certain other fibres (Method using dimethylformamide)
			BDS ISO 1833-13	Textiles - Quantitative chemical analysis - Part 13: Mixtures of certain chlorofibres and certain other fibres (Method using carbon disulfide/acetone)
			BDS ISO 1833-15	Textiles - Quantitative chemical analysis - Part 15: Mixtures of Jute and certain animal fibre (Method using determining nitrogen content)
			BDS ISO 1833-16	Textiles - Quantitative chemical analysis - Part 16: Mixtures of Polypropylene fibres and certain other fibres (Method using xylene)
			BDS ISO 1833-18	Textiles - Quantitative chemical analysis - Part 18: Mixtures of Silk and wool or hair (Method using sulphuric acid)

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 2061	Evaluating of twist in yarn in package form
			BDS ISO 2062	Determination of Tensile Strength and Elongation at Break of Single Yarns
			BDS ISO 2313	Textiles - Determination of the recovery from creasing of a horizontally folded specimen of fabric by measuring the angle recovery. thermal resistance - Part 1: Low thermal resistance
			BDS ISO 2549	Methods for Testing hand knotted woollen pile carpets
			BDS ISO 2913	Wool - Colorimetric determination of cystine plus cysteine in hydrolysates
			BDS ISO 2947	Textiles – Integrated conversion table for replacing traditional yarn numbers by rounded values in the tex system
			BDS ISO 3005	Textiles - Determination of dimensional change of fabrics induced by free - steam
			BDS ISO 3071	Textiles- Determination of pH of the aqueous extract
			BDS ISO 3072	Wool - Determination of solubility in alkali
			BDS ISO 3073	Wool - Determination of acid content
			BDS ISO 3074	Wool - Determination of dichloromethane - Soluble matter in combed sliver
			BDS ISO 3175-1	Textiles - Dry cleaning and finishing- Part 1: Method for assessing the cleanability of textiles and garments

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 3175-2	Textiles-Dry cleaning and finishing- Part 2: Procedures tetrachloroethane
			BDS ISO 3175-3	Textiles - Professional care, dry cleaning and wet cleaning of fabrics and garments - Part 3: Procedures for testing performance when cleaning and finishing using hydrocarbon solvents
			BDS ISO 3175-4	Textiles - Professional care, dry cleaning and wet cleaning of fabrics and garments - Part 4: Procedures for testing performance when cleaning and finishing simulated wet cleaning
			BDS ISO 3801	Textiles - Woven fabrics - Determination of mass per unit length and mass per unit area
			BDS ISO 3998	Textiles - Determination of resistance to certain insect pest
			BDS ISO 4880	Burning behaviour of textiles and textiles products- Vocabulary
			BDS ISO 4913	Textiles-Cotton fabrics- Determination of length (span length) and uniformity index
			BDS ISO 4920	Textiles fabrics – Determination of resistance to surface wetting (spray test)
			BDS ISO 5077	Textiles - Determination of dimensional change in washing and drying
			BDS ISO 5084	Textiles - Determination of thickness of textiles and textile products

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 5085-1	Textiles - Determination of thermal resistance-Part 1: Low thermal resistance
			BDS ISO 5088	Textiles - Ternary fibre mixtures - Quantitative analysis
			BDS ISO 5089	Textiles- Preparation of laboratory test samples and test specimens for chemical testing
			BDS ISO 6330	Textiles domestic washing and drying procedures for textiles testing
			BDS ISO 6348	Textiles - Determination of mass-vocabulary
			BDS ISO 6741-1	Textiles - Fibers and yarns - Determination of commercial mass of consignment Part - 1: Mass determination and calculation
			BDS ISO 6741-2	Textiles- Fibers and yarns - Determination of commercial mass of consignment Part-2: Methods for obtaining laboratory samples
			BDS ISO 6741-3	Textiles- Fibers and yarns - Determination of commercial mass of consignment Part-3: Specimen cleaning procedures
			BDS ISO 6939	Textiles-Yarn from Packages-Methods of test for breaking strength of yarn by the skein methods

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 7211-1	Textiles - Woven fabrics- Construction -Methods of analysis - Part 1: Methods for the presentation of a weave diagram and plans for drafting, denting and lifting
			BDS ISO 7211-2	Textiles - Woven fabrics- Construction-Methods of analysis - Part 2: Determination of number of threads per unit length
			BDS ISO 7211-3	Textiles - Woven Fabrics - Construction-Methods of analysis-Part 3: Determination of crimp of yarn in fabric
			BDS ISO 7211-4	Textiles - Woven fabrics - Construction -Methods of analysis-Part 4: Determination of twist in yarn removed from fabric
			BDS ISO 7211-5	Textiles - Woven fabrics - Construction -Methods of analysis - Part 5: Determination of linear density of yarn removed from fabric
			BDS ISO 7211-6	Textiles - Woven fabrics - Construction -Methods of analysis - Part 6: Determination of the mass of warp and weft per unit area of fabric
			BDS ISO 7768	Textiles - Tests method for assessing the smoothness appearance of fabrics after cleansing

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 7771	Textiles- Determination of dimensional changes of fabrics induced by cold- water immersion
			BDS ISO 9865	Textiles- Determination of water repellency of fibres by the bundesmann rain shower test
			BDS ISO 9866-1	Textiles-Effect of dry heat on fabrics under low pressure- Part 1: Procedure for dry- heat treatment of fabrics
			BDS ISO 9866-2	Textiles-Effect of dry heat on fabrics under low pressure- Part 2: Determination of dimensional change in fabrics exposed to dry-heat
			BDS ISO 12445	Determination of pilling resistance of fabrics
			BDS ISO 12945-1	Textiles - Determination of fabric propensity to surface fuzzing and to pilling - Part 1: Pilling box method
			BDS ISO 12945-2	Textiles - Determination of fabric propensity to surface fuzzing and to pilling - Part 2: Modified Martindale method
			BDS ISO 12947-1	Textiles - Determination of the abrasion resistance of fabrics by the Martindale method- Part 1: Martindale abrasion testing apparatus
			BDS ISO 12947-2	Textiles - Determination of the abrasion resistance of fabrics by the Martindale method - Part 2: Determination of specimen breakdown

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 12947-3	Textiles-Determination of the abrasion resistance of fabrics by the Martindale method - Part 3: Determination of mass loss
			BDS ISO 12947-4	Textiles-Determination of the abrasion resistance of fabrics by the Martindale method - Part 4: Assessment of appearance change
			BDS ISO 13934- 1	Textiles- Tensile Properties of Fabrics- Part 1: Determination of maximum force and elongation at maximum force using the strip method
			BDS ISO 13934- 2	Textiles- Tensile Properties of fabrics- Part 2: Determination of maximum force using the Grab method
			BDS ISO 13935- 1	Textiles- Seam Tensile properties of fabrics and made–up textile articles Part 1: Determination of maximum force to seam rupture using the strip method
			BDS ISO 13935- 2	Textiles- Seam tensile properties of fabrics and made – up textile articles Part 2: Determination of maximum force to seam rupture using the Grab method
			BDS ISO 13936-1	Textiles - Determination of the slippage resistance of yarns at a seam in woven fabrics - Part 1: Fixed seam opening method
			BDS ISO 13936-2	Textiles - Determination of the slippage resistance of yarns at a seam in woven fabrics - Part 2: Fixed load method.
			BDS ISO 13936-3	Textiles - Determination of the slippage resistance of yarns at a seam in woven fabrics - Part 3: Needle clamp method

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 13937-1	Textiles- Tear properties of fabrics- Part 1: Determination of tear force using ballistic pendulum method (elmendorf)
			BDS ISO 13937- 2	Textiles- Tear properties of fabrics- Part 2: Determination of tear force of trouser-shaped test specimens (Single Tear method)
			BDS ISO 13937- 3	Textiles- Tear properties of fabrics- Part 3: Determination of tear force of wing-Shaped test specimens (Single Tear method)
			BDS ISO 13937- 4	Textiles- Tear Properties of Fabrics- Part 4: Determination of Tear force of tongue-shaped test specimens (Double Tear method)
			BDS ISO 13938-1	Textiles - Bursting properties of fabrics -Part 1: Hydraulic method for determination of bursting strength and bursting distension
			BDS ISO 13938-2	Textiles- Bursting properties of fabrics -Part 2: Pneumatic method for determination of bursting strength and bursting distension
			BDS ISO 14184-1	Textiles - Determination of formaldehyde - Part 1: Free and hydrolized formaldehyde (Water extraction method)
			BDS ISO 14184-2	Textiles - Determination of formaldehyde- Part 2: Released formaldehyde (Vapour absorption method)
			BDS ISO 14419	Textiles - Oil repellency - Hydro carbon resistance test
			BDS ISO 15797	Textiles - Industrial washing and finishing procedures for testing of workwear

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07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 16322-1	Textiles - Determination of spirality after laundering, Part 1 : Percentage of wale spirality change in knitted garments
			BDS ISO 16322-2	Textiles - Determination of spirality after laundering, Part 2 : Woven & knitted fabrics
			BDS ISO 16322-3	Textiles - Determination of spirality after laundering, Part 3 : Woven & knitted garments
			BDS ISO 16549	Unevenness of textile strands - Capacitance method
			BDS ISO 17202	Textiles - Determination of twist in single spun yarns untwist/retwist method
			BDS ISO 18695	Textiles - Determination of resistance to water penetration - Impact penetration test
			BDS ISO 18696	Determination of resistance to water absorption - Tumble-jar absorption test
			BDS ISO 20645	Textile fabrics - Determination of antibacterial activity - Agar diffusion plate test
			BDS ISO 20743	Textiles - Determination of antibacterial activity of antibacterial finished products
			BDS ISO 22198	Textiles-Fabrics-Determination of width and length
			BDS ISO 22958	Textiles- Water resistance - Rain tests exposure to a horizontal water spray

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A07	Textile Test Methods (JTSC-05) (Contd.)	-	BDS ISO 24362-1	Textiles-Methods for determination of certain aromatic amines derived from azo colorants-Part1: Detection of the use of certain azo colorants accessible with and without extracting the fibres
			BDS ISO 24362-2	Textiles-Methods for determination of certain aromatic amines derived from azo colorants-Part 3: Detection of the use of certain azo colorants which may release 4-aminoazobenzene
07.A08	Yarn, Rope, Twine and cordages (JTSC-06)	-	BDS 33	Cotton sewing thread
			BDS 1027	Cotton yarn bleached/dyed. (first revision)
			BDS 1047	Cotton yarn - Grey
			BDS 1137	Grey cotton yarn for hosiery
			BDS 1221	Industrial sewing thread made wholly or partly from synthetic fibres
			BDS 1487	Fuse Yarn-Specification for blasting fuses produced in Bangladesh
			BDS 1542	Jute twine
			BDS 1559	Specification for spun polyester yarn, Part-2: for knitting
			BDS 1619	Threads for Footwear
			BDS 1744	Glossary of terms - Relating to fibre, ropes and cardages

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.A08	Yarn, Rope, Twine and cordages (JTSC-06) (Contd.)	-	BDS 1795	Textiles - Rotor spun grey cotton yarns-specification
			BDS 1835	Textiles – Ring spun polyester blended grey yarn - Specification
			BDS 1836	Specification for Spun polyester yarn, Part-1: for weaving (conventional loom)
			BDS 1864	Specification for single jute yarn
			BDS 1926	Textiles - Composite synthetic fibre ropes - Specification
			BDS ISO 2	Textiles - Designation of the direction of twist in yarns and related products
			BDS ISO 1139	Textiles - Designation of yarns
			BDS ISO 1140	Fibre ropes - Polyamide - 3, 4, 8 and 12 -strand ropes
			BDS ISO 1141	Fibre ropes - Polyester - 3, 4, 8 and 12 -strand ropes
			BDS ISO 1181	Ropes- Manila and Sisal- Specification
			BDS ISO 1346	Fibre ropes - Polypropylene split film, monofilament and multifilament (PP2) and polypropylene high-tenacity multifilament (PP3) -3, 4, 8 and 12 - strand ropes
			BDS ISO 1968	Fibre ropes and cordages - Vocabulary
			BDS ISO 1969	Fibre Ropes- Polyethylene - 3 and 4 -strand ropes
			BDS ISO 2307	Fibre ropes- Determination of Certain Physical and Mechanical properties

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07.A08	Yarn, Rope, Twine and cordages (JTSC-06) (Contd.)	-	BDS ISO 3505-1	Ropes and cordages- Equivalence between natural fibre ropes and man –Made fibre ropes for use in the mooring of vessels.
			BDS ISO 4167	Ropes and cordages-Polyolefin agricultural twines
			BDS ISO 5080	Sisal agricultural twines
			BDS ISO 8159	Textiles - Morphology of fibres and yarns- Vocabulary
			BDS ISO 8160	Textured - Filament yarns - Vocabulary
			BDS ISO 9554	Fibre ropes- General specifications.
			BDS ISO 10132	Textured - Filament yarns - Definition
			BDS ISO 10290	Textiles - Cotton yarns- Specifications
			BDS ISO 18692	Fibre ropes for offshore station keeping polyester

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Sub-Section: B- Dyeing and Printing				
Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.B01	AATCC 16E	-	(ISO 105 B02, conditions used in USA)	Test chamber temperature 43 °C, Rel. Humidity ~ 30 %
07.B02	Dry Cleaning Fastness	-	M&S C5	
07.B03	Dusting Rate	-	AATCC TM 170	
07.B04	Multiple Laundry Washing	-	ISO 105 CO4 – 5 Washing Tests at 95C	
07.B05	Oxidative Bleach Damage 60°C	-	M&S C10A	
07.B06	Rubbing Fastness Wet	-	ISO 105 / X12	Textiles. Tests for color fastness Part…..X12: color fastness to rubbing
07.B07	Washing A 1S, 40°C	-	ISO 105 / C06	Textiles. Tests for color fastness Part…..C06 color fastness to domestic and commercial laundering
07.B08	Washing A2S, 40°C	-	ISO 105 / C06	Textiles. Tests for color fastness Part…..C06 color fastness to domestic and commercial laundering
07.B09	Washing B2S, 50°C	-	ISO 105 / C06	Textiles. Tests for color fastness Part…..C06 color fastness to domestic and commercial laundering
07.B10	Washing 2, 50°C	-	ISO 105 / C02	Textiles. Tests for color fastness Part…..C02: color fastness to washing test 2
07.B11	Washing 3, 60°C	-	ISO 105 / C03	Textiles. Tests for color fastness Part…..C03: color fastness to washing test 3

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Item No.	**Item Description**	**Components**	**Codes/ Standards/ Acceptability Criteria/Test**	
07.B12	Washing Fastness at 40°C	-	AATCC 61 1A with 10 steel ball	
07.B13	Washing Fastness at 49°C	-	AATCC 61 2A with 50 steel ball	
07.B14	Washing Fastness at 60°C	-	ISO 105 C06 - C2S	Light fastness to washing 60°C
07.B15	Water Fastness	-	ISO 105 / E01 - Oven with air circulation 37°C ± 2C	Textiles. Tests for color fastness Part E01 : color fastness to water.
07.B16	Xenon Light Fastness	-	ISO 105 B02 (normal conditions Europe)	Test chamber temperature 31-34°C, Rel. Humidity ~ 50 %

THE INSTITUTION OF ENGINEERS, BANGLADESH (IEB)
Shaheed Prokaushali Bhaban, IEB Headquarters : Ramna, Dhaka-1000
Phone : 02223389485, 02223387860, 02223382447, 02223386336
02223353343; Fax : 88-02-9562447; E-mail : info.iebhq@gmail.com

ISBN : 978-984-34-3293-3

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