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1. SCOPE

This document provides the list of International Codes and Industry Standards which will govern the design and construction.

3. LIST OF APPLICABLE CODES AND INDUSTRY STANDARDS

3.1 Safety Relief System

API (American Petroleum Institute)

API RP 520	Sizing, Selection and Installation of Pressure-Relieving Devices in Refineries
API RP 521	Guide for Pressure-Relieving and Depressuring Systems
API RP 2000	Venting Atmospheric and low pressure storage tanks (non refrigerated and refrigerated)

3.2 Pressure Vessels and Heat exchangers

ASME (American Society of Mechanical Engineers)

ASME SECTION VIII	ASME Boiler & Pressure Vessel Code, Div. 1 and 2 including Addenda
ASME SECTION II, Parts ABCD	ASME Boiler & Pressure Vessel Code & Materials
ASME SECTION IX	ASME Boiler & Pressure Vessel Code, Welding and Brazing Qualification
ASME Section V	Non-destructive examination
ASME B 1.1	Unified Inch Screw Threads

ASME B 16.9	Factory-Made Wrought Steel Buttwelding
ASME B 16.11	Forged Fittings, Socket-Welding and Threaded
ASME B 16.20	Metallic Gaskets for Pipe Flanges – Ring-Joint, Spiral-Wound, and Jacketed
ASME B 16.21	Non-metallic Flat Gaskets for Pipe Flanges
ASME B 16.25	Butt-welding Ends
ASME B 16.47	Large diameter steel flanges (NPS 26 Through NPS 60)
ASME B 16.30	Unfired pressure vessel flange dimensions
ASME B 36.10M	Welded and Seamless Wrought Steel Pipe
ASME B 46.1	Surface Texture (Surface Roughness, Waviness, and Lay)
ASME B 58.1	Building code requirements for minimum design loads in building and other structures
ASME B 16.5	Pipe Flanges and Flanged Fittings

TEMA Standards of the Tubular Exchangers Manufacturers Association

EJMA Standards of the Expansion Joints Manufacturers Association, Inc.

ASTM

ASTM A 435	Straight-Beam Ultrasonic Examination of Steel Plates
ASTM A 578	Straight-Beam Ultrasonic Examination of Plain and Clad Steel Plates for Special Applications

NACE

NACE MR0175/ISO 15156	Petroleum and Natural Gas Industries Materials for use in H ₂ S-Containing Environments in Oil and Gas production.
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BSI (British Standard Institute)

PD 5500	Unfired Fusion Welded Pressure Vessels
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EN

EN 13445-3	European Norm for pressure vessel
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Others

UBC	Uniform Building Code – Volume 2
	Division III = Wind Design
	Division IV = Earthquake Design

OCMA TEW-1	Recommendations for tube and welding
AISC	
AISC	Manual of Steel Construction
ASCE	
ASCE-7	Minimum Design Loads for Buildings and Other Structures

API (American Petroleum Institute)

API 660	Shell and Tube Exchangers for General Refinery Services
API 662	Plate Heat Exchangers for General Refinery Services

Welding Research Council

WRC	Bulletin 107
WRC	Bulletin 198
WRC	Bulletin 297

3.3 Heaters-Boilers

API 530	Calculation of Heater Tube Thickness in Petroleum Refinery
API 535	Burners for Fired Heaters in General Refinery Services
API 560	Fired Heater for General Refinery Service
ASME Section I	Boiler and Pressure Vessel Code
ASME B31.1	Power Piping
ASME B31.3	Chemical Plant and Petroleum Refinery Piping
ASME PTC 4	Steam Generating Unit Test
BS 2486	Treatment of Water for Steam Boiler and Water Heater
NFPA 8502	Prevention of Furnace Explosion/Implosion In Multiple Burner Boilers

3.4 Air coolers

API 661	Air Cooled Heat Exchangers for General Refinery Service
ASME SECTION VIII	ASME Boiler & Pressure Vessel Code, Div. 1 and 2 including Addenda
ASME SECTION II, Parts ABCD	ASME Boiler & Pressure Vessel Code & Materials
ASME SECTION IX	ASME Boiler & Pressure Vessel Code & Welding Procedures
ASME B 16.5	Pipe Flanges and Flanged Fittings
ASTM 123	Specification for Zinc 9HDG) Coatings
BS 729	Hot dip Galvanised Coatings on Iron & Steel Articles
EEMUA Publication No. 143	Recommendation for Tube end Welding
BS 2486	Treatment of Water for Steam boiler and Water Heater
EEMUA 132	Electric Motors
EEMUA 140	Noise Procedure Specification
EEMUA 141	Guide to Use of EEMUA Specification No. 140
EEMUA 143	Recommendation for Tube End Welding
Replace ASTM F 871 and ASTM B 644 with ASTM A153 / A 153M Specification for Zinc Coating (Hot Dip Galvanised) on Iron and Steel	
ASCE 7-05	Minimum Design Loads for Buildings and other Structures
ASTM B 633 and ASTM F 871	
By ASTM A153 / A153M	Specification for Zinc Coating (Hot – Dip Galvanised) on Iron and Steel
ASME B 1.1	Unified inch screw threads
ASME B 16.5	Steel pipe flanges and flange fittings
ASME B 16.11	Forged steel fittings, socket welding and threaded
ASME B 16.25	Buttwelding ends
ASME B 46.1	Surface texture
NACE MR 0175/ISO 15156	Sulphide stress cracking resistant metallic material for oil field equipment
MSS SP6	Standard finishes for contact gaces of pipe flanges

Reference

CODAP	French code governing the construction of unfired pressure vessels
PD 5500	Specification for unfired fusion welded pressure vessels
ASME VIII	Boiler and pressure vessel code
ASME A 58-1	Building Code Requirements for minimum Design load in buildings and other structures
AISC	Code for design criteria for steel structures
ASME B 16-20	Metallic Gaskets for Pipe Flanges –Ring-Joint, Spiral Wound, and Jacketed

3.5 Storage tanks

3.5.1 Storage tanks non refrigerated

API (American Petroleum Institute)

API 620	Recommended Rules for Design and Construction of large welded, low pressure storage tanks
API 650	Welded Steel Tanks for Oil Storage
API 651	Cathodic Protection
API 2000	Venting Atmospheric and Low-pressure Storage Tanks
API 2550	Method for Measurement and Calibration of Upright Cylindrical Tanks

NACE

NACE RP0193	External Cathodic Protection of On-Grade Carbon Steel Storage Tank Bottoms.
NACE TM0284	Evaluation of Pipeline and Pressure vessel steels for resistance to Hydrogen Induced Cracking
NACE MR0175/ISO 15156	Petroleum and Natural Gas Industries Materials for use in H ₂ S-Containing Environments in Oil and Gas production.

UBC (Uniform Building Code)

UBC	Volume 2 Chapter 16
	Division III = Wind Design
	Division IV = Earthquake Design

3.5.2 Storage Tanks Refrigerated

BSI (British Standard Institute)

BS 7777	Flat Bottomed Vertical Cylindrical Storage Tanks for Low Temperature Service
BS 5896	Specification for High Tensile Steel Wire and Strand for the Prestressing of Concrete
BS 8110	Structural Use of Concrete (Parts 1-13)

API (American Petroleum Institute)

API 620	Design and construction of Large, Welded, Low Pressure Storage tanks
API 2550	Method for Measurement and Calibration of Upright Cylindrical Tanks
API 651	Cathodic Protection
API 2000	Venting Atmospheric and Low-pressure Storage Tanks

ASTM (American Society for Testing and Materials)

ASTM A 537	Specification for Pressure Plates, Heat Carbon-Manganese-Silicon Steel
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Others

EEMUA 147	Recommendations for the Design and Construction of Refrigerated Liquefied Gas storage Tanks
AISI E-I	Steel Plate Engineering Data Series: Useful Information – Design Of Plate Structure, Volume II
FIP-CEB	Report on Method of Assessment of the Fire Resistance of Concrete Structural Members
FIB-CEB	Model Code 1990
FIB-CEB	Bulletin 174-Model Code for Fire Design of Concrete Structures
FIP Recommendations	Acceptance and Application of Post-tensioning System
FIP Recommendations	Approval, Supply and Acceptance of Steels for Prestressing
FIP Report	Assessment of Mechanical Properties of Structural Material for Cryogenic Applications
ASME SA 435	Specification for Straight Beam Ultrasonic Examination of

Steel Plates.

UBC (Uniform Building Code)

UBC

Volume 2 Chapter 16

Division III = Wind Design

Division IV = Earthquake Design

3.6 Rotating Equipment

API (American Petroleum Institute)

API 610	Centrifugal Pumps for Petroleum, Heavy Duty Chemical & Gas Industry Services
API 611	General Purpose Steam Turbines for Petroleum, Chemical and Gas Industry Services
API 612	Special Purpose Steam Turbines for Petroleum, Chemical and Gas Industry Services
API 613	Special-Purpose Gear Units for Refinery Petroleum, Chemical and Gas Industry Services
API 614	Lubrication, Shaft-Sealing, and Control System for Special Purpose Applications
API 616	Gas Turbines for Refinery Services
API RP 11	Recommended Practices for Packaged Combustion Gas Turbines
API 617	Centrifugal Compressors for Petroleum, Chemical and Gas Services Industries
API 618	Reciprocating Compressors for Petroleum, Chemical and Gas Industry Services
API 619	Rotary-type positive displacement compressor for Petroleum Chemical and Gas Industry Services
API 670	Vibration, Axial-Position, and Bearing Temperature Monitoring Systems
API 671	Special-Purpose Couplings for Refinery Service
API 672	Packaged Integrally Geared, Centrifugal Air Compressors for Petroleum, Chemical and Gas Industry Services
API 673	Special Purpose Fans for Petroleum, Chemical and Gas Industry Services
API 674	Positive displacement pumps –Reciprocating
API 675	Positive displacement pumps – Controlled volume

API 676	Positive Displacement Pumps – Rotary
API 677	General Purpose Gear Units for Petroleum Chemical and Gas Industry Services
API 682	Shaft Sealing Systems for Centrifugal and Rotary Pumps
API 684	Paragraphs Rotodynamic Tutorial: Lateral Critical Speeds Unbalance Response, Stability, Train Torsionals and Rotor Balancing
API 686	Machinery Installations and Installation Design

NFPA (National Fire Protection Association)

NFPA 20	Installation of Stationary Pumps for Fire Protection
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ASME (American Society of Mechanical Engineers)

Power Test Code :	PTC 1 “General Instructions
	PTC 9 “Displacement Compressors”
	PTC 10 “Compressors and Exhausters”
	PTC 22 “Gas Turbine Power Plant”
	PTC 8.2 “Centrifugal Pumps”
	PTC 17 “Reciprocating Internal-Combustion Engines”
	PTC 6 “ Steam Turbine
ASME B73.1M	Horizontal End Suction Centrifugal Pumps for Chemical Process
ASME B73.2M	Specification for Vertical In-line Centrifugal Pumps for Chemical Process

ISO (International Organisation for Standardisation)

ISO 2314	Gas Turbines – Acceptance Tests
ISO 2548	Acceptance Tests for Centrifugal, Mixed Flow and Axial Pumps
ISO 8528	Reciprocating Internal Combustion engine driven alternating current generating sets
ISO 2858	End Suction Centrifugal Pumps (rating 16 bar)
ISO 1940	Mechanical Balancing of Rotating Bodies
ISO 11342	Balancing of Flexible Rotor

ISO 3046	Internal Combustion Reciprocating Engines (Parts 1-7)
ISO 5199	Industrial Pumps – Technical Specification for Centrifugal Pumps
ISO 10816	Mechanical Vibration
<u>Others</u>	
AGMA 6011	Association of Gear Manufacturers, Practice for High Speed Helical and Herringbone
NACE MR0175/ISO 15156	Materials for use in H ₂ S – containing Environments in Oil and Gas Production
NEMA SM 23	Steam Turbines for Mechanical Drive Services
NEMA SM 24	Land Based Steam Turbine Generator Sets 0-33,000 KW
NF EN 733	End-suction centrifugal pumps, rating with 10 bar with bearing bracket
BS EN 10204 / ISO 10474	Metallic Products – Types of Inspection Document
ISO 9906	Rotodynamic pumps – Hydraulic performance acceptance test – Grades 1 and 2
ISO 7005-1	Metallic flanges –Part 1: Steel flanges
PD 5304 : 2000	Safe Use of Machinery
ANSI / HI	Pump Standards of Hydraulic Institute
ANSI / ABMA 11	Load Ratings and Fatigue Life for Roller Bearings

3.7 Overhead cranes and hoists

FEM/Section 1.001	European Materials Handling Federation Rules for the Design of Hoisting Appliances
BS 2573 Parts 1& 2	Rules for the Design of Cranes
NFE 52.126	French Norm for Testing Cranes
BS 466	Power Driven Overhead Travelling Crane, Semi Goliath and Goliath Cranes for General Use
CMAA 70	Specifications for Top Running Bridge & Type Multiple Girder Electric Overhead Travelling Cranes
CMAA 74	Specifications for Top Running & Under Running Single Girder Electric Travelling Cranes Utilizing Under Running Trolley Hoist
ASME B30.17	Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Under Hung Hoist)

ASME B30.2	Overhead and Gantry Cranes (Top Running, Single or Multiple Girder, Top Running Trolley Hoist)
DIN ISO18	Part 1 Cranes-Steel Structure Verification and Analysis
DIN ISO18	Part 2 Cranes-Steel Structure Principal of Design and Construction

3.8 Piping

ANSI/ASME (American National Standards Institute)

ASME B 1.1	Unified Inch Screw Threads
ASME B 1.2	Gages and Gaging for Unified Inch Screw Threads
ASME B 1.20.1	Pipe Threads, General Purpose (Inch Series)
ASME B.16.1	Cast Iron Pipe Flanges and Flanged Fittings Class 125 (Flat Face)
ASME B 16.5	Pipe Flanges and Flanged Fittings
ASME B16.9	Factory-Made Wrought Butt welding Fittings
ASME B 16.10	Face to Face and End to End Dimensions of Valves
ASME B16.11	Forged Fittings, Socket- <u>Welding</u> and Threaded
ASME B16.20	Metallic Gaskets for Pipe Flanges-Ring-Joint, Spiral-wound and Jacketed
ASME B16.21	Non-metallic Flat Gaskets for Pipe Flanges
ASME B16.24,	Cast Copper Alloy Pipe Flanges and Flanged Fittings
ASME B16.25	Butt welding Ends
ASME B16.28	Wrought Steel Butt-Welding Short Radius Elbows and Returns
ASME B 16.34	Valves – Flanged, Threaded and welding End
ASME B16.36	Orifice Flanges
ASME B16.45	Cast Iron Fittings for Sovent Drainage Systems
ASME B 16.47	Large Diameter Steel Flanges
ASME B 16.48	Line Blank
ASME B18.2.1	Square and Hex Bolts and Screws (Inch Series)
ASME B18.2.2	Square and Hex Nuts (Inch Series)

ASME B 31.1	Power Piping
ASME B 31.3	Process Piping
ASME B 31.4	Pipeline transportation Systems for liquid hydrocarbon and other Liquids
ASME B 31.8	Gas Transmission and Distribution Piping System
ASME B36.10M	Welded and Seamless Wrought Steel Pipe
ASME B36.19M	Stainless Steel Pipe
ASME SEC. III	Rules for Construction of Nuclear Facility Components
ASME SEC.V	Nondestructive Examination
ASME SEC.VIII	Rules for Construction of Pressure Vessels
ASME SEC.IX	Welding and Brazing Qualifications
ASME B46.1	Surface Texture(Surface Roughness, Waviness, and Lay)

API (American Petroleum Institute)

API 560	Fired Heaters for General Refinery Services
API 594	Check Valves : Flanged, Lug, Wafer and Butt-welding
API 598	Valve Inspection and Testing
API 600/ISO 10434	Steel Gate Valves – Flanged and Butt – Welding Ends, Bolted Bonnets
API 602	Steel Gate, Globe and Check valves for sizes NPS4 (DN 100) and smaller for the Petroleum and Natural Gas Industries
API 603	Corrosion-Resistant, Bolted Bonnet Gate Valves – Flanged and Butt Welding Ends
API 604	Ductile Iron Gate Valves, Flanged
API 607	Fire Test for Soft-Seated Quarter – Turn Valves
API 608	Metal Ball Valves Flanged Threaded and Welding Ends
API 609	Butterfly Valves, Double flanged – Lug and Wafer Type

API 610	Centrifugal Pumps for Petroleum, Petrochemical and Natural Gas Industries
API 619	Rotary-Type Positive-Displacement Compressors for Petroleum,Petrochemical, and Natural Gas Industries
API 650	Welded Tanks for Oil Storage
API 660	Shell and Tube Heat Exchangers
API 661	Air Cooled Heat Exchangers for General Service
API 686	Recommended Practice for Machinery Installation Design
API RP 520	Sizing, Selection, and Installation of Pressure-Relieving Devices in Refineries
API RP 945	Avoiding Environmental Cracking in Amine Units
API STD 614	Lubrication, Shaft-sealing and Oil-control Systems and Auxiliaries
API 1104	Welding of Pipeline and Related Facilities
API 5L	Line Pipe
API 6D	Specification for Pipeline Valves
API 6 FA	Specification for Fire Test for Valves
API 15 LR	Specification for Low Pressure Fibreglass Line Pipe and Fittings
API 15 HR	Specification for High Pressure Fiberglass Line Pipe
WRC 107 and 297	Welding Research Council Bulletins 107 & 297

MSS (Manufactures Standardisation Society of the Valve and Fittings Industry, Inc)

MSS SP6	Standard Finishes for Contact Faces of Pipe Flanges and connecting ends Flanges of Valves and Fittings
MSS SP9	Spot Facing for Bronze, Iron and Steel Flanges
MSS SP25	Standard Marking System for Valves, Fittings, Flanges and Unions
MSS SP42	Corrosion Resistant Gate,Globe,Angle and Check Valves with Flanged and Butt Weld Ends(Classes 150,300&600)
MSS SP43	Wrought and Fabricated Butt-Welding Fittings for Low Pressure,Corrosion Resistant Applications

MSS SP44	Steel Pipe Line Flanges
MSS SP45	Bypass and Drain Connectoins
MSS SP53	Quality Standards for Steel Castings for Valves, Flanges, and Fittings and Other Piping Components - Magnetic particle Examination Method
MSS SP54	Quality Standards for Steel Castings for Valves, Flanges, and Fittings and Other Piping Components – Radiographic Examination Method
MSS SP55	Quality Standards for Steel Castings for Valves, Flanges, and Fittings and Other Piping Components - Visual Inspection
MSS SP58	Pipe Hangers and Supports – Material and Design, Manufacture, Selection, Application and Installation
MSS SP69	Pipe Hangers and Supports – Selection and Application
MSS SP70	Gray Iron Gate Valves Flanged and Threaded Ends
MSS SP75	Specification for High Test Wrought Butt-Welding Fittings
MSS SP77	Guidelines for Pipe Support Contractual Relationships
MSS SP80	Bronze Gate, Globe,Angle and Check Valves
MSS SP95	Swage(d) Nipples and Bull Plugs
MSS SP97	Integrally Reinforced Forged Branch Outlet Fittings Socket Welding Threaded, and Butt welding Ends

ASTM (American Society for Testing and Materials)

ASTM A105	Standard Specification for Carbon Steel Forgings for Piping Applications
ASTM A106	Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service
ASTM A153	Zinc Coating (Hot Dip) on Iron and Steel Hardware
ASTM A182	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High- Temperature Service
ASTM A193	Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature or High Pressure Service and Other Special Purpose Applications
ASTM A194	Standard Specification for Carbon and Alloy-Steel Nuts for Bolts for high Pressure or High Temperature Service

or Both

ASTM A216	Standard Specification for Steel Castings, Carbon, Suitable for Fusion Welding, for High-Temperature Service
ASTM A217	Martensitic Stainless Steel and Alloy Steel Castings for Pressure Containing Parts Suitable for High Temperature Service
ASTM A234	Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service
ASTM A307	Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
ASTM A312	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
ASTM A320	Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for Low-Temperature Service
ASTM A333	Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service
ASTM A335	Standard Specification for Seamless Ferritic Alloy Steel Pipe for High Temperature Service
ASTM A350	Standard Specification for Carbon and Low-Alloy Steel Forgings, Requiring NotchToughness Testing for Piping Components
ASTM A351	Standard Specification for Castings, Austenitic, Austenitic-Ferritic (Duplex), for Pressure-Containing Parts
ASTM A352	Standard Specification for Steel Castings, Ferritic and Martensitic, for Pressure-Containing Parts, Suitable for Low-Temperature Service
ASTM A358	Standard Specification for Electric-Fusion-Welded Austenitic Chromium-Nickel Stainless Steel Pipe for High-Temperature Service and General Applications
ASTM A370	Annual Book of ASTM Standards – Part 1, Steel Piping, Tubing and Fittings – Mechanical Testing of Steel Products
ASTM A395	Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures
ASTM A403	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings
ASTM A420	Standard Specification for Piping Fittings of Wrought

	Carbon Steel and Alloy Steel for Low-Temperature Service
ASTM A439	Standard Specification for Austenitic Ductile Iron Castings
ASTM A453	Standard Specification for High-Temperature Bolting Materials, with Expansion Coefficients Comparable to Austenitic Stainless Steels
ASTM A488	Standard Practice for Steel Castings, Welding, Qualifications of Procedures and Personnel
ASTM A516	Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service
ASTM A53	Standard Test Method for Determination of Copper in Unalloyed Copper by Gravimetry
ASTM A530	Standard Specification for General Requirements for Specialized Carbon and Alloy Steel Pipe
ASTM A578	Standard Specification for Straight-Beam Ultrasonic Examination of Rolled Steel Plates for Special Applications
ASTM A671	Standard Specification for Electric-Fusion-Welded Steel Pipe for Atmospheric and Lower Temperatures
ASTM A672	Standard Specification for Electric-Fusion-Welded Steel Pipe for High-Pressure Service at Moderate Temperatures
ASTM A691	Standard Specification for Carbon and Alloy Steel Pipe, Electric-Fusion-Welded for High-Pressure Service at High Temperatures
ASTM A694	Standard Specification for Carbon and Alloy Steel Forgings for Pipe Flanges, Fittings, Valves, and Parts for High-Pressure Transmission Service
ASTM A703	Standard Specification for Steel Castings, General Requirements, for Pressure-Containing Parts
ASTM A790	Seamless and Welded Ferritic / Austenitic Stainless Steel Pipe ASTM A 815 Wrought Ferritic / Austenitic Stainless Steel Fittings
ASTM A815	Standard Specification for Wrought Ferritic, Ferritic/Austenitic, and Martensitic Stainless Steel Piping Fittings
ASTM A841	Standard Specification for Steel Plates for Pressure Vessels, Produced by Thermo- Mechanical Control

	Process (TMCP)
ASTM A860	Standard Specification for Wrought High-Strength Ferritic Steel Butt-Welding Fittings
ASTM A960	Standard Specification for Common Requirements for Wrought Steel Piping Fittings
ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM B148	Standard Specification for Aluminum-Bronze Sand Castings
ASTM B150	Standard Specification for Aluminum Bronze Rod, Bar, and Shapes
ASTM B287	Method of Acetic Acid-Salt Spray(Fog) Testing
ASTM B402	Standard Specification for copper-nickel alloy Plate and Sheet for Pressue Vessels By ASTM B171
ASTM B466	Standard Specification for Seamless Copper-Nickel Pipe and Tube
ASTM B467	Standard Specification for Welded Copper-Nickel Pipe
ASTM B62	Standard Specification for Composition Bronze or Ounce Metal Castings
ASTM B584	Standard Specification for Copper Alloy Sand Castings for General Applications
ASTM B633	Specification for Electrodeposited Coatings of Zinc on Iron and Steel
ASTM B656	Standard Guide for Autocatalytic (Electroless) Nickel-Phosphorus Deposition on Metals for Engineering Use
ASTM B733	Standard Specification for Autocatalytic (Electroless) Nickel-Phosphorus Coatings on Metal
ASTM C150	Standard Specification for Portland Cement
ASTM C33	Standard Specification for Concrete Aggregates
ASTM C602	Standard Specification for Agricultural Liming Materials
ASTM D412	Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers
ASTM D1414	Standard Test Methods for Rubber O-Rings
ASTM D1415	Standard Test Method for Rubber PropertyInternational Hardness
ASTM D1418	Standard Practice for Rubber and Rubber Latices—Nomenclature

<u>ASTM D1599</u>	Standard Test Method for Resistance to Short-Time Hydraulic Pressure of Plastic Pipe, Tubing, and Fittings
ASTM D1652	Standard Test Methods for Epoxy Content of Epoxy Resins
ASTM D2105	Standard Test Method for Longitudinal Tensile Properties of "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Tube
ASTM D2122	Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
ASTM D2143	Standard Test Method for Cyclic Pressure Strength of Reinforced, Thermosetting Plastic Pipe
ASTM D2240	Standard Test Method for Rubber Property-Durometer Hardness
ASTM D2310	Standard Classification for Machine-Made "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe
ASTM D2343	Standard Test Method for Tensile Properties of Glass Fiber Strands, Yarns, and Rovings Used in Reinforced Plastics
ASTM D2393	Standard Test Method for Viscosity of Epoxy Resins and Related Components
ASTM D2412	Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
ASTM D2471	Standard Test Method for Gel Time and Peak Exothermic Temperature of Reacting Thermosetting Resins
ASTM D2563	Standard Practice for Classifying Visual Defects in Glass-Reinforced Plastic Laminate Parts
ASTM D2583	Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor
ASTM D2584	Standard Test Method for Ignition Loss of Cured Reinforced Resins
ASTM D297	Standard Test Methods for Rubber Products - Chemical Analysis
ASTM D2992	Standard Practice for Obtaining Hydrostatic or Pressure Design Basis for "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe and Fittings
ASTM D2996	Standard Specification for Filament-Wound "Fiberglass" (Glass-Fiber-Reinforced Thermosetting-Resin) Pipe

ASTM D3359	Standard Test Methods for Measuring Adhesion by Tape Test
ASTM D543	Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents
ASTM D570	Standard Test Method for Water Absorption of Plastics
ASTM D648	Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
ASTM E446	Standard Reference Radiographs for Steel Castings Up to 2 in. (50.8 mm) in Thickness
ASTM E45	Standard Test Methods for Determining the Inclusion Content of Steel
ASTM E709	Standard Guide for Magnetic Particle Testing
ASTM E92	Standard Test Method for Vickers Hardness of Metallic Materials
ASTM F104	Standard Classification System for Nonmetallic Gasket Materials
ASTM F152	Standard Test Methods for Tension Testing of Nonmetallic Gasket Materials
ASTM F36	Standard Test Method for Compressibility and Recovery of Gasket Materials
ASTM F871	Standard Specification for Electrodeposited Coatings on Threaded Components
ASTM G14	Standard Test Method for Impact Resistance of Pipeline Coatings (Falling Weight Test)
ASTM G23	Standard Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) with and without Water for Exposure of Nonmetallic Materials
Others	
AWWA C 205	Cement-Mortar Protective Lining and Coating for Steel Water Pipe-4 In. (100 mm) and Larger-Shop Applied
BS 5383	Material Identification of Steel, Nickel Alloy and Titanium Alloy Tubes by Continuous Character Marking and Colour Coding of Steel Tubes
BS 6364	Valves for Cryogenic Service
DIN 2614	Cement Mortar Linings for Ductile Iron and Steel Pipes and Fittings

DIN 7707	Power Presses, Mechanical Straight-Sided Single-Action Type of from 400 kN up to and Including 4000 kN Nominal Force (ISO 9188: 1993)
BS 1868	Steel Check Valve (Flanged and Butt Welding End) for the Petroleum, Petrochemical and Allied Industries.
BS 3974	Pipe Support
BS 1873	Steel Globe and Globe Stop and Check Valves (Flanged and Butt Welding-Ends) for the Petroleum, Petrochemical and Allied Industries
BS 1780	Specification for bourdon tube pressure and vacuum gauges
<u>BS EN 10002</u>	Tensile testing of materials.Method of test at ambient temperature
BS EN 10028	Flat Products Made of steels for Pressure Purposes
BS EN 10204	Metallic products Types of inspection documents
BS EN 12266	Industrial valves Testing of valves
BS EN ISO 10497	Testing of valves — Fire type-testing requirements
BS EN 12449	Copper and Copper Alloys - Seamless, Round Tubes for General Purposes
BS EN 1652	Copper and Copper Alloys - Plate, Sheet, Strip and Circles for General Purposes
BS EN 837-1	Pressure Gauges Part 1: Bourdon Tube Pressure Gauges- Dimensions, Metrology, Requirements and Testing
BS EN ISO 17292	Metal Ball Valves for the Petroleum Industries.
EEMUA 182	Specification for Integral Block and Bleed Valve Manifolds for Direct Connection to Pipework
EJMA STD	Standard of the Expansion Joint Manufactures Association, Inc. including Addenda
EEMUA 144	Copper Nickel Alloy Piping for Offshore Applications-Specification:Tubes Seamless and Welded
EEMUA 145	Copper Nickel Alloy Piping for Offshore Applications-Specification:Flanges Composite and Solid
EEMUA 146	Copper Nickel Alloy Piping for Offshore Applications-Specification:Fittings
ISO 15649	Petroleum and Natural Gas Industries – Piping

ISO 4042	Fasteners - Electroplated Coatings
ISO 286	Iso System Of Limits And Fits - Part 2: Tables Of Standarded Tolerance Grades And Limit Deviations For Holes And Shafts
DIN 25913	259-1 Whitworth Pipe Threads; Parallel Internal And Parallel External Threads; Basic Sizes 259-2 Whitworth Pipe Threads; Parallel Internal And Parallel External Threads; Tolerances 259-3 Whitworth Pipe Threads; Parallel Internal And Parallel External Threads; Limits
49 CFR 193	Liquefied Natural Gas Facilities:Federal Safety Standards
UBC 97	Uniform Building Code
NACE RP0169	Control of external corrosion on Underground or Submerged Metallic Piping Systems
<u>NACE</u> RP0472	Standard Recommended Practice-Methods and Controls Prevent In-Service Environmental Cracking of Carbon Steel Weldments in Corrosive Petroleum Refining Environments
NACE RP 1077	Mitigation of Alternating Current and Lightning Effects on Metallic Structures and Corrosion Control Systems
NFPA 59A	Standard for the Production, Storage, and Handling of Liquefied Natural Gas (LNG)
NACE MR0175/ISO 15156	Petroleum and Natural Gas Industries Materials for use in H2S-Containing Environments in Oil and Gas production.
NACE TM0284	Evaluation of Pipeline and Pressure vessel steels for resistance to Hydrogen Induced Cracking
3.9 Civil – Structural	
3.9.1 Design Codes	
Loading	
UBC – 97	Uniform Building Code for earthquake
ASCE/SEI 7-05	Minumum Design Loads for Buildings and Other Structure
ASCE-97	Design Of Blast Resistant Buildings In Petrochemical Facilities
Concrete Design	
ACI 318/318M-08	Building Code Requirements for Structural Concrete with Commentary

Steel structure Design

ANSI/AISC 360-05

Specification for Structural Steel Buildings

UBC-97

Seismic Provisions for Structural Steel Buildings

Foundation

BS CP 2012 Code of Practice for Foundations of Machinery

V.D.I 2056 Criteria for evaluate oscillation in machines.

API 620 Design and Construction of Large, Welded, Low-Pressure Storage Tanks

API 650 Welded Steel Tanks for Oil Storage

Roads design

American Association of State Highway & Transportation Officials (AASHTO)

AASHTO GDPS-4 Guide for design of Pavement structures

NCHRP 1-37A Guide For Mechanistic-Empirical Design Of New And Rehabilitated Pavement Structures

Overseas Road Note 31 (Fourth Edition), Transport Research Laboratory, "A guide to the structural design of bitumen-surfaced roads in tropical and sub-tropical countries"

Specification for Highway works – Highways agency, The Stationery Office

3.9.2 Construction Standards

A.A.S.H.T.O. standards

DIN 931 spec for bolts and nuts

American Welding Society (A.W.S)

ACI 117-06 Specifications for Tolerances

For Concrete Construction and Materials and Commentary

ACI 301-05 Specifications for Structural Concrete

ACI 303.1-97 Standard Specification for Cast-in-Place Architectural Concrete

ACI 304.2R-96 Placing Concrete by Pumping Methods

ACI 305.1-06 Specification for Hot Weather Concreting

ACI 308.1-98 Standard Specification for Curing Concrete

ACI 311.6-09 Specification for Ready-Mixed Concrete Testing Services

ACI 315-99 Details and Detailing of Concrete Reinforcement

AISC 303-05 Code of Standard Practice for Steel Buildings and Bridges.

3.9.3 Testing, Inspection and acceptance standards

A.S.T.M. standards or equal

ASTM A6/A6M	Specification for General Requirements for Rolled Structural Bars Plates Shapes and Sheet Piling
ASTM A53	Standard Specification for Pipe, Steel, Black & Hot Dipped, Zinc-coated Welded and Seamless
ASTM A185/A185M	Standard Specification For Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A307	Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
ASTM A325/A325M	Standard Specification for Structural Bolts, Steel, Heat Treated,120/105 ksi Minimum Tensile Strength
ASTM A 370	Test Methods and Definitions for Mechanical Testing of Steel Products
ASTM A 496/496M	Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement
ASTM A 497/497M	Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete
ASTM A615/615M	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A 700	Practices for Packaging, Marking, and Loading Methods for Steel Products for Shipment
ASTM A992/992M	Standard Specification for Structural Steel Shapes
ASTM C 684	Test Method for Making, Accelerated Curing,and Testing of Concrete Compression Test Specimens
ASTM C 873	Test Method for Compressive Strength of Concrete Cylinders Cast in Place in Cylindrical Molds
ASTM C 39/39M	Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C 192/192M	Practice for Making and Curing Concrete Test Specimens in the Laboratory

3.10 Buildings

3.10.1 Design codes

UBC – 97	Uniform Building Code for earthquake
ASCE/SEI 7-05	Minimum Design Loads for Buildings and Other Structure
ACI 318/318M-08	Building Code Requirements for Structural Concrete with Commentary
PCA Notes on ACI 318-02	Building Code Requirements for Structural Concrete
ANSI/AISC 360-05	Specification for Structural Steel Buildings
<u>UBC – 97</u>	Seismic Provisions for Structural Steel Buildings
ASCE-97	Design Of Blast Resistant Buildings in Petrochemical Facilities
NFPA	National Fire Protection Association

3.10.2 Construction standards

ACI 117-06	Specifications for Tolerances For Concrete Construction and Materials and Commentary
ACI 301-05	Specifications for Structural Concrete
ACI 303.1-97	Standard Specification for Cast-in-Place Architectural Concrete
ACI 304.2R-96	Placing Concrete by Pumping Methods
ACI 305.1-06	Specification for Hot Weather Concreting
ACI 308.1-98	Standard Specification for Curing Concrete
ACI 311.6-09	Specification for Ready-Mixed Concrete Testing Services
ACI 315-99	Details and Detailing of Concrete Reinforcement
AISC 303-05	Code of Standard Practice for Steel Buildings and Bridges.
AISC 325-05	Steel Construction Manual, Thirteenth Edition

3.10.3 Testing inspection and acceptance standards

A.S.T.M. Standards or equivalent	
ASTM A6/A6M	Specification for General Requirements for Rolled Structural Bars Plates Shapes and Sheet Piling
ASTM A53	Standard Specification for Pipe, Steel, Black & Hot Dipped, Zinc-coated Welded and Seamless
ASTM A185/A185M	Standard Specification For Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A307	Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength

ASTM A325/A325M	Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 370	Test Methods and Definitions for Mechanical Testing of Steel Products
ASTM A 496/496M	Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement
ASTM A 497/497M	Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete
ASTM A615/615M	Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A 700	Practices for Packaging, Marking, and Loading Methods for Steel Products for Shipment
ASTM A992/992M	Standard Specification for Structural Steel Shapes
ASTM C 684	Test Method for Making, Accelerated Curing, and Testing of Concrete Compression Test Specimens
ASTM C 873	Test Method for Compressive Strength of Concrete Cylinders Cast in Place in Cylindrical Molds
ASTM C 39/39M	Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C 192/192M	Practice for Making and Curing Concrete Test Specimens in the Laboratory

3.10.4 Materials

A.S.T.M Standards or equal

ASTM A36/A36M	Standard Specification for Carbon Structure Steel
ASTM A706/706M	Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement

3.10.5 Insulation

A.S.T.M. Standards or equivalent

ASTM C165	Measuring Compressive Properties of Thermal Insulations
ASTM C167	Fibreglass Material Density

3.11 HVAC

ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers)

Hand Books – HVAC Application

- System and Equipment
- Fundamental
- Refrigeration

ASHRAE Handbooks and Standards

OCMA (Oil Companies Materials Association)

Oil and Gas Environment

ARI (American Refrigeration Institute)

AFI (American Filtering Institute)

ADC (Air Diffusion Council)

CBSE (Chartered Institute of Building Service Engineering)

UK Heating Ventilation Contractor Association (HVAC) Specification for Sheet Metal Duct Work

SMACNA (Sheet Metal and Air Conditioning Contractors National Association)

Low Pressure Duct Construction Standards

BS 476 Part 7	Method of Test to Determine the Classification of the Surface Spread of Flame of Product
BS 848 Part 1	Fans for General Purpose, Method of Noise Testing
BS 4718	Method of Test for Silencers for Air Distribution Systems
BS 2871	Copper Tube for Water, Gas and Sanitation
BS 1710	Identification of Pipelines

3.12 Electrical

The latest edition of the following standards and codes shall be applied where applicable:

- 1- The institute of petroleum model code of safe practice, part 1 electrical, and part 15 area classification code for petroleum installations.
 - 2- International electro technical commission (IEC) standards.
 - 3- The institution of electrical engineers regulations for electrical installations BS7671 1992.
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4-Other national and international standards for
example:IEC,IEE,IEEE,NFPA,NEC,ICAO,NEMA,DIN,VDE,DNV,IALA,SOLAS,IMO.

IEC (International Electrical Commission) and in particular :

IEC 60027	Electrical applicable symbols
IEC 60028	International standard of resistance for copper
IEC 60044-1	Instrument transformers
IEC 60050	International electro-technical vocabulary
IEC 60056	High voltage alternating current circuit
IEC 60085	Recommendations for the classification of material for the insulation of electrical machinery and apparatus in relation to their thermal stability service.
IEC 60129	Alternating current disconnectors and earthing switches
IEC 60146	Semi-conductor convectors
IEC 60173	Colours of the cores of flexible cables and cords
IEC 60183	Guide to the selection of high voltage cables
IEC 60044-2	Voltage transformers
IEC 60228	Conductor of insulated cables
IEC 60255	Electrical relays
IEC 60265	High voltage switches
IEC 60269	Low voltage switches
IEC 60282	High voltage fuses
IEC 60287	Calculation of the continuous current rating of cables
IEC 60289	Reactors
IEC 60292	LV motor starters
IEC 60298	AC metal –enclosed switchgear and control gear for rated voltages 1 kV and up to and including 52 kV
IEC 60331	Fire resisting characteristics of electric cables
IEC 60332-1 to 3	Tests on electric cables under fire conditions
IEC 60335-2-29	Safety of household and similar electrical appliances: battery chargers

IEC 60354	Loading guide for oil-immersed power transformer
IEC 60408	Low-voltage air-break switches, air-break disconnectors and fuse combination units
IEC 60420	High voltage alternating current switch-fuse combinations
IEC 60446	Color identification insulated and non-insulated cores
IEC 60470	High voltage alternating current contactors
IEC 60478	Stabilized Power supplies, DC output
IEC 60502	Extruded solid dielectric insulated power cables for rated voltages from 1 kV up to 30 kV
IEC 60529	Degree of protection provided by enclosures (IP code)
IEC 60551	Determination of transformer and reactor sound levels
IEC 60606	Application guide for power transformers
IEC 60617	Graphic symbols for diagrams
IEC 60622	Sealed nickel-cadmium prismatic rechargeable single cells
IEC 60623	Vented nickel-cadmium prismatic rechargeable single cells
IEC 60632	High voltage motor starters
IEC 60682	Stabilized power supplies, AC output
IEC 60694	Common clauses for high voltage switchgear and control gear standards
IEC 60726	Dry type transformers
IEC 60801	Electromagnetic compatibility for industrial process measurement and control equipment
IEC 60947	Low voltage switchgear and control gear
IEC 60989	Separating transformers, autotransformers, variable transformers and reactors
IEC 601000	Electromagnetic compatibility (EMC)
IEC 601024	Protection of structures against lightning
IEC 60055-2	Paper insulated metal sheathed cables for rated voltage up to 18/30Kv
IEC 60227	Specification for insulating covering and sheaths
IEC 60038	Standard voltage
IEC 60686	Stabilized power supplies, AC output

IEC 60034-17	Rotating electrical machines part 17
IEC 61800-2	Adjustable speed electrical power drive systems part 2
IEC 60079	Electrical apparatus for explosive gas atmospheres
IEC 60144	Degree of protection of enclosures for low voltage switchgear and control gear
IEC 60137	Insulating bushings for alternating voltages above 1000V or equivalent
IEC 60337	Control switches
IEC 60540	Test methods for insulation and sheaths of electric cables and cords
BS EN 954	Safety of machinery
BS 6622	Specifications for cables with extruded XLPE or EPR insulation rated voltage 3800/6600 up to 19000/33000 volts.
EN 29004	Small computer system interfaces
BS EN 50 014	Electrical apparatus for potentially explosive atmosphere
BS EN 50 015	Oil immersion (type O)
BS EN 50 016	Pressurized apparatus (type P)
BS EN 50 017	Power filled (type Q)
BS EN 50 018	Flame proof (type D)
BS EN 50 019	Increased safety (type E)
BS EN 50 020	intrinsically safe
BS EN 50 021	Type N protection
BS EN 50 039	Intrinsic safety
EN 60 079	Intrinsically safe installation
ISA S 5.3	Graphic symbols for distributed control/shared display instruments
BS 5000 part 16	Ex "N" motors
BS 6739	Installation of process control systems
BS 6121 part 1	Mechanical cable glands
BS 5467	Cables with thermosetting insulation for rated voltage up to and including 600/1000V.

BS 6724	Specification for armored cable with low emission of smoke and corrosive gases
<u>BS 7361</u>	<u>Cathodic Protection : Part 1. Code of practice for land and marine applications</u>
IEEE	Local area network
IEEE 80	Guide for Safety in AC Substation Grounding
IEEE 81	Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials a Ground System
IP	Model code of safe practice part 15
ICAO	International civil aviation organization (ICAO), for aircraft warning light
IEC 60034	Rotating Electrical Machines
IEC 62271	High Voltage Switchgear and Control Gear
IEC 60076	Power Transformers
IEC 60079	Electrical Apparatus for Explosive Gas Atmospheres
IEC 60364	Electrical Installations of Buildings
IEC 60439	Low-Voltage Switchgear and Control gear Assemblies
IEC 529	Classification of Degrees of Protection Provided by Enclosures for Electrical Equipment.
IEC 62305	Protection of Structure against Lightning
Others	
CENELAC	European Standards and Publications
NFC 13200	High Voltage Electrical Installation
<u>API 651</u>	<u>Cathodic Protection</u>
<u>NACE RP0193</u>	<u>External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms</u>
<u>ISO 15589-1</u>	<u>Pipeline Transportation System – Cathodic Protection – Part 1: Onshore Pipelines</u>

3.13 Instrumentation – Controls

ANSI/ASME (American National Standards Institute)

B 16.34	Valve – Flanged, Threaded and Welding End
B 16.36	Orifice Flanges
B 16-104/ FC 70-2	Control Valve Seat Leakage

MC 96-1	Temperature Measurement Thermocouples
ANSI/UL-827	Central Station for Watchman Fire Alarm and Supervisory Services
ANSI/UL-268	Smoke Detectors for Fire Protection Signalling Systems
ANSI/UL-217	Single and Multiple Station Smoke Detectors
ANSI/NFPA-22A	Smoke Control System

API (American Petroleum Institute)

Manual of Petroleum Measurement Standards

API RP 500	Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Division I and Division 2
API RP 505	Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, Zone 1, and Zone 2
API RP 520	Sizing, Selection and Installation of Pressure Device in Refineries
API RP 521	Guide for Pressure Relief and Depressurising Systems
API Std 526	Flanged Steel Safety Valves for Use in Petroleum Industry (including marking)
API Std 527	Commercial Seat Tightness of Safety Relief Valves with Metal to Metal Seat
API 540	Electrical Installations in Petroleum Processing Plants
API RP 550	Part 1 Manual on Installation of Refinery Instruments and Control Systems
API RP 550	Part II Process Stream Analyses
API RP 551	Process Measurement Instrumentation
API RP 552	Transmission System
API RP 554	Process Instrumentation
API RP 555	Process Analysers
API Std 598	Valve Inspection and Testing
API 670	Machinery Protection Systems
API 2000	Venting Atmospheric Low Pressure Storage Tanks Petroleum, Petrochemical and Natural Gas Industries
API 2510	Design and Construction of Liquefied Petroleum Gas

	Installation
API 2534	Petroleum Metering System and Measurement of Liquid Hydrocarbons and Turbine Meters
API 2545	Methods of Gauging Petroleum and Petroleum Products

ASME (American Society of Mechanical Engineers)

ASME, Div. 1	Flanged Rating when Temperature Exceeds the Limits of Sect. VIII, ap. 2 ANSI B 16-5
ASME, Div. 1	Hydraulic Test for Safety Relief Valve Sect. VIII

IEC (International Electrical Commission)

IEC 60028	International Standard of Resistance for Copper
IEC 60068.2	Basic Environment Testing Procedures for Electronic Components and Electronic Equipment
IEC 60079	Electrical Apparatus for Explosive Gas Atmosphere
IEC 60092.350	L.V, Shipboard Power Cables-General
IEC 60092.351	Insulating Materials for Shipboard Power Cables
IEC 60092.353	Single & Multicore Cables with Extruded Solid Insulation for Rated Voltage 0.6/1.0 KV
IEC 60092.375	General Instrumentation Control & Communication Cables
IEC 60092.504	Electrical Installation in Ships-Control and Instrumentation
IEC 60144	Ingress Protection for Dust and Water Jets
IEC 60173	Colours of the cores of flexible cables and cords
IEC 60189-1 to 7	L.F. Cables and Wires-General
IEC 60227-1 to 5	Conductors & cables Insulated with P.V.C Nominal Voltage 450/750V
IEC 60228	Conductor of insulated cables
IEC 60230	Impulse Tests on Cables and their Accessories
IEC 60245-1 to 4	Rubber Insulated Conductors & Cables, Nominal Voltage 450/750 Volts
IEC 60304	Standard Colour for PVC insulation for low frequency cables and wires

IEC 60331	Fire resisting characteristics of electrical cables (parts 11, 21, 23, & 25)
IEC 60332	Tests on electric cables under fire conditions (with part 1 and part 3c)
IEC 60446	Colour identification insulated and non-insulated cores
IEC 60478	Stabilised Power Supplies, DC Output
IEC 60529	Classification of Degree of Protection Provided by Enclosures
IEC 60540	Test methods for insulation and sheath of electrical cable and conductor
IEC 60584	Thermocouples
IEC 60751	Industrial Platinum Resistance Thermometer Sensors
IEC 60754-1	Tests on gases Evolved During Combustion of Electric Cables
IEC 60801	Electromagnetic Compatibility for Industrial-Process Measurement and Control Equipment
IEC 60811	Common test Methods for Insulating & Sheathing Materials of Electric Cables
<u>IEC 60870-6-802</u>	<u>Telecontrol Equipment and Systems</u>
IEC 60885	Electrical Test Methods for Electrical Cables, Nominal voltage 450/750 Volts
IEC 61034	Measurement of Smoke Density through Burning of Electric Cables
IEC 61508	Functional Safety of Electrical / Electronic / Programmable Electronic Safety Related Systems (Parts 1 to 7)
IEC 61131	Programmable Controllers
IEC 61511	Functional Safety – Safety Implemented Systems for Process Industry Sector
IEC 61000	Electro-Magnetic Compatibility (EMC) – Generic Emissions Std. (Parts 1 – 6)

IEEE (Institute of Electrical and Electronics Engineers)

IEEE 472	Surge Protection Criteria
IEEE 802.3	Telecommunications and Information Exchange Between Systems – Local and Metropolitan Area Networks

ISA (Instrument Society of America)

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
ISA S5.4	Instrument Loop Diagrams
ISA S5.5	Graphic Symbols for Process display (Version: 1986)
ISA S16.1	Terminology Dimensions and Safety Practice for indication Variable Area flow Meters
ISA S75.01	Flow Equations for Sizing Control Valves
ISA S75.02	Control Valve capacity Test Procedure
ISA S75.03 / <u>ASME</u> B16.10	Uniform Face to Face Dimensions for Flanged Globe Style Control Valve Bodies
ISA S75.04	Face to Face Dimensions for Flangeless Control Valves
ISA S75.05	Control Valve Terminology
ISA S75.012	Face to Face dimensions for Socket Weld-end and Screwed-end Globe-Style control Valves
ISA S75.014	Face to Face Dimensions for Buttweld End gold style control valves
ISA S75.015	Face to Face Dimensions for Buttweld-end gold-Style Control Valves
ISA S75.019 /ANSI B16.37	Hydrostatic Testing of Control Valves
ISA S84.01	Application of safety Instrument System for Process Industry
ISA RP 4.1	Uniform face-to-face dimensions for flanged control valve bodies
ISA RP 55.1	Hardware Testing of Digital process Computers
ISA RP 18.1	Alarm and Sequences
ISA PR 60.8	Electrical Guide for Control Centres
ISA S18.1	Annunciator Sequences and Specifications
ISA S20	Specification Forms for Process Measurement and Control Instruments, Primary Elements and Control Valves

British Standards

BS 2765	Specification for Dimensions of Temperature Detecting Elements and Corresponding Pockets
BS 3463	Specification for Observation and Gauge Glasses for Pressure Vessels
BS 4683 PT1	Specification for Electrical Apparatus for Explosive Atmospheres –Classification of Maximum Surface Temperature
BS 4683 PT2	Specification for Electrical apparatus for explosive atmospheres –the Construction and testing of Flameproof enclosures of Electrical apparatus
BS 4683 PT4	Specification for electrical apparatus for explosive atmospheres – Type PF protection “E”
BS 4937 PT30	International Thermocouple Reference Tables - Extension and Compensating Cables Tolerances and Identification System
BS 5343 PT2	Specification for Short Term Gas Detector Tubes
BS 5345	Code of Practice for Selection Installation and Maintenance for Electrical Apparatus for use in potentially Explosive Atmospheres
BS 5445 PT5	Components of Automatic Fire Detection Systems – Heat Sensitive Detectors-Point Detectors Containing a Static Element
BS 5445 PT7	Components of Automatic Fire Detection Systems – Specification for Point Type Smoke Detectors Using Scattered Light Transmitted Light or Ionization
BS 5445 PT8	Components Of Automatic Fire Detection Systems – Specification for High Temperature Heat Detectors
BS 5445 PT9	Components of Automatic Fire Detection Systems – Methods of Test of Sensitivity to Fire
BS 5760	Reliability of Systems, Equipment and Components
BS 5839	Fire Detection and Alarm Systems for Buildings Code of Practice for the Design and Installation of Fire Detection and Alarm Systems in Dwellings (Parts 1 to 6, 8)
BS 6134	Specification for Pressure and Vacuum Switches
BS 6387	Specification for Performance Requirements for Cables Required to Maintain Circuits under Fire Conditions
BS 6941	Specification for Electrical Apparatus for Explosive Atmospheres with Type of Protection N

BS 7405	Guide to Selection and Application of Flow Meters for Measurements of Fluid Flow
BS EN 29004	Small Computer System Interfaces
BS EN 298	Automatic Gas Burner control for Gas Burner
BS EN 50 014	Electrical Apparatus for Potentially Explosive Atmosphere
BS EN 50 015	Oil Immersion (Type o)
BS EN 50 016	Pressurised apparatus (Type p)
BS EN 50 017	Power Filled (Type q)
BS EN 50 018	Flame Proof (Type d)
BS EN 50 019	Increased Safety (Type e)
BS EN 50 020	Intrinsically Safe (Type i)
BS EN 50 021	Type n Protection
BS EN 50 039	Intrinsic Safety (Type i) - Installation
BS EN 50 054	Instruments for Detection of Combustible Gases
BS EN 50008	Inductive Proximity Switches
BS EN 54	Fire Detection Equipment
BS EN 55022	Information Technology Equipment-Radio Disturbance Characteristics - Limits and Methods of Measurement
BS EN 60 054	Operating Conditions for Industrial Process Measurement and Control
BS EN 60 079	Intrinsically Safe Installation
BS EN 60801	Electro Magnetic Compatibility for Industrial Process Measurement & Control
BS EN 837	Specification for Bourdon Tube Pressure Vacuum Products
BS EN 954	Safety of Machinery

EEMUA

EEMUA 160	Safety Related Instrument System for the Process Industry
HSE PES2	Programmable Electronic System in Safety Related Applications

ISO 3966	Flow Measurement using Pitot Tubes
ISO 4006	Glossary of Terms and Symbols of Measurement of Fluid flow in Closed Conduits
ISO 4589	Determination of Burning Behaviour by Oxygen Index
ISO 5167	Measurement of Fluid flow by Means of Orifice Plates Nozzles and Venturi Tubes inserted in circular cross-section conduits running full
ISO 5168	Methods of Measurement of Fluid Flow: Estimation of Uncertainty of a Flow Rate Measurement
ISO 5210	Valves Details for Fitting Actuators
ISO 6974	Determination of Hydrocarbon by Chromatography to C8
ISO 6975	Determination of Hydrocarbon by Chromatography to C16
ISO 6976	Natural Gas - Calculation of Calorific Value Density and Relative Density
ISO 72401	Fire Detection and Alarm Systems
BS EN ISO 6551	Fidelity and Security of Dynamic Measurement of Petroleum Liquids and Gases in Cables Transmission and/or Electronic Data
BS EN ISO 9300	Measurement of Gas Flow by Means of Critical Flow Venturi
ISO TR15377	Measurement of Fluid Flow by Differential Pressure Devices

DNV

RPC 301	Computer Based Systems
NFC 32070	Insulated Conductors of Cables and Flexible Cords for Installation, Classification Tests on Cable and Cords with Respect to their behaviour in fire
ITU Rec. G652	Characteristics of a Single Mode Optical Fibre Cable
DIN 0575	Fire Detection Systems

MIL

HDBK-217f	Reliability Prediction of Electronic Equipments
HDBK-472	Maintability Prediction

Others

EIA RS 232/422/485	Interface between Data Terminal Equipment and Data Communication Equipment Employing serial Binary Data
DIN V 19250	Fundamental Safety Aspects for Measurement and Control Equipment
DIN V VDE 0801	Principles for Computers in Safety-Related Systems

3.14 Safety / fire protection

General

IP Code Part 15	Area Classification Code for Petroleum Installations
IP Code Part 9	Large Bulk Pressure Storage and Refrigerated LPG
BS 5378	Safety Signs & Colours
BS 5839	Fire Detection And Alarm In Buildings. Part 1 Design, Installation & Servicing.
BS 6651	Protection of Structures against Lighting
EN BS 50055	Electrical Apparatus for the Detection and Measurement of Combustible Gases. Performance Requirements for Group I Apparatus Indication up to 5% (v/v) Methane in Air.
EN BS 50056	Electrical Apparatus for the Detection and Measurement of Combustible Gases. Performance Requirements for Group I Apparatus Indication up to 100% (v/v) Methane in Air.
EN BS 50057	Electrical Apparatus for the Detection and Measurement of Combustible Gases. Performance Requirements for Group II Apparatus Indication up to 100% (v/v) Lower Explosion Limit.
EN BS 50058	Electrical Apparatus for the Detection and Measurement of Combustible Gases. Performance Requirements for Group II Apparatus Indication up to 100% (v/v).

API (American Petroleum Institute)

API 2021	Fighting Fires in and around flammable and combustible liquid atmospheric storage tanks
API 2510A	Fire protection Consideration for Design & Operation of LPG Storage Facilities
API 2510	Design and Construction of LPG Installations

NFPA (National Fire Protection Association)

NFPA 10	Portable Fire Extinguishers
NFPA 11	Low-Expansion Foam and Combined Agent Systems
NFPA 11A	Medium and High Expansion Foam Systems
NFPA 11C	Mobil Foam Apparatus
NFPA 12	Carbon Dioxide Extinguishing Systems
NFPA 13	Installation of Sprinklers Systems
NFPA 14	Installation of Standpipe Private Hydrants and Hose Systems
NFPA 15	Water Spray Fixed Systems for Fire Protection
NFPA 16	Installation of Deluxe Foam Water Sprinkler Systems and Foam-water spray systems
NFPA 17	Dry Chemical Extinguishing Systems
NFPA 20	Installation of Centrifugal Fire Pumps
NFPA 22	Water Tank for Private Fire Protection
NFPA 24	Private Fire Service Mains and Their Appurtenance
NFPA 30	Flammable and Combustible Liquids Code
NFPA 45	Fire Protection for Laboratories using Chemicals
NFPA 58	Storage and Handling of Liquefied Petroleum Gases
NFPA 59A	Standard for Production, Storage and Handling of LPG
NFPA 70	National Electrical Code
NFPA 72	National Fire Alarm Code
NFPA 72E	Automatic Fire Detectors
NFPA 75	Protections Information Technology Equipment
NFPA 8502	Prevention of Furnace Explosion/Implosion in Multiple Burner Boilers
NFPA 86	Ovens and Furnaces
NFPA 86C	Industrial Furnaces using a special processing Atmosphere
NFPA 101	Life Safety Code

NFPA 325	Fire Hazard Properties of Flammable Liquid, Gases and Volatile Solids
NFPA 655	Prevention of Sulphur Fires and Explosions
NFPA 750	Water Mist Fire Protection Systems
NFPA 780	Installation of Lighting Protection System
NFPA 1961	Fire Hose
NFPA 1963	Fire Hose Connections
NFPA 2001	Clean Agent Extinguishing Systems

3.15 Noise Control

EEMUA (Engineering Equipment and Material Users Association)

Pub. 140	Noise Procedure Specification (formally OCMA Spec. NWG1, Rev.2,1980)
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ISO (International Organisation for Standardisation)

ISO Handbook	Handbook on Acoustics - Volume 1: General Aspects of Acoustics - Methods of Noise Measurement.
ISO 31-7	Quantities and Units of Acoustics
ISO 140-9	Measurement of Room to Room Sound Attenuation
ISO 717	Acoustics –Rating of Sound Insulation in Buildings. Part 1 Airborne Sound Insulation in Buildings Part 2 Impact Sound Insulation
ASME PTC 36	Measurement of Industrial Sound

IEC (International Electrical Commission)

IEC 225	Specification for Octave-Band and Fractional-Octave-Band-Analog and Digital Filters
IEC 651	Recommendations for Sound-Level Meters
IEC 61260	Electro Acoustics-Octave Band of Fractional Octave Band Filters
IEC 61672 1/2	Electro Acoustics- Sound-Level Meters Parts 1 & 2

OSHA	Occupational Safety and Health Administration
OSHA	Regulations (Standards – 29 CFR)
	Occupational Noise Exposure 1910.95

3.16 Painting

ISO (International Organisation for Standardisation)

ISO 8501	Preparation of Steel Substrates before Application of Paints and Related Products –Visual Assessment of Surface Cleanliness – Part 1: Rust Grades and Preparation Grades of Uncoated Steel Substrates and of Steel Substrates after Overall Removal of Previous Coatings.
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IEC (International Electrical Commission)

IEC 225	Specification for Octave-Band and Fractional-Octave-Band-Analog and Digital Filters
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SSPC (Steel Structures Painting Council)

SSPC-PA 2	Measurement of Dry Film Thickness with Magnetic gauges
SSPC-PA 3	A guide to Safety in Paint Application
SSPC-Vis 1	Visual Standard for Abrasive Blast Cleaned Steel
SP 1	Solvent Cleaning
SP 3	Power Tool Cleaning
SP 5	White Metal Blast Cleaning
SP 6	Commercial Blast Cleaning
SP 8	Pickling
SP 10	Near-White Blast Cleaning
SP 11	Power Tool Cleaning to Bare Metal

ASTM (American Society for Testing and Materials)

ASTM D3359	Measuring Adhesion by Tape Test
ASTM D4417	Field Measurement of Surface Profile of Blast Cleaned Steel
ASTM D4541	Standard Test Method for Pull-off Strength of Coatings Using Portable Adhesion

ASTM D4752	Standard Test Method for Measuring MK resistance of Ethyl Silicate (Inorganic) Zinc Rich Primers by Solvent Rub
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BSI (British Standards Institute)

BS 1710	Specifications for Identification of Pipeline and Services
BS 3900	Method of Tests for Paints

NACE (National Association of Corrosion Engineers)

NACE RP 0178	Fabrication Details, Surface Finish Requirements and Proper Design
	Considerations for Tanks and Vessels to be Lined for Immersion Service
NACE RP 0188	Discontinuity (Holiday) Testing of Protective Coatings
NACE RP 288	Inspection of Linings on Steel and Concrete
NP 6 H 189	A State-of-the-Art Report of Protective Coatings for Carbon Steel and Austenitic Stainless Steel Surface Under Thermal Insulation and Cementious Fireproofing
TM-01	Visual Standard for Surfaces of New Steel Airblast Cleaned with Sand Abrasives

Others

NF 30124	Measuring of Dry Film Thickness Non Destructive method with magnetic flux
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3.17 Insulation

ASTM (American Society for Testing and Materials)

ASTM A167	Stainless Steel and Heat Resisting Chromium – Nickel Steel Plate, Sheet and Strip
ASTM A463	Steel Sheet, Cold-Rolled, Aluminium-coated, Type 1 and Type 2
ASTM C165	Measuring Compressive Properties of Thermal Insulations
ASTM C167	Fibreglass Material Density
ASTM C240	Foamglass Density
ASTM C450	Prefabrication and Field Fabrication of Thermal Insulating Fitting Covers, Adjunct No. 12-304500-00

ASTM C461	Mastics and Coatings Used with Thermal Insulation (R 1990)
ASTM C518	Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of The Heat Flow Meter Apparatus
ASTM C 552	Standard Specification for Cellular Glass Thermal Insulation
ASTM C 591	Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation
ASTM C 592	Standard Specification for Mineral Fiber Blanket Insulation and Blanket-Type Pipe Insulation (Metal-Mesh Covered) (Industrial Type)
ASTM C547	Mineral Fibre Blanket Insulation & Blanket Type Pipe Insulation (metal meshcovered)
ASTM C612	Mineral Fibre Block and Board Thermal Insulation
ASTM C680	Determination of Heat Gain or Loss and the Surface Temperature of Insulated pipe and Equipment Systems by the Use of a Computer Program .
ASTM 692:	Evaluating the Influence of Thermal Insulations on External Stress Corrosion Cracking Tendency of Austenitic Stainless Steel.
ASTM C795	Wicking Type Thermal Insulation for use over austenitic stainless steel
ASTM C871	Thermal Insulation Materials for Leachable Chloride, Fluoride, Silicate and Sodium Ions
ASTM D93	Flash Point by Pensky-Martens Closed Tester
ASTM D1621	Compressive Properties of Rigid Cellular Plastics (R 1979)
ASTM D1622	Apparent Density of Rigid Cellular Plastics
ASTM D1623	Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
ASTM D2341	Rigid Urethane Foam
ASTM D2856	Open Cell Content of Rigid Cellular Plastics by the Air Pycnometer
ASTM E84	Surface Burning Characteristics of Building Materials
ASTM E90	Measurement of Airborne Sound Transmission Loss in Building Partition
ASTM E96	Water Vapour Transmission of Materials

BSI (British Standard Institute)

BS 4735	Laboratory Method of Test for Assessment of the Horizontal Burning Characteristics of Specimens no longer than 150 mm x 150 mm x 13 mm of Cellular Plastics and Cellular Rubber Materials when subjected to a Small Flame
BS 5970	Thermal Insulation of Pipe Work and Equipment (in the temperature range of -100°C to +870°C)

3.18 Fireproofing

UL 1709 Fire Test on Building Materials and Structures
(Underwriter Laboratories)

3.19 Materials /Welding and steel material inspection

NACE

NACE MR0175/ISO 15156-1/2/3: 2001 (E): Petroleum and natural gas industries-Materials for use in H₂S-containing environments in oil and gas production.

European Federation of Corrosion

EFC Publication No.16: Guidelines on Materials Requirements for Carbon and Low Alloy Steels for H₂S-Containing Environments in Oil and Gas Production.

EFC Publication No.17: Corrosion Resistant Alloys for Oil and Gas Production: Guidance on General Requirements and Test Methods for H₂S Service.

European Norms

EN 10 204 Metallic Products – Types of Inspection Documents

British Standards

BS EN 287-1 Approval Testing of Welders.

BS EN 462-1/2/3/4/5: Non-Destructive testing. Image quality of radiographs. Image quality indicators (wire type).Determination of image quality value.

BS EN 473: Non-destructive testing. Qualification and certification of NDT personnel. General principles.

BS EN 571-1: Non destructive testing. Penetrant testing. General principles.

BS EN 584-1:Non-destructive testing. Industrial radiographic film. Classification of film systems for industrial radiography.

BS EN 1435: Non-destructive examination of welds. radiographic examination of welded joints.

BS EN ISO 9934-1: Non destructive testing. Magnetic particle testing .General Principles.

BS EN 10160: Ultrasonic testing of steel flat product of thickness equal or grater than 6mm (reflection method).

BS EN ISO 15607: Specification & qualification of welding procedures for metallic materials. General Rules.

BS EN ISO 15609-1: Specification and qualification of welding procedures for metallic materials. Welding procedure specification. Arc welding.

BS EN ISO-15614-1: Specification and qualification of welding procedures for metallic materials. Welding procedure test. Arc and gas welding of steels and arc welding of nickel and nickel alloy.

BS EN 1714: Non destructive testing of welded joints. Ultrasonic testing of welded joints

ASME (American Society of Mechanical Engineers) Codes

Section II

Section II – Part C	Welding Rods, Electrodes and Filler Metals
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Section V	Non-destructive Examination
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Section VIII	Unfired Pressure Vessels, Division 1 and 2
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Section IX	Welding Qualification
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ASTM (American Society for Testing and Material(s) Standards

E92	Test Method for Vinchers Hardness of Metallic Materials
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E94	Guide for Radiographic Testing
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E113	Recommended Practice for Ultrasonic Testing by the Resonance Method
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E114	Ultrasonic Pulse-Echo Straight Beam Examination by the Contact Method
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E125	Magnetic Particle Indications on Ferrous Castings
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E142	Controlling Quality of Radiographic Testing
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E165	Liquid Penetrant Inspection Examination
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E709	Magnetic Particle Examination
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A578	Specification for Straight-Beam Ultrasonic Examination of Plain and Clad Steel Plates for Special Applications
A833	Indentation Hardness of Metallic Materials by Comparison Hardness Testers
E110	Standard Test Method for Indentation Hardness of Metallic Materials by Portable Hardness Testers
E140	Standard Hardness Conversion Tables of Metals

AWS (American Welding Society)

AWS A 4-2	Standard Procedure for Calibrating Magnetic Instruments to Measure the Delta Ferrite Content of Austenitic and Duplex Austenitic-Ferritic Stainless Steel Weld Metal
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ASNT (American Society of Non-destructive Testing)

SNT-TC-1a	Recommended Practice for Non-Destructive Testing Personnel Qualification and Certification
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API (American Petroleum Institute)

API Std 1104 Standard for Welding Pipelines and Related Facilities

3.20 Telecommunication

Where there are no equivalent Iranian standards, the appropriate International and European standards shall be applied to the Telecommunications system Design. These shall include, but not be limited to, all applicable sections of :

- ◆ ITU Recommendations, including ITU-R and ITU-T
- ◆ IEE, IEEE, ISO and IEC Standards, TIA/EIA
- ◆ DTI MPT Specifications
- ◆ IMO Regulations
- ◆ ICAO Regulations
- ◆ CENELEC Standards
- ◆ EUTELSAT EESS Standards
- ◆ ATEX for certificates

3.21 Cathodic Protection System

API Standard 650	Welded Storage Tanks for Oil Storage
API RP 651	Cathodic Protection of Aboveground Storage Tanks

API RP 1632	Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems
BS 7361: Pt.1	Cathodic protection – Code of practice for land and marine applications
BS 1377	Methods of Testing Soils for Civil Engineering Purposes
: Part 1	General Requirements and Sample Preparation
: Part 3	Chemical and Electro-chemical Tests
: Part 9	In-situ Tests
BS 7430	Code of Practice for Earthing
DNV RP B401	Cathodic Protection Design
MIL-A-18001	US Military Specification for Zinc Anodes
IEC 529	Degrees of Protection Provided by Enclosures
IEC 146	Semiconductor Convertors
NACE RP0169	Control of External Corrosion on Underground or Submerged Metallic Piping Systems
NACE RP0572	Design, Installation, Operation, and Maintenance of Impressed Current Deep Groundbeds
NACE RP0675	Control of External Corrosion on Offshore Steel Pipelines
NACE RP0176	Corrosion Control of Steel Fixed Offshore Platforms Associated with Petroleum Production
NACE RP0285	Corrosion Control of Underground Storage tank Systems by cathodic Protection
NACE RP0286	The Electrical Isolation of Cathodically Protected Pipelines
NACE RP0387	Metallurgical and Inspection Requirements for Cast Sacrificial Anodes for Offshore Applications
NACE RP0388	Impressed Current Cathodic Protection of Internal Submerged Surfaces of Steel Water Storage Tanks
NACE RP0193	External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms
NACE RP0196	Galvanic Anode Cathodic Protection of Internal Submerged Surfaces of Steel Water Storage Tanks
NACE RP0177	Mitigation of Alternating Current & Lightning Effects on Metallic Structures and Corrosion Control System
NACE RP0492	Metallurgical and Inspection Requirements for Offshore Pipeline Bracelet Anodes

NACE RP0575	Design, Installation, Operation, and Maintenance of Internal Cathodic Protection System in Oil Treating Vessels
NACE RP0169-92	Control of external corrosion on underground or submerged metallic piping systems
NACE RP0177-83	Mitigation of alternating current and lightning effects on metallic structures and corrosion control systems
NACE RP0286-97	Electrical isolation of cathodically protected pipelines
NACE RP0572-95	Design, Installation, Operation, and Maintenance of Impressed Current Deep Groundbeds
BS 1591	Specification for corrosion resisting high silicon iron castings
BS 5467	Specification for Cables with Thermosetting Insulation for Electricity Supply
BS 6004	Specification for PVC Insulated Cables (Non Armoured) for Electrical Power and Lighting
BS 6346	Specification for PVC Insulated Cables for Electricity Supply
BS 7361	Cathodic Protection : Part 1. Code of practice for land and marine applications
ISO 15589-1	Pipeline Transportation System – Cathodic Protection – Part 1: Onshore Pipelines
