

## Type 'A' Inspection Body

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
IAF Scope 14 Plastic Products (PVC & PE Products) PVC (UPVC / CPVC) Pipes & Fittings Pressure Pipes	Stagewise/Final Inspection	IS 4985 : 2000	Unplasticized PVC Pipes for Potable Water Supplies
		IS 532 : 2006	Bicycle tube valves and Valve tubing specifications.
		ISO 1452-2 : 2009	Plastics piping systems for water supply and for buried and above- ground drainage and sewerage under pressure - Unplasticized poly(vinyl chloride) (PVC-U) -- Part 2: Pipes
		ASTM D1785 : 2015	Standard Specification for Poly(Vinyl Chloride) (PV C) Plastic Pipe, Schedules 40, 80, and 120
		ASTM D2241 : 2015	Standard Specification for Poly(Vinyl Chloride) (PV C) Pressure-Rated Pipe (SDR Series)
		DIN 8062 : 2009-10	Unplasticized Polyvinyl Chloride(PVC-U) Pipes dimensions
		AS/NZS 1477: 2006	PVC Pipes & Fittings for Pressure Applications
		IS 15265:2003 & Departmental Specification	Flexible PVC Pipes or Polymer Reinforced Thermoplastic Hoses for Suction and Delivery Lines of Agricultural Pumps
		IS 10151: 1982 (R2008)	Polyvinyl Chloride (PVC) and its Copolymers for its Safe Use in Contact with Foodstuffs, Pharmaceuticals and Drinking Water
		PNS 65 : 1993	Philippines National Standar dm no. PNS 65 : 1993 for Unplasticized PVC Pipes for Potable Water Supply

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
Screen & Casing Pipe		IS 12818 : 2010  ASTM F 480: 14  DIN 4925 : 2014-09  DIN 4925-3:2012-10	Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification  Unplasticized PVC-U Screen & Casing Pipes for Bore/tube well specifications.  Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), SCH 40 and SCH 80  Unplasticized PVC-U for Tube Wells - Part 2: DN 100 To DN 200 with Trapezoidal Thread  Well Screens And Casings Of Unplasticized PVC-U for Tube
Cable Duct Pipe  SWR Pipe  Pipe for Suction & Delivery  Sure – Loc. Screen & Casing Pipe  Sure – Loc. Column Pipe  PVC - U Pipes for use in underground drainage and sewerage systems		IS 14787:2000 (RA 2005)  IS 13592:2013  IS 12231:1987  ASTM D1785:2015  ASTM D2241:2015  ASTM D 1785:2015  IS 15328:2003	Wells - Part 2: DN 250 To DN 400 with Trapezoidal Thread  Unplasticized PVC Pipes (ducts) And Fittings For Underground Telecommunications Cable Installation Specification  Unplasticized PVC-U pipes for Soil & Water Discharge system for inside & outside buildings including ventilation & rain water system specifications  Unplasticized PVC-U pipes for use in Suction & Delivery Lines of Agricultural Pump sets.  Standard Specification for PVC Plastic Pipe, Schedules 40, 80, and 120  Standard Specification for PVC Pressure-Rated Pipe (SDR Series)  Standard Specification for PVC Plastic Pipe, Schedules 40, 80, and 120  PVC-U Pipes for use in underground drainage and sewerage systems
Fabricated PVC Fittings for Potable Water Supplies.  Injection Moulded PVC socket Fittings with Solvent Cement		IS 10124:2009  IS 7834:1987	Fabricated PVC Fittings for Potable Water Supplies.  Injection Moulded PVC socket Fittings with Solvent Cement Joints for Water Supply.

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
Joints for Water Supply  PE Pipes & Fittings (HDPE/ MDPE/ LDPE) Polyethylene (PE) Pipes for Pressure and Gas Application		IS 14885:2001  ENGSPEC/01/03-R4  BSNL Spec. (GR/DWC- 34/01SEP 2007) IS:14930 (Part-1):2001 amendment no. 2 April:2011 IS:14930 (Part-2):2001 PR EN 13476 -1: 2007 (E), PR EN 13476 -2:	Polyethylene Pipes for the supply of Gaseous Fuels specifications  Technical Specification for Polyethylene Pipe for Natural Gas OR any equivalent standards (All the above standards with latest amendments) BSNL Technical specifications for HDPE duct pipes  Conduit Systems for Electrical Installations  Plastics Piping Systems for Non-Pressure
HDPE Pressure Pipes		2007 (E), EN 13476-3:2007+A1:2009  IS 4984 : 1995 (PE 63, 80 &100), (RA 2008) DIN 8074 : 2011-12 (PE 63,80 & 100) ASTM D2104 -03  ASTM D2239:2012  ASTM D2447-03	underground drainage and sewerage-structured-wall system of UNPLASTICIZED POLY (VINYL CHLORIDE) (PVC-U), POLYPROPYLENE (PP) AND POLYETHYLENE (PE) - PART 2: specifications for pipes and fittings with smooth internal and external surface High Density Polyethylene pipes for potable water supplies  Polyethylene (PE) - Pipes PE 80,PE 100 Dimensions Standard Specification for Polyethylene (PE) Plastic Pipe, Schedule 40 Standard Specification for Polyethylene (PE) Plastic Pipem (SIDR-PR) Based on Contr olled Inside Diameter Standard Specification for Polyethylene (PE) Plastic Pipe, Schedules 40 and 80, Based on

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
			Outside Diameter ( Withdrawn 2010)
HDPE Sprinkler Pipe Plastic Piping Systems Polyethylene (PE) Pipes for Water Supply		ASTM D2737:2012  ASTM D3035:2014  ASTM F714:2013  IS 14151 (Part1):1999	Standard Specification for Polyethylene (PE) Plastic Tubing  Standard Specification for Polyethylene Plastics Pipe and Fittings Materials  Standard Specification for Polyethylene (PE) Plastic Pipe (DR- PR) Based on Outside Diameter Irrigation Equipment Sprinkler Pipes specifications. Part 1: Polyethylene Pipes
Sewerage Pipe		IS 14151 (Part2):2008  BS EN 12201-1:2003  BS EN 12201- 2:2011+A1:2013 (PE 63, 80 & 100 )	Equipment -Sprinkler Pipes specifications. Part-2 : Quick Coupled Polyethylene Pipes and fittings Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification Plastic piping systems for water supply. Polyethylene (PE). General Plastics piping systems for water supply, and for drainage and
PLB HDPE Duct		IS 14333 :96 (RA 2001) (PE 63, 80 & 100)	sewerage under pressure. Polyethylene (PE) Pipes Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification High Density Polyethylene Pipes for sewerage specifications
HDPE Double Wall Corrugated (DWC)Pipe		BSNL Spec.(TEC/GR/TX/CD S-008/03/March 2011)	Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification BSNL Technical specifications for HDPE duct pipes  Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
Polyethylene (PE)Pipes for Pressure Application		AS/NZS 4130 : 2009  AS/NZS 5065 : 2005	Polyethylene (PE) Pipes for Pressure Applications  Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification
Fabricated and Machined HDPE Fittings for Potable Water Supplies  Injection Moulded HDPE Fittings for Water Supply HDPE Fittings for Potable Water Supplies		IS 8360 (Part 1 to 3) : 1977 (RA 2002)  IS 8008 (Part 1 to 9) : 2003  BS EN 12201- 3:2011+A1:2012  ISO - 4427- 3 : 2007  ISO 14236:2000	Specifications for fabricated High Density Poly Ethylene. (HDPE) fittings for potable water supplies  Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification Injection Moulded/Machined High Density Poly Ethylene HDPE Fittings for Potable Water Supply. Plastics piping systems for water supply, and for drainage and sewerage under pressure. Polyethylene (PE). Fittings Plastic \ Piping Systems- Polyethylene PE Pipes & Fittings for water supply. OR any equivalent standards (All the above standards with latest amendments) Plastics pipes and fittings- Mechanical-joint compression fittings for use with polyethylene pressure pipes in water supply systems Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification
Low Density Polyethylene Pipes		IS 3076 : 1985  IS 13488:1992 IS 12786:1989  BS EN 1555-3:2010  ISO 12162:2009	Low Density Polyethylene Pipes for Potable Water Supplies Emitting Pipes System Irrigation Equipment - Polyethylene Pipes for Irrigation Laterals Plastics piping systems for the supply of gaseous fuels. Polyethylene (PE) Fittings Thermoplastics materials for pipes and fittings for pressure applications -

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
EF Fittings - (Couplers , Tapping Tee, End Cap, Reducer, Equal Tee, Transition fitting, Elbow)	Stagewise/ Final Inspection	BS EN 1555-3:2010	- Classification, designation and design coefficient  Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification  Plastics piping systems for the supply of gaseous fuels. Polyethylene (PE) Fittings
		BS EN 12201- 3:2011+A1:2012	Plastics piping systems for the supply of gaseous fuels. Polyethylene (PE) Fittings Polyethylene (PE). Fittings
		ISO 13954 : 1997	Plastics pipes and fittings -- Peel decohesion test for polyethylene (PE) electrofusion assemblies of nominal
Low Density Polyethylene Pipes		ISO 13955 : 1997	outside diameter greater than or equal to 90 mm  Plastics pipes and fittings -- Crushing decohesion test for polyethylene (PE) electrofusion assemblies
		IS 3076 : 1985	Low Density Polyethylene Pipes for Potable Water Supplies
		IS 13488:1992	Emitting Pipes System
		IS 12786:1989	Irrigation Equipment - Polyethylene Pipes for Irrigation Laterals
		BS EN 1555-3:2010	Plastics piping systems for the supply of gaseous fuels. Polyethylene (PE) Fittings
		ISO 12162:2009	Thermoplastics materials for pipes and fittings for pressure applications - - Classification,  designation and design coefficient Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification
	Client Requirements in the form of QAP mentioning required specification and scope mentioned in this scope. However, the applicable National & International Codes and Standards shall be among those which are either referred in the scope statement or shall be equivalent to the standards described above for the relevant scope category		
IAF Scope 17			

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
<b>Basic Metals and Fabricated Metal Products</b> Pipes and Tubes (Straight Tube & U-Tube (Seamless and Welded))	Stagewise/ Final Inspection	ASME SA106:2015	Specification for seamless carbon steel pipe for high temperature service
		ASME SA179:2015	Specification for seamless cold drawn low carbon steel heat exchanger and condenser tubes
		ASME SA213:2015	Specification for seamless ferritic and austenitic alloy steel boiler, super heater, and heat exchanger tube
		BSEN10217:2014	Welded steel tubes for pressure purpose
		ASME SA 214:2015	Specification for electric resistance welded carbon steel heat exchanger and condenser tubes
		ASME SA 250:2015	Specification for electric resistance welded ferritic alloy steel boiler and super heater tubes
		ASME SA 312:2015	Specification for seamless, welded, and heavily cold worked austenitic stainless steel pipes
		ASME SA 333:2015	Specification for seamless and welded steel pipe for low temperature service
		ASME SA334:2015	Specification for seamless and welded carbon and alloy steel tubes for low temperature service
		ASME SA 672:2015	Specification for electric fusion welded steel pipe for high pressure service at moderate temperature Petroleum, petrochemical and natural gas industries -- Metallic materials resistant to sulfide stress cracking in corrosive petroleum refining environments
		ASTM A999 / A999M - 17	Standard Specification for General Requirements for Alloy and Stainless Steel Pipe
		IS 1161: 2014	Steel Tubes for Structural Purposes – Specification
		IS 3601: 2006	Steel Tubes for Mechanical and General ENG~EEWG Purposes — Specification

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
		ASTM A 178: 2015	Specification for Electric-Resistance-Welded Carbon Steel and Carbon-Manganese Steel Boiler and Super heater Tubes
		ASTM A 179: 2015	Specification for Seamless Cold-Drawn Low-Carbon Steel Heat-Exchanger and Condenser Tubes
Tubing (Non-Ferrous)		ASTM A 192: 2015	Specification for Seamless Carbon Steel Boiler Tubes for High-Pressure Service
		ASTM A 209: 2015	Specification for Seamless Carbon-Molybdenum Alloy-Steel Boiler and Super heater Tubes
		ASTM A 213: 2015	Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Super heater, and Heat-Exchanger Tubes
		ASTM A 214: 2015	Specification for Electric-Resistance-Welded Carbon Steel Heat-Exchanger and Condenser Tubes
		ASTM A 249: 2015	Specification for Welded Austenitic Steel Boiler, Super heater, Heat- Exchanger, and Condenser Tubes
		API 5CT: 2011	Specification for Casing and Tubing
		EN 10255: 2004	Non-alloy steel tubes suitable for welding and threading. Technical delivery conditions
		IS 3589:2001	Steel Pipes for Water and Sewage
		ASTM B-111:2015	Spec for Copper and Copper alloy seamless condenser tubes and ferrule stock
		ASTM B-135:2015	Specification for seamless brass tubes
		ASTM B-161	Specification for nickel seamless pipe and tube
		ASTM B-163:2015	Specification for seamless nickel and nickel alloy condenser and heat exchangers tubes
		ASTM B-165:2015	Specification for nickel-copper alloy seamless pipe and tubes
		BS 2871:1972	Specification for copper and copper alloy, tubes for general purpose Or equivalent to the above standards with latest edition and QAP/ITP and Client Specification.



IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
Ductile Iron Pipes		BS EN 545:2010  BS EN 598: 2007+A1:2009  IS 8329: 2000  ISO 2531: 2009  ASTM A 746: 2015	Ductile iron pipes, fittings, accessories and their joints for water pipelines  Ductile iron pipes, fittings, accessories and their joints for sewerage applications  Centrifugally cast (spun) ductile iron pressure pipes for water, gas and sewage - specification  Ductile iron pipes, fittings, accessories and their joints for water application  Standard Specification for Ductile Iron Gravity Sewer Pipe
Storage Tanks          Welded Structures for Onshore and Offshore Purpose		API 620  API 650 IS 803: 1976   IS 10987: 1992   ASME Sec VIII 2015   AWS D 1.1   ASME B 31.1	Or equivalent to the above standards with latest edition and QAP/ITP and Client Specification  Design & construction of large welded low pressure tanks, Welded tanks for Oil Storage  Code of practice for design, fabrication and erection of vertical mild steel cylindrical welded oil storage tank  Code of fabrication, Practice for design, testing and installation, of under-ground/above- ground horizontal cylindrical steel storage tanks for petroleum products  Rules for construction of pressure vessels  Or equivalent to the above standards with latest edition and QAP/ITP and Client Specification. Structural welding code - Steel    Or equivalent to the above standards with latest edition and QAP/ITP and Client Specification Power Piping
Piping fabrication, installation & testing		ASME B 31.3	Process Piping   Or equivalent to the above standards with latest edition and QAP/ITP and Client Specification

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
Metallic Hose Assemblies		BS4089:1999	Specification for metallic hose assemblies for liquid petroleum gases and liquefied natural gases Or equivalent to the above standards with latest edition and QAP/ITP and Client Specification
Plates		ASME SA516:2015	Specification for pressure vessel plates, carbon steel, for moderate and lower temperature service
		ASME SA 515:2015	Specification for pressure vessel plates, carbon steel, for intermediate and higher temperature service.
		ASME SA 285:2015	Specification for pressure vessel plates, carbon steel, low alloy and intermediate tensile strength
		ASME SA 387:2015	Specification for pressure vessel plates, alloy steel, chromium molybdenum
		IS 2041:2009	Steel Plate for Pressure Vessel used at moderate and low temperature
Castings		ASME SA216:2015	Or equivalent to the above standards with latest edition and QAP/ITP and Client Specification Specification for Steel Castings, carbon, suitable for fusion welding for high temperature service
		ASME SA217:2015	Specification for steel castings, martensitic stainless and alloy, for pressure-containing parts, suitable for high-temperature service
		ASME SA352:2015	Specification for steel castings, ferritic and martensitic, for pressure containing parts, suitable for low temperature service
		BS3100:1991	Steel castings for general engineering purpose
		BSEN 10293:2005	Steel castings for general engineering uses
		IS 1030: 1998	Carbon steel castings for general engineering purposes - specification
		IS 2644: 1994	High strength steel castings for general engineering and structural purposes-specification
		IS 1865: 1991	Iron Castings with Spheroidal or Nodular Graphite - Specification

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
Forgings		ASTM A 915: 2015	Steel Castings, Carbon and Alloy, Chemical Requirements Similar to Standard Wrought Grades
		ASTM A 958: 2015	Steel Castings, Carbon and Alloy, with Tensile Requirements, Chemical Requirements Similar to Standard Wrought Grades
		ASTM A 781: 2015	Standard Specification for Castings, Steel and Alloy, Common Requirements, for General Industrial Use
		ASME SA105:2015	Specification for carbon steel Forgings for piping application,
		ASME SA182:2015	Specification for forged or rolled alloy and stainless steel pipe flanges, forged fittings, and valves and parts for high-temperature service
		ASME SA350:2015	Specification for carbon and low alloy steel forgings, requiring notch toughness testing for piping components
		BSEN10250:2000	Open die steel forgings for general engineering purpose
		BS4670:1971 SA965:2015	Specification for alloy steel forgings Specification for steel forgings, austenitic, for pressure and high temperature parts
Line pipes       Fittings & Flanges		IS 2004: 1991	Carbon steel forgings for general engineering purposes-specification
		ASTM A 788: 2015	Standard Specification for Steel Forgings, General Requirement
		ASTM A 336: 2015	Alloy Steel Forgings for Pressure and High-Temperature Parts
		ASTM A 372: 2015	Carbon and Alloy Steel Forgings for Thin-Walled Pressure Vessels Or equivalent to the above standards with latest edition and QAP/ITP and Client Specification
		API 5L, 45 <sup>th</sup> Edition 2012, Includes Errata (2015)	Specification for line pipe  Or equivalent to the above standards with Latest edition and QAP/ITP and Client specification
		ASME SA 234:2015	Specification for pipe fittings of wrought carbon steel and alloy steel

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
		ASME SA420:2015	for moderate and high temperature service Specification for piping fittings of wrought carbon steel and alloy steel for low temperature service
		ASTM A 234: 2015  ASTM A 182: 2015  EN 877: 1999  ASTM A 420: 2015  ASTM A 403: 2015  ASTM A 758: 2015  ASTM A 774: 2015	Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service Specification for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service Specification for Cast Iron Pipes and fittings Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service Specification for Wrought Austenitic Stainless Steel Piping Fittings Specification for Wrought-Carbon Steel Butt-Welding Piping Fittings with Improved Notch Toughness Specification for As-Welded Wrought Austenitic Stainless Steel Fittings for General Corrosive Service at Low and Moderate Temperatures
Fasteners		ASME SA 193:2015  ASME SA 194:2015  ASME SA 320:2015	Or equivalent to the above standards with latest edition and QAP/ITP and Client Specification Specification for alloy steel and stainless steel bolting materials for high temperature or high pressure service and other special purpose applications. Specification for carbon and alloy steel nuts for bolts for high pressure or high temperature service or both. Specification for alloy steel and stainless steel bolting for low temperature service

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
		ASME SA 540:2015	Specification for alloy steel bolting for special application.  Or equivalent to the above standards with latest edition and QAP/ITP and Client Specification
		Client Requirements in the form of QAP mentioning required specification and scope mentioned in this scope. However, the applicable National & International Codes and Standards shall be among those which are either referred in the scope statement or shall be equivalent to the standards described above for the relevant scope category	
<b>IAF Scope 18 Machinery and Equipment</b> All Types of Valves (all Materials-Size & Class)	Stagewise/ Final Inspection	API 602, 10 <sup>th</sup> Edition: 2015  API 603, 9 <sup>th</sup> Edition: 2018  BS EN ISO 10434:2020  API 600, 14 <sup>th</sup> Edition, 2021 BS EN 1984:2010 BS EN 12516- 1:2014+A1:2018 ASME B16.34: 2020 API 6D:24 <sup>th</sup> Edition, 2014 API 6A: 21 <sup>st</sup> Edition 2019 API 594 8 <sup>th</sup> Edition 2017	Gate, globe, and check valves for sizes DN100 (NPS4) and smaller for the petroleum and natural gas industries.  Corrosion-resistant, bolted bonnet gate valves-flanged and butt-welding ends  Bolted bonnet steel gate valves for the petroleum, petrochemical and allied industries  Steel Gate Valves - Flanged and Butt-welding Ends, Bolted Bonnets  Industrial valves. Steel gate valves  Industrial valves. Shell design strength Tabulation method for steel valve shells  Valves—Flanged, Threaded, and Welding End  Specification for Pipeline and Piping Valves  Specification 6A, Wellhead and Tree Equipment.  Check Valves: Flanged, Lug, Wafer, and Butt-welding
		API 608- 6 <sup>th</sup> Edition 2020 API 609: 9 <sup>th</sup> Edition 2021	Metal Ball Valves -Flanged, Treaded and welding ends  Butterfly Valves – Double Flanged, Lug and Wafer type

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
		API 598 : 2016 10 <sup>th</sup> Edition IS 9890 : 1981 BS EN12266-1 : 2012 EN 12516 : 2014 API 526-7 <sup>th</sup> Edition : 2017 API 603- 9 <sup>th</sup> Edition : 2018 API 6A -4 <sup>th</sup> Edition includes Errata 1 & 2 : (2018) API 694-8 <sup>th</sup> Edition : 2017 API 607 : 2016 ; API 6FA:2020 ISO 10497	Valve Inspection and Testing Specification for general purpose ball valves Testing of metallic valves. Industrial valves. Shell design strength. Calculation method for steel valve shells. Flanged Steel Pressure Relief Valves. Corrosion Resistant Bolted Bonnet Gate Valves. Specification for Fire Test Valves Check Valves Flanged Lug and Wafer Type and Butt Welding Fire Test for soft seated Quarter Turn Valves Testing of valves - Fire type-testing requirements
		API 624:2014 API 641: 2016 ISO 15848-1:2015 BS EN 12266-1 -2012 EN 1626:2008 ISO 21011:2008 BS 6364 : 1991 API 591 : 2019 API 17D : 2021	Type Testing of rising Stem Valves quipped with Graphite packing Type Testing of quarter turn Valves for Fugitive Emissions Helium Fugitive Emission Test for Industrial Valves. Testing of metallic valves. Valves for cryogenic service Valves for cryogenic service; specifies the requirements for the design, manufacture and testing of valves for a rated temperature of -40 °C and below (cryogenic service) Standard specifies the requirements for the design, manufacture and testing of valves for cryogenic service Process Valve Qualification Procedure Design and Operation of Subsea Production Systems -Subsea Wellhead and Tree Equipment

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
		MESC SPE 77/300: 2012	Procedure and technical specification for type acceptance testing (TAT) of industrial valves
		MESC SPE 77/312 : 2019	Fugitive emission production testing (amendments/supplements to ISO 15848-2)
		EN 334:2019	Gas pressure regulators for inlet pressures up to 100 bars
		EN 593 :2017	Industrial valves - Metallic butterfly valves for general purpose
		EN 1171:2015	Industrial valves — Cast iron gate valves
		EN 1349 :2009	Industrial process control valves
		EN 1983:2013	Industrial valves — Steel ball valves
		EN 1984:2010	Industrial valves — Steel gate valves
		EN 12284:2003	Refrigerating systems and heat pumps — Valves — Requirements, testing and marking
		EN 12288:2010	Industrial valves — Copper alloy gate valves
		EN 16767:2020	Industrial valves — Metallic check valves
		EN 13397:2001	Industrial valves — Diaphragm valves made of metallic materials
		EN 13709 :2010	Industrial valves — Steel globe and globe stop and check valves
		EN 13789 :2010	Industrial valves — Cast iron globe valves
Pumps (All Types & Size)		IS 6595: Part 1: 2002	OR any equivalent standards (All the above standards with latest amendments ) Other applicable National / International Specifications / Standards / Client specific requirements) Horizontal Centrifugal Pumps for Clear, Cold Water- Specification
		IS 6595: Part 2: 2002	Horizontal Centrifugal Pumps for clear, cold water (other than agricultural and rural water supply purposes)
		IS 9137:1978	Code for Acceptance Tests for Centrifugal, Mixed Flow and Axial Pumps-Class C

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
		IS 11745:1986  API 610 : 2021  API 674 : 2016  API 685:2011	Technical supply conditions for positive displacement pumps- reciprocating  Centrifugal Pumps for Petroleum, Petrochemical and Natural gas industries  Positive Displacement Pumps – Reciprocating  Seal less Centrifugal Pumps for Petroleum, Heavy duty chemical and Gas Industry services
Metallic Gasket (All Types & Size)		API 675:2021  IS 5120:1977  IS 1710:1989    ASTM A240 SS316L  IS1079 Gr Hr3	Positive Displacement Pumps- Controlled Volume for Petroleum, Chemical, and Gas Industry Services  Technical requirements for roto dynamic special purpose pumps  Pumps - Vertical Turbine Mixed and Axial Flow, For Clear Cold Water  OR any equivalent standards (All the above standards with latest amendments) Other applicable National / International Specifications / Standards / Client specific requirements)  Standard Specification for Heat- Resisting Chromium and Chromium- Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels1  Hot Rolled Carbon Steel Sheet And Strip
Bearing (All Types & Size)		ASTM F2443:04:2012  IS 14691: 1999  IS 14347:1996	Standard specification for roller, bearing, needle, ferrous, solid, spherical end  Rolling Bearings - Taper Rolling Bearings - Tapered Roller: Metric Series  Plummer block housing
		IS 14802:2000  IS 13962:1994  API 613:2003	Plain bearings -Hardness testing of bearing metals  Rolling bearings - metric tapered roller bearings - designation system  Special Purpose Gear Units for Petroleum, Chemical and Gas Industry Services



IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
All type of Pressure Regulation Skids (MRS, DRS, PRS, IMS, SRM) (All Types & Size)		API 677 : 2016	General Purpose Gear Units for Petroleum, Chemical and Gas Industry Services  OR any equivalent standards (All the above standards with latest amendments) Other applicable National / International Specifications / Standards / Client specific requirements)
		ASME B 31.3 : 2020	Process Piping & Piping Skids
		ASME B 31.8 : 2020	Gas Transmission and distribution piping system
Gas / Service Regulator (All Types & Size)  Odorizing system (All Types & Size) CNG Cascade (All Types & Size) CNG Dispenser		BS EN 88-2 : 2007	OR any equivalent standards (All the above standards with latest amendments) Other applicable National / International Specifications / Standards / Client specific requirements) Pressure Regulators and Associated Safety Devices for Gas Appliances. Pressure Regulators for Inlet Pressures Above 500 Mbar Up To And Including 5 Bar (British Standard) As per Client Tech. Specification
		IS 7285 : 2018	Specification for Refillable Seamless Steel Gas Cylinders
		EN 13617-1: 2012	Construction and performance of metering pumps, dispensers and remote pumping units
		Client Requirements in the form of QAP mentioning required specification and scope mentioned in this scope. However, the applicable National & International Codes and Standards shall be among those which are either referred in the scope statement or shall be equivalent to the standards described above for the relevant scope category	

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
<b>IAF Scope 19 Electrical Equipment</b>  Transformers (All Types & Size) (HV & LV))	Stagewise/ Final Inspection	IS 2026 Part 1 to 8 : 2009	Power Transformers
		IS 2026: Part 1:2012	Power Transformers: Part 1: General
		IS 2026: Part 2 :2010	Power Transformers: Part 2: Temperature Rise
		IS 2026: Part 3 :2009	Power Transformers: Part 3: Insulation levels, dielectric tests and external clearances in air
		IS 2026: Part 4:1977	Power Transformers: Part 4: Terminal markings, tapings and connections
		IS 2026: Part 5 :2011	Power Transformers: Part 5 Ability to withstand short circuit
		IEC 60076:1: 2011	Power Transformers: Part 1: General
		IEC 60076:2: 2011	Power Transformers: Part 2: Temperature rise for liquid-immersed transformers
		IEC 60076:3: 2013	Power Transformers: Part 3: Insulation levels, dielectric tests and external clearances in air
		IEC 60076:4:2002	Power Transformers: Part 4: Guide to the lightning impulse and switching impulse testing
		IEC 60076:5:2006	Power Transformers: Part 5: Ability to withstand short circuit
		IS 11171: 1985	Specification for Dry Type Power Transformers
		IS:2705 (Part 1) :1992	Current Transformers-Specification- Part 1: General Requirements
		IS:2705 (Part 2) :1992	Current Transformers -Specification- Part 2: Measuring Current Transformers
		IS:2705 (Part 3) :1992	Current Transformers -Specification- Part 3: Protective Current Transformers
		IS:2705 (Part 4) :1992	Current Transformers -Specification- Part 4: Protective Current Transformers for special purpose applications

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
		IEC: 61869-2:2012	Instrument transformers - Part 2: Additional requirements for current transformers
		IS: 3156 (Part 1) :1992	Voltage Transformers -Specification- Part 1: General Requirements
		IS: 3156 (Part 2) :1992	Voltage Transformers -Specification- Part 2: Measuring Voltage Transformers
Motors (All Capacity and Types) (HT & LT)		IS: 3156 (Part 3):1992	Voltage Transformers -Specification- Part 3: Protective Voltage Transformers
		IS: 3156 (Part 4) :1992	Voltage Transformers -Specification- Part 4: Capacitor Voltage Transformers
		IEC: 61869-3:2011	Instrument transformers - Part 3: Additional requirements for inductive voltage transformers OR any equivalent standards (All the above standards with latest amendments) Other applicable National / International Specifications / Standards / Client specific requirements.)
		IS 12615: 2018	Energy efficient Induction Motors- Three-phase Squirrel cage
		IEC 60034-2-1:2014	Rotating electrical machines - Part 2- 1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)
		IS 7538:1996	Three-phase squirrel cage induction motors for centrifugal pumps for agricultural applications
		IS 12066: 1987, (RA 2009)	Three-phase Induction Motors for Machine Tools
		IS 4029, Rev1: 2010, (RA 2016)	Guide for Testing Three Phase Induction Motors
		IS 12065, Rev1: 1987, (RA 2009)	Permissible limits of noise level for rotating electrical machines
		IS 12075, Rev1: 2008, (RA 2013)	Mechanical Vibration of Rotating Electrical Machines with Shaft Heights 56 mm and Higher - Measurement, Evaluation and Limits of Vibration Severity
		IEC 60079: 2017	Explosive atmosphere

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
Wires and Cables (All Types & Capacity) (HT & LT)		IS 7098 Part 1:1988	(Only Label and TC Review)  OR any equivalent standards (All the above standards with latest amendments) Other applicable National / International Specifications / Standards / Client specific requirements) Power cables Specification for cross linked polyethylene insulated PVC sheathed cables Part 1: for working voltages up to and including 1100 Volts
		IS 7098 Part 2:2011  IS 7098 Part 3:1993  IEC 60502 (Part 1) :2004  IEC 60502 (Part 2) :2014  IEC 60840 :2011	Cross linked polyethylene insulated thermoplastic sheathed cables Part 2: for working voltages from 3.3 KV up to and including 33 KV  Cross linked polyethylene insulated thermoplastic sheathed cables Part 3: for working voltages from 66 KV up to and including 220 KV  Power cables with extruded insulation and their accessories for rated voltages from 1 KV (Um = 1,2 KV) up to 30 KV (Um = 36 KV) –  Part 1:Cables for rated voltages of 1 KV ((Um = 1,2 KV) and 3 KV (Um = 3,6 KV)  Power cables with extruded insulation and their accessories for rated voltages from 1 KV (Um = 1,2 KV) up to 30 KV (Um = 36 KV) - Part 2: Cables for rated voltages from 6 KV (Um = 7,2 KV) up to 30 KV (Um = 36 KV)  Power cables with extruded insulation and their accessories for rated voltages above 30 KV (Um =
		BS 6622:2007  BS 5467:1997:2008	36 KV) up to 150 KV (Um = 170 KV) - Test methods and requirements  Electric cables: Armoured cables with thermosetting insulation for rated voltages from 3.8/6.6 KV to 19/33 KV  Requirements and test methods

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
		IS 694:2010	Control cable Electric cables. Thermosetting insulated, armoured cables for voltages of 600/1000 V and 1900/3300 V
		IS 1554 (Part 1):1988	Polyvinyl chloride insulated unsheathed and sheathed cables/cords with rigid and flexible conductor for rated voltages up to and including 450/750V
		IS 1554 (Part 2):1988	Specification for PVC insulated (Heavy Duty) Electric Cables. Part 1: for working voltages up to and including 1100 Volts
			Specification for PVC insulated (Heavy Duty) Electric Cables. Part 1: for working voltages from 3.3 KV up to and including 11 KV
Control Panels (All types, Size and Capacity) (HT & LT)		IEC 60227 (Part 1):2007	Poly Vinyl Chloride insulated cables of rated voltages up to and including 450/750 V - Part 1: General requirements
		BS 6346:1997	Electric cables. PVC insulated, armoured cables for voltages of 600/1000 V and 1900/3300 V
		IS/IEC 60794: PART 1: SEC :1 :2001	Optical Fiber Cables: Part 1 Generic Specification: Section 1 General
		IS/IEC 60794: Part 2:2002	Optical Fiber Cables Part 2 Indoor Cables - Sectional Specification
		IEC 60331-1:2018	Fire retardant cable/fire resistant cable (FRC)
			Tests for electric cables under fire conditions - Circuit integrity - Part 1
			Tests for electric cables under fire conditions - Circuit integrity - Part 1
			OR any equivalent standards (All the above standards with latest amendments ) Other applicable National / International Specifications / Standards / Client specific requirements)
		IS 13703:1993, (RA 2014)	Low-voltage fuses for voltages not exceeding 1000 V AC or 1500 V DC

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
		IS 12083:1986, (RA 2016) IS 12021, rev1: 2015  IS 8686: 1977, (RA 2016) IS 13947 (Part 1 ) :2004  IEC 60947-1:2007  IS 12729:2004  IEC 62271-1:2007	Electrical Relays  Control Transformers for Switchgear and Controlgear for Voltages Not Exceeding 1000 V a.c. – Specification Static protective relays  LV switchgear and control gear Specification For Low-Voltage Switchgear And Controlgear - Part 1: General Rules Specification For Low-Voltage Switchgear And Controlgear - Part 1: General Rules HV Switchgear and control gear Common Specification for High Voltage Switchgear and control gear standards High Voltage Switchgear and control gear Part 1: Common Specifications
		IEC 60694:2002	Common Specification for High Voltage Switchgear and control gear standards  OR any equivalent standards (All the above standards with latest amendments) Other applicable National / International Specifications / Standards / Client specific requirements)
		Client Requirements in the form of QAP mentioning required specification and scope mentioned in this scope. However, the applicable National & International Codes and Standards shall be among those which are either referred in the scope statement or shall be equivalent to the standards described above for the relevant scope category	
<b>IAF Scope 26 Gas and Petroleum supply</b> Gas Supply-NGPL with item 26-A (iii)	Stagewise / In-service	PNGRB's GSR 808(E) dated 11.11.2009 along with latest	PNGRB's "Technical Standards and Specifications including Safety Standards for Natural Gas Pipelines" Regulations, 2009

IAF Scope / Field of Inspection and Specific Item(s)	Stage and Range of Inspection(s)	Inspection Requirement(s) Standards / Regulations / Methods / Procedures	
		Number identification with year of publication	Title
of NABCB Sub- sector categorization document BCB 503 (IB)		amendments, national/ international standards  and relevant statutes mentioned therein	
Gas Supply-CGD with item 26-B (iii) of NABCB Sub- sector categorization document BCB 503 (IB)	Stagewise / In-service	PNGRB's GSR 612(E) dated 27.08.2008 along with latest amendments, national/ international standards and relevant statutes mentioned therein	PNGRB's "Technical Standards and Specifications including Safety Standards for City or Local Natural Gas Distribution Network" Regulations, 2008
<b>IAF Scope 31</b> <b>Transport, storage</b> <b>and communication</b> LPG Bottling, Over Ground/ Mounded / Refrigerated / Cavern Storage and Transport by Tank Truck with items- 31(v)	In-service	PNGRB's F.No. PNGRB/Tech/6- T4SLPG/(1)/2019.date d 15th February 2019 along with national/ international standards mentioned therein and relevant statutes	PNGRB's "Technical Standards and Specifications including Safety Standards for LPG Storage, Handling and Bottling Facilities" Regulations, 2019.