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उत्पाद मानुयल
Steel Pipe Flanges
IS 6392:2020 के अनुसार

PRODUCT MANUAL For
Steel Pipe Flanges
ACCORDING TO IS 6392:2020

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरण के प्रचलन में रीति और पारदर्शिता के सुसंगत सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2008 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	उत्पाद Product	:	IS 6392:2020
	शीर्षक Title	:	Steel Pipe Flanges - Specification
	संशोधन संख्या No. of amendments	:	00
2.	नमूनाकरण दिशा निर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	Other than high temperature use, the materials of forgings, castings and rolled plates shall be those given in Table 1 of IS 6392:2020 except that alternative materials may be used provided that their mechanical properties (tensile strength, yield stress and percent elongation) shall not be less than the value as specified in IS 2002 Gr-1. Both bolts and nuts shall be in accordance with IS 1364. For alloy steel studs or bolts, nuts of a similar steel, but of a different grade shall be used. If carbon steel is used, it shall have a tensile strength of 415 N/mm ² , Min.

			For temperatures up to 450°C, carbon steel bolts, studs and nuts may be used. For temperatures higher than 450°C bolts and studs shall be of alloy steel and nuts shall be of carbon or alloy steel of different grade. For bolts less than 12 mm size alloy steel nuts shall be used.
b)	समूहिकरण दिशा निर्देश Grouping Guidelines	:	Please refer Annex-A
c)	नमूने का परिमाण Sample Size	:	6 m x Full width.
3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex –B
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	:	Please refer Annex - C
5.	एक दिन में संभावित परीक्षण Possible tests in a day	:	(i) Dimension test & Tolerances, Cl.no 6 & 7 (ii) Hydrostatic test , Cl.no 10 (iii) Galvanizing test , Cl.no 13
6.	लाइसेन्स का कार्यक्षेत्र/Scope of the Licence:		
IS 6392:2020 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है Licence is granted to use Standard Mark as per IS 6392:2020 with the following scope:			
	Name of the product	Steel Pipes Flanges	
	Type	Forgings/ Castings/ Rolled plates , Type of Flange (Table.no__)	
	Type, grade and standard number of the material for flange	Carbon Steel as per Class 2 or 3 of IS 2004, Carbon Molybdenum Steel with IS 1570 (Part 4), Grade 20 Mo6 with 0.050, Max, of S and P etc. As per Cl. 3.1 and Table 1 of IS 6392:2020	
	Class Designation	Classes 0.1, 0.25, 0.60, 1.0, 1.6, 2.5, 4.0, 6.4, 10.0 and 16.0	
	Sizes	Nominal Bore Size (As per Tables 2 to 42):	
	Additional Properties	Galvanized/Not Galvanized	

ANNEX-A
GROUPING GUIDELINES

GROUPING GUIDELINES

For the purpose of the GOL/CSoL the product is grouped as under:

Types of Flanges	Class Designation/Pressure Rating		
	Group-I	Group-II	Group-III
	0.1, 0.25, 0.60	1.0, 1.6, 2.5, 4.0	6.4, 10.0, 16.0
Plate Flanges for Welding	Any one sample of any class designation within one group and any size (preferably highest size available) and of • Each type of flanges & • Each type of manufacturing process (Forging, Casting and Rolled plates) • Each type and grade of material Shall be tested from each for all the requirements of the specification to cover all the class designations in that group		
Slip-on Boss Flanges for Welding			
Loose Flanges for Welded on Lapped Pipe Ends			
Welding Neck Flanges			
Screwed Boss Flanges			
Plate Blind Flanges			
Integral Flanges			

Scope of the licence shall be restricted based on the manufacturing and the testing capabilities and during operation of licence, each variety shall be tested in rotation

ANNEX-B
LIST OF TEST EQUIPMENTS

Major test equipment required to test the requirements of the Indian Standard.

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Material specification , Cl.no 3.1, 4.2.1	Universal Testing Machine (UTM), Class-1 accuracy or better
2	Material specification , Cl.no 3.1, 4.2.1	Device for instrumental chemical analysis such as Optical Spectrometer with all requisite channels, certified reference materials etc. OR Equipment, Apparatus and reagents as per list annexed in case of analysis as per IS 228
3	Dimensions, Cl no. 6, 7, 8	Vernier caliper gauge or any other suitable device Steel scale micrometer (screw) gauge or other suitable device Weighing Balance Measuring Tape Thread gauges as per IS 554 and IS 8999
4	Hydraulic testing of Flanges , Cl.no 10	Hydrostatic Test Equipment with appropriate attachment and calibrated pressure gauge, stop watch
5	Galvanizing test , Cl.no 13	Weighing balance, Clean soft cotton cloth, Antimony trioxide / Antimony tri chloride, Conc. HCl, soft cotton cloth, solvent naphtha, trichloroethylene, alcohol, Distilled Water, 100 ml glass burette with stopcock, rubber tube Copper carbonate (laboratory grade) or Copper hydroxide (laboratory grade), Copper Sulphate Crystals – Technical grade, Ammonium Hydroxide, Alcohol, Distilled water, Volatile organic solvent such as ether, trichloroethylene, carbon tetrachloride, etc. and other chemicals and reagents applicable, Thermostatically Controlled Freezer (Capable of achieving 15 deg to 20 deg Celsius temp., LC = 1 deg. C), Magnifying glass

The above list is indicative only and may not be treated as exhaustive.

ANNEX – C

SCHEME OF INSPECTION AND TESTING

1. **LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.
 - 1.1 The manufacturer shall prepare a calibration plan for the test equipment.
2. **TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.
3. **PACKING AND MARKING** – The Standard Mark as given in the Schedule of the license shall be incorporated on the product or the label on each bundle of flanges provided always that the said product to which the mark is thus applied conforms to every requirement of the specification
 - 3.1 Marking and packing shall be done as per the provisions of the Indian Standard. In addition, the following information shall be given on each cut as well as bale/case:
 - a) Control Unit (or Batch) Number.
 - b) BIS website details i.e.–“For details of BIS certification please visit www.bis.gov.in”
4. **CONTROL UNIT** – For the purpose of this Scheme, all Flanges produced using material of same cast and processed to same form and dimensions in a day under uniform conditions of production shall constitute a control unit.
5. **LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.
 - 5.1 All the production which conforms to the Indian Standard and covered by the licence should be marked with Standard Mark.
6. **TEST CERTIFICATE**- For each consignment of BIS Certified material conforming to IS 6392:2020 there shall be a test certificate which shall contain the Standard Mark, the Control Unit number and the corresponding test results (as given in Annexure-I, enclosed)
7. **REJECTIONS**–Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act,2016.

TABLE 1
LEVELS OF CONTROL

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Claus e	Reference				
3	Material	3	IS 6392:2020 Table 1	S	One sample	Each Cast	In case the material ISI marked no testing is required.
6	Dimensions	6	IS 6392:2020	R	One sample	Each Cast	-
6.2	Machining of flanges	6.2	IS 6392:2020	R	One sample	Each Cast	-
7.2	Finish of joint surfaces	7.2	IS 6392:2020	R	One sample	Each Cast	-
7.3	Joint faces	7.3	IS 6392:2020	R	One sample	Each Cast	-
7.4	Flat Faces	7.4	IS 6392:2020	R	One sample	Each Cast	-
8	Attachment of Flange – Screwed Flanges	8.2.1	IS 6392:2020	R	One sample	Each Cast	--
	Welding neck Flange	8.2.3	IS 6392:2020	R	One sample	Each Cast	-
	Plate Flanges, slip on Boss flange and loose flange for welding	8.2.2	IS 6392:2020	R	One sample	Each Cast	-
10	Hydraulic testing of flanges	10	IS 6392:2020	R	One sample	Each Cast	Nominal pressure of flange shall be as specified by the purchaser & hydraulic test pressure shall be 1.5 times the nominal pressure.
13	Galvanizing	13	IS 6392:2020	R	One sample	Each Cast	
14	Workmanship & Finish	14	IS 6392:2020	R	One sample	Each Cast	

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.

Annexure-I
(Para 6 of the Scheme of Inspection and Testing)
XYZ IRON AND STEEL COMPANY
(Registered office Address and works address)
TEST CERTIFICATE FOR SPECIFICATION FOR STEEL PIPE FLANGES

TEST CERTIFICATE No. _____

DATE _____

To M/s _____

We certified that the material described below fully conforms to IS 6392:2020 Chemical composition and Physical properties of the product, as tested in accordance with the Scheme of Inspection and Testing contained in the BIS Certification Marks Licence No. CM/L _____ are as indicated below against each order No.

(PLEASE REFER TO IS 6392:2020 FOR DETAILS OF SPECIFICATION REQUIREMENTS)

Test Results

Order No and Date	Type of flange	Steel Designation	Control Unit Number	Class Designation/Pressure Rating	Nominal Sizes	Chemical and physical properties (test certificate of material may be attached)	Quantity

REMARKS
WAGON NO
TRUCK NO

FOR XYZ IRON AND STEEL COMPANY

(It is suggested that size A4 paper be used for this test certificate)