

भारत सरकार  
Government of India  
रेल मंत्रालय  
MINISTRY OF RAILWAYS



INDIAN RAILWAYS STANDARD SPECIFICATION

For

FISHPLATES AND FISHPLATE BARS

Serial no. T-1: 2021  
(First Revision)



अनुसंधान अभिकल्प एवं मानक संगठन, लखनऊ -11

Research Designs and Standards Organisation, Lucknow-11

## **FOREWORD**

- 0.1** Indian Railway Standard Specification for Fishplates was issued under the fixed serial No. T-1; adopted in 1931; revised in 1934, 1950, 1957, 1962 and 1966. A separate Indian Railway Standard Specification for Fishplates Combination was issued under fixed serial No.T-6 in 1939 and revised in year 1949, 1954, 1960 and 1965.
- 0.2** Indian Railway's requirement of fishplates was met in past by producers who not only manufactured fishplate but also produced the raw material for the purpose. With development of major steel plants, the raw material required for rolling of fishplate bars i.e. carbon steel billet is readily available from steel plants and is of superior quality as compared to one produced by small re-rollers. Therefore, it was permitted in ACS-7 of IRS T-1: 66.
- 0.3** Total 09 Nos. of Addendum and Corrigendum to IRS- T-1/1966 and 04 Nos. of Addendum and Corrigendum to IRS-T- 6/1965 were issued. Most of the provisions of IRS-T-1/1966 and IRS-T-6/1965 have been found common. To avoid duplication of items in above specifications, this combined specification for all type of fishplates i.e. normal fishplate, special fishplate, joggled fishplate and fishplate combination under the fixed serial number T-1-2012 is being issued. The last number indicates the year of original adoption as standard, or in case of revision, the year of last revision.
- 0.4** This specification covers the provisions required for manufacturing of fishplate bars and fishplates from carbon steel billets. Carbon steel billets meeting the properties given in this specification shall only be used for re-rolling in to fishplate bars/fishplates which in turn shall also meet various requirements laid down in this standard.
- 0.5** Latest edition amended from time to time of Indian and other standards mentioned in this specification shall be referred to.
- 0.6** Now, this specification has been revised and issued in 2021 to cover the ACS-1 issued in September-2018 to this specification and updating the latest revision of IS codes. Also, ALT column under Annexure-A, has been updated which indicates alteration numbers of drawings issued.

## 1. SCOPE

This standard covers the requirements for all types of fishplates and fishplate bars to be manufactured from carbon steel billets/blooms of specified chemical composition, mechanical properties and other metallurgical properties mentioned herein.

## 2. DIMENSIONS

The dimensions of fishplates shall be in accordance with the respective drawings unless otherwise specified by the purchaser. The List of drawings of fishplates of various categories is given in Annexure-A of this specification.

## 3. TEMPLATES

The manufacturer shall prepare two sets of working templates, internal and external, of approved metal for each section of fishplate ordered, and shall submit them to the purchaser or the Inspecting Officer and obtain his approval before the rolling/manufacture of the fishplates is commenced.

## 4. QUALITY OF RAW MATERIAL

**4.1** The steel of billets/blooms shall be of killed quality and shall be manufactured by any process of steel making followed by secondary refining. The billets/blooms shall be conforming to IS:1875 and it will be procured from BIS approved sources only.

**4.2** The carbon steel billets/blooms to be used as raw material for manufacturing fishplate bars shall be hot rolled from concast blooms/ingots ensuring a minimum reduction ratio of 3:1 from concast bloom/ingot to the rolled billet/bloom and shall be supplied in normalized heat treated condition. The size of billet/bloom for manufacturing fishplate bars shall be minimum 125mmX 125mm in normalized heat treated condition.

**4.3** The carbon steel billets/blooms shall be conforming to chemical composition, mechanical properties and other metallurgical properties as stipulated in Tables 1 & 2 of this specification.

**Note-** Chemical composition, Mechanical and other Metallurgical properties stipulated in Tables 1 & 2 are based on values as mentioned in IS 1875:1992 **(Class 4 of steel, Designation 45C8).**

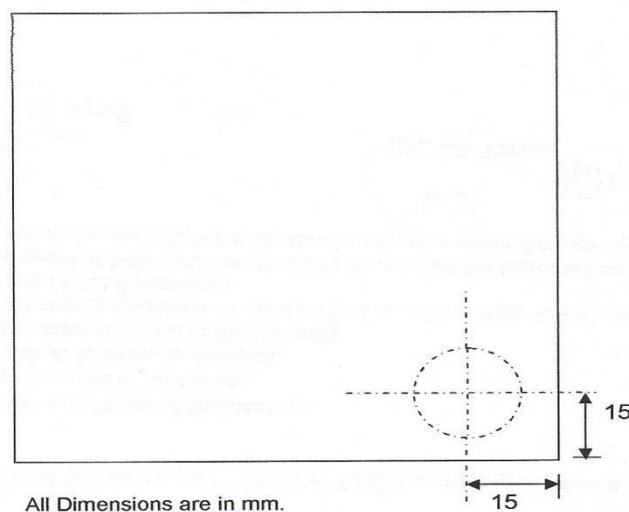
**4.4** The billets/blooms used for re-rolling of fishplate bars shall be free from all harmful defects such as cracks, surface flaws, laminations and rough jagged and imperfect edges. The billets/blooms shall also be reasonably free from harmful defects such as segregation, piping, inclusions, blow holes etc.

**4.5** The chemical composition of the each cast of billets/blooms used for rolling of fishplate bars when carried out by billet/bloom manufacturer either by the methods specified in the relevant parts of IS: 228 or duly calibrated Spectrometer shall be as given in Table 1 of this specification. The number of samples on which the analysis has to be carried out shall be at the rate of one sample per 100 nos. of billets/blooms or part thereof with respect to each cast.

**4.6** The tensile test for determining UTS, yield strength, % age elongation shall be carried out by the billet/bloom manufacturer in accordance with IS:1608 (Part-1):

2018 by drawing samples from each cast. The number of samples on which the analysis has to be carried out shall be at the rate of one sample per 25 metric tonnes of billets/blooms or part thereof with respect to each cast. The test pieces shall be machined lengthwise from the sampled billets/blooms from the locations as given in Fig. 1. The grain size of the steel should be tested in accordance with IS 4748: 2009. Hardness test shall be carried out in accordance with IS: 1500 (Part-1): 2019. The test results should meet the requirement as laid-down in Table 2 of this specification.

- 4.7** The fishplate bar manufacturer shall maintain the cast-wise record of source of purchase of blooms/ingots, requisite test pieces and test certificate with respect to chemical composition and mechanical properties mentioned at Table- 1 and 2 and cast wise records of the raw material billets/blooms to be used for manufacturing fishplate bars. The fishplate bar manufacturer shall produce these test certificates duly signed by steel billet/bloom manufacturer to the inspecting official at the time of offering the material for inspection. Fishplate bar manufacturer shall also submit the test pieces of the raw material of billet/bloom to the inspecting official for verification of chemical, metallurgical and mechanical properties.
- 4.8** The re-roller (fishplate bar manufacturer) shall also conduct and supply a complete analysis (chemical, mechanical and metallurgical) as mentioned at clause 4.5 and 4.6 above of each cast of steel used for rolling of fishplate bars to the purchaser or the inspecting official. For inspection of fishplate bars, sampling size and inspection schedule should be as per clause 15.
- 4.9** The fishplate manufacturer shall use only the fishplate bars duly inspected and stamped by inspecting agency. The fishplate manufacturer shall produce the inspection certificate along with test certificates of above properties duly signed by fishplate bar manufacturer to inspecting official at the time of offering the material for inspection. The Inspecting authority at the expense of fishplate manufacturer, shall cross verify the results for which suitable samples shall be available.



**FIG.1- LOCATION OF TEST SAMPLES FOR CHEMICAL AND MECHANICAL TESTING**

**TABLE 1: CHEMICAL COMPOSITION**

<b>Element</b>	<b>%age</b>
Carbon	0.40 - 0.50
Silicon	0.15 - 0.35
Manganese	0.60 - 0.90
Sulphur	0.04max.
Phosphorus	0.04max.

The permissible deviation in check analysis from the specified composition limit given in Table 1 above shall be as given below-

<b>Element</b>	<b>Permissible variation percent (Max)</b>
Carbon	± 0.03
Silicon	± 0.03
Manganese	± 0.04
Sulphur	+0.005
Phosphorus	+0.005

**TABLE 2: MECHANICAL PROPERTIES**

Ultimate Tensile Strength (Min.)	620 MPa
Yield Strength (Min.)	320 MPa
% age Elongation (Min.)	15
Hardness (HB) (min.)	175
Grain size as per IS:4748-2009	6 or Finer

## **5. ROLLING AND HEAT TREATMENT**

- 5.1** The billets/blooms shall be suitably soaked above 950°C for appropriate period and subjected to hot rolling in the rolling mill to achieve the required shape and size of fishplate bars. The rolled fishplate bars shall be cooled in draught free environment till the temperature reaches below 300°C.
- 5.2** The fishplate bars shall be subjected to normalizing heat treatment at a temperature of 830°C-860°C for a suitable period followed by cooling in air.
- 5.3** Such fishplate bars which are required to be subjected to hot forming operations and hot punching of holes for which reheating in furnace is required, shall again be subjected to normalizing heat treatment at 830°C-860°C followed by cooling in air. The normalizing is to be done before machining.

## 6. MANUFACTURING OPERATIONS

**6.1** The requisite operations for manufacture of fishplate such as drilling of holes, machining, chamfering of drilled holes shall be carried out to produce the finished fishplates/fishplate combination as per the relevant drawing.

**6.2** For Combination fishplates, the top and bottom fishing angles of these fishplates will be left in the as drop-forged or machined condition subject to compliance with Clause 10 of this Specification. If the fishplates are, however, manufactured by hand forging, under special permission of the Purchaser or the Inspecting Officer, the bearing surfaces shall be machined. The four corners of the fishplates will be rounded off after cutting to a radius of mentioned in the relevant approved drawings.

Holes are not to be punched but must be drilled. The holes shall be clean without burrs on either side, accurate in pitch and in the positions as specified. The bolt holes in the fishplates shall be chamfered before offering fishplates for inspection.

## 7. MECHANICAL AND METALLURGICAL PROPERTIES OF FISHPLATE BARS/ FISHPLATES

**7.1 Tensile Test:** The tensile strength, yield strength and elongation shall be conducted on test pieces prepared from fishplates selected randomly from the lot and testing shall be done as per IS:1608 (Part-1):2018. The test results of tensile strength, yield strength and % age elongation in respect of each tested sample should comply the following requirements. The sample for tensile test shall be taken from location as marked in Annexure-B.

Tensile Strength (Min.)	- 620 MPa
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Yield Strength (Min.)	- 320 MPa
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Percentage Elongation (Min.)	-15%
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**7.2 Bend Test:** The finished fishplates when cold shall be capable of being bent between the bolt holes without fracturing or showing any signs of crack on the outside when observed visually and by dye penetration test through 120° in such a manner that internal radius of the bend shall not exceed twice the thickness of fishplates at the center. Bend Test procedure shall be followed as stipulated in IS 1599:2019.

For combination fishplates, the inequalities of the finished section shall be machined down so as to obtain a uniform section. The bending shall be carried out so that the original forged surface is subjected to tension.

For joggled fishplates, the bend test is not required to be carried out due to peculiarity of design.

**7.3 Hardness Test:** Hardness test shall be carried out in accordance with IS:1500 - (Part-1): 2019. The test shall be performed on central portion of outer surface of the fishplate. The hardness values on the test samples shall be 175 HB (min.). The hardness test being non-destructive in nature, the fishplates used for testing

and meeting the requirement of this test can be included in the lot for acceptance provided these fishplates meet other requirements of specification.

**7.4 Macrostructure:** The macrostructure of the steel on the etched transverse section when examined in accordance with IS: 11371-1985 shall be free from harmful shrinkage, porosity, blow holes, laminations, cracks, non-metallic inclusions, cavities, dendrites etc.

**7.5 Grain Size:** The grain size of the steel tested in accordance with IS: 4748-2009 shall be 6 or finer.

**7.6** Lot and Sample size for conducting above mentioned tests shall be as per clause 15.

## **8. FISHPLATES TO CONFORM TO TEMPLATES**

Each section of fishplates shall be accurately rolled to its respective profile. The manufacturer shall prepare two sets of profile and nipple gauges as per standard RDSO drawing for fishplates, made up of stainless steel for each section of fishplates ordered for testing the accuracy of the fishing planes and the bolt holes. Nipple gauges shall be accurately planed to represent the fishing of the rail with which the fishplates are to be used and fitted with suitable studs for testing the accuracy of the bolt holes. All gauges along with their drawings shall be prepared by the fishplate manufacturers and approved by the RDSO prior to use. Every fishplate shall be checked with respective gauges before offering the fishplates to Inspecting Authority for inspection and any fishplate which fails shall be rejected.

## **9. SAWING TO LENGTH**

All fishplates shall be sawn within the tolerances mentioned at Clause 12. The specified length shall be ensured and the ends shall be square. All burrs caused by the saw shall be removed.

## **10. FREEDOM FROM DEFECTS**

All fishplates shall be of uniform section throughout, straight and smooth on all bearing surfaces, sound and free from twist, blisters, flaws, fins, cracks and any other defect.

## **11. HOLES IN FISHPLATES**

**11.1** The bolt holes in the fishplates (other than fishplate combination) shall be either drilled or hot punched as specified by the Purchaser. If the holes are to be drilled, the fishplates shall be made perfectly straight along the lines of fishing, for the full length of the fishplate before drilling is commenced. If the holes are to be punched, the punching of all holes shall be done at one stroke of the machine before the fishplates have cooled to below a red heat from the rolling temperature and the fishplates shall then, whilst still hot, be straightened by gradual pressure between blocks of full length of the fishplate.

**11.2** In case of fishplate combination holes shall be drilled and punched as mentioned in clause 6 above.

**11.3** The bolt holes in the fishplates shall be chamfered to remove the sharpness of edges of bolt holes.

## **12. TOLERANCES**

**12.1 Fishplates (except joggled fishplates and fishplates combination)** –The following dimensional tolerances shall be permitted: -

(a) Fishplate holes- The hole shall be clean and without burrs on either side. The diameter and the position of the holes shall be in accordance with those shown on the plan subject to the following tolerances: -

- (i) Diameter of the hole: (+) 0.8mm / (-) 0.0 mm
- (ii) Position of the holes- The distance between the centre of any hole with respect to the centre of any of the remaining holes shall not vary by more than  $\pm 0.4\text{mm}$  ( $\pm 0.6\text{mm}$  for 1.0/0.95 meter long fishplate) from the exact dimension either horizontally or vertically.

(b) Overall length: ( $\pm$ ) 2.0mm

(c) Thickness: (+) 1.5mm/(-) 1.0 mm

(d) Height: ( $\pm$ ) 0.5 mm

(The height of the fishplate is to be checked along a vertical line which passes through the centre point of the upper fishing surface of the fishplate)

(e) Straightness

(i) Horizontal: 0.16 mm per 100 mm of length

(ii) Vertical: 0.10 mm per 100 mm of length

(Centre should not be lower than the ends)

(f) End Squareness: ( $\pm$ ) 2 mm

(g) Permissible Variation in Weight– A variation of 2% above or below the nominal weight (after holing) will be allowed but the nominal weight will be paid for.

**12.2 Joggled fishplates**–The following dimensional tolerances shall be permitted:-

(a) Fishplate holes- The hole shall be clean and without burrs on either side. The diameter and the position of the holes shall be in accordance with those shown on the plan subject to the following tolerances:-

(i) Diameter of the hole: (+) 2.0mm /(-) 0.0 mm

(ii) Position of the holes- The distance between centre of any hole with respect to the centre of any of the remaining holes shall not vary by more than ( $\pm$ ) 2mm from the exact dimension either horizontally or vertically.

(b) Overall length: (+) 6.0 mm/ (-) 2.0 mm



(c)

Items	Fishplate bar	Fishplate
Thickness	(+) 2.5 mm/(-) 0.5 mm	(+) 2.0 mm/(-) 1.0 mm
height	(+) 0.6 mm/(-) 0.4 mm	(±) 0.5 mm

(The height of the fishplate is to be checked along a vertical line which passes through the centre point of the upper fishing surface of the fishplate.)

(d) Straightness

- (i) Horizontal: 0.16 mm per 100mm of length
- (ii) Vertical: 0.15 mm per 100 mm of length  
(Centre should not be lower than the ends)

(e) End Squareness: (±) 2.0 mm

(f) Other tolerances:

- (i) Slot for clamp: (±) 0.5 mm along length  
(±) 0.2 mm along width
- (ii) Radius of collar bend: (±) 1.5 mm
- (iii) Top notch (machined): (+) 0.5 mm
- (iv) Bottom notch (machined): (+) 0.5 mm

(g) Permissible Variation in weight: A variation of 2% above or below the nominal weight (after holing) will be allowed but the nominal weight will be paid for.

**12.3 Fishplate combination**– The following dimensional tolerances shall be permitted:

(a) Fishplate holes- The hole shall be clean and without burrs on either side. The diameter of the hole shall be in accordance with those shown in the plan subject to the following tolerances :-

Diameter of holes: (+) 1.00 mm  
(-) 0.00 mm

(b) Overall length: (±) 2.0 mm

(c) Between surfaces of fishing  
Planes of fishplates: (+) 0.4 mm  
(-) 0.00 mm

(d) Thickness: (+) 2.0mm  
(-) 0.8mm

(e) Height: (±) 0.5mm  
(The height of the fishplate is to be checked along a vertical line which passes through the centre point of the upper fishing surface of the fishplate)

(f) Straightness

- (i) Horizontal: 0.16 mm per 100 mm of length
- (ii) Vertical: 0.10 mm per 100mm of length

(g) End Squareness:  $(\pm)$  2 mm

(h) Permissible Variation in Weight: A variation of 5% above and 2% below the nominal weight (after holing) will be allowed but the nominal weight will be paid for.

**12.4 Nominal Weight-** The nominal weight of fishplates is mentioned on their approved drawings. Wherever, the nominal weight is not available, it shall be considered as being the average weight of 100 parts manufactured to the dimensions given in the approved drawing till such times the same is made available.

### 13. CHECKING OF DIMENSIONS

**13.1** The inspecting official will have every fishplate checked on an approved nipple gauge for correctness of bolt holes. The sample size for dimension check shall be as per clause 15. For combination fishplates, every fishplate shall be checked for all dimensional tolerance.

**13.2** In addition to it, 3 percent of the pairs of fishplates shall be bolted to the two specified rail sections to check the fit. The 'fit' of fishplates shall be tested by attempts to insert small feeler gauges of size not exceeding 0.5mm between fishing angles of fishplates and rails.

### 14. MARKING

**14.1 Fishplate bars-** Every fishplate bar shall be legibly marked with the firm's initials as approved by RDSO, the two digits of the month and last two digits of the year of manufacture of the fishplate bar and heat no. etc. below-

FI-XX-YY-DN-RS-ZZ

- FI = Firm's initials
- XX = Two digits of the month of manufacture
- YY = Two digits of the year of manufacture
- \*DN = Drawing Nos.
- RS = Rail Section
- ZZ = Heat No.

These markings except heat no. of letters/digits shall be rolled at least 15mm in height and 1mm above the surface at the bottom of non-fishing side of fishplate bar at the spacing not exceeding 400mm centre to centre of the identification mark so that each fishplate contains complete identification mark when manufactured. The heat no. can be hot stamped.

\*Note- DN- In case the same profile of fishplate bar is used for number of fishplate drawings; it is permitted to mention all respective drawing numbers.

**14.2 Fishplates** - The fishplates shall also be legibly marked with the initial of the firm manufacturing fishplates as approved by RDSO and the two digits of the months and last two digits of the year of manufacture of fishplate and such

other marks as may be specified by the purchaser or shown on the drawings at one end of non-fishing side of fishplate by punching letter/digits of size not less than 15mm in height without causing any damage to fishplate. All marking must be clear of nuts and bolts holes.

**14.3 Fishplate combination** - Each set of combination fishplates shall consist of four fishplates namely: -

OL Signifying Outside Left  
 IL Signifying Inside Left  
 IR Signifying Inside Right  
 OR Signifying Outside Right

**NOTE** – R.H. and L.H. are defined as follows:-

With rails of unequal weights – Face the heavier section.

With rails of equal weights – Face the deeper type of rail, or if both rails are of equal depth, the more modern section.

The above initials are to be stamped on the outside of each plate in 12.0 mm letters in addition to other details as indicated in Clause 14.2 above.

All markings must be clear off nuts and bolt holes, and shall not be permitted on the top slopes of IL or IR fishplates as these slopes may be exposed to wheel flanges.

## 15. LOT SAMPLING AND INSPECTION

**15.1 Fishplate bars:-** For the purpose of inspection of fishplate bars, 20 MT or bars rolled from one heat of billet/blooms shall be taken as one lot. Number of samples to be tested per lot shall be as per Table-3. The dimensional check shall include only relevant dimensions such as check of profile, thickness, straightness and height of fishplate bars.

**15.2 Fishplates:-** For the purpose of inspection of fishplates, 1000 numbers fishplates (500 nos. in case of joggled fishplates) of the same drawing or part thereof rolled from one cast and normalized together shall constitute a lot. The number of samples per lot to be randomly drawn from this lot for visual, dimensional, metallurgical and mechanical testing shall be as per Table-3.

### 15.3 Sample Size:

**Table 3**

S.N.	Inspection Activity	Number of Samples per lot	Requirement
1	Visual Examination	100%	As per clause 10
2	(a) Correctness of bolt holes	100%	As per clause 12
	(b) Dimensions and weight	20% of Fishplates/bars selected at random except combination fishplates where it is 100%	As per clause 12 & 15.1
3	Fitment Checks	3%	As per clause 13.2
4	Chemical Composition	2	As per clause 4

5	Tensile Strength, Yield Strength & % age Elongation	2	As per clause 7.1
6	Bend Test	2	As per clause 7.2
7	Hardness	3%	As per clause 7.3
8	Macrostructure	1	As per clause 7.4
9	Grain Size	1	As per clause 7.5

## 16. RE TESTS

**1. Visual examination and dimensional checks: (SI No. 1 & 2 of Table 3)** All fishplates/ fishplate bars not meeting the requirement shall be rejected.

**2. Other tests: (SI No. 3 to 9 of Table 3)**

All samples should pass in the test parameters. If any sample fails to meet the specified requirements, the additional samples of double the sample size shall be drawn from the same lot and tested for those test parameters in which the earlier samples had failed. During re-testing, all samples should pass the relevant tests and if any sample fails in any test parameter, the whole lot shall stand rejected.

## 17. INSPECTION

**17.1** The Inspecting Officer or the Purchaser shall have free access to Contractor's works at all reasonable times. He shall be at liberty to inspect the manufacturing at any stage and to reject a material or supplies that fail to conform to the terms of this Specification.

**17.2** The quantity/number of fishplate bar/ fishplates rolled in each shift, with the cast numbers, the date rolled and the shift shall be registered in a book and a true copy of the same shall be given to the Inspecting Officer. Before the fishplate bar/ fishplates are submitted to the Inspecting Officer for inspection, the manufacturer shall have got them internally examined and all fishplate bars/fishplates which are defective shall be placed in a separate stack.

**17.3** After inspection every accepted fishplate bar/fishplate shall be stamped with the Inspecting Officer's stamp at one end in the presence of Inspecting Officer. Rejected fishplates shall be identified as detailed in Clause 18.

## 18. REJECTION

**18.1** Any of the fishplates which fail to comply with the requirements of this specification shall be rejected. All rejected fishplates/bars shall be cut by the manufacturer by Oxy-acetylene flame to a length of less than minimum length of fishplate to the satisfaction of inspecting official.

## 19. TESTING FACILITIES

**19.1** The manufacturer shall at his own expense, supply all templates and gauges, furnish and prepare samples of steel, sample fishplates and supply all labour and appliances for such testing as may be carried out in his own premises in accordance with this specification.

- 19.2 For combination fishplate-** The manufacturer shall provide at his own expense a short piece of each section of rail, not less than 460mm long correct to templates. The manufacturer must prepare a suitable piece, machined at top and sides of head and on all fishing faces to the standard templates. He shall make at his own expense all the working gauges called for by the inspecting official. One such working gauge shall be the nipple gauge referred to in clause 13.

## **20. PROTECTION AND BUNDLING**

After the fishplates have been inspected and approved, they shall be dipped into hot boiled linseed oil to IS: 77-1976 or with any other approved rust preventive compound, and when dry shall be tied up in bundles of four with steel wire not less than 5mm in diameter, if they are required to be dispatched in less than full wagon/truck load. If they are being dispatched in full wagon/truck load, the fishplates may not be bundled.

- 21.** All the provisions contained in RDSO's ISO procedures laid down in Document No. QO-D-8.1-11 dated 04.12.2020 (titled "Vendor-Changes in approved status") and subsequent versions/amendments thereof, shall be binding and applicable on the successful vendor/vendor in the contracts floated by Railways to maintain quality of Products supplied to Railways.

### **PUBLICATION(S) REFERRED TO-**

- |                         |  |
|-------------------------|--|
| 1. IS 1875:1992         | Carbon steel billets, blooms, slabs and bars for forgings- Specification                             |
| 2. IS 228:1987          | Methods of chemical analysis of steels   |
| 3. IS 1608(Part-1):2018 | Metallic Materials-Tensile testing   |
| 4. IS 4748: 2009        | Steels-micrographic determination of the apparent grain size   |
| 5. IS 1500(Part-1):2019 | Methods for Brinell hardness test for metallic materials   |
| 6. IS 77: 1976          | Linseed oil, boiled, paints  |
| 7. IS 11371: 1985       | Method of macroetch test for wrought steel products  |
| 8. IRS T-12: 2009       | Indian Railway Standard Specification for flat bottom rails  |
| 9. BS 47:Part 1: 1991   | Fishplates for railway rails. Specification for rolled steel fishplates                              |
| 10. UIC 864-4           | Technical Specification for the supply of fishplates or sections for fishplates made of rolled steel |
| 11. IS 1599: 2019       | Metallic Materials-Bend Test   |

<b>MASTER LIST OF FISHPLATE DRAWINGS</b> <b>(Drawings with latest alterations only shall be considered)</b>			
S.NO.	DRG. NO.	ALT:	NAME / DESCRIPTION
1	T-090(M)	6	FISHPLATE FOR 52Kg RAIL.
2	T-10049	6	FISHPLATE FOR 52Kg. RAIL – ELECTRIFIED SECTION
3	RDSO/T-1898	4	FISHPLATE FOR 60Kg (UIC) RAIL.
4	RDSO/T-2434	2	FISHPLATE FOR 60Kg (UIC). (ELECTRIFIED SECTION) 686mm LONG.
5	RDSO/T-5915	NIL	FISHPLATE FOR 52Kg RAIL (1 meter long)
6	RDSO/T-5916	NIL	FISHPLATE FOR 60Kg UIC RAIL (1meter long)
7	RDSO/T-3714	NIL	1.1 meter LONG FISHPLATE FOR CLAMPING FRACTURED 60Kg UIC RAIL AND 52Kg RAIL.
8	RDSO/T-62	NIL	FISHPLATE AND CLAMPS FOR EMERGENCY USE IN RAIL FRACTURES FOR 52Kg.
9	RDSO/T-66	NIL	FISHPLATE FOR EMERGENCY USE IN RAIL FRACTURES FOR 52Kg.
10	T-059(M)	4	FISHPLATE FOR BS NO. 90R.
11	T-10056	1	FISHPLATE FOR BS NO. 90R (ELECTRIFIED SECTION).
12	T-1(M)	2	FISHPLATE 610mm long FOR BS NO. 90R RAIL.
13	T-10063	NIL	FISHPLATE FOR BS NO. 90R RAIL TO BE USED ON ELECTRIFIED SECTION.
14	T-2(M)	3	ALTERNATIVE FISHPLATE FOR BS NO. 90R.
15	T-060(M)	3	FISHPLATE FOR BS NO. 75R RAIL.
16	T-10057	1	FISHPLATE FOR BS NO. 75R(ELECTRIFIED SECTION)
17	T-061(M)	2	FISHPLATE FOR BS NO. 60R RAIL
18	RDSO/T-5850 TO 5851	NIL	1 meter LONG GROOVED FISHPLATES FOR USE WITH FRACTURED RAIL FOR 52Kg & 60Kg (UIC).
19	T-10349	NIL	FISHPLATE INNER FOR EXPANSION JOINT B.G. FOR 52Kg FOR PLATE GIRDER BRIDGES.
20	T-10352	NIL	FISHPLATE FOR EXPANSION JOINT- CANTED RAIL B.G. FOR 52Kg FOR GIRDER BRIDGES.
21	T-10353	NIL	FISHPLATE FOR EXPANSION JOINT -VERTICAL RAIL B.G. FOR 52Kg FOR GIRDER BRIDGES
22	T-10354	NIL	FISHPLATE INNER FOR EXPANSION JOINT B.G. FOR 52Kg FOR GIRDER BRIDGES.
23	T-10394	NIL	FISHPLATE FOR EXPANSION JOINT - VERTICAL RAILS B.G. FOR B.S.No.90R ON PLATE GIRDER BRIDGES.
24	T-10395	NIL	FISHPLATE FOR EXPANSION JOINT -CANTED RAILS B.G. FOR B.S.No.90R ON PLATE GIRDER BRIDGES.
25	T-10396	NIL	FISHPLATE INNER FOR EXPANSION JOINT B.G. FOR BS No. 90R ON PLATE GIRDER BRIDGES.
26	T-10399	NIL	FISHPLATE FOR EXPANSION JOINT- VERTICAL RAIL B.G. FOR BS NO.90R. ON GIRDER BRIDGES.
27	T-10400	NIL	FISHPLATE FOR EXPANSION JOINT - CANTED RAILS B.G. FOR B.S.No.90R ON GIRDER BRIDGES.
28	T-10357	NIL	FISHPLATE FOR EXPANSION JOINT - CANTED RAILS M.G. FOR B.S.No.60R FOR PLATE GIRDER BRIDGES.
29	T-10358	NIL	FISHPLATE FOR EXPANSION JOINT - VERTICAL RAIL MG FOR B.S.No.60R FOR PLATE GIRDER BRIDGES.
30	T-10359	NIL	FISHPLATE INNER FOR EXPANSION JOINT M.G. FOR BS No.60R FOR PLATE GIRDER BRIDGES.
31	T-10362	NIL	FISHPLATE FOR EXPANSION JOINT - CANTED RAILS M.G. FOR BS.No.60R FOR GIRDER BRIDGES.
32	T-10363	NIL	FISHPLATE FOR EXPANSION JOINT VERTICAL RAILS M.G. FOR BS No. 60R FOR GIRDER BRIDGES.

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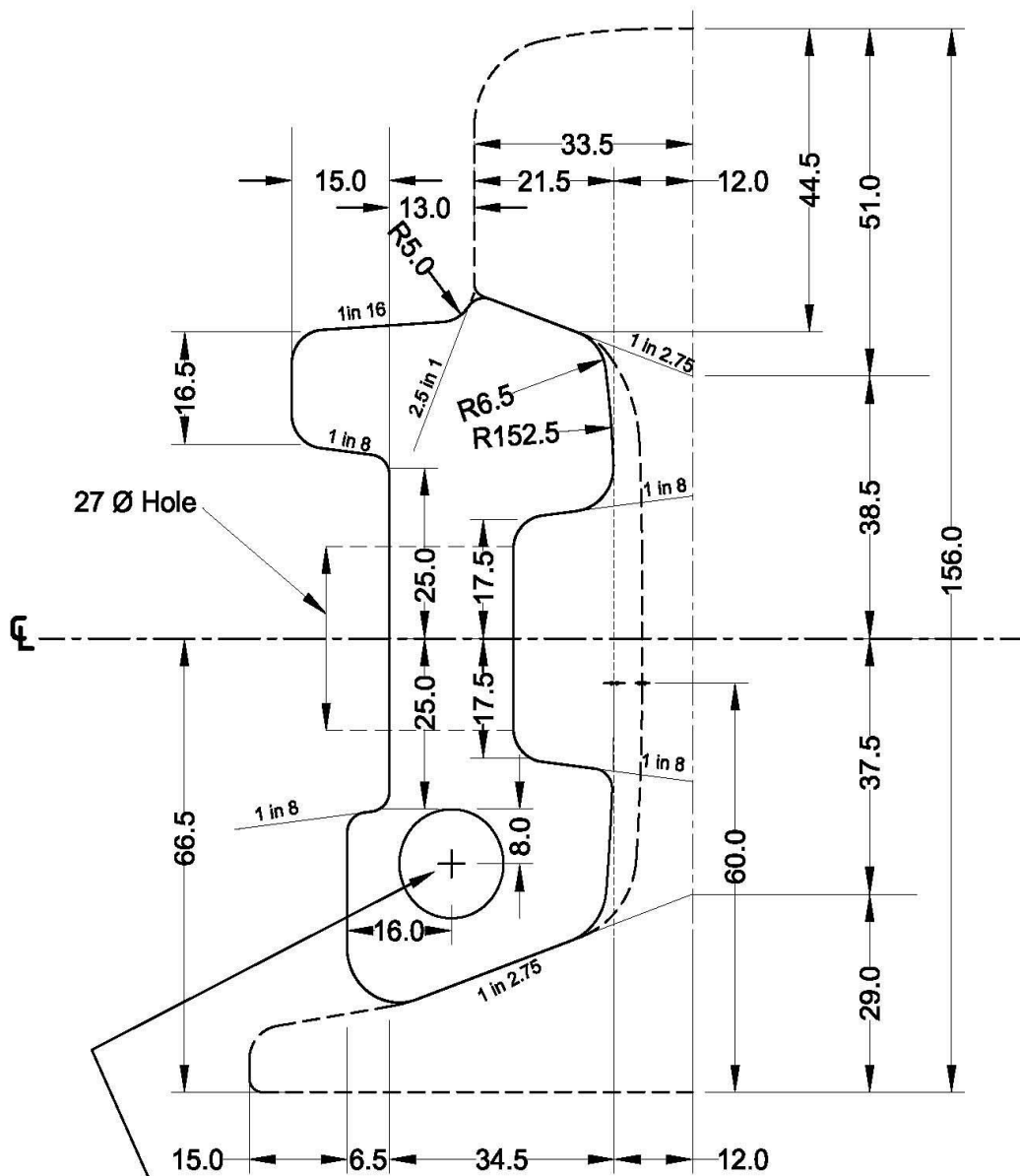
33	T-10364	NIL	FISHPLATE INNER FOR EXPANSION JOINT M.G. FOR BS No. 60R FOR GIRDER BRIDGES
34	T-10401	NIL	FISHPLATE INNER FOR EXPANSION JOINT B.G. FOR BS No. 90R ON GIRDER BRIDGES.
35	T-10448	NIL	FISHPLATE FOR EXPANSION JOINT CANTED RAILS M.G. FOR BS No. 75R FOR PLATE GIRDER BRIDGES.
36	T-10449	NIL	FISHPLATE FOR EXPANSION JOINT VERTICAL RAILS M.G. FOR BS No. 75R FOR PLATE GIRDER BRIDGES.
37	T-10450	NIL	FISHPLATE INNER FOR EXPANSION JOINT M.G. FOR BS No. 75R FOR PLATE GIRDER BRIDGES.
38	T-10453	NIL	FISHPLATE FOR EXPANSION JOINT CANTED RAILS M.G. FOR BS No. 75R FOR GIRDER BRIDGES.
39	T-10454	NIL	FISHPLATE FOR EXPANSION JOINT VERTICAL RAILS M.G. FOR BS No. 75R FOR GIRDER BRIDGES.
40	T-10455	NIL	FISHPLATE INNER FOR EXPANSION JOINT M.G. FOR BS No. 75R FOR GIRDER BRIDGES.
41	T-10347	NIL	FISHPLATE FOR EXPANSION JOINT CANTED RAILS B.G. FOR 52Kg FOR PLATE GIRDER BRIDGE.
42	T-10348	NIL	FISHPLATE FOR EXPANSION JOINT VERTICAL RAILS B.G. FOR 52Kg FOR PLATE GIRDER BRIDGE.
43	RDSO/T-3320	NIL	FISHPLATE FOR 1 IN 5 CMS ACUTE CROSSING B.G. FOR 60Kg UIC (FOR SCISSORS).
44	T-10050	1	BENT FISHPLATE FOR 1 IN 20 LEFT TURNOUT B.G. FOR BS No. 90R.
45	T-10052	NIL	BENT FISH PLATE FOR 1 IN 16 LEFT TURNOUT M.G. FOR BS No. 60R.
46	T-10053	NIL	BENT FISHPLATE FOR 1 IN 16 LEFT TURNOUT B.G. FOR 52Kg.
47	T-10054	NIL	BENT FISHPLATE FOR 1 IN 16 LEFT TURNOUT M.G. FOR BS No. 75R.
48	T-10055	NIL	FISHPLATE FOR USE WITH PIVOT BLOCK OF LEFT SPRING CROSSING B.G. FOR BS No. 90R.
49	T-10058	NIL	FISHPLATE FOR USE WITH PIVOT BLOCK OF RIGHT-SPRING CROSSING B.G. FOR B.S. NO. 90R.
50	T-10059	NIL	FISHPLATE FOR USE WITH PIVOT BLOCK OF LEFT SPRING CROSSING M.G. FOR BS No. 75R.
51	T-10060	NIL	FISHPLATE FOR USE WITH PIVOT BLOCK OF RIGHT-SPRING CROSSING M.G. FOR BS NO. 75R.
52	T-10061	NIL	FISHPLATE FOR USE WITH PIVOT BLOCK OF LEFT-SPRING CROSSING B.G. FOR 52Kg. (1 IN 12 LEFT SPRING CROSSING B.G. FOR 52Kg).
53	T-10062	NIL	FISHPLATE FOR USE WITH PIVOT BLOCK OF LEFT-SPRING CROSSING B.G. FOR 52Kg. (1 IN 8.5 LEFT SPRING XING B.G. FOR 52Kg).
54	RDSO/T-303	NIL	BENT FISHPLATE LEFT
55	RDSO/T-304	NIL	BENT FISH PLATE RIGHT
56	RDSO/T-696-699	1	FISHPLATE COMBINATION FOR 60Kg (UIC) AND 52Kg.
57	RDSO/T-2792-2793	NIL	COMBINATION FISHPLATES FOR 52 Kg AND BS No. 90R RAIL WITH HOLES FOR 610mm LONG FISH PLATES.
58	RDSO/T-178-181	1	FISHPLATE COMBINATION FOR 65 Kg AND 52 Kg
59	RDSO/T-5206-5207	1	FISHPLATE COMBINATION FOR THICK WEB RAIL (CR-100) & 52 Kg.
60	T-10559-60	NIL	FISHPLATE COMBINATION FOR BS Nos. 90R & 90
61	T-10561-62	NIL	FISHPLATE COMBINATION FOR BS Nos. 75R & 75.
62	T-10563-64	NIL	FISHPLATE COMBINATION FOR BS Nos. 60R & 60.
63	T-10565-68	NIL	FISHPLATE COMBINATION FOR BS Nos. 90R & 75.
64	T-10491-94	NIL	FISHPLATE COMBINATION FOR BS Nos. 90R & 75R.
65	T-10495-98	NIL	FISHPLATE COMBINATION FOR BS Nos. 75R & 60R.
66	T-10499-10502	NIL	FISHPLATE COMBINATION FOR BS Nos. 60R & 50R.

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67	RDSO/T-1439-1442	NIL	FISHPLATE COMBINATION FOR BS Nos. 115 AND 90R.
68	RDSO/T-5848	1	JOGGLED FISHPLATES FOR USE ON WELDED JOINT FOR B.G. 52 Kg.
69	RDSO/T-5849	1	JOGGLED FISHPLATES FOR USE ON WELDED JOINT FOR B.G. 60 Kg.
70	RDSO/T-6594 TO - 6597	1	COMBINATION JOGGLED FISHPLATES FOR 60 Kg (UIC)/ 52 Kg RAILS WITH C.I. BLOCK FOR B.G.
71	RDSO/T-5551	NIL	JOGGLED FISHPLATES AND CLAMPS FOR RAIL-FRACTURE B.G. FOR 52 Kg.
72	EDO/T-2242 & 2243	NIL	JOGGLED FISHPLATES FOR 75mm WIDE GAP A.T. WELD FOR 52 Kg WITH C.I. BLOCK.
73	EDO/T-2246 & 2247	2	JOGGLED FISHPLATES FOR 75mm WIDE GAP A.T. WELD FOR 60 Kg (UIC) WITH C.I. BLOCK.
74	RDSO/T-671	12	FISHPLATES OF GLUED INSULATED RAIL JOINT FOR B.G. 52Kg G3 (L). (06 BOLTS, END POST THICKNESS 6mm).
75	RDSO/T-2572	3	FISHPLATES OF GLUED INSULATED RAIL JOINT FOR B.G. 60Kg (UIC)- G3(L) . (06 BOLTS, END POST THICKNESS 6mm).
76	RDSO/T-1259	7	FISHPLATES OF GLUED INSULATED RAIL JOINT WITH 06mm THICK - END POST FOR B.G.52Kg G3(S)-TYPE (04 BOLTS).
77	RDSO/T-2576	2	FISHPLATES OF GLUED INSULATED RAIL JOINT WITH 06mm THICK - END POST FOR B.G.60Kg (UIC) G3(S)TYPE (04 BOLTS).
78	RDSO/T-5361	2	FISHPLATES OF GLUED INSULATED RAIL JOINT WITH 10mm THICK -END POST FOR B.G.52Kg G3(L)-TYPE (06 BOLTS).
79	RDSO/T-5843	1	FISHPLATES OF GLUED INSULATED RAIL JOINT WITH 10mm THICK - END POST FOR B.G.60Kg (UIC) G3(L)TYPE (06 BOLTS).
80	RDSO/T-1283	5	FISHPLATES OF GLUED INSULATED RAIL JOINT FOR M.G. BS. No. 75R- G3 (L) TYPE (06 BOLTS, END POST THICKNESS 6mm).
81	RDSO/T-3008	2	FISHPLATES OF GLUED INSULATED RAIL JOINT FOR 75R- G3 (S)-TYPE. (04 BOLTS, END POST THICKNESS 06mm).
82	RDSO/T-1276	5	FISHPLATES OF GLUED INSULATED RAIL JOINT FOR 90R- G3(L)-TYPE. (06 BOLTS, END POST THICKNESS 6mm).
83	RDSO/T-1278	5	FISHPLATES OF GLUED INSULATED RAIL JOINT FOR 90R- G3 (S)-TYPE. (04 BOLTS, END POST THICKNESS 06mm).



## Annexure-B, No. T-1: 2021



**LOCATION FOR TAKING SAMPLE FOR TENSILE TEST OFFSET  
MAY BE KEPT SAME FOR DIFFERENT FISH PLATE SECTION**