

Research Designs & Standards Organisation (Traction Installation Directorate)

REASONED DOCUMENTS FOR Specification No. TI/SPC/OHE/Fittings/0130(10/13) **Revision 1** of 25 kV,A.C.OHE Fittings 50 Hz Traction Overhead Equipment which was uploaded for 30 days on RDSO website for comments and suggestion. Following are the RDSO remarks on the comments received from manufacturers/firms.

Reasoned Document

Clause No.	Uploaded Specification No. TI/SPC/OHE/Fittings/0130 (10/13) Rev.-1	Transmission Line Products Kolkata.	RDSO's Remark
4 (ii)	IS:617- 2003 1994 Reaffirmed 1999	IS:617- 2003 1994 Reaffirmed 2020	Accepted and updated in Spec.
(ix)	IS:2004-1991 Reaffirmed 2001	IS:2004-1991 Reaffirmed 2018	Accepted and updated in Spec.
(x)	IS:2062-2011	IS:2062-2011 Reaffirmed 2016	Accepted and updated in Spec.
(xiii)	IS:3091-1999	IS:3091-1999 Reaffirmed 2015	Accepted and updated in Spec
6.1.3	Physical properties test shall be conducted on test bars and Chemical analysis test shall be conducted on sample fittings drawn from the same heat. Boring of anyone of the cast fittings can be sent for Chemical test instead of sending complete fittings/part of fittings.	Physical properties test shall be conducted on test bars and Chemical analysis test shall be conducted on sample fittings drawn from the same heat/Boring/ Cut Piece of anyone of the cast fittings can be sent for Chemical test instead of sending complete fittings/part of fittings.	Accepted and updated in Spec
6.1.5	Chemical analysis test for Ferrous OHE fittings shall be conducted on boring of anyone of the sample fittings drawn from the lot instead of complete fittings/part of the fittings. Boring can be sent for Chemical test instead of sending complete fittings/part of the fittings.	Chemical analysis test for Ferrous OHE fittings shall be conducted on cut piece Of anyone of the sample fittings drawn from the lot instead of complete fittings/part of the fittings. Cut piece can be sent for Chemical test instead of sending complete fittings/part of the fittings.	Accepted and updated in Spec
7.2.1	Type tests: Type test are intended to establish the general qualities and design characteristics of the fittings and to prove its conformity with the requirements of Specification. The type tests are to be conducted only after all the designs and drawings have been approved and clearance given by RDSO/Purchaser to this effect the manufacturer shall then take up the manufacture of the prototype for RDSO/Purchaser inspection. It is to be clearly understood that any change required to be done in the prototype as	Type tests: Type test are intended to establish the general qualities and design characteristics of the fittings and to prove its conformity with the requirements of Specification. The type tests are to be conducted only after all the designs and drawings have been approved and clearance given by RDSO/ CORE to this effect the manufacturer shall then take up the manufacture of the prototype for RDSO/ CORE inspection. It is to be clearly understood that any change required to be done in the prototype as required by RDSO/ CORE shall be done expeditiously. Each test shall be made on 3 samples. If the sample fails in any of the tests the production of further fittings shall be stopped till further	Accepted and updated in Spec.

	required by RDSO/Purchaser shall be done expeditiously. Each test shall be made on 3 samples. If the sample fails in any of the tests the production of further fittings shall be stopped till further investigation and improvements in the manufacturing procedure done.	investigation and improvements in the manufacturing procedure done.	
7.3.	<p>Bulk Manufacture: Only after clear written approval of the results of the tests on the prototype is communicated by RDSO/Purchaser to the manufacturer, shall be take up bulk manufacture of the fittings which shall be strictly with the same material and process as adopted for the prototype. In no circumstances shall material other than those approved in the design/drawings and/or the prototype be used for bulk manufacture on the plea that they had been obtained prior to the approval of the prototype.</p>	<p>Bulk Manufacture: Only after clear written approval of the results of the tests on the prototype is communicated by RDSO/CORE to the manufacturer, shall take up bulk manufacture of the fittings which shall be strictly with the same material and process as adopted for the prototype. In no circumstances shall material other than those approved in the design/drawings and/or the prototype be used for bulk manufacture on the plea that they had been obtained prior to the approval of the prototype.</p>	Accepted and updated in Spec.
7.4	<p>Inspection: Before giving the call to RDSO/Purchaser for inspection and testing of the prototype of the system, the manufacturer shall submit a detailed test schedule consisting of schematic circuit diagrams for each of the tests, nature of the test, venue of the test, duration of each test and the total number of days required to complete the test at one stretch. Once schedule is approved, the test shall invariably be done accordingly. However, during the process of type testing or even later, RDSO/Purchaser's during the process of type testing or even later, RDSO/Purchaser's representative reserves the right to conduct any/additional tests besides those specified herein, on any equipment/sub-system or system so as to test the</p>	<p>Inspection: Before giving the call to RDSO/CORE for inspection and testing of the prototype of the system, the manufacturer shall submit a detailed test schedule consisting of schematic circuit diagrams for each of the tests, nature of the test, venue of the test, duration of each test and the total number of days required to complete the test at one stretch. Once schedule is approved, the test shall invariably be done accordingly. However, during the process of type testing or even later, RDSO/CORE representative reserves the right to conduct any/additional tests besides those specified herein, on any equipment/sub-system or system so as to test the</p>	Accepted and updated in Spec.

	<p>system to his satisfaction or for gaining additional information and knowledge. In case any dispute or disagreement arises between the manufacturer and the RDSO/Purchaser's representative during the process of testing as regards the type test and/or the interpretation and acceptability of the type test results, it shall be brought to the notice of the director General (Traction Installation), RDSO/Purchaser as the case may be whose decision shall be final and binding.</p>	<p>the RDSO/CORE representative during the process of testing as regards the type test and/or the interpretation and acceptability of the type test results, it shall be brought to the notice of the director General (Traction Installation), RDSO/CORE as the case may be whose decision shall be final and binding.</p>	
		<p>MOSDORFER INDIA PRIVATE LIMITED, NASHIK.</p>	
5.4	<p>All parts of the fittings shall be manufactured by the manufacturer in his works. Components such as fasteners, washers and Split pins which form part of the fittings shall be obtained from the approved manufacturers with the specific approval of the Central Organization for Railway Electrification. The supplier of the assembly shall ensure that such bought out components conform to the relevant specification.</p>	<p>All parts of the fittings shall be manufactured by the manufacturer in his works. Components such as fasteners, washers and Split pins which form part of the fittings shall be obtained from the approved manufacturers with the specific approval of the Central Organization for Railway Electrification. The supplier of the assembly shall ensure that such bought out components conform to the relevant specification. Fasteners Washers & Split Pins shall be procured from RDSO/CORE approved suppliers.</p>	<p>Accepted and updated in Spec.</p>
6.2	<p>Castings- If the weight of the fittings is not more than one kg, a lot shall consist of pieces making upto a weight of not more than 200 kg. If each fitting weighs more than one kg, a lot shall consist of pieces making upto 500 kg for non-ferrous fittings and 1500 kg for ferrous fittings.</p>	<p>Castings- If the weight of the fittings is not more than one kg, a lot shall consist of pieces making upto a weight of not more than 200 kg. If each fitting weighs more than one kg, a lot shall consist of pieces making upto 500 kg for non-ferrous fittings and 1500 kg for ferrous fittings. Restriction on lot size to be removed considering current and upcoming demands.</p>	<p>Not Accepted due to keep the quality and reliability of items. Fittings items are used as safety items.</p>
7.2.1	<p>Type tests: Type tests are intended to establish the general qualities and design characteristics of the fittings and to prove its conformity with the requirements of</p>	<p>Type tests: Type test are intended to establish the general qualities and design characteristics of the fittings and to prove its conformity with the requirements of Specification.</p>	<p>Accepted and updated in Spec.</p>

	Specification. The type tests are to be conducted only after all the designs and drawings have been approved and clearance given by RDSO/CORE/Purchaser to this effect the manufacturer shall then take up the manufacture of the prototype for RDSO/Purchaser inspection. It is to be clearly understood that any change required to be done in the prototype as required by RDSO/CORE/Purchaser shall be done expeditiously. Each test shall be made on 3 samples. If the sample fails in any of the tests the production of further fittings shall be stopped till further investigation and improvements in the manufacturing procedure are done.	The type tests are to be conducted only after all the designs and drawings have been approved and clearance given by RDSO/Purchaser to this effect the manufacturer shall then take up the manufacture of the prototype for RDSO/Purchaser inspection. It is to be clearly understood that any change required to be done in the prototype as required by RDSO/Purchaser shall be done expeditiously. Each test shall be made on 3 samples. If the sample fails in any of the tests the production of further fittings shall be stopped till further investigation and improvements in the manufacturing procedure are done.	
8.2	Malleable cast iron: The malleable cast iron fittings shall conform to Grade BM: 340 of IS: 14329-1995 Reaffirmed 2005. Relevant extracts of the specification are given in appendix- 'B'.	Malleable cast iron: The malleable cast iron fittings shall conform to Grade BM: 340 of IS: 14329-1995 Reaffirmed 2005. Relevant extracts of the specification are given in appendix- 'B'. Supply of MCI fittings shall be permitted in SGCI considering higher material class and better physical properties.	Not accepted. Agreed on SGCI material is superior with MCI material but both type fittings are used in existing railway electrification and volume in size of fittings are different.
	Aluminium alloy: The aluminium alloy fittings shall conform to Grade 4600 of IS: 617-20031994 Reaffirmed 1999. The extracts are given in Appendix 'D'. Forged steel: The material of forged steel fittings shall conform to class 2 of IS: 2004-1991 Reaffirmed 2001, unless otherwise specified. The relevant extracts are given in Appendix 'E'.	Aluminium alloy: The aluminium alloy fittings shall conform to Grade 4600 of IS: 617-20031994 Reaffirmed 1999. The extracts are given in Appendix 'D'. Forged steel: The material of forged steel fittings shall conform to class 2 of IS: 2004-1991 Reaffirmed 2001, unless otherwise specified. The relevant extracts are given in Appendix 'E'. Instead of CL-2, higher grade material eg. CI-4 shall be allowed after normalizing)	Not accepted due to increase the % of Carbon and decrease the Elongation properties.
8.6	Fabricated steel: The material of fabricated steel fittings unless otherwise stated on the drawings shall conform to Grade A of IS: 2062-2011. The relevant extracts are given in Appendix 'F'. Copper strip	Fabricated steel: The material of fabricated steel fittings unless otherwise stated on the drawings shall conform to Grade A of IS: 2062-2011. The relevant extracts are given in Appendix 'F'. Copper strip. Appendix "F" to be revised As per IS:2062 :2011	Accepted and updated in specification

12.	<p>Marking : For the purpose of identification, the following marking shall invariably be made/cast on each fittings/castings.</p> <p>i) Manufacturer's code number ii) Railway Identification No. (R.I. No) iv) The month and year of production shall invariably be indicated on the fittings/castings. If it is not possible to accommodate any particular marking on the fittings/castings, the manufacturer shall obtain prior approval of the purchaser to delete the markings or to make the marking by any other suitable means.</p>	<p>Marking : For the purpose of identification, the following marking shall invariably be made/cast on each fittings/castings.</p> <p>i) Manufacturer's code number ii) Railway Identification No. (R.I. No) iv) The month and year of production shall invariably be indicated on the fittings/castings. If it is not possible to accommodate any particular marking on the fittings/castings, the manufacturer shall obtain prior approval of the purchaser to delete the markings or to make the marking by any other suitable means. (...) Minimum possible marking by any other suitable means shall be allowed. Specific guidelines to be issued for marking on small items. Eg. Sequence preferred: 1. Mfg. Monogram 2. RI Number 3. Batch Code/Melt.</p>	Not accepted, Existing pattern of markings is acceptable by all manufacturers since long period.
13.		<p>1. Packing requirements shall be revised as per core letter no. ELCORE/MP/VENDOR/MISC/PT.I Dt. 23.01.2019. 2. Guy rods RI No. 50005-2, 5005, 5004, 5005-1 to be supplied in 'U' bent condition for easy handling at site locations and transportation.</p>	Not accepted, These are the general comments. It should be decided mutually supplier and purchaser.
Appendix "F"	Appendix "F"	Appendix "F" To be updated as per latest IS 2062:2011, Grades designation & Values are changed	Accepted and updated in specification
Appendix "G"	Appendix "G"	Technical requirements of few sections are missing eg. Dia 3,5 & 7 rods mm and flats above 10mm shall be included in Appendix.	Not accepted, 10 mm thickness strip is required and mentioned in Appendix.
Appendix "H"	Appendix "H"	Material grades and heat treatments types details are missing/not specified for various items.	Not accepted, heat treatment generally outsourced by manufacturers. So technical parameters of finished product should meet with appendix.