

**Bureau of Indian Standards
Northern Regional Laboratory
Mohali**

1 Dec 2023

Out Ref: NRL/Manak-Manthan IS 3601

Subject: Writeup of Manak-Manthan of IS 3601: 2006 held on 22 Nov 2023

NRL, Mohali organized a Manak-Manthan Program of IS 3601: 2006 'Steel tubes for Mechanical and General Engineering purposes' on 22 Nov 2023 at 1030h. The program was graced by participants from various BIS labs as well as by BOs under NRO through online/offline.

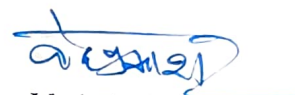
During the Program, participants were apprised about status of test facility of IS 3601 at NRL. Also, method of testing was discussed clause-wise. Further, discussions were also held for various other clauses of this standard including both amendments and following points were observed:

- 1) In Cl. 2, the reference ISs are since revised, so, should be updated with the latest ISs.
- 2) In Cl. 6 'Workmanship', it is mentioned that all tubes shall be free from loose scale and rust. However, Cl. 11.1 states that the tubes shall be supplied uncoated or with manufacturer's standard mill protective coating. So, if the tubes are supplied uncoated, it is prone to rusting, hence, Cl. 6 should be modified with allowance of minor rusting in the tubes and should not be a cause of rejection.
- 3) In Cl. 10 'Dimensions and Properties' Annex-B is referred for various sizes of tubes and Nominal diameter, thickness, mass etc. are specified there. Further, it is also specified that any other diameter or thickness as agreed to between the manufacturer and purchaser may be supplied. So, a formula based upon density of steel should be specified in the Annex-B to cover the other sizes (OD & thickness).
- 4) In Cl. 15.2, in last line, 'Cl. 1.4' may be replaced by 'Cl. 14' being editorial correction stating Cl. 14 'Re-test'.
- 5) In Cl. 26.2, Grade 430 is indicated both for ordinary welding technique as well as for special welding technique for manufacturing. It may be indicated at special welding technique and may be removed from other location to bring clarity to the standard.
- 6) In Cl. 27 'Mechanical Properties' for CDS tubes, Table 12 is referred for mechanical properties where properties of grades CDS 370, CDS 430, CDS 540 are provided with headline, "As drawn or as drawn and stress relieved condition at the option of the manufacturer" with a note at the bottom of the table "If as drawn and stress relieved / tempered tubes are subjected to annealing, brazing, welding or similar heating, these properties will be reduced in the heat affected zone." There is no indication of extent of such reduction in properties, instead a column may be incorporated to indicate clearly the properties with or without heat treatment.
- 7) Table 1 specifies CEW 310 grade for CEW tubes along with other grades. The same is nowhere indicated in Cl. 31 'Condition' which may be suitably mentioned and its physical properties may also be indicated in Table 16.
- 8) In Cl 19.1.1 and Cl 24.1.1, the lower tolerance for OD upto and including 40 mm and 48.3 mm respectively is mentioned as -1 mm, however, for OD over 40 mm and 48.3 mm respectively, lower tolerance is mentioned as -1%. So, lower tolerance for OD 40 mm would

be -1 mm while for OD 50 mm it would be -0.5 mm. Hence, lower tolerance may be replaced with '-1% or -1 mm whichever is more' instead of what is specified currently for OD more than 40 mm and more than 48.3 mm in Cl. 19.1.1 & Cl. 24.1.1 respectively.

- 9) In Annexure A 'Information to be supplied by Purchaser', the 'Heat treatment Conditions after fabrication such as annealing, brazing, welding or similar heating processes after fabrication' should be incorporated as the same may also be required by the manufacturer.
- 10) Both Amendment no. 1 & 2 may be incorporated in the Standard.

The comments on the standard (IS 3601) as discussed during Manak Manthan would be forwarded to concerned Technical Department.



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~~Head (NRL)~~ For kind information please
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