



**उत्पाद मैनुअल**  
**सामान्य इंजीनियरिंग अनुप्रयोगों हेतु पिटवाँ**  
**एल्यूमीनियम एवं एल्यूमीनियम मिश्र**  
**धातुओं से बनी एक्सट्रूडेड गोल नालियाँ एवं**  
**खोखले सेक्शन- विशिष्टि**  
**IS 1285:2023 के अनुसार**

Product Manual for

**Wrought Aluminium and Aluminium Alloys- Extruded Round Tube and Hollow Sections for General Engineering Purposes According to IS 1285:2023**

व भन्न उत्पादों के लए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) वनियम, 2018 की योजना -I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

*This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.*

|    |                                          |   |                                                                                                                                                                                                                                                                                                          |
|----|------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | मानक संख्या<br>IS No.                    | : | IS 1285:2023                                                                                                                                                                                                                                                                                             |
|    | शीर्षक<br>Title                          | : | Wrought Aluminium and Aluminium Alloys-Extruded Round Tube and Hollow Sections for General Engineering Purposes                                                                                                                                                                                          |
|    | संशोधनों की संख्या<br>No. of amendments  | : | NIL                                                                                                                                                                                                                                                                                                      |
| 2. | नमूना दिशानिर्देश<br>Sampling Guidelines |   |                                                                                                                                                                                                                                                                                                          |
| a) | कच्चा माल<br>Raw material                | : | Extruded round tubes and hollow sections shall be made from alloys specified in IS 733.<br><br>Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance |

|    |                                                                                                     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----|-----------------------------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| b) | समूहीकरण दिशानिर्देश<br><b>Grouping Guidelines</b>                                                  | : | Please refer Annex – A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| c) | नमूने का परिमाण<br><b>Sample Quantity</b>                                                           | : | <p>For chemical testing – 5 pcs of 5 cm length</p> <p>For mechanical testing – 1 pc of 1 meter length</p> <p>In case of higher sizes (bulky sizes) of Tubes/Sections, prepared Pieces for Mechanical testing shall be sent.</p> <p>The Requirements of Freedom from Defects (cl.6.) &amp; Dimensions and Tolerances (cl.8.) shall be tested in the factory (F/T) on full sizes of Tubes/Hollow Sections from which samples are drawn for IT.</p> <p>Note: This section indicates the quantity of the sample of the product and/or the raw material (if applicable), required to be sent to the laboratory for testing, for the purpose of Grant of Licence/Change in Scope of Licence/ Factory Surveillance (in case of market surveillance, effort may be made to procure the required quantity of product sample, as far as possible since raw material sample may not be available in market)</p> |
| d) | परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर<br><b>Parameters to be Declared in Test Request</b> | : | <p>i. Type of Section</p> <p>ii. Sizes</p> <p>iii. Temper designation</p> <p>Note: Apart from the above, any other requirements/parameters may also be declared as per the standard, as applicable.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 3. | परीक्षण उपकरणों की सूची<br><b>List of Test Equipment</b>                                            | : | Please refer Annex – B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 4. | निरीक्षण और परीक्षण की स्कीम<br><b>Scheme of Inspection and Testing</b>                             | : | Please refer Annex – C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 5. | एक दिन में संभावित परीक्षण<br><b>Possible tests in a day</b>                                        | : | <p>All tests</p> <p>Note: This section is for the guidance of BIS Certification Officers/Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide readyreference regarding the tests which can be witnessed during the inspection in the factory by the officer/auditor.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 6. | <b>लाइसेंस का दायरा /Scope of the Licence:</b>                                                      |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|    | Licence is granted to use Standard Mark as per IS 1285:2023 with the following scope:               |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|    | <b>Name of the product</b>                                                                          |   | <b>Wrought Aluminium and Aluminium Alloys-Extruded Round Tube and Hollow Sections for General Engineering Purposes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|  |                         |  |                                                                                                                 |
|--|-------------------------|--|-----------------------------------------------------------------------------------------------------------------|
|  | <b>Type of section</b>  |  | Structural Tube/Seamless Tube/Hollow Sections                                                                   |
|  | <b>Dimensions/Sizes</b> |  | Outside Diameter, Width or Width Across Flats, Thickness.                                                       |
|  | <b>Condition(s)</b>     |  | Temper designations such as F/ O/ T4/ T5/ T6.                                                                   |
|  | <b>Designation (s)</b>  |  | 19000, 19500, 19600, 24345, 24534, 43000, 46000, 52000, 53000, 54300, 63400, 64423, 64430, 65032, 74530, 76528. |

## ANNEXURE A

**GROUPING GUIDELINES****A) Grouping based upon Grade Designations:**

A.1 Manufacturer shall declare the Grade Designations (specified at Table 1 of IS 733) intended to be covered in the scope of licence

| Group | Grade Designations               | Grouping                                                                                                                                                          |
|-------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | 19000<br>19500<br>19600          | One sample of Grade Designation having the highest Purity of Aluminium shall be drawn to cover Grade Designations having lower purity in the Scope (Also See A.2) |
| 2     | 24345<br>24534                   | One sample of any Grade Designation shall be drawn and tested (Also See A.2)                                                                                      |
| 3     | 43000<br>46000                   | One sample of any Grade Designation shall be drawn and tested (Also See A.2)                                                                                      |
| 4     | 52000<br>53000<br>54300          | One sample of any Grade Designation shall be drawn and tested (Also See A.2)                                                                                      |
| 5     | 63400<br>64423<br>64430<br>65032 | One sample of any Grade Designation shall be drawn and tested (Also See A.2)                                                                                      |
| 6     | 74530<br>76528                   | One sample of any Grade Designation shall be drawn and tested (Also See A.2)                                                                                      |

A.2 Evidence of manufacturing capability such as Mill Test Certificates (MTCs) (of earlier consignments) of all Grade Designations, intended to be covered in the scope of the licence, within each Group, shall be submitted by the manufacturer and their conformity to the requirements of IS 733 shall be ensured before endorsing all Grade Designations in the Scope of Licence. In case of non-availability of MTCs, samples of all those Grade Designations shall also be drawn and tested from each Group.

**B) Grouping based upon Temper Condition:**

B.1 Grade Designations specified at Table 1 of IS 733 can be supplied in different Temper Conditions and mechanical properties of Grade Designations in different Temper Condition are specified at Table 2 of IS 733. Manufacturer shall declare the Temper Condition for supply of each Grade Designation as a part of scope of the licence.

| <b>Temper Conditions</b> | <b>Grouping</b>                                                                                                                                                                                      |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| F,O,T4,T5,T6             | Samples of different Grade Designations, drawn at A above, shall be drawn in such combination that samples of all Temper Conditions, intended to be covered in the scope of the licence, are tested. |

**C) Grouping based upon Type of Section/Sizes:**

C.1 Manufacturer shall declare the Sections and their Sizes intended to be covered in the Scope of the Licence.

| <b>Type of Section</b>                        | <b>Grouping</b>                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Structural Tube/Seamless Tube/Hollow Sections | <p>Samples of different Grade Designations and Temper Designations, drawn at A &amp; B above, shall be drawn in such combination that samples of all Sections, intended to be covered in the scope of the licence, are tested.</p> <p>The samples of different Sections drawn may be of any size. However, scope of licence with regards to sizes shall be restricted based upon manufacturing capability.</p> |

D. Scope of licence shall be restricted based on the manufacturing and testing facilities available.

E. During operation of licence, samples of each variety covered in the scope of licence, shall be tested in rotation, to the extent possible

**ANNEXURE B**  
**LIST OF TESTING EQUIPMENTS**  
*(INDICATIVE LIST, FOR GUIDANCE ONLY)*

| Sr. No. | Tests used in with Clause Reference                                          | Test Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Dimensions and Tolerances (Clause 7)                                         | Vernier Caliper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|         |                                                                              | Micrometer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|         |                                                                              | Steel Scale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|         |                                                                              | Right Angle                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|         |                                                                              | Measuring Tape                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|         |                                                                              | Feeler Gauge                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         |                                                                              | Straight Surface                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2       | Tensile Test (Clause 9) And Table 2                                          | Universal Tensile Testing Machine                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|         |                                                                              | Extensometer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 3       | Chemical Composition (Clause 8) and Table 1 – Instrumental method            | Spectrometer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 4       | Chemical Composition (Clause 8) and Table 1 – Chemical Analysis (Wet) Method | Analytical Balance(0-200gm, LC- 0.1mg)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|         |                                                                              | Hot Plate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|         |                                                                              | Hot Air Oven                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         |                                                                              | Photometer (Absorption cell)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|         |                                                                              | Porcelain/Silica Crucible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|         |                                                                              | Platinum Crucible                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|         |                                                                              | Thermometer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|         |                                                                              | Filter Paper including ashless filter paper pad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|         |                                                                              | Stainless steel/nickel beaker, Plastic/polyethylene/SS Beaker                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5       | Copper (Below 0.1%)                                                          | Pyrex beakers and other glassware                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|         |                                                                              | Reagents-Mixed Acid(Conc.HCL, Conc. Sulphuric Acid, Conc.Nitric Acid), Dilute Sulphuric Acid, Hydrofluoric Acid, Hydrogen Sulphide(gas), Hydrogen Sulphide Wash Solution, Dilute Nitric Acid, Concentrated Ammonium Hydroxide, Dilute Ammonium Hydroxide Wash Solution, Citric Acid Solution, Sodium-Diethyl-Dithiocarbonate solution, Carbon Tetrachloride, Sodium Sulphate, Standard Copper Solution, silicabasin.                                                                                                                                                                                    |
| 6       | Copper (Above 0.1%)                                                          | Reagents – Concentrated Sulphuric Acid, Concentrated Nitric Acid, Concentrated Hydrochloric Acid, Mixed Acids(Conc.HCL, Conc. Sulphuric Acid, Conc. Nitric Acid), Hydrofluoric Acid, Dilute Sulphuric Acid, Ammonium Fluoride, Concentrated Ammonium Hydroxide, Acetic Acid, Urea Solution, Potassium Iodide Solution, Standard Sodium Thiosulphate Solution, Starch solution, ammonium thiocyanate, Sodium Hydroxide Solution, Sodium Sulphate Solution, Sodium Hydroxide-Sodium Sulphate Wash Solution, Dilute Nitric Acid, Sulphurous Acid, Hydrogen Sulphide (gas), Hydrogen Sulphide Wash Solution |

|    |                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7  | Magnesium<br>(0.01<br>to 12 %)                    | Reagents – Sodium Hydroxide, Hydrogen Peroxide, Sodium Carbonate, Methyl Red Indicator Solution, Conc. Ammonium Hydroxide, Ammonium Chloride Wash Solution, Ammonium Chloride, Conc. Hydrochloric Acid, Ammonium Sulphide Solution, Ammonium Persulphate, Ammonium Sulphide Wash Solution, Bromine Water, 8-Hydroxyquinoline Solution, Dilute Ammonium Hydroxide, Methyl Orange Indicator Solution, Potassium Bromate-Potassium Bromide Solution, Potassium Iodide Solution, Starch Solution, Standard Potassium Iodate Solution, Standard SodiumThiosulphate Solution |
| 8  | Magnesium (0.5<br>to 11%)                         | Reagents – Sodium Hydroxide Solution, Hydrogen Peroxide, Potassium Cyanide Solution, Dilute Hydrochloric Acid, Ammonium Chloride, Bromine Water, Conc. Ammonium Hydroxide, Sodium Acetate, Tartaric Acid, Chrome Blank T Indicator, Standard Magnesium Sulphate, Standard EDTA Solution.                                                                                                                                                                                                                                                                               |
| 9  | Silicon (0.02 to<br>0.3%)                         | Reagents- Sodium Hydroxide Solution, Dilute Nitric Acid, Ammonium Molybdate Solution, Standard Silicon Solution.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 10 | Silicon<br>(Above<br>0.3%)                        | Reagents – Sodium Hydroxide Solution, Hydrogen Peroxide, Conc. Sulphuric Acid, Sulphuric Acid-Perchloric Acid Mixture, Perchloric Acid Solution, Conc. Nitric Acid, Sulphurous Acid, Dilute Sulphuric Acid, Conc. Hydrochloric Acid, Ammonium Acetate Solution, Dilute Hydrochloric Acid, HydrofluoricAcid                                                                                                                                                                                                                                                             |
| 11 | Iron (0.03 to<br>0.10%)                           | Reagents-Sodium Hydroxide Solution, Finely granulated lead containing under 0.001% iron, Acetate Buffer Solution, Hydroxylamine Hydrochloride Solution, O-phenanthroline solution, Standard Iron Solution.<br><br>Equipment – Magnet, Nickel Beaker.                                                                                                                                                                                                                                                                                                                   |
| 12 | Iron (0.01 to<br>2.0%)                            | Reagents -Concentrated Sulphuric Acid, Concentrated NitricAcid, Concentrated Hydrochloric Acid, Mixed Acids(Conc.HCL, Conc. Sulphuric Acid, Conc. Nitric Acid),Dilute Sulphuric Acid, Hydrofluoric Acid, Potassium Bisulphate, Hydrogen Sulphide, Hydrogen Sulphide Wash Solution, Potassium Permanganate Solution, Potassium Thiocyanate Solution, Standard Titanous Chloride Solution.Equipment – Apparatus for Storing Titanous Chloride Solution, Solid Glass Beads.                                                                                               |
| 13 | Manganese (Mn content<br>between 0.01<br>to 0.1%) | Reagents – Sodium Hydroxide Solution, Sodium Nitrite Solution, Acid Mixture(Conc. Nitric Acid and PhosphoricAcid), Hydrofluoric Acid,<br>Potassium Periodate Solution, Standard Manganese Solution                                                                                                                                                                                                                                                                                                                                                                     |

|    |                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14 | Manganese (Chromium Content up to 0.5%)             | Reagents - Sodium Hydroxide Solution, Acid Mixture(Conc.Sulphuric Acid, Phosphoric Acid and Nitric Acid), Silver Nitrate Solution, Ammonium Persulphate Solution, Ammonium Chloride Solution, Standard Arsenite-Nitrite Mixture, Sodium Arsenite, Standard Manganese Solution.                                                                                                                                                                                                 |
| 15 | Manganese (Mn content between 0.1 to 1.5%)          | Reagents – Conc. Nitric Acid, Sodium Bismuthate, Sulphurous Acid, Dilute Nitric Acid, Phosphoric Acid, Standard Ferrous Ammonium Sulphate Solution, Standard Sodium Oxalate Solution, Standard Potassium Permanganate Solution.<br><br>Equipment- Asbestos Gooch Crucible.                                                                                                                                                                                                     |
| 16 | Zinc (Photometric Method for Zn content below 0.1%) | Reagents – Dilute Hydrochloric Acid, Potassium Chlorate, Carbon Tetrachloride, Complex Forming Solution (Conc. Ammonium Hydroxide, Ammonium Oxalate, HCl acid, sodium acetate, sodium thiosulphate solution and sodium sulphide solution), Dithizone Solution, Sodium Sulphide Wash Solution, Standard Zinc Solution.                                                                                                                                                          |
| 17 | Zinc By Mercuric Thiocyanate Method                 | Reagents – Mixed Acid(Conc. Sulphuric Acid, Conc. HCl and Conc. Nitric Acid), Dilute Sulphuric Acid, Hydrogen Sulphide(gas), Hydrogen Sulphide Wash Solution, Tartaric Acid Solution, Conc. Ammonium Hydroxide, Methyl Red Indicator Solution, Formic Acid Mixture, Formic Acid Wash Solution, Dilute Hydrochloric Acid, Ammonium Nitrate, Methylated Spirit, Mercuric Potassium Thiocyanate Solution, Chloroform, Standard Zinc Solution, Standard Potassium Iodate Solution. |
| 18 | Titanium                                            | Reagents – Sodium Hydroxide Solution, Nitric Acid- Sulphuric Acid Mixture, Dilute Sulphuric Acid, Hydrogen Peroxide, Standard Titanium Solution.                                                                                                                                                                                                                                                                                                                               |
| 19 | Chromium                                            | Reagents – Conc. Sulphuric Acid, Conc. Nitric Acid, Silver Nitrate, Hydrofluoric Acid, Ammonium persulphate, Dilute HCl, Standard Ferrous Ammonium Sulphate Solution, Standard Potassium Permanganate Solution.                                                                                                                                                                                                                                                                |
| 20 | Vanadium                                            | Potassium permanganate, N-Cinnamoyl 1-N Phenyl Hydroxylamine, Chloroform, Dilute Hydrochloric acid, Dilute Sulphuric acid, Ammonium metavanadate                                                                                                                                                                                                                                                                                                                               |

## ANNEXURE C SCHEME OF INSPECTION AND TESTING

### 1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

#### 1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is : For the purpose of this scheme Structural Tubes, Seamless Tubes or Hollow Sections of the same dimensions, and condition produced continuously from the same cast and of the same alloy on the same line in one go shall be taken as one control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

**2. ENSURING COMPLIANCE THROUGH TESTING-** It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

**2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.**

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

**2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1),** where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website [www.bis.gov.in](http://www.bis.gov.in). (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

**2.4 TEST RECORDS-** The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

**3. PACKING AND MARKING** - The Standard Mark as given in the Schedule of the license and Licence Number (i.e. CM/L) shall be incorporated suitably on each lot of Structural Tubes, Seamless Tubes or Hollow Sections and on the Test Certificate issued along with each Consignment provided always that the product thus marked and packed conforms to all the requirement of the specification.

3.1 Packing and Marking shall be done as per the Indian Standard.

**4. TEST CERTIFICATE-** For each consignment of BIS Certified material conforming to the specification there shall be a test certificate which shall contain the Standard Mark, the lot/cast number and the corresponding test results (as given in Annexure I enclosed).

**5. REJECTION** - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. 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**  
**(ONLY FOR GUIDANCE PURPOSE)**

| (1)          |                           |              |                                                                                               | (2)                                                                        | 3                                                                                                                                                                                                                                    |                   |                                                                                                                                              |
|--------------|---------------------------|--------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Test Details |                           |              |                                                                                               | Test equipment requirement<br>R: required (or)S: Sub-contracting permitted | Levels of Control                                                                                                                                                                                                                    |                   |                                                                                                                                              |
| Cl.          | Requirement               | Test Methods |                                                                                               |                                                                            | No. of Sample                                                                                                                                                                                                                        | Frequency         | Remarks                                                                                                                                      |
|              |                           | Clause       | Reference                                                                                     |                                                                            |                                                                                                                                                                                                                                      |                   |                                                                                                                                              |
| 6            | Freedom from Defects      | 6.1, 6.2     | IS 1285                                                                                       | R                                                                          | Manufacturer shall exercise adequate in-process controls to ensure that the material remains free from harmful defects.                                                                                                              |                   |                                                                                                                                              |
| 9            | Chemical Composition      | 9.1, 9.2     | IS 1285<br>IS 733<br>IS 504 (all parts) or any other established instrumental/chemical method | R                                                                          | One                                                                                                                                                                                                                                  | Each Control Unit | No further testing if the raw material procured for manufacturing of Tubes and Sections is ISI marked and is received with Test Certificate. |
| 8            | Dimensions and Tolerances | 8            | IS 1285<br>IS 2673<br>IS 6477                                                                 | R                                                                          | Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity. |                   |                                                                                                                                              |
| 10           | Mechanical Properties     | 10           | IS 1285<br>IS 733<br>IS 1608 (Part 1)                                                         | R                                                                          | One                                                                                                                                                                                                                                  | Each Control Unit | ---                                                                                                                                          |

**ISI Mark  
with IS No.  
and CM/L  
No.**

**ANNEXURE I  
TEST CERTIFICATE FORMAT XYZ COMPANY  
TEST CERTIFICATE**

**Wrought Aluminium and Aluminium Alloys - Extruded Round Tube and Hollow Sections for General Engineering Purposes**

TEST CERTIFICATE NO. \_\_\_\_\_ DATED \_\_\_\_\_

TO M/s \_\_\_\_\_

It is certified that the material described below fully conforms to IS 1285:2023. Chemical composition 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. etc.

(PLEASE REFER TO IS 1285:2023 FOR DETAILS OF SPECIFICATION REQUIREMENTS) TEST RESULTS

| Order no and date | Type (Structural Tube, Seamless Tube or Hollow section ) and nominal size | Designation (19000, 19500 etc) and condition | Cast No./Lot No. | Quantity (in tonnes) | Chemical Analysis (in %) |    |    |    |    |    |    |                                         |    |      |                  |       | Tensile properties      |                        |                | Remarks |
|-------------------|---------------------------------------------------------------------------|----------------------------------------------|------------------|----------------------|--------------------------|----|----|----|----|----|----|-----------------------------------------|----|------|------------------|-------|-------------------------|------------------------|----------------|---------|
|                   |                                                                           |                                              |                  |                      | Al                       | Cu | Mg | Si | Fe | Mn | Zn | Ti and/or other grain refining elements | Cr | Ti+V | Total impurities | Cr+Mn | 0.2% proof stress (Mpa) | Tensile strength (Mpa) | Elongation (%) |         |
|                   |                                                                           |                                              |                  |                      |                          |    |    |    |    |    |    |                                         |    |      |                  |       |                         |                        |                |         |

The material supplied conforms to specified tolerances REMARKS  
SHIPPING ADVICE NO.

WAGON NOS

FOR XYZ Company

**“For details of BIS certification please visit [www.bis.gov.in](http://www.bis.gov.in)”**