**4** **TYPES AND CATEGORIES**

**4.1** Depending upon the percentage of leather fibre content, there shall be two types of leather boards, namely:

**Type 1** —Containing minimum 25 percent of leather forming material.

**Type 2** —Containing minimum 50 percent of leather forming material

**4.2** Similarly, the insoles are categorised as follows, depending on the final footwear product's utility factor or end-use application.

**Category ‘A’**- Industrial and high quality footwear

**Category ‘B’**- Fashion and comfort footwear

**Category ‘C’**- Light use footwear

**7.2 Physical Requirements —** The material shall comply both Type 1 and Type 2 Leather board with the physical requirements as given in Table 1 **& 2**

**Table 1 Physical Requirements for Leather Board (Type 1)**

*(Clause 7.2)*

| **S. No** | **Properties** | **Requirements** | | | **Test Method** |
| --- | --- | --- | --- | --- | --- |
| **Category ‘A’** | **Category ‘B’** | **Category ‘C’** |
| i | Wet tensile strength, N/mm2, *Min* | 6.0 | 4.5 | 4.0 | Annex ‘B’ |
| ii | Flexing Index, *Min* | 3.2 | 3.0 | 2.5 | Annex ‘C’ |
| iii | Stitch tear strength, N/mm, *Min* | 60 | 50 | 40 | ISO 20876:2018 |
| iv | Transverse tensile strength, N/mm2, *Min* |  |  |  | Annex ‘D’ |
| Dry | 0.50 | 0.45 | 0.30 |
| Wet | 0.40 | 0.35 | 0.20 |
| v | Abrasion resistance,  at 400 Cycles by  Visual observation | Abrasion damage shall not be severe | Abrasion damage shall not be severe | Abrasion damage shall not be severe | IS 15298  (Part 1):2024 |
| vi | Water absorption, mg/cm2, *Min* | 60 | 45 | 30 | IS 15298  (Part 1):2024 |
| Water Desorption, Percent, *Min* | 70 | 60 | 40 |
| vii | Surface Peel strength, N/mm, *Min* | 0.5 | 0.5 | 0.5 | Annex ‘E’ |

**Table 2 Physical Requirements for Leather Board (Type 2)**

*(Clause 7.2)*

| **S. No** | **Properties** | **Requirements** | | | **Test Method** |
| --- | --- | --- | --- | --- | --- |
| **Category ‘A’** | **Category ‘B’** | **Category ‘C’** |
| i | Wet tensile strength, N/mm2, *Min* | 7.0 | 6.0 | 4.0 | Annex ‘B’ |
| ii | Flexing Index, *Min* | 3.7 | 3.2 | 2.7 | Annex ‘C’ |
| iii | Stitch tear strength, N/mm, *Min* | 70 | 60 | 50 | ISO 20876:2018 |
| iv | Transverse tensile strength, N/mm2, *Min* |  |  |  | Annex ‘D’ |
| Dry | 0.60 | 0.50 | 0.40 |
| Wet | 0.50 | 0.35 | 0.20 |
| v | Abrasion resistance,  at 400 Cycles by  Visual observation | Abrasion damage shall not be severe | Abrasion damage shall not be severe | Abrasion damage shall not be severe | IS 15298  (Part 1):20**24** |
| vi | Water absorption, mg/cm2, *Min* | 70 | 50 | 35 | IS 15298  (Part 1):20**24** |
| Water Desorption, Percent, *Min* | 80 | 70 | 45 |
| vii | Surface Peel strength, N/mm, *Min* | 0.5 | 0.5 | 0.5 | Annex ‘E’ |

**7.3 Chemical Requirements —** The material shall comply with the chemical requirements as given in Table **3**. **The moisture content shall be determined in accordance with LC: 1 or Part 1 of IS 582**

**Table 3 Chemical Requirements for Leather Board**

(*Clause 7.3*)

| **S. No** | **Properties** | **Requirements** | | **Test Method** |
| --- | --- | --- | --- | --- |
| **Type 1** | **Type 2** |
| i | Mineral ash, percent by weight, *Max* | 2.5 in excess of Cr2O3 | 2.5 in excess of Cr2O3 | IS 582 Part 3:2017  IS 582 (Part 10/Sec 1):2022 |
| ii | Water soluble matter, percent by weight, *Max* | 5 | 5 | IS 582 Part 2:20**24** |
| iii | Leather forming material (calculated as hide substance on the material) | 25 | 50 | IS 582 Part 12:2022 |

**NOTE - Calculating the above-listed characteristic requirements shall be on a zero percent moisture basis. The moisture content shall be determined by LC: 1 or Part 1 of IS 582.**