

**SYNOPSIS OF INDIAN STANDARDS**

| <b>Number and Title of Indian Standard</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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| 17376 : 2020 /ISO 11092 : 2014, Textiles — Determination of physiological effects — Measurement of thermal and water-vapour resistance under steady-state conditions (sweating guarded-hot plate test) [Doc : TXD 05 (14585)]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>a) Scope:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p>This Indian Standard specifies methods for the measurement of the thermal resistance and water-vapour resistance, under steady-state conditions, of e.g. fabrics, films, coatings, foams and leather, including multilayer assemblies, for use in clothing, quilts, sleeping bags, upholstery and similar textile or textile-like products.</p> <p>The application of this measurement technique is restricted to a maximum thermal resistance and water-vapour resistance which depend on the dimensions and construction of the apparatus used (e.g. 2 m<sup>2</sup>·K/W and 700 m<sup>2</sup>·Pa/W respectively, for the minimum specifications of the equipment referred to in this Standard).</p> <p>The test conditions used in this standard are not intended to represent specific comfort situations, and performance specifications in relation to physiological comfort are not stated.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>b) Salient features of content:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p>The specimen to be tested is placed on an electrically heated plate with conditioned air ducted to flow across and parallel to its upper surface as specified in this Standard.</p> <p>For the determination of thermal resistance, the heat flux through the test specimen is measured after steady-state conditions have been reached.</p> <p>The technique described in this Standard enables the thermal resistance <math>R_{ct}</math> of a material to be determined by subtracting the thermal resistance of the boundary air layer above the surface of the test apparatus from that of a test specimen plus boundary air layer, both measured under the same conditions.</p> <p>For the determination of water-vapour resistance, an electrically heated porous plate is covered by a water-vapour permeable but liquid-water impermeable membrane. Water fed to the heated plate evaporates and passes through the membrane as vapour, so that no liquid water contacts the test specimen. With the test specimen placed on the membrane, the heat flux required to maintain a constant temperature at the plate is a measure of the rate of water evaporation, and from this the water-vapour resistance of the test specimen is determined.</p> <p>The technique described in this Standard enables the water-vapour resistance <math>R_{et}</math> of a material to be determined by subtracting the water-vapour resistance of the boundary air</p> |