

IS 2553 (Part 1): 2018

Safety Glass- Specification Part 1 Architectural, Building and General uses

Glass is a non-crystalline, amorphous solid primarily composed of **silica** (SiO₂), which is derived from sand. This **silica-based substance**, often in combination with other elements such as lime and soda, is heated to an extremely high temperature until it melts and becomes a viscous liquid. Upon cooling, it hardens into the glass. Alterations in the basic composition or additional treatments during the manufacturing process can enhance specific characteristics such as strength, insulation properties or resistance to impacts, leading to a range of **specialized glass products** designed to meet the diverse needs of modern architecture.

Several **intrinsic properties of glass** such as **Transparency, Strength, Insulation, Recyclability** and **Design Flexibility** make Glass an appealing material for **architectural applications**. Use of **Glass in Buildings** offers various practical benefits, such as natural lighting, thermal regulation, **energy efficiency** and unparalleled aesthetic versatility.

The **safety glass** standard (**IS 2553 Part 1**), initially published in 1963 and updated in 1964, 1971 and 1990. It prescribes the **specifications for glass** used in a wide range of applications, from **buildings** and **furniture** to **vehicles** and **appliances** and has been continually updated to reflect significant technological advancements and enhance safety measures.

These revisions include key updates such as clearer terminology, updated **thickness** and **dimensional tolerances** for precision, new requirements such as **squareness** for **structural integrity**. New sampling methods to improve testing reliability and annexes to address issues like **nickel sulfide-induced breakage**. For **toughened safety glass**, enhanced requirements now cover **flatness, resistance to human impact** and **edge working** specifications. Additionally, **laminated safety glass** now includes rigorous criteria for **edge displacement, bake tests** and **defect assessments**, alongside optional **humidity tests**.