

SAFETY GLASS | ACOUSTIC | STRUCTURAL | EN ISO 12543 | IS 2553 | ASTM C1172

Laminated Glass

Bonded for Safety. Engineered for Every Demand.

IPH Glasses combines premium glass substrates with Kuraray and Eastman Solutia interlayers to deliver post-breakage integrity, acoustic performance, UV protection, and the base for anti-burglar and bullet-resistant applications.

PRODUCT CATEGORY

Safety Glass
Acoustic
Structural
EN ISO 12543
IS 2553
ASTM C1172

AUTHORIZED DISTRIBUTOR

Guardian Glass | Saint-Gobain
Kuraray | Technoform | Fenzi

PRODUCT OVERVIEW

Laminated Glass

Bonded for safety. Engineered for every performance demand.

Laminated glass is manufactured by permanently bonding two or more glass plies using a polymeric interlayer — most commonly Polyvinyl Butyral (PVB) or Ionoplast — through controlled heat and pressure in an autoclave process. The interlayer holds glass fragments in place upon breakage — maintaining a physical barrier even after both plies fracture. IPH Glasses offers interlayers from Kuraray Trosifol, Eastman Solutia, and Kuraray SentryGlas® Ionoplast.

Post-Breakage	6.38–100 mm	2440 × 6000 mm	~99% UV
Fragments retained by interlayer	Unit thickness range	Maximum panel size	Blockage by standard PVB

INTERLAYER TECHNOLOGY

Interlayer Selection Guide

The interlayer choice determines structural performance, acoustics, post-breakage behaviour, and application suitability.

Interlayer Type	Brand / Origin	Primary Performance	Typical Applications
Standard PVB	Kuraray Trosifol / Eastman Solutia	Safety, UV protection, post-breakage retention	Facades, balustrades, overhead glazing
Acoustic PVB	Kuraray Trosifol SC / Eastman Saflex	Sound attenuation — Rw up to +6 dB over standard PVB	Urban facades, airports, offices near traffic
Coloured PVB	Kuraray Trosifol Colour Range	Aesthetic tinting, privacy, light diffusion	Interiors, feature walls, decorative glazing
SentryGlas® Ionoplast	Kuraray SentryGlas® (USA)	5× stiffer than PVB — structural, anti-burglar, blast, hurricane	Structural balustrades, security glass, frameless facades

TECHNICAL DATA

Technical Specifications

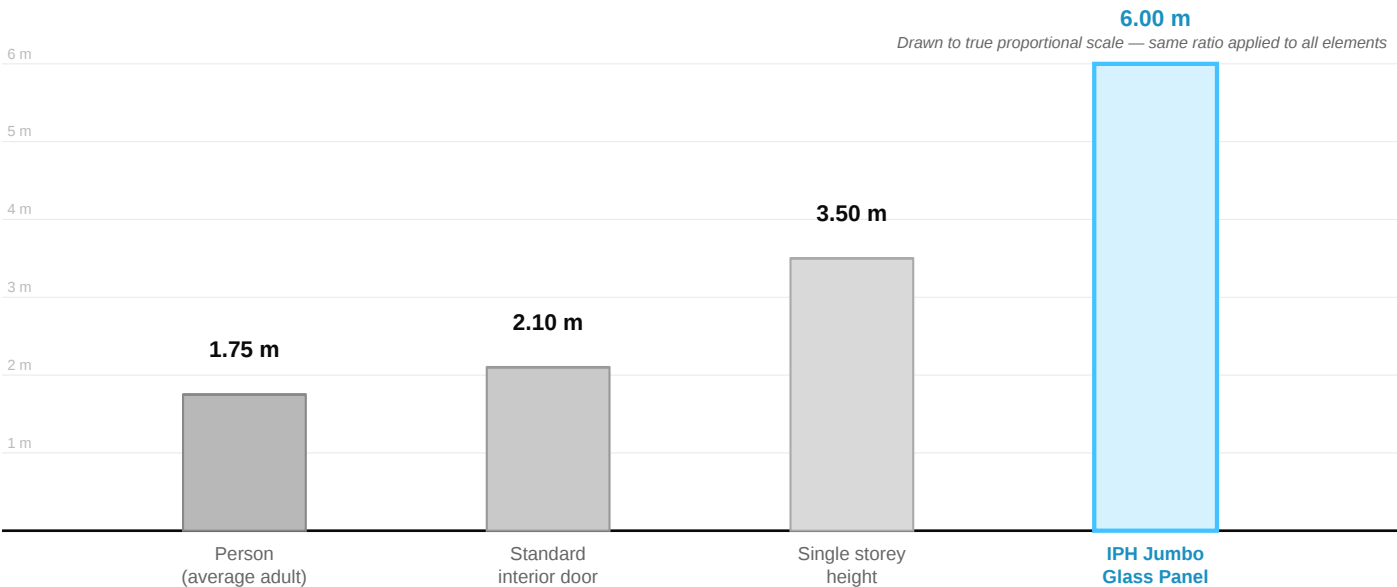
Parameter	Specification
Process Type	Nip-rolled or Vacuum Treated — Autoclaved
Glass Substrate Types	Clear, Extra Clear, Ultra Clear, Tinted, Solar-Control Coated, Low-E Coated (Single / Double / Triple Silver)
Surface Treatments	Ceramic Frit, Digital Printing, Sandblasting, Acid Etching, Holes, Notches, Cutouts
Upgrade Path	Curved Laminated Glass Anti-Burglar Glass (EN 356) Bullet-Resistant Glass (EN 1063)
Unit Thickness Range	6.38 mm to 100 mm
Maximum Dimensions	2,440 mm × 6,000 mm
Edge Finishes	Rough Grind Arrissed Super Polished

PVB Interlayer Supply	Kuraray Trosifol (Japan / Germany) Eastman Solutia (USA)
Ionoplast Interlayer	Kuraray SentryGlas® (USA)
UV Filtration	Approximately 99% UV blockage — standard PVB
Safety Classification	IS 2553 EN ISO 12543 ANSI Z97.1 AS/NZS 2208

MAXIMUM DIMENSIONS

Jumbo Glass Capability & Scale

IPH Glasses processes panels up to **2,440 mm × 6,000 mm** — enabling large, uninterrupted glass surfaces that reduce joint lines and elevate the visual quality of architectural facades, atriums, and interior spaces. The scale diagram below is drawn to true proportion: every bar uses the same fixed scale factor.



Maximum panel width: 2,440 mm — shown separately from height, as glass panels are supplied to project-specific width and height combinations up to these maximum dimensions.

Reference Object	Typical Dimensions	How IPH Glass Compares
Standard interior door	900 × 2,100 mm	IPH panel height is 2.9× a standard door height
Typical floor-to-floor height	3,000 – 3,600 mm	A single IPH panel can span the full floor-to-ceiling height in one piece
Average adult height	~1,750 mm	IPH panel height is 3.4× the height of an average adult
ISO shipping container height	2,591 mm	IPH panel height is 2.3× the height of a standard shipping container
Maximum panel width (separate dimension)	2,440 mm	Width and height are supplied independently up to these maximums, in project-specific combinations

- Maximum panel size of 2,440 × 6,000 mm enables full-height glazing across most floor-to-floor heights without horizontal joints.
- Larger laminated panels reduce the number of edge sealant lines exposed to weather — improving long-term durability and aesthetics.
- IPH Glasses processes laminates from standard safety glass to 100 mm thick multi-layer security composites.

STANDARDS & COMPLIANCE

Applicable Standards

IPH Glasses processes and supplies this product in compliance with the following Indian (IS/BIS), European (EN/ISO), American (ASTM/UL/NIJ), and Australian/New Zealand (AS/NZS) standards:

Standard Code	Title & Scope
Indian Standards — Bureau of Indian Standards (BIS)	
IS 2553 Part 1 : 1990	Safety glass — General requirements and test methods (India)
IS 6498 : 1971	Specification for laminated safety glass for general use (India)
IS 14900 : 2000	Transparent float glass — Specification (India)
European Standards — CEN / ISO	
EN ISO 12543-1 : 2011	Glass in building — Laminated glass and laminated safety glass — Part 1: Definitions and description
EN ISO 12543-2 : 2011	Glass in building — Laminated glass and laminated safety glass — Part 2: Laminated safety glass
EN ISO 12543-3 : 2011	Glass in building — Laminated glass and laminated safety glass — Part 3: Laminated glass
EN ISO 12543-4 : 2011	Glass in building — Laminated glass and laminated safety glass — Part 4: Test methods for durability
EN ISO 12543-5 : 2011	Glass in building — Laminated glass and laminated safety glass — Part 5: Dimensions and edge finishing
EN ISO 12543-6 : 2011	Glass in building — Laminated glass and laminated safety glass — Part 6: Appearance
European Standards — CEN	
EN 12600 : 2002	Glass in building — Pendulum test — Impact performance classification and test method for flat glass
EN 356 : 2000	Glass in building — Security glazing — Testing and classification of resistance against manual attack (reference for upgrade path)
EN 1063 : 2000	Glass in building — Security glazing — Testing and classification of resistance against bullet attack (reference for upgrade path)
ASTM International — USA	
ASTM C1172 : 2014	Standard Specification for Laminated Architectural Flat Glass
ASTM C1036 : 2016	Standard Specification for Flat Glass
ASTM C1048 : 2018	Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass (substrate)
ASTM E1300 : 2016	Standard Practice for Determining Load Resistance of Glass in Buildings
ANSI — USA	
ANSI Z97.1 : 2015	American National Standard for Safety Glazing Materials Used in Buildings — Safety Performance Specifications and Methods of Test
Australian / New Zealand Standards — Standards Australia / SNZ	
AS/NZS 2208 : 1996	Safety glazing materials in buildings — Australian/New Zealand Standard
AS 1288 : 2006	Glass in buildings — Selection and installation
AS/NZS 4667 : 2000	Quality requirements for cut-to-size and processed glass

ARCHITECTURAL APPLICATIONS

Applications

Overhead Glazing & Skylights Post-breakage retention prevents fragment fall — the mandatory specification for overhead glazing.	Glass Balustrades & Railings SentryGlas® ionoplast recommended for structural balustrades without top rails.	Acoustic Facade Systems Acoustic PVB reduces occupant noise exposure in urban, airport, and transport corridor projects.
Structural Glass Floors Multi-ply laminate with ionoplast interlayer — structural performance and visual clarity.	Cyclone Zone Facades Laminated glass retains its barrier function after wind-driven debris impact.	Museums & Cultural Institutions UV-filtering PVB protects exhibits; anti-burglar configurations protect high-value displays.
Luxury Residential Acoustic facades, laminated balustrades, and coloured PVB feature glazing.	Commercial Offices Acoustic laminated facades in CBDs, glass partitions, structural glazing elements.	Hospitality & Retail Feature glass walls, large-span lobby glazing, shopfront glass with post-breakage integrity.

COMPARISON

Product Comparison

Performance Attribute	Standard Float Glass	Laminated Glass
Post-Breakage Behaviour	✗ Fragments fall — physical barrier lost	✓ Fragments retained by interlayer — barrier maintained
Overhead Glazing Safety	✗ Not permitted for overhead glazing	✓ Mandatory per IS 2553, EN ISO 12543, AS/NZS 2208
Acoustic Performance	✗ Limited sound attenuation	✓ Rw 38–52 dB with acoustic PVB — superior to monolithic glass
UV Filtration	✗ No UV filtration	✓ ~99% UV blockage with standard PVB — protects interiors
Security Capability	✗ No intrusion resistance	✓ Anti-burglar rated to EN 356 P8B with ionoplast interlayer
Structural Interlayer	✗ Not available	✓ SentryGlas® ionoplast — 5× stiffer than PVB
Aesthetic Options	✗ Clear glass only	✓ Coloured PVB, frosted, and decorative interlayers available

MANUFACTURING EXCELLENCE

Quality Assurance

Every panel processed at IPH Glasses passes through a structured, multi-stage quality control process — from incoming raw material to final pre-dispatch inspection.

Raw Material Verification

Incoming float glass and component materials (interlayers, spacers, sealants) are checked against supplier specification before entering production.

Optical Quality Inspection

Glass surfaces are visually inspected for distortion, bow, roller wave, and coating defects prior to dispatch.

Edge Quality Inspection

Edge finish (rough grind, arissed, or super polished) is checked for consistency and conformance to the specified finish.

Batch Traceability

Production records link each panel batch to its raw material source, processing parameters, and quality check results.

Process-Controlled Manufacturing

Furnace temperature, cooling rate, lamination pressure, and IGU assembly parameters are monitored and logged at each processing stage.

Dimensional Accuracy Checks

Panel dimensions, squareness, and thickness are verified against project specification tolerances.

Toughening Process Validation

Surface compressive stress and fragmentation pattern are verified on sample panels from each production batch to confirm heat treatment compliance.

Final Pre-Dispatch Sign-Off

A final inspection is carried out before packing and dispatch, confirming the panel meets project specification and IPH Glasses' internal quality criteria.

OUR CAPABILITY

Why Choose IPH Glasses?

IPH Glasses — operating as Mahavir Glass Enterprise — is one of Gujarat's most trusted architectural glass processors and authorized distributors for Guardian Glass and Saint-Gobain. We serve architects, developers, facade consultants, and PMC teams from our facility in Kheda, Gujarat.

Authorized Distributor

Guardian Glass and Saint-Gobain — certified supply chain, authentic products with full traceability.

Complete Product Range

Toughened, laminated, insulated, digital printed, curved, anti-burglar, and bullet-resistant glass — all from one processor.

Multi-Stage Quality Control

Raw material verification, in-process inspection, optical and dimensional accuracy checks, and final pre-dispatch quality sign-off on every batch.

Advanced Processing

Horizontal roller furnace, autoclave lamination, and fully automatic IGU assembly line.

Technical Support

In-house team for glass selection, specification writing, performance calculations, and full project delivery support.

Export Experience

Supplying projects across India, East Africa, Congo, Sri Lanka, and expanding international markets.

CONTACT & TECHNICAL SUPPORT

Get in Touch

Head Office & Factory	Sales & Technical	Digital Presence
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Our technical team is available to assist with glass selection, specification writing, performance calculations, and project-specific requirements. Contact us to schedule a technical consultation or to request samples and project pricing.

This catalogue is for reference purposes. Specifications subject to change. Consult IPH Glasses technical team for project-specific recommendations.