



GLASSHIELD

DESCRIPTION

GLASSHIELD is a fully tempered (also called toughened or fully toughened) glass that is four to five times stronger than annealed glass of the same thickness. The additional mechanical and thermal stress resistance capabilities enable use of GLASSHIELD in a myriad application space such as facades, interior partitions, frameless glazing, shower cubicles and furniture. At FG, GLASSHIELD is manufactured in one of two electric horizontal roller-hearth tempering lines. Both lines are equipped with a high-powered top-and-bottom convection heating system that enables heat-treatment of the most advanced coatings available in the market. Along with this the machines are equipped with an advanced and precise cooling (or quenching) system to ensure minimum levels of iridescence and very high glass flatness.

PRODUCT FAMILY

1. GLASSHIELD FIRST: Clear fully toughened (tempered) glass
2. GLASSHIELD CLARITY: Ultra clear fully toughened (tempered) glass
3. GLASSHIELD TONE: Tinted fully toughened (tempered) glass
4. GLASSHIELD SOLAR: Solar-control coated fully toughened (tempered) glass (pyrolytic or MSVD coated)
5. GLASSHIELD PRO-1: Low-E coated fully toughened (tempered) glass (pyrolytic coated or MSVD coated)*
6. GLASSHIELD PRO-2, PRO-3, PRO-4: Silver low-E coated fully toughened (tempered) glasses (MSVD)*

* Not applicable for monolithic glazing. Only possible when made into an insulated or laminated glass assembly.

GENERAL CHARACTERISTICS

FEATURE	DESCRIPTION
Process Type	Horizontal Roller-Hearth Convection Furnace
Glass Types	Clear, extra clear, ultra clear, tinted, solar-control coated, low-E coated
Additional Process Compatibility	Ceramic-frit, digitecture™ digital printing, sand-blasting, acid-etching, holes, cutouts and notches
Product Enhancement	Can be converted to CLIMACOOL (insulated glass) and LAMISURE (laminated glass)
Glass Thickness	4 mm to 25 mm
Edge Types	Rough grind, arrissed, super polished
Compressive Stress (Edge)	67 MPa (9,700 psi) minimum
Compressive Stress (Surface)	69 MPa (10,000 psi) minimum
Emissivity	Minimum 0.01**

** Lower emissivity only applicable for insulated or laminated glass assemblies.

UNIQUE SELLING POINTS



HEATING SYSTEM

Top-and-bottom forced turbo-charged convection system



HEATING CONTROL

Heat-scanner with precise measurement points



COOLING CONTROL

Dual-oscillating quenching to minimize anisotropy

DIMENSIONS

FEATURE	DESCRIPTION
Minimum Size	200 mm X 300 mm
Maximum Size	2440 mm X 3660 mm (4 mm and 5 mm)
	3000 mm X 5100 mm (6 mm)
	3000 mm X 6000 mm (8 to 19 mm)
	25 mm maximum size available on request

LABELLING

Each piece of GLASSHIELD shall be permanently labeled with the FG logo, process type and relevant standard description. In cases where the glass is made under a specific listing, the same shall be incorporated in the label. Order-specific labeling is also possible, under certain terms and conditions.

STANDARDS

GLASSHIELD is manufactured as per BIS 2553: Part 1 (2018), EN 12150, ASTM C1048 and/or AS/NZS 2208: 1996.

LISTINGS

1. Bureau of Indian Standards IS 2553: Part 1 (2018) - License Number 78001028
2. StandardsMark License AS/NZS 2208: 1996 - License Number SMK41109
3. Safety Glazing Certificate Council ANSI Z97.1 - 2015 & CPSC 16 CFR 1201 - License Number 8344 & 8355

STORAGE

GLASSHIELD requires storage in a covered, dry area, unexposed to rain and dust. Each sheet of GLASSHIELD should be separated with the help of non-adhesive transferring cork/rubber pads. Prolonged storage without separation or with paper separation may result in permanent and irreversible damage to the glass surface. This is even more critical for coated surfaces.