

FUTURE

Tomorrow starts today



FIRE SAFETY

LIFE, ABOVE EVERYTHING ELSE.

www.faglass.com

Protection, unlike any other.

Our wide range of Glazed Fire Rated Systems allows for fabrication of a variety of structural elements that are responsible for fire protection zones in buildings and provides appropriate conditions for evacuation of their occupants. These solutions include products linked to window and door systems, both for external and internal facades.

The purpose of these systems is to prevent the spread of fire by creating barriers to its passage for a specified duration, enabling occupants to assemble in a relatively safe compartment and eventually be pulled out to safety.



Our Strategy, Your Advantage.



GLASS PROCESSING FACILITY

Our state-of-the-art glass-processing facility ensures local production, availability and faster turnaround times for projects.



SOPHISTICATED FABRICATION

Profiles are fabricated by a fully automated European machinery setup that ensures highest standards of material quality and eliminates processing errors and product rejections thereby leading to better project execution.

TRAINED TECHNICAL TEAM

Installation is done by a highly trained technical team under the supervision of a project engineer to achieve impeccable output quality.



CIVIL DEFENSE APPROVALS

Products are certified and approved by authorities having jurisdiction (AHJ) such as the Civil Defense Department to ensure product compliance to fire and safety codes and standards.



BESPOKE SOLUTIONS

Future Glazing is highly capable of addressing customized and bespoke requirements from clients providing not only the best of designs but cost effective solutions.

SHORTER LEAD TIMES

Strategic factory location and availability of stocks that can ensure faster and more efficient delivery schedule.



Fire Rated Glazing in Buildings

Partitions

Compartmentalisation of floor plates to create fire-safe refuge spaces are now a mandatory architectural feature in all commercial, hospitality and residential developments and are dictated as per the local civic regulations. Fire-rated glass serves as an exceptional material of choice for creating these compartments due to its transparency, longevity and almost zero-maintenance.

Skylights

Fire-rated glazing can be used in skylights to prevent the fire from spreading through the building roof. Specially important if there are adjacent structures that need to be protected against fire from inside the building.

Fire Doors with Vision Panels

Fire-rated doors are now a critical safety feature in creating fire-barriers for staircases, building entrances and exits and internal applications such as communal areas, foyers and corridors.

Facades and Windows

Increasing focus on fire-safe facades is mandating use of fire-rated glazing in commercial and residential applications. These facades stop the fire from transmitting from inside-out or outside-in as per the safety and regulatory requirement.

Floors

Fire-safe floors utilise glass and other glazing materials to stop the flow of fire between floors. As per many city municipal codes, fires need to be contained within the floor it originated from and fire-rated floors serve as an important barrier.

Data Storage and Server Room Enclosures

Preservation of electronic data against risk of fire is critical and almost all server and data room enclosures are now designed with fire-rated glasses. With its dual benefits of integrity and transparent views, glass serves as a mandatory, yet desirable solution for these cabinet constructions.

Stairs Enclosure

Staircases are the fastest and the safest exit routes in most constructions and it is important to protect their access points with fire-rated doors with inbuilt vision panels. These vision panels greatly assist in understanding the extent of fire and helps facilitate coordinated getaways from fire-affected areas..

Lift Doors and Enclosures

Protection of lifts and elevators against fire is of paramount importance and fire-rated glass doors are becoming preferred to service this requirement. Apart from its visual appeal, these doors help in identifying potential survivors on either side as the glass remains transparent throughout the fire and can greatly help rescue efforts.

Fully Glazed Fire Doors

A glass-glazed option to regular fire-doors, these provide complete transparency and better aesthetics and are becoming increasingly popular as use in fire-door barriers.



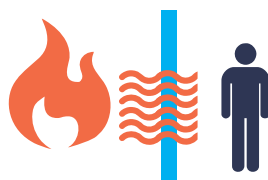


Fire Protective Glass

TGP FireLite

FireLite from Technical Glass Products® (TGP) is made from transparent glass ceramic, and has a warmer earth tone when compared to ordinary float glass. It is available in large sizes and can be installed in standard fire-rated frames.

FireLite products are rated up to four hours*, pass the required hose stream test, has variants that can meet ANSI and CPSC impact safety standards and are classified and labeled by Underwriters Laboratories, Inc.®



- Stops flames and smoke
- Entire range of fire-rated glass available (wired glass, glass ceramic, etc.)

Technical Glass Products® or TGP is the recognized leader in the fire rated glass and framing. TGP is offering fire safety in line with the aesthetic intent, allowing you to create bright, open and attractive spaces in areas requiring fire protection. TGP is where you can find stunning transparent lites of glass also support daylighting. TGP is a part of Allegion family of brands. Allegion is a global pioneer in safety and security with product sold in 130 countries. Focusing on security on the door and adjacent areas, Allegion produces a range of solutions for homes, businesses, schools and other institutions.

Application in doors, facades and partition walls

FireLite

Fire Protective Glass

The industry standard for over 25 years, the FireLite family of products feature ultraHD® Technology for superior color, clarity and surface quality. FireLite from Technical Glass Products (TGP) is made from transparent glass ceramic, and has a warmer earth tone when compared to ordinary float glass. It is available in large sizes and can be installed in standard fire-rated frames. FireLite products are rated up to four hours*, pass the required hose stream test, has variants that can meet ANSI and CPSC impact safety standards and are classified and labeled by Underwriters Laboratories, Inc.®

Why FireLite



Remains Transparent Throughout

Does not lose transparency under fire. This is extremely beneficial in critical fire-safety applications like doors and partitions to facilitate human rescue and plan fire-fighting efforts.



Same Week Delivery Time

Our sophisticated inventory management system ensures we never stock out of the base glass. So you can maintain just-in-time inventory levels and order the glass just when you need it!



Large Size Possibility

Tested in large sizes up to 1200mm x 2400mm.



UL Classified and Hose Stream Tested

Passes the critical hose stream test as per UL norms.



Double Sided Glass

Our fire-rated glass provides fire protection from both sides. This ensures zero liability for installers and 100% protection.



Combinations Possible Without Compromise on Rating

Can be lightly sandblasted / etched / double glazed without affecting fire rating to cater to architectural demands.



UltraHD® Technology

Unlike most fire-rated glass ceramics available, FireLite stands out for its exceptional light transmission, low reflection levels and the highly-polished nature of its surface.



Slim Fit

At 5 mm, FireLite is the thinnest fire rated glass in the market. This ensures you get lighter structures with a very bespoke glass.

Available Variants

FireLite® NT

FireLite Plus® WS

FireLite Plus®

FireLite® IGU

Characteristics



Supply Form

Single Glazing



Fire Rating

20-180*
Minutes



Glass Thickness

3/16" (5 mm)



Approximate Weight

2.56 lb/ft²
(12.5 kg/m²)



Approx. Visible Transmission

88%



Approximate Visible Reflection

9%



Approximate STC Rating

35dB



Hardness (Vicker's scale)

700



Impact Safety Rating

None



Hose Stream Tested

Yes

Applications

FireLite is an incredible type of glass with near-zero coefficient of thermal expansion and has a softening point of 1600°C. It does not swell or contract in response to changes in surrounding temperature and exhibits almost no dimensional variability. FireLite is best-suited for fire-rated applications that require it to withstand thermal shock and provide fire-protection on the non-fire side up to 240 minutes depending on the installation and size.



Fire Protective Doors



Fire Protective Facades



Partition Walls

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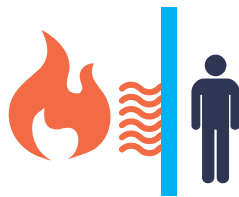




Fire Resistive Glass

SCHOTT PYRANOVA®

PYRANOVA® is a clear, laminated composite glass that is made up of several thin panes of float glass that prevents passage of fire, smoke and heat radiation. Due to its structure, PYRANOVA® fire resistive glasses provide bi-directional protection from fire scenarios. With high-quality products and intelligent solutions, we contribute not only to the success of a project but most importantly ensuring life and safety of building occupants and making SCHOTT part of everyone's life.



- Stops flames, smoke and radiant heat (both glass and frames)
- Thick glazing technology
- Tested and classified for wall applications

SCHOTT is an internationally recognized group with more than 125 years of experience in the areas of specialty glasses and materials and advanced technologies. SCHOTT works closely with architects and designers to extend the boundaries of design and create new opportunities for building culture - in terms of design and space, indoors and outdoors, for solar power and fire protection, aesthetics and functionality, sustainable and custom-tailored. That's what makes SCHOTT a qualified partner for architecture and design.

Application in doors, facades, partition walls and stairways

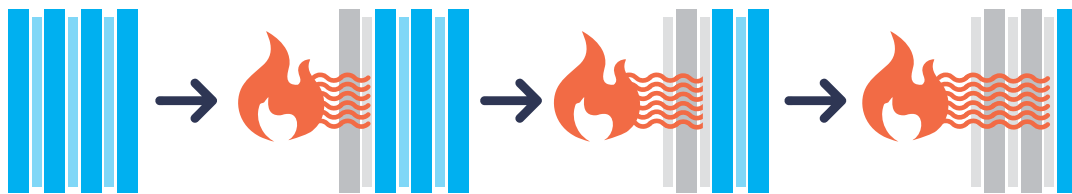
SCHOTT PYRANOVA®

Fire Resistive Glass



How Fire Resistive Glass Works

Fire resistant glazing with PYRANOVA® special glass acts as a barrier against the spread of fire, smoke and heat radiation in the event of fire. The float glass pane facing the fire shatters. The enclosed, transparent fire resistant layers foam up and form an opaque heat shield, which prevents the passage of heat radiation in case of fire. The requirements of an EI glazing are met, if the temperature rise on the non-fire side does not exceed 140 °C (average) or 180°C in any one position. Depending on the thickness of the composite, the fire resistance time can be influenced accordingly. Due to its structure, the standard construction of PYRANOVA® special glass provides protection from either side.



For Interior Applications

PYRANOVA® glass is designed for a wide array of interior applications and provides extremely high clarity to suit all aesthetic criteria.

For Exterior Applications

PYRANOVA® is also available in a version that is suitable for exterior use. This glass adopts a special UV-blocking interlayer, thereby preventing deterioration of the inner intumescent layers.

PYRANOVA® is suitable for all areas of application requiring thermal insulation in case of fire. In co-operation with Future Glazing, SCHOTT develops internationally approved constructions with PYRANOVA® special glass, which are ideally suited for applications in:



Fire Resistive Doors



Fire Resistive Facades



Partition Walls



Escape Routes and Stairways

Why PYRANOVA®



Fire-Resistive Performance

PYRANOVA® provides comprehensive protection against radiant and conductive heat transfer. It limits the temperature on the non-fire side to facilitate safe evacuation.



Bespoke Constructions

Our glass is available in insulated units with other glass variants (but not limited to) multi-laminates, tinted glass, low-E glass, mirrors, coated glass, art glass and security glass.



UL Classified and Hose Stream Tested

PYRANOVA® passes the critical hose stream test as per UL norms.



Large Size Possibility

Stock sheets of 3m x 2m available.



Same Week Delivery Time

Our sophisticated inventory management system ensures we never stock out of base glass so you can maintain just-in-time inventory levels and order the glass when you need it.



Exceptional Clarity

PYRANOVA® is unique amongst comparable products in the market with its near same clarity levels as low-iron glass, providing excellent vision as well as clarity.



Combinations Possible Without Compromise on Rating

Our glass can be double glazed without affecting fire rating to cater to architectural demands.



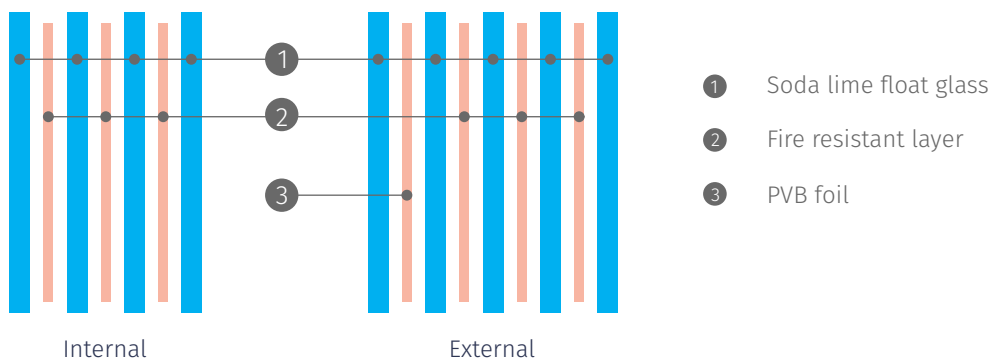
Double Sided Glass

Our fire-rated glass provides fire protection from both sides. This ensures zero liability for installers and 100% protection.



Bespoke Applications

Fire resistive glass can be used for both interior and exterior applications.



Compact Laminated Composite Glass

PYRANOVA® fire resistance classes EI 15 to 120, EW 30 to 60

PYRANOVA® for Internal Use

Thickness	7mm	11mm	15mm	19mm	23mm	37mm	52mm
Fire resistance class	EW 30	EI 15/ EW 30	EI 30	EI 45	EI 60	EI 90	EI 120
Weight	17kg/m ²	26kg/m ²	35kg/m ²	44kg/m ²	55kg/m ²	86kg/m ²	108kg/m ²
Light transmission	89 %	87 %	86 %	85 %	87 %	84 %	74 %
Ug value	5.6W/m ² K	5.4W/m ² K	5.1W/m ² K	5.0W/m ² K	4.8W/m ² K	4.2W/m ² K	2.5W/m ² K
Sound insulation value	33 dB	36 dB	38 dB	38 dB	41 dB	44 dB	44 dB
Impact rating (according to EN 12600)	-	-	1B1	1B1	1B1	1B1	1B1

PYRANOVA® for External Use

Glass structure with laminated safety glass on the outside

Thickness	10mm	14mm	19mm	19mm	27mm	40mm	54mm
Fire resistance class	EI 15/ EW 30	EI 20/ EW 30	EI 30	EI 45/ / EW 60	EI 60	EI 90	EI 120
Weight	24kg/m ²	32kg/m ²	44kg/m ²	44kg/m ²	61kg/m ²	93kg/m ²	116kg/m ²
Light transmission	87 %	86 %	83 %	85 %	86 %	83 %	74 %
Ug value	5.4W/m ² K	5.2W/m ² K	5.0W/m ² K	5.0W/m ² K	4.7W/m ² K	4.1W/m ² K	2.5W/m ² K
Sound insulation value	36 dB	38 dB	38 dB	38 dB	41 dB	44 dB	44 dB
Impact rating (according to EN 12600)	-	1B1	1B1	1B1	1B1	1B1	1B1

Maximum glass dimensions of PYRANOVA® depends on the system that has been approved

FUTURE | GLAZING



STEEL

FIRE RATED SYSTEMS

Forster Profile System

Forster Profile System provides a variety of systems that offers fire protection with more than 1000+ test evidences for both the profile and PYRANOVA® glass. The system excels with its narrow profile face widths, filigree appearance and enhanced transparency. The narrow framework increases visibility and allows more light through with no adverse effects to safety and security. The system offers a wide range of applications and therefore a high degree of design freedom.

E 30 to
E 120

Forster Presto

Forster Presto is the complete profile system with fittings and accessories for flush-fitting single and double-leaved doors, glazed walls, porches and windows which do not require thermal break. These elements stand for elegance and safety and satisfy the most stringent requirements with regard to extreme constant use.

EI 30 to
EI 120

Forster Fuego Light

Forster Fuego Light is the safe profile system for fire protection. The flush doors are constructed around a narrow steel frame with a large glass area that guarantees maximum transparency, a sleek appearance and reliable security.

EI 30 to
EI 90

Thermfix Vario

Forster Thermfix Vario is a thermal insulated mullion and transom construction, based around a dry glazing security application system for fire, burglar and bullet protection. Corner designs are tested in fire protection and are bonded with glass to panels up to a size of 1500 × 3000mm creating additional applications for all facades with high heat insulation and in line with safety requirements.



Fire Protective doors and screens E30–E120
 Smoke-resistant doors S200 according to EN 1634-3
 Non rebated meeting stile fire and smoke control doors E30/ E60 according to BS 476/ BS EN 1634-1
 Burglar-resistant doors RC1-3 according to EN 1627-

1630 Steel Fire Rated System compatibility means it has synergistic effects. The outward appearance of the Forster Presto is much identical to the Forster Fuego Light series, and makes the system flexible and planner-friendly.

Tested Variants

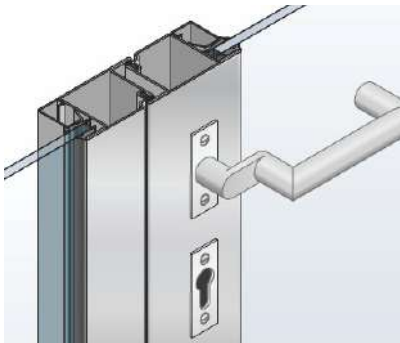
E 30

E 60

E 90

E 120

For Fixed Partitions and Doors



Why Forster Presto



Attractive stainless steel handle



Slender roller door hinges



Concealed door closing system



Extremely slender visible section width



Individual surface design



Combination without compromise on rating



Forster Fuego Light is a tested and approved profile system that provides a complete solution for fire resistive assemblies in various application such as single and double leaf fire resistive doors as well as for fire resistant glazed walls.

The appeal of the system resides in its slender profile and the overall look. It offers great transparency whilst offering safety and security to building occupants.

Tested Variants

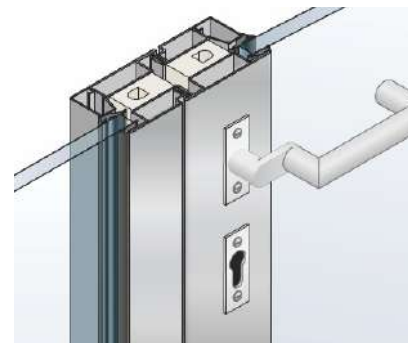
EI 30

EI 60

EI 90

EI 120

For Fixed Partitions and Doors



Why Forster Fuego Light



Fire-resistant doors and screens E30–E120



Smoke-resistant doors S200 according to EN 1634-3



Non rebated meeting stile fire and smoke control doors EI30/ EI60 according to BS 476 / BS EN 1634-1



Burglar-resistant doors RC1-3 according to EN 1627-1630



Forster Thermfix Vario

Forster Thermfix Vario fire-protection is a comprehensive program for self-supporting fire-resistant constructions made from mullion/transom profiles, universally suitable for usage

as vertical elements or facades, as well as for the inner and the outer partition walls within the fire-resistant categories of 60 minutes, 90 minutes and 120 minutes.

Tested Variants

EI 30

EI 60

EI 90

E 30

E 60

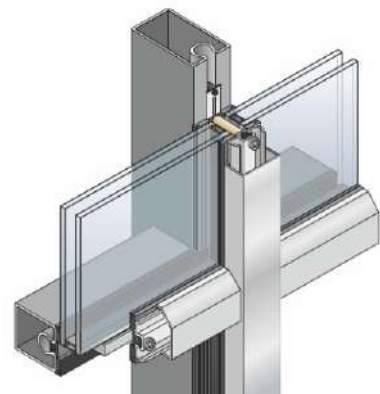
E 90

E 120

EW 30

EW 60

For Fixed Partitions and Curtain Walls



Tested Standards

- Thermal insulation: Uf-value from 1.0 W/(m²·K)
- Classification from CE-tests according to EN 13830: Resistance to wind load acc. to EN 12179: 3 kN, safety load 4.5 kN | Rain impermeability according to EN 12155: RE1200 | Air permeability according to EN 12153: AE (>600) | Sound insulation (EN ISO 140-3): Rw up to 45 dB | Impact resistance according to EN 14019: E5 / I5
- Burglary resistance according to EN 1627-1630: RC 2-3
- Bullet resistance according to EN 1522-1523: FB4 NS
- Tested glass sheeting panels with a maximum dimension of 1500mm x 3000mm EI30 and EI60, are also possible (can be printed or enamelled)
- Corner building in class EI30 and EI60
- Fire resistance classification of construction products according to EN 13501-2: EI30, EI60, EI90, i<->o (E30 / EW30, E60 / EW60, E90)
- Reaction to fire of construction products acc. to EN 13501-1: class E
- EI30: proved combination of bullet resistance according to EN 1522-1523 FB4 NS and burglary resistance according to EN 1627-1630



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ALUMINUM FIRE RATED SYSTEM

Schüco Middle East Windows and Facade Systems L.L.C.

Schüco fire rated systems provide an extensive range of innovative fire resistant aluminum construction to encompass all requirements in protecting fire zones within the building and securing evacuation routes. Schüco's aluminum fire rated system provide protection in the following application areas: door and external windows, internal partition wall system and high rise curtain wall system. Depending on requirement, these systems achieve different levels of performance from EI 30 minutes to EI 90 minutes for doors, windows, partitions, and curtain wall application. These constructions also offers high flexibility and minimized complexity.

EI 60

ADS 80 FR 60

The series is based on stable 5-chamber hollow profiles with a basic depth of 80. This highly fire-retardant construction achieves resistance class EI 60 in accordance with EN 1364/1634 by the insertion of fire boards and the use of fire- resistance glass. Numerous country-specific approvals are available as proof for the fire protection series. Optional fittings components can be added to create multi-purpose doors to meet the most varied of requirements for building safety, security and automation.

EI 90

FIRESTOP T90

The door and wall construction for fire-resistant applications. The series has been tested in accordance with European standards (EN 1364 / 1634) and also German standards (DIN 4102) and fulfils the requirements of fire protection classes EI90 (T / F90). The series is based on stable hollow profiles with a basic depth of 105 mm. Optional fittings components can be added to create tailor-made, multi-purpose doors to meet the most varied of requirements for building safety, security and automation. This series has fire and smoke protection properties, as well as other potential application options such as panic functions, access control or sound reduction. The fully approved Aluminium door and wall units prevent the uncontrolled spread of fire for a period of 90 minutes.

EI 60

FW 50+ FR-60

Mullion-transom curtain walls are designed for fabrication of lightweight, hung and in-filled fire-resistant curtain walls classified fire resistant EI 30-EI 60. The external face widths, which are identical to the Schüco FW 50+ standard façade, and the concealed transition from fire-resistant façade to standard façade, offer the developer maximum design freedom together with the necessary fire resistance properties.



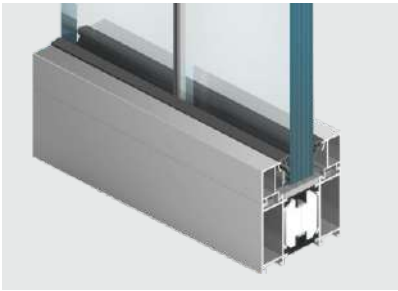
Schuco ADS 80 FR 60

The ADS 80 FR 60 fire partition system is a tested and approved system for internal and external partition walls as well as fire rated single and

double leaf door with a fire resistance requirement of EI 60 in accordance to EN 1364

Tested Variants

EI 60 For Fixed Partitions and Doors



Tested Standards

- Fire resistance partition walls and rebated doors: EI60 according to EN 1364
- Max. sound reduction – 46 db(a)
- Air permeability – Class 4
- Burglar resistance up to RC 2
- Wind load resistance B2
- Locking cams pre-assembled at the factory allow uniform and flexible installation of fitting components in the multi-purpose groove
- Fast and cost-effective fixing of the units to the building structure with various installation accessories
- Multi -purpose: fire and smoke protection, burglar resistance, sound reduction, access control and panic functions



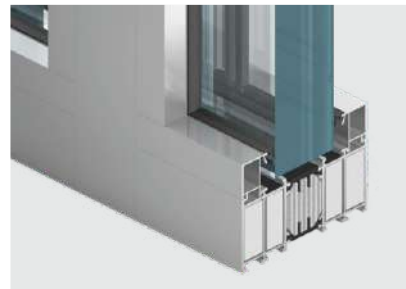
Schuco Firestop T90

The Firestop T90 fire partition system is a tested and approved system for internal and external partition walls as well as fire rated single and

double leaf door with a fire resistance requirement of EI 90 in accordance to EN 1364

Tested Variants

EI 90 For Fixed Partitions and Doors



Tested Standards

- Fire resistance partition walls and rebated doors: EI90 according to EN 1364
- U – Value – 1.7 (W/m2.K)
- Single and double-leaf with sidelight / top light, inward / outward opening
- Maximum vent weights of up to 300 kg are possible
- Side hung door drives can also be used on double-leaf doors.
- Approved for use in doors in internal walls, glazing for internal and external walls
- Locking cams pre-assembled at the factory allow uniform and flexible installation of all fittings components in the multi-purpose groove
- Fast and cost-effective fixing of the units to the building structure with various installation accessories



Schuco FW 50+ FR-60

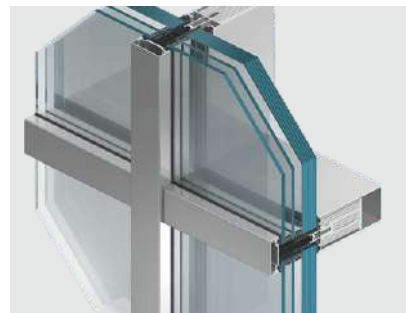
Fire resistant façades are ideal to protect fire lobbies at the corners of the buildings or also in inside areas as an atrium. These systems are no

different in appearance from a standard façade and therefore allow architectural design freedom.

Tested Variants

EI 60

For Curtain Walls



Tested Standards

- The same appearance for fire and non-fire rated elements of curtain wall facade
- Various design and aesthetics options for capping
- Faceted construction and burglar resistance up to Rc2
- Max distance between fixing dependent on fire resistant glass up to 5850mm
- Thermal insulation – 3 (w/m2.k)
- Water tightness – up to RE 1200 (12154)
- Air permeability – AE (EN 12152)
- Wind resistance – 1.8 kN/m2 (EN 12179)
- Impact resistance – I5/E5 (EN 14019)

System Offerings

	Steel Fire Rated System	Aluminum Fire Rated System
HINGED DOOR	Fuego Light, Presto	ADS 80 FR 60, FIRESTOP T90
Clear Opening	Double Leaf – 2.4 x 2.7m	Double Leaf - 2.4 x 2.7m
Fire Rating	Up to E 120, Up to EW 120, Up to EI 90	EI 60, EI 90

	Steel Fire Rated System	Aluminum Fire Rated System
NON REBATED DOOR	Forster Fuego Light	---
Clear Opening	Double Leaf – 2.4 x 2.5m	---
Fire Rating	Up to EI 60	---

	Steel Fire Rated System	Aluminum Fire Rated System
GLASS PARTITIONS	Fuego Light, Presto, Thermfix Vario	ADS 80 FR 60, FIRESTOP T90
Max. Exposed Area	4.5m ²	4.5m ²
Fire Rating	Up to E 120, Up to EW 120, Up to EI 120	EI 60, EI 90

	Steel Fire Rated System	Aluminum Fire Rated System
CURTAIN WALL	Forster Thermfix Vario	FW 50 + SR 60
Mullion Depth	50 to 150mm	85 to 175mm
U-Value	1.5-2.4 W/m ² K	Less than 3 W/m ² K
Fire Rating	Up to E 120, Up to EW 120, Up to EI 90	EI 60

*Tested as per EN 1634-1 (Door) and EN 1364-1 (Partition and Curtain wall)

Who We Are

Future Architectural Glass, LLC (Future Glass) is a joint venture between a multinational and diversified Singapore corporation and a leading Indian glass conglomerate. The company has established itself as UAE's premium glass processor having the entire gamut of European machinery and systems to process any type of interior and exterior glass.

Since 1976, the group has been serving the needs of architectural glass market by providing latest products suiting the dynamic needs of architects/consultants. We started operations as a glass trading and distribution firm and ever since have expanded our products and services to include safety glass manufacturing and providing specialty glass solutions.

In the last four decades, we have diversified into several product lines encompassing exciting exteriors glazing products, comfortable interior

glazing, specialty design applications and high performance green building product solutions.

Our specialized products development unit, is dedicated to understand the changing needs of the architectural glass market and introduce innovative glass and glazing solutions for enhanced comfort, safety and performance. Spread over more than 30 countries worldwide, our strong client base is an indicator of our global reach and the trust we share with our customers.

Our ever-expanding presence with offices in UAE, India and Singapore helps us serve the varied needs of client promptly and efficiently. With multiple manufacturing bases in UAE and India, we are able to optimize resources and utilize the location advantage to the benefits of our global clientele.



Key Indicators



5

Million panels delivered worldwide

2

Manufacturing base – UAE and India

3

Regional headquarters – UAE, India, Singapore

4+

Decades Group's experience in Glass

35+

Countries exports worldwide

1000

Employees group strength

500,000

Sq.ft. area of Factory space

FUTURE

Tomorrow starts today

FUTURE



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