



ISOLAR ARDOREX®

Arnold Fire® fire resistant
glass

Technical delivery conditions

Table of contents

1 What is fire resistant glass?	1
2 How is it packaged and delivered?	2
3 Guidelines for handling glass	2
4 F(EI) Glass	3
Additional handling and test instructions ...	3
5 Blocking instructions	3

1 What is fire resistant glass?

The fire resistant glass Arnold-Fire® F(EI) 30 - 120 in connection with the tested systems prevents the spread of fire and smoke in the respective classes from 30 to 120 minutes, and thus protects people, animals and material assets. The test for non-load-bearing partition walls e.g. is carried out in accordance with DIN EN 1364.

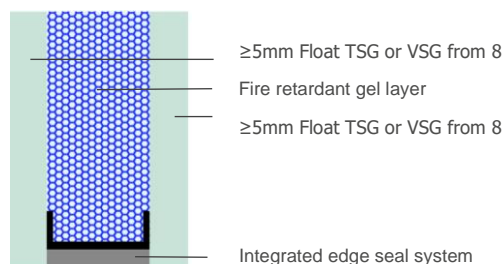
This Arnold-Fire® fire resistant glass complements all common high-performance frame systems and enables us to offer a comprehensive range of glazing variants.

In the event of a fire, the Arnold-Fire® fire resistant glass, in conjunction with the frame system, should create a barrier against the passage of flames, radiant heat and smoke. These safety aspects are required to protect escape routes in buildings, endangered areas or different fire compartments or adjacent buildings. Fire protection systems have taken on a decisive role since they prevent or decisively delay both radiant heat and the spread of fire and smoke.

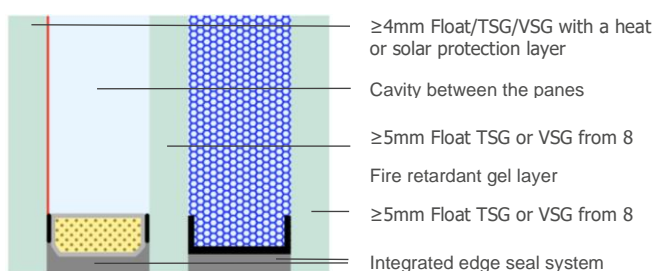
Protection is achieved through the unique composition of the glass unit. The layer of clear UV-stable reactive gel is securely embedded between two panes made of TSG or VSG. In the event of a fire, the water contained in the gel evaporates, and the glass facing the fire also breaks. The chemical reaction makes the gel opaque and then forms a barrier against heat and flames.



Arnold-Fire® F(EI) Monolithic structure



Arnold-Fire® F(EI) Insulating glass structure



2 How is it packaged and delivered?

The delivery takes place on non-returnable wooden frames or reusable steel frames that can be transported by forklift, pallet truck or crane. If necessary, packing can also be done in wooden crates. If export crates (ISPM 15) are required, this must be stated when ordering. These costs are additionally charged according to the expense.

Unless otherwise agreed or specified, the order will be delivered as stated on the delivery note. The transport is carried out by a forwarding agency, in the vicinity of our factory, possibly with our own forwarding agency and on reusable racks. If crane unloading from above or a truck with a loading crane is required, this must be specified when ordering. The resulting additional costs will then be charged to you accordingly.

Before the goods are unloaded, they must be checked for damage. If damage is discovered, this must be noted and acknowledged by photo and on the delivery note! Please report this damage to us immediately.

Forklifts should be available to unload the trucks from the side. The trucks should be unloaded promptly.

3 Guidelines for handling glass

The gel-filled F(EI) glass is generally heavier than normal glass. Please therefore observe the product data sheets in which the weight information is given.

With the following information on density, the glass weight can be determined in advance: Glass approx. 2.5 kg per mm/m²; gel approx. 1.2 kg per mm/m².

Heavy panes should be transported using a glass suction cup. With fire resistant glass and fire-resistant insulating glass panes, the suction cups should be attached to the fire-resistant glass side if possible! The heaviest weight of the pane unit is on the fire-resistant glass side.

Brandschutzglas ARNOLD-FIRE®

Produktbeschreibung
ARNOLD-FIRE® ist ein Verbund aus EDG- bzw. VSG - Scheiben mit einer dazwischen liegenden Brandschutzgelschicht. Diese bildet im Brandfall eine hochviskose Dämmung, die die Entzündung brennbarer Materialien auf der dem Feuer abgewandten Seite verhindert.

Scheibendicke, Abmessungen sowie weitere Angaben finden Sie auf einem separaten Aufkleber.

Besondere Hinweise
Für wichtige Hinweise zur Bearbeitung sowie weitere Informationen bitte technisches Datenblatt anfordern. Die jeweilige allgemeine bauaufsichtliche Zulassung ist zu beachten!

ARNOLD-FIRE® darf nicht nachbearbeitet werden!

Die „Ergänzenden Bedingungen und Hinweise für Transport, Montage und Lagerung“ sind anzufordern und zu beachten.

ARNOLD BRANDSCHUTZGLAS
Lichtenstein

Arnold Brandschutzglas Vertriebs-GmbH & Co.KG - 09350 Lichtenstein - Kastanienstraße 10 - www.arnold-fire.de - brandschutz@arnold-glas.de

Please note:

The fire-resistant glass may not be processed afterwards, and the edge seal may not be cut and processed afterwards!



4 F(EI) Glass

Additional handling and test instructions

As with any special glass, you should handle it with particular care and protect it from edge damage or vibrations. In order to guarantee the long-term function, the fire-resistant glass must not be exposed to temperatures below -20°C and more than $+50^{\circ}\text{C}$. The gel is UV-stable and has been tested in accordance with the EN 12543 standard. However, influences that are outside the norm can also affect the optical stability.


In general, when checking for features, what is decisive is looking through the pane, i.e. looking at the background, and not the top view. The inspection of the glazing unit is to be carried out from a distance of at least 1 m from the inside to the outside, from a vertical 90° viewing angle. The complaints must not be specially marked.

The test is carried out in diffuse daylight in accordance with EN ISO 12543 (like overcast sky) without direct backlight (e.g. sunlight). This also applies to fire resistant insulating glass. Direct lighting or backlighting as well as viewing against direct sunlight are special cases and do not correspond to this guideline or the standard.

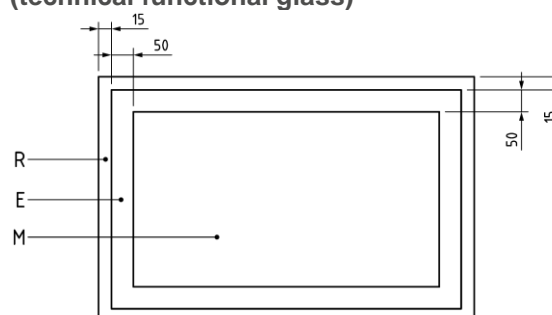
The basis for the assessment according to the table below is fire resistant glass with a polymer-based intermediate layer.

5 Blocking instructions

The fire-resistant glass must stand with its two outer panes on the glazing blocks. In addition, the glazing blocks must not be fixed with adhesive!

Measurable characteristics	Tolerances	
	Dimensions	Tolerance
Dimensions	$\leq 1 \text{ m}$	$\pm 2,0 \text{ mm}$
	$\leq 2 \text{ m}$	$\pm 2,0 \text{ mm}$
	$> 2 \text{ m}$	$\pm 3,0 \text{ mm}$
Pane offset	Within the permissible dimensional tolerance, but max. 2 mm	
Thick laminated glass	$-1 / +1,5 \text{ mm}$	
Thick fire protection-Iso	$-1 / +3 \text{ mm}$	
Planarity	Permissible value 3 mm / running m of edge or diagonal 	
Angularity	Difference between the diagonals, permissible value 1 mm / running m	

Approvals for the visual quality of Arnold-Fire® (technical functional glass)



R = Zone of 15 mm, which is usually covered by the frame or, in the case of a frameless edge, corresponds to the edge seal (Fold zone)
 E = Edge zone of the visible surface, with a width of 50 mm
 M = Main zone



Visual characteristics	Permissions for the overall structure		
Test conditions	Point "Additional instructions for action"		
Assessment criteria for the Edge area: Fold zone F	up to 20 mm edge distance:		
Edge zone R	up to 10% of the respective Clear width and height dimension	Point characteristics	Like pane field of view, all Points $\varnothing \leq 3$ mm, Streaks, inhomogeneities In the hydrogel are allowed
		Linear characteristics:	Scratches up to 30 mm in length and in the sum of max. 90 mm, as well as hair-line inclusions in the hydrogel are permissible
Assessment criteria for the Pane field of view:	Punctiform characteristics per m ² Pane surface	Size: 0,5 mm < \varnothing \leq 1 mm	Size: 1 mm < \varnothing \leq 3 mm
		15 pieces, but no accumulations	3 pieces
Main field of view H	Linear characteristics	Under the test conditions, hair-shaped pale inclusions, thickness \leq 1 mm, are product-related and therefore permissible	
	Area characteristics	Not permitted	
Definitions:	Accumulation - the mutual distance between two or more points (characteristics) is less than 200 mm		

The fire resistance function is usually not impaired by optical phenomena such as streaks.