

Fire-resistant Glass



FOCUS ON
YOUR SAFETY

PYROBEL

AGC Glass Europe presents...



...fire-resistant glass for safe places and lives



PYROBEL

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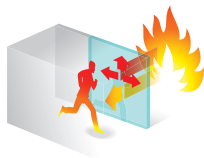


The most transparent fire-resistant solution

— PYROBEL —

It is simply impossible to imagine multiple occupancy buildings that do not use fire-resistant glass. In addition, building regulations and a sharp rise in international fire safety standards mean increasingly stringent requirements on fire-retardant safety glass in buildings.

With a full range of fire-resistant glass products, AGC can help you optimise fire safety for buildings and building projects. These fire-resistant glass products comply with all applicable fire safety requirements, standards and guidelines, the best known being EN 14449, EN 12101-1, EN 13501-2; BS 476-22; ASTM E119, E152, E163, E2074, E2010-1; NFPA 80, 251, 252, 257; UL9, 10B, 10C, 263; ULC CAN 4-S101, S104, S106, etc. Pyrobel complies with European classifications E, EW and EI.



E 'Integrity': Retains flames



EW 'Integrity and Radiation Limitation': Restricts heat transfer to no more than 15kW/m²



EI 'Integrity and Insulation': Blocks heat transfer

Independently tested for fire-resistance

— PYROBEL AND PYROBELITE —

Pyrobel/Pyrobelite comprises two or more sheets of glass and one or more fire-resistant interlayers. The interlayers and glass are completely transparent. When the glass reaches a temperature of around 100°C, the interlayers activate, forming a fireproof and opaque glass unit.

Pyrobel and Pyrobelite have different fire-resistance ratings:

Pyrobelite complies with the EW classes and, due to its low radiation rating, there are even types that comply with class EI15.

Pyrobel complies with the EI classes, from EI30 to EI120.



Pyrobelite 7 EW30



Pyrobelite 10 EW30



Pyrobelite 9 EG
EI15 + EW30



Pyrobelite 12
EI15 + EW60



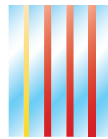
Pyrobel 16
EI30 + EW60



Pyrobel 16 EG
EI30 + EW60



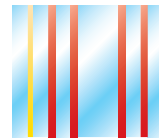
Pyrobel 17N
EI45 + EW60



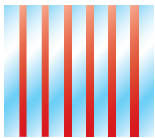
Pyrobel 17N EG
EI45 + EW60



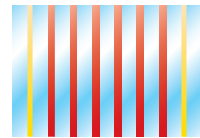
Pyrobel 25 EI60



Pyrobel 25 EG EI60



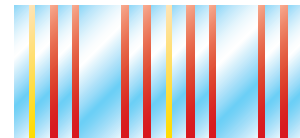
Pyrobel 30 EI90



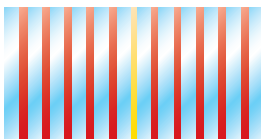
Pyrobel 30 EG2 EI90



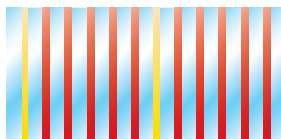
Pyrobel 53N EI120



Pyrobel 53N EG EI120



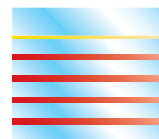
Pyrobel 54 EI120



Pyrobel 54 EG120



Pyrobel 19H EI30



Pyrobel 28H EI60





Benefits

- ✓ Extensively tested, comprehensive range.
- ✓ Complies with all applicable safety standards.
- ✓ Extensively tested in wood, steel, aluminium and composite doors, frames and curtain walls.
- ✓ The glass is fire-resistant on both sides (bi-directional).
- ✓ Thermal and acoustic insulation.
- ✓ With Pyrobel, radiation in the EW class is under 6 kW/m².
- ✓ Easy to install.
- ✓ Tested for Impact Safety: Pyrobelite 7 3B3, Pyrobelite 10, Pyrobelite 12, Pyrobel 16 2B2, other Pyrobel/Pyrobelite class 1B1 as per EN12600.

Did you know?

- The glass is a laminated safety glass.
- Pyrobel/Pyrobelite can be processed and delivered very quickly thanks to our extensive network of distributors.
- Pyrobel/Pyrobelite Clearvision in extra clear glass available upon request.
- All types of Pyrobel/Pyrobelite comply with the associated E classes.
- The glass can be used in temperatures ranging from -40°C to +50°C.
- Fire-resistant solutions are also possible in EI30 and EI60 for floors and roofs.



Maximum transparency

PYROBEL VISION LINE

The Vision Line system ensures both maximum transparency and optimal fire safety. It is the fire-resistant solution for stylish, all-glass walls. Instead of mullions between the glass panels, Pyrobel Vision Line has a narrow seal (4 to 5 millimetres), including when used in corner applications. The result is an unbroken fire-resistant glass wall that makes every space into a spacious modern assembly.

The Vision Line system uses multiple Pyrobel glass units interconnected by a neutral, fire-resistant silicone. If fire breaks out, the glass becomes opaque and protects the wall, the environment and people on the non-fire side.

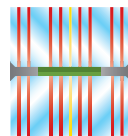
Pyrobel Vision Line has been tested extensively for indoor applications in EI 30, 60, 90 and 120 minutes (as per EN 13501-2) with steel, aluminium and wood frames.



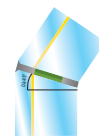
Pyrobel 16
Vision Line EI30



Pyrobel 25
Vision Line EI60



Pyrobel 53N
Vision Line EI120



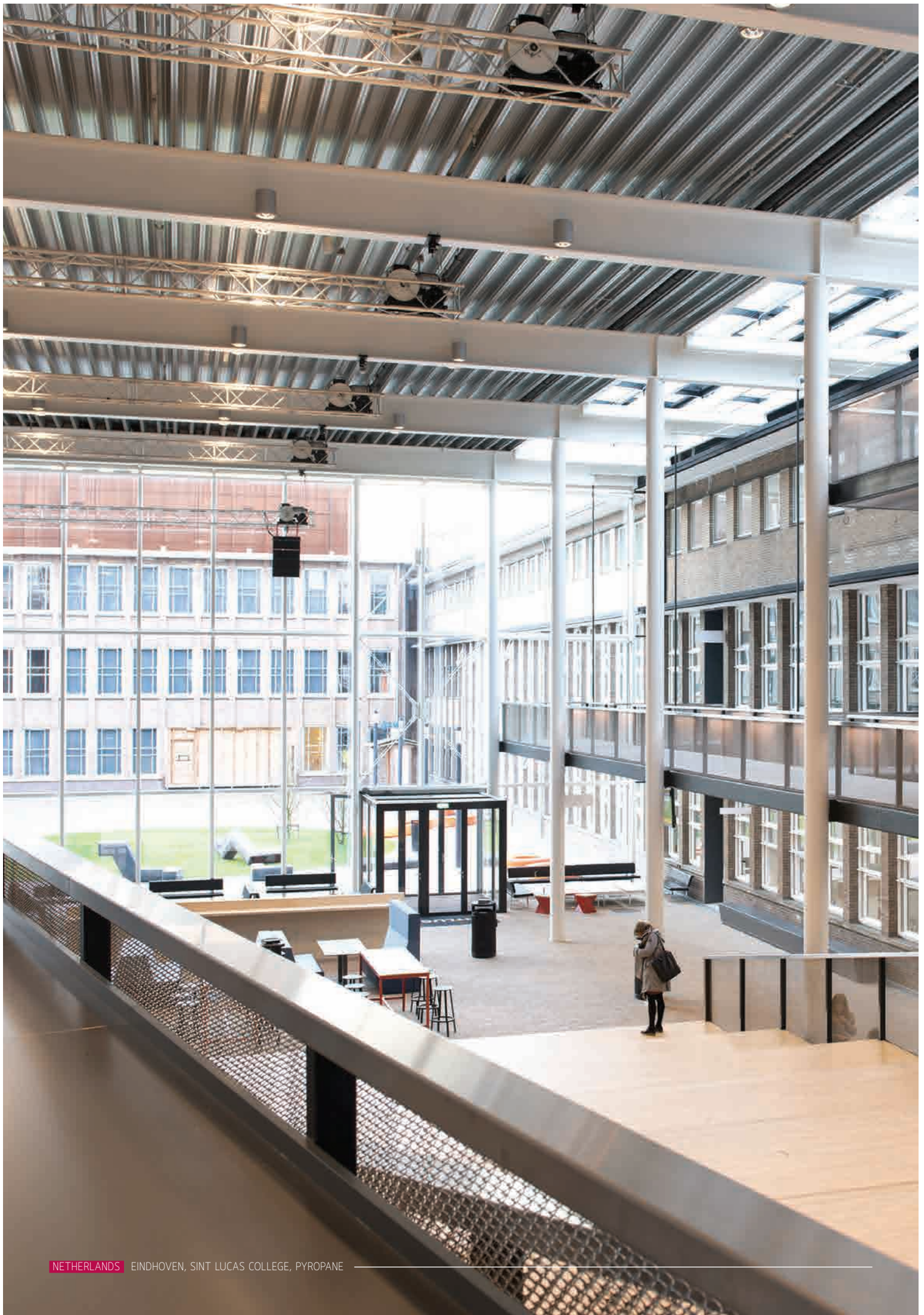
Pyrobel xx
Vision Line
Corner EI30 & EI60

Benefits

- ✓ Maximum transparency and light transmission.
- ✓ No mullions.
- ✓ Modern and stylish.
- ✓ Gives every environment a spacious feel.
- ✓ Glass is fire-resistant from both sides (bi-directional).
- ✓ Safety and security glass compliant with EN 12600.
- ✓ Delivers optimal acoustic insulation (complies with EN 12758).
- ✓ Seamless glass walls are possible.
- ✓ Easy to combine with different types of frames.

Did you know?

- That a mitre is used to form glass corners.
- Pyrobel Vision Line is also available in a Clearvision version (highly transparent glass).
- Pyrobel Vision Line can also be fitted with a UV filter (EG type).
- It can easily be combined with fire-resistant doors by testing it with frames readily available on the market.
- Maximum temperature range from -40 to +50 °C.



Clear glass in XXL size

PYROBEL-T

Fire-resistant glass in XXL size: meet Pyrobelt-T! This glass can be delivered in very large sizes, up to 2 metres wide and 4.5 metres high (9 m²). The gel developed by AGC is one of the clearest and most neutrally coloured gels available on the market.

Pyrobelt-T complies with all safety and barrier load requirements for separation between levels and in facades. When the temperature rises above 100°C the interlayers in the glass are activated. This fireproof, opaque foam can deliver fire-resistance of 120 minutes class EW and more than 60 minutes in class EI.



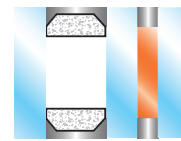
Pyrobelt-T EW30-16
(EW60, EW90 and EW120)



Pyrobelt-T EI30-18



Pyrobelt-T EI60-28



Pyrobelt-T xx IGU

Benefits

- ✓ Technology available in XXL glass with a height of 4.5 metres.
- ✓ Can be produced to suit all levels of fire performance:
EW: 30 to 120 minutes
EI: 15 to 60 minutes
- ✓ Unrivalled transparency (LT = 87%).
- ✓ UV, water and impact resistant for use in gymnasiums and other similar applications.
- ✓ Class 1B1 is certified compliant with EN 12600.

Did you know?

- The glass is toughened and fully customised.
- Pyrobelt-T is also available in highly transparent glass (Clearvision).
- Pyrobelt-T is also available in insulating glass with all AGC thermal and solar control coatings.
- This XXL glass is available in EI resistance classes.
- Maximum temperature range -10 to +50 °C.



Full transparency under all circumstances

PYROPANE

Pyropane remains transparent under all circumstances. This slim, toughened glazing complies with the relevant 'Integrity' criteria (E 30). When a coating is added Pyropane can comply with the relevant 'Integrity and Low Radiation' criteria (EW 30 and EW 60).

The coating on the glass works as a heat shield, reflecting radiation back to the fire side. If a fire breaks out, the glass resists thermal shocks and remains clear at all times.

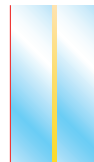
AGC's advanced coating technology makes it possible to use Pyropane in a facade along with ordinary insulating glass without sacrificing aesthetics.



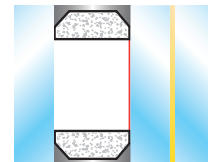
Pyropane 100



Pyropane 151-70



Pyropane 152-70



Pyropane IGU 152-70

Benefits

- ✓ Heat radiation is well under 15 kW/m².
- ✓ Extensively tested range and possibilities
- ✓ Extensively tested in resistance classes DH, E, EW, EW 20, 30 and 60.
- ✓ Tested in wood, steel and aluminium doors, frames and curtain walls.
- ✓ Class 1C1-certified compliant with EN 12600.
- ✓ Moisture and UV-resistant.

Did you know?

- Pyropane in insulating glass is only as thick as your standard glazing.
- The glass has also been tested horizontally.
- Pyropane is also available in Clearvision (highly transparent glass).
- The glass can be delivered in one-sided or two-sided fire-resistant glazing.



Processing, storage and installation

PROCESSING

- Our Pyrobel fire-resistant glazing is processed and supplied by AGC approved processors. The glass cannot be further cut, sawn, drilled or processed.

TRANSPORT AND STORAGE

- The glass must be transported and stored in a dry, ventilated environment at the temperatures we recommend (see the individual product description). Protect the Pyrobel(ite) glass from the solar radiation and UV light. Always position the glass upright.
- During transport on racks or trestles, the glass must be fully supported and positioned at a 6 to 10° angle to prevent it from falling over.

INSTALLATION

- The edge protection tape or sealant must not be removed or damaged.
- Prior to installation check the glass for scratches and other damage, especially the tape along the edges (for the 'tape' version). Damaged glass must not be installed.
- Before and after installation, there must be no contact at all between the glass edges and water. Prevent any contact with metal or increased pressure on the glass.
- Fire-resistant glazing is not suitable for locations where the temperature of the glass can exceed 50 °C.
- For UV exposure, the alternative is Pyrobel/Pyrobelite EG for 'outdoor use'.
- For outdoor applications Pyrobel/Pyrobelite is combined in double or triple glazing in an EG version or with a laminated outer pane.



Marking and quality description

MARKING

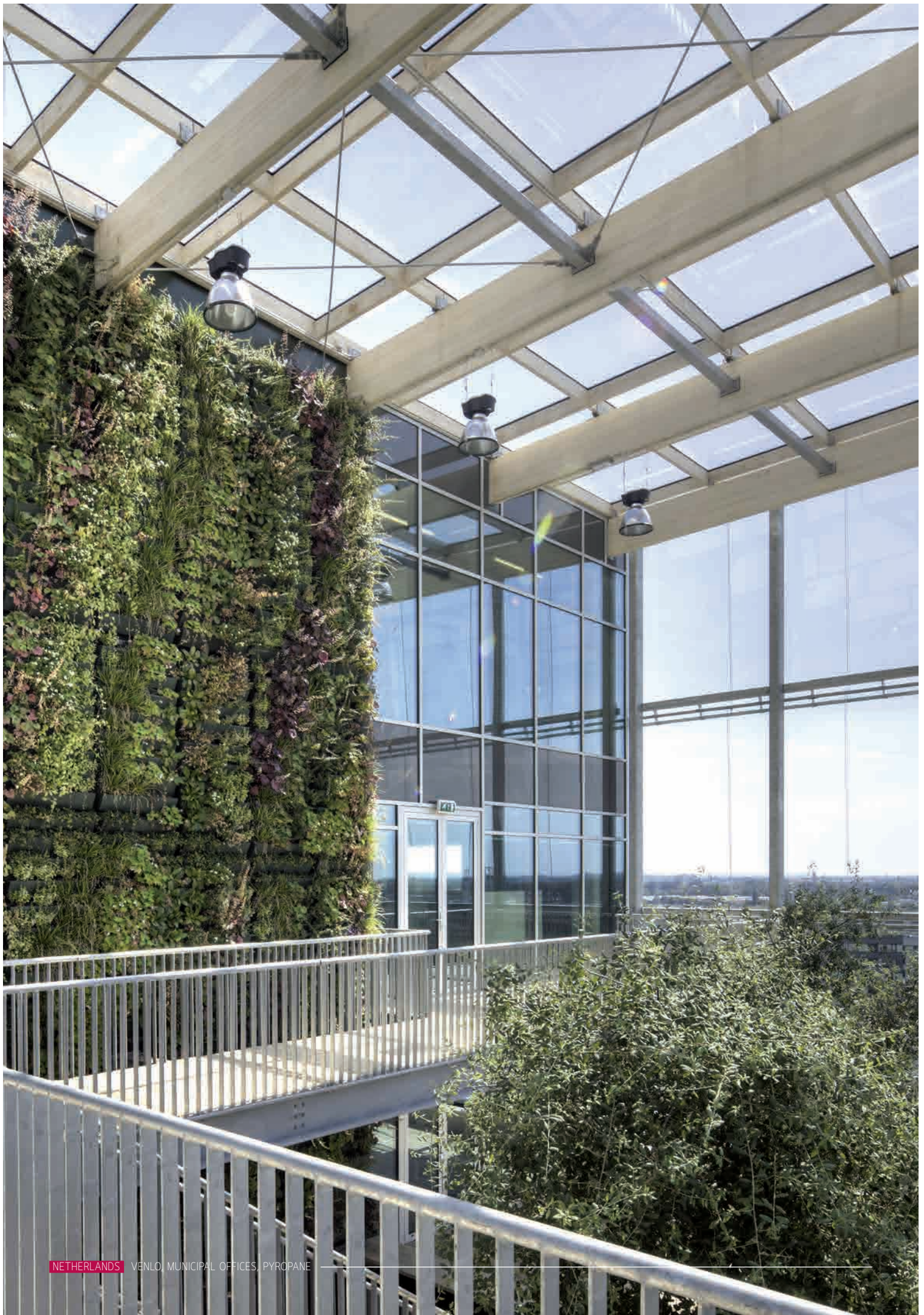
- Pyrobel/Pyrobelite is always fire-resistant in both directions, but has just one stamp.
For correct installation, the mandatory stamp must be legible on the inner side of the Pyrobel glass.
- For correct installation, the mandatory stamp must be legible on the fire side of the Pyropane glass.

AGC
PYROBEL 17 N
CE 17
yourglass.com

QUALITY DESCRIPTION

Pyrobel glass is continually subject to strict internal and external quality controls. Small inclusions and air bubbles, small optical imperfections or a light haze can develop on the glass. This does not affect fire resistance, as long as the change in haze or light transmission does not exceed 5%.

IMPORTANT: With Pyropane a damaged coating can negatively impact the fire resistance of the glass.



Mission, Compliance and the Environment

MISSION

Our mission: Looking to the future and building a safer and brighter world.

We are continually striving to improve the comfort, safety, aesthetics, sustainability and environmental impact of our products. That is how we contribute to improving the everyday lives of people around the world. Working together to build a brighter world.

COMPLIANCE

Pyrobel is just one part of the total fire-resistant unit. The glazier is responsible for ensuring that the fire-resistant unit as a whole complies with regulations and/or is approved by the relevant authorities. The official test reports are available from AGC for that purpose. AGC accepts no liability if the glass is installed in systems that do not comply with the regulations.

All AGC fire-resistant glass is produced in level AoC 1 plants and delivered with the CE marking. Processors of Pyrobel in insulating glass (DGU and/or TGU) must also be level AoC 1 certified.

'A positive impact on the environment'

ENVIRONMENT

Environmental protection is one of our core values. We are constantly looking for solutions to reduce the environmental impact of our products and processes. One of our goals is to reduce our ecological footprint. To that end, we use the Cradle to Cradle (C2C) design approach and Life Cycle Assessment (LCA) and CO₂ footprint measurement tools.

EPD: Environmental Product Declaration

IFT Rosenheim, a German testing institute, has inspected and approved Pyrobel and Pyrobelite's EPD. This internationally recognised certification makes it possible to communicate LCA results in a standardised way. Systems such as LEED and BREEAM use EPDs to calculate the sustainability of buildings.

RoHS: Restriction of Hazardous Substances

Pyrobel/Pyrobelite, Pyrobel-T and Pyropane comply with the RoHS Directive. This means that Pyrobel/Pyrobelite, Pyrobel-T and Pyropane do not contain any of the following substances: lead (Pb), cadmium (Cd), mercury (Hg), hexavalent chromium (Hex-Cr), polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE).

REACH: Registration, Evaluation, Authorisation and Restrictions of Chemicals

All AGC fire-resistant glass products comply with REACH certification. This means that there is no more than 0.1% of any of the substances on the list of Substances of Very High Concern (SVHC) in our products.

For more information about AGC's environmental objectives and performance, please see our environmental report available at www.agc-glass.eu.

'A positive impact
on the environment'



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**AGC GLASS EUROPE, A LEADER IN FLAT GLASS**

AGC Glass Europe is the European branch of AGC, the world's leading flat glass producer. Its baseline, Glass Unlimited, reflects its core assets: innovative strength in advanced glass technologies, a global sales network and an industrial presence stretching from Spain to Russia. AGC Glass Europe has representatives worldwide. See www.agc-yourglass.com for more information.

