

ISOLAR
MONOPACT®



**THERMALLY
TOUGHENED
SAFETY GLAZING
FOR CRYSTAL
CLEAR SECURITY**

**ISOLAR®
GLAS**

MEHR AUS GLAS

CRYSTAL CLEAR SECURITY THAT'S REASSURING. THE THERMALLY TOUGHENED SAFETY GLASS AND THE HEAT STRENGTHENED GLASS OF THE MONOPACT® PRODUCT FAMILY ADD PROTECTIVE FUNCTIONS TO YOUR BUILDING.

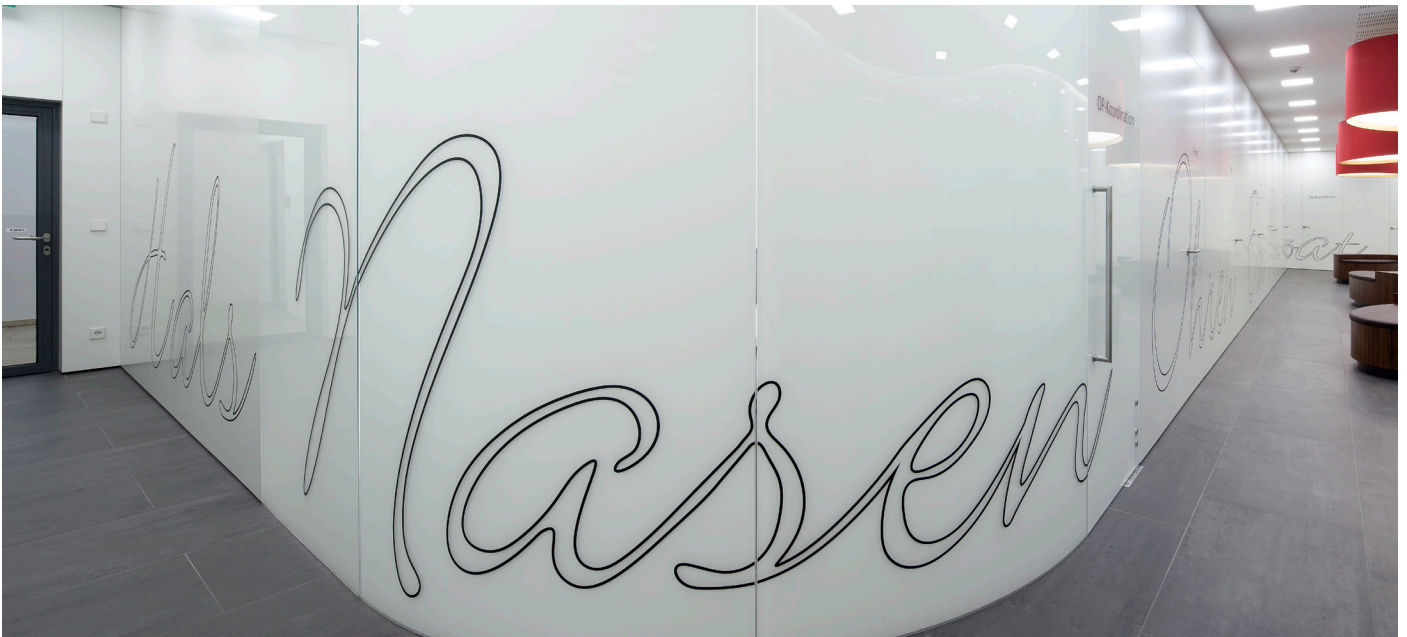
■ THE RIGHT GLASS TO SUIT EVERY NEED

Glass is not just a transparent material that creates brightness and a feeling of spaciousness. In fact, through special finishing and machining processes, glass can also perform protective functions in a variety of ways. That is why our safety glazing product range also includes our monolithic, heat-strengthened glass: **MONOPACT®**.

The thermal treatment that these glasses undergo makes them much more load-resistant. This makes MONOPACT® suitable for all applications that demand enhanced safety characteristics or high resistance to thermal, dynamic or static loads.

MONOPACT® is available as thermally toughened safety glass, heat strengthened glass and heat-soaked thermally toughened safety glass. All variants are eminently suitable for both exterior and interior applications, and their entire surface can be enamelled or printed prior to the tempering process.

Important areas of application for our MONOPACT® are: glazing systems in the façade that use linear or punctiform supports and are accessible, such as partition walls, door panels, all-glass installations, fall protection glazing, glass floors, roofs or even glass columns and pillars.



MONOPACT® in a doctor's office.

■ THERMALLY TOUGHENED SAFETY GLASS

Our monolithic **MONOPACT® thermally toughened safety glass** have a higher flexural strength achieved through a thermal treatment, and produce a characteristic breakage pattern. The tempering process makes these glasses considerably more resilient and allows them to be subjected to up to five times greater stress than standard float glass. In the event of breakage, the fine, crumbled, blunt fragments – typical of tempered safety glass – also greatly reduce the risk of injury. This, coupled with the small size of the individual crumbled pieces, creates a certain safety characteristic.

During the tempering process, the glasses are first heated to a high temperature and then cooled down again with air. As a result, tensile stresses develop in the core of the glass, while compressive

stresses develop near its surfaces. If the glass surface is damaged or the flexural strength is exceeded, the glass pane will break immediately. The energy retained in the glass due to internal tension is released abruptly and intensely, which in turn produces a high crack propagation velocity.

Thanks to the fracture behaviour that occurs over the entire surface, our glasses can be easily fitted with an alarm. This can be done by placing an alarm loop in one corner of the glass and connecting it to an alarm system. Any destruction of the glass also causes damage to the alarm loop and automatically triggers an alarm. This system has been tested and approved by the German VdS (Association of Non-Life Insurers).

■ HEAT-SOAKED THERMALLY TOUGHENED SAFETY GLASS

During the process of manufacturing glass, tiny nickel sulphide inclusions may remain present in the glass melt. These inclusions have the characteristic of transforming and increasing in volume over time. In tempered safety glass, this often causes what is called “spontaneous breakage” as a consequence of the tempering process – this a major nuisance for both the glass processing company and the customer. The remedy for this: Our **MONOPACT® heat-soaked thermally toughened safety glazing**.

In order to minimize the probability of occurrence of such spontaneous breakage, the thermally toughened safety glass is heat-soaked for a defined period of time. During the heat soak, critical inclusions are destroyed and the glass now meets the statutory safety requirements for the use of heat-soaked thermally toughened safety glass in windows and façades at an installation height greater than 4 m above the ground and as structural glazing. Other than minimizing spontaneous breakage, the properties of heat-soaked thermally toughened safety glass and its breakage pattern in the event of glass breakage are no different from those of conventional thermally toughened safety glass.



MONOPACT® at Busmann Chapel, Dresden, Germany.

■ HEAT STRENGTHENED GLASS

MONOPACT® heat-strengthened glass is a heat-treated glass with high flexural strength and high temperature resistance, specially developed for the building and construction industry. Like thermally toughened safety glass, it is subjected to a thermal tempering process, but in such a way that the tensile and compressive stresses induced are lower. When such a glass pane breaks, some radial cracks run from the centre of the break to the edge of the pane – similar to the fracture behaviour of normal float glass. The lower pre-stressing compared to tempered safety glass means that in case of a

“failure”, large fragments will be produced. After further processing into laminated safety glass (laminated safety glass made from heat strengthened glass), the products that are created add a high residual load-bearing capacity to the existing advantages of toughened glass. The sum of the properties thus obtained from the increased bending tensile stress, the coarse fracture pattern and the resulting residual load-bearing capacity make laminated safety glass made from heat strengthened glass the ideal glass product for overhead glazing, structural glazing and point fixed glazing systems.



Glass roof of the library building of the University of Marburg, Germany.

THERMALLY TOUGHENED SAFETY GLASS – THE KEY BENEFITS

- Increased impact and shock resistance
- Increased flexural strength
- Increased temperature resistance
- Blunt, fine, crumbled fracture pattern minimizes the risk of injury



Screen-printed MONOPACT® processed into laminated safety glass - Wehrhahn line Düsseldorf, Germany.

AVAILABILITY AND COMBINATIONS:

- Available as thermally toughened safety glass, heat-soaked thermally toughened safety glass, heat strengthened glass
- Thermally toughened safety glass and heat-soaked thermally toughened safety glass also available as alarm glass
- Can be combined as desired with decorative and functional coatings

■ CLEAR BENEFITS WITH ISOLAR®

ISOLAR® is one of the largest associations of independent insulating glass manufacturers in Europe with members from twelve countries. Thanks to the close cooperation within the group, our products are constantly optimised and new developments are driven forward. You will find an ISOLAR® partner in your area as well, who will support you as an experienced full-range supplier with comprehensive consulting expertise and who will supply you with high-quality functional glass for windows and façades.



Heat insulation



Solar control



Bird protection



Design



Fire protection



Radio transparency



Sound insulation



Attack resistance



Safety glass



Fall protection

■ WE'RE HERE TO HELP.

ISOLAR Glas Beratung GmbH is your competent partner when it comes to glass. We turn your wishes into clear solutions. Ask us.

ISOLAR GLAS Beratung GmbH | Otto-Hahn-Straße 1 | D-55481 Kirchberg
Tel. +49 6763 521 | service@isolard.de | Version 02/2022



www.isolar.de/en

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