

PROFILON® ER1

**explosion resistant
security film**
according to EN 13541

PROFILON® ER1 is a highly flexible, 4-ply security film with impact and explosion resistant properties. It was designed to absorb the maximum area pressure as built up by a shock wave and certified according to class ER1, EN 13541. PROFILON® ER1 is hardly flammable in conformity with DIN 4102-1 class B1.

This high-performance film offers protection in the event of a bomb explosion at very high constructional danger zones, e.g. in cases of high and narrow construction or at especially endangered entrance areas.

Additionally, the multi-ply quality of PROFILON® ER1 generates an excellent impact resistance which is an important additional feature for endangered parts of a building.

PROFILON® ER1 provides:

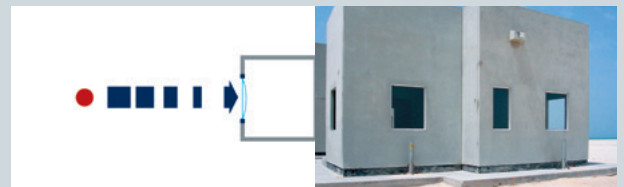
- extremely high explosion resistance (according to EN 13541)
- impact resistance
- splinter retention
- reduction of the spreading of fire (no fuming)
- UV absorption



Test procedure

PROFILON® ER1 was tested in a shock tube with a reflected pressure wave. These repeating shock waves alternately produce firm pressure and suction. In doing so, an explosion in a narrow and high construction is simulated, where the shock waves are reflected by the surrounding buildings.

Open Air Test (GSA/British standard resp.)



Pressure Impulse Tube (German/European standard)





Achieved resistance classification/standards

PROFILON® ER1 is a multilayer film laminate with a thickness of approx. 0.5 mm. Unprotected single or insulating glazing, after installation of PROFILON® ER 1, will achieve the impact-resistant classification of laminated security glass. The coated glass achieves the following resistance classification:

- Explosion resistance DIN EN 13541 ER1 (NS)
- Impact-resistant
 - A1 according to German Standards
 - P2A according to EN 356
 - UL 972

Scratch insensitive

During a rubbing test, while the film has been scratched, the increase of the scattered light was measured. The Federal Motor Transport Authority, which is known for their highly limits, allows a scattered light increase of 4.5 percent. PROFILON® ER 1 provides with 2.5 percent still better values. The special surface sealing causes a high scratch insensitive and grants a long durability of the film. The surface of the film can be cleaned with conventional cleaning liquids.

UV resistance

PROFILON® ER 1 is equipped with a UV-filter, which prevents also a yellowing and bleaching of furniture as well as exhibited goods after years.



Installation

The security film PROFILON® ER 1 will be installed on the interior surface. A professional frame anchoring grant the stabile connection to the frame: it depends on the window construction whether it will be installed under the glass pane holding profile or will be sealed with silicon.

The glasses don't need to be removed for the installation of PROFILON® ER 1. The windows will be coated by our trained and certificated employees on-site.

Technical data

Resistance class	ER 1 according to EN 13541 (NS) A1 according to DIN 52 290 (impact resistance) P2A according to EN 356
Thickness	approx. 0.5mm
Color/Tinting	crystal clear
Light transmission	84 % (visible scope)
UV absorption	> 99 % (300 – 380 nm)
Adhesive	on acrylic basis
Composition	multi-ply laminate, developed in Sandglider-process
Surface coating	hardened DURITAL-surface sr; increase of scattered light 2.5 % according to Taber abrasion test
Fire features	B1 according to DIN 4102, Part 1

Also tested by Fraunhofer Institut for short-term dynamics, Ernst-Mach-Institut.