

PROFILON® AX A1

**Impact resistant
security film**



PROFILON® AX A1 is a 3-ply impact resistant security film protecting glass in cases of smash-and-grab, vandalism and attacks with incendiary devices. Additionally the laminate offers explosion resistant properties. PROFILON® AX A1 is hardly flammable in conformity with DIN 4102-1 class B1.

Panes, as e.g. windows or shop windows, belong to the most sensitive parts of a building. Burglaries, attacks with projectiles or incendiary devices and vandalism are often carried out at these most damageable parts of the building. PROFILON® AX A1 was developed to increase the resistance value the offender encounters in cases of those mechanical attacks on glass panes.

The multi-ply composition of PROFILON® AX A1 absorbs the impact energy caused by a stone throw, a throw of incendiary devices or other attacks. The extremely strong adhesive provides for a very firm bond of splinters.

PROFILON® AX A1 provides:

- impact resistance
- explosion resistance
- deterrent to smash and grab
- splinter retention
- reduction of the spreading of fire (no fuming)
- UV absorbing

PROFILON® AX A1 can be retrofitted on any glass with a plain surface, regardless of whether it is float glass, toughened glass, laminated security glass or heat strengthened glass.

Additionally, an integrated UV filter protects the interior against UV radiation. Thus, a yellowing and fading respectively of upholstered furniture or clothing is prevented.

Which resistance classes does PROFILON® AX A1 achieve?

PROFILON® AX A1 is a 3-ply impact resistant security film with a strength of 360µ. Glass coated with PROFILON® AX A1 achieves the following resistance classes (steel ball drop test):

- A1 according to DIN 52 290
- P2A according to EN 356
- UL 972

In addition, PROFILON® AX A1 has explosion resistant properties, i.e. it binds the dangerous glass splinters in the event of a detonation.

Which variants of PROFILON® AX A1 are available?

- transparent
- white-matt (privacy protection)
- solar (sun protection)
- alarm – active glass break detector of notification class C (VdS certified)
- with passive glass break detector of notification classes A and B (VdS certified)

How scratch-resistant is PROFILON® AX A1?

After an abrasion test, which scratches the film wantonly, the increase of diffused light is measured. The German Federal Office for motor vehicles, known for its high values allows an increase of dif-fused light of 4,5%. With only 2,5% PROFILON® AX A1 is well below this value. The scratch-resistance generated by the special surface coating provides for a long durability of PROFILON® AX A1.

According to experience, PROFILON® AX A1 works without visual and technical impairments many years after expiration of the 5-year war-ranty period. The specially-hardened, long-lasting surface of the film can easily be cleaned with ordinary cleaning agents.

Does PROFILON® AX A1 change its appearance in the course of time?

PROFILON® AX A1 is equipped with a UV filter pre-venting a yellowing of the film even after many years

How is the glass coated with PROFILON® AX A1?

The high-performance film is installed from the inward looking side onto the pane. A correspond-ing frame fixture provides for a firm connection with the frame. This is done, dependent on the window construction, either by installing PROFILON® AX A1 below the pane holding profile, by sealing with sili-cone or through the additional mechanical connection "PROFICON". The glass panes are not taken out of the frame, but coated directly within the frame with PROFILON® AX A1 by trained HAVERKAMP installers.

Technical data

Resistance class	A1 according to DIN 52290 (impact resistance) P2A according to EN 356 UL 972 (Underwriters Laboratories USA/Canada)
Thickness	approx. 360µ
Colour/Tinge	crystal clear
Light transmission	94 % (visible light)
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
Haze value	0,9%

Further tested by KWU/Siemens, VdS, R+V, Federal Office for the Protection of the Constitution, Asial, US-Forces, TÜV Rheinland, ANSI, IRL, Unisearch, Prins Maurits Lab./TNO, German Secret Service, Aachen Technical University



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With the release of a new datasheet the previous data loose their validity.
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