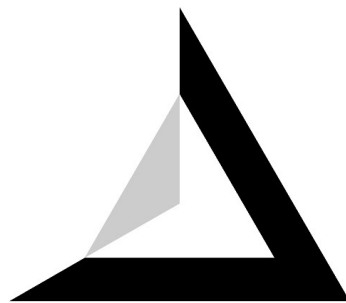


Technical

Information

Storage, handling and

cleaning of screen-  
printed glasses with  
anti-slip properties



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## Technical Information

### Storage, handling and cleaning of screen-printed glasses with anti-slip properties

#### 1. Scope of validity

This recommendation applies to handling our fully or partially screen-printed panes of glass with anti-slip properties that are manufactured as heat strengthened or toughened safety glass by applying and burning in ceramic colours.

#### 2. The screen printing method

In the screen-printing method, the ink is applied to the surface of the glass through a narrow-mesh screen using a blade. Depending on the colour selected, the ink application is either opaque or transparent.

The printing with anti-slip properties is largely scratch-proof and resistant to acid. Light resistance and adhesion resistance are in accordance with the durability of the ceramic enamel colours.

Typically for the production process, there are slight lines in both the printing direction and transverse to it, depending on the colour. These lines are particularly visible against a light background once the pane has been installed.

#### 3. Product characteristics

##### Edge processing:

In accordance with the inspection criteria of DIN 1249, Part 11.

##### Surface and glass characteristics:

Building glass: In accordance with the Hadamer guidelines and the guideline for visual assessment of toughened safety glass, printed in our price list.

##### Printing:

The complete surface can be printed on, serving as both a screen and – depending on the colour – letting through light at the same time. However, due to less susceptibility to getting dirty, we recommend partial printing with a line, checker or dot design.

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#### Colours:

Besides a translucent colour (translucent but not transparent), almost the entire range of RAL colours is available for printing with anti-slip properties.

A test certificate for anti-slip properties and resistance to abrasion has only been issued for the colour translucent. The other colours display similar values.

#### Anti-slip classes:

The anti-slip class of our completely printed glass panes is R 12.

Thanks to special colour mixtures and designs, it is also possible to obtain surfaces with lower anti-slip classes (R9 – R11).

#### Surface wear:

The anti-slip surface is a special enamel with a rough surface on toughened or on heat-strengthened security glass which is permanently burned into the glass surface. This enamel approximately corresponds to wear class II – III as defined by DIN 154 (resistance to surface wear) and is therefore not suitable for busy areas.

#### Weather resistance:

Weather resistance (outdoor installation) of the screen-printed glass is greatly influenced by environmental conditions. Depending on the rain intensity and air pollution by aggressive media such as SO<sub>2</sub>, NO<sub>x</sub> and fine dust, glass and glass enamel surfaces can become unsightly after only a few months (loss of sheen on the colour surface, coloured deposits etc.). The assessment of the weather resistance of ceramic glass colours is a complex subject with no all-inclusive answer, because every ceramic glass system can be attacked by environmental influences to a greater or lesser degree.

The surface can be damaged by the following influences, which can occur outdoors in particular:

- Dust, small stones, abrasion caused by tyres or shoes – these cause greater wear, scratches and dirty surfaces.
- Liquids such as rain water, oils, beverages – these cause surface erosion or patchy dirt that can no longer be removed, particularly when individual areas are covered by materials or if the liquids can remain under them for extended periods.



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#### 4. Storage

Screen printed panes must be protected against moisture during transport and storage. Moisture (condensation), particularly resulting from long storage periods, can cause corrosion damage. Internal tests have shown that the transparent adhesive naps that we use to keep the glass panes apart are ideally suited for keeping apart panes of screen-printed glass with anti-slip properties.

#### 5. Glass installation – sealing

If possible, the glass should be stored on soft material. Silicone profiles or EPDM with a Shore A hardness of approximately 60 are especially well suited for this.

A sealant (e.g. silicone) should be used for sealing, it being necessary to ensure compatibility with the glass structure (e.g. in the case of laminated security glass, compatibility of sealant and PVB film).

When carrying out the sealing work, it must be strictly ensured that no sealing mass gets onto the anti-slip surface, because it is almost impossible to remove later. It is therefore necessary to mask off the surface before sealing using a compatible adhesive tape.

When carrying out construction work on adjacent parts of the building, the dry panes of glass must be protected against contamination by building materials, otherwise irreparable surface scratches can occur. The best protection is afforded by films or planks of wood. Avoid covering the glass for excessively long periods. If there is a danger of moisture building up, replace the cover every working day. Remove any dirt or liquids that have entered immediately.

#### 6. Cleaning the anti-slip surface

In order to preserve the properties of the surface, regular cleaning of the surface is necessary. The cleaning cycle is dependent on the level of stress involved.

Avoid using tools that can scratch, such as razor blades, steel scrapers or steel wool.

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We can recommend the following cleaning agents for special impurities:

**a) Organic impurities:**

Ethyl acetate, acetone or isopropanol

**b) Other impurities:**

Normal impurities can best be removed from the rough surface with a suitable brush and liquid cleaner using standard cleaning agents recommended by the manufacturer for cleaning ceramic surfaces.

Heavy contamination can be treated with hot water (75°C) by adding gentle cleaning agents (e.g. Pril, Sidolin). In the case of very stubborn impurities, we suggest using an ordinary vinegar cleaning agent, e.g. 5% acetic acid (vinegar essence).

With all cleaning agents it must be ensured that the entire printed surface is cleaned in every case and then thoroughly rinsed with clear water and dried (use a rubber scraper, because cloths can leave residues on the rough surface).

Before using a cleaning agent, test its compatibility with the slip-resistant printing by applying some of it to a non-visible or inconspicuous spot.

**After water has penetrated, it must then be possible for the surface to dry perfectly after being cleaned.**

**In all cases, avoid liquid being able to act on the surface for an extended period.**

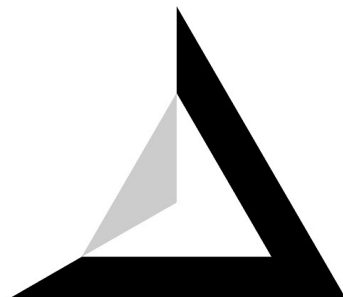
Our “Technical information for the end user – glass suitable for surface traffic” also provides some information about handling screen-printed glass with anti-slip properties (available on request).

This technical information

supersedes all previous editions.

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