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1 Introduction

Glass can cope with a lot – but not with everything!

As part of the facade, glass is subject to natural and building-related soiling. Normal dirt, professionally cleaned at reasonable intervals, presents no problem to glass. However, depending on time, location, climate and building situation, significant chemical and physical accretions of dirt can accumulate on the glass surface, making professional cleaning particularly important.

This technical guide is intended to provide information on how to prevent and minimise soiling during the lifetime of different glass surfaces, and on how to clean them properly and in time.

2 Types of cleaning

2.1 During the construction phase

As a general principle, all aggressive soiling must be prevented during the construction phase. If this nevertheless occurs, then the dirt must be washed off without trace by the person responsible, immediately after it appears, using non-aggressive cleaning agents.

Concrete and cement slurries, plasters and mortars in particular are highly alkaline and cause etching and hence damage to the glass (dulling) if they are not immediately rinsed off with plenty of water. Dusty and granular deposits must be removed professionally, but under no circumstances removed when dry. As a result of his obligations to intervene and protect, the building contractor is responsible for controlling the interaction of the different trades, and in particular for informing subsequent trades of the necessary protective measures.

Soiling can be minimised by optimising the construction process and by separately arranging for protective measures, for example the application of protective films in front of windows and facade surfaces. The object of so-called initial cleaning is to clean the components after the building work is complete. It cannot be used to remove all the dirt accumulated during the entire construction period.

2.2 During use

Professional cleaning, matched to the particular glass and carried out at appropriate intervals, is essential to maintain the characteristics of the glass over its entire period of use.

3 Glass cleaning instructions

3.1 General

The following cleaning information applies to all glass products used in the building. Plenty of clean water must be used whenever cleaning glass to avoid any scouring effect from dirt particles. Soft and clean sponges, leathers, cloths and rubber scrapers are suitable hand tools. Careful use of glass cleaning tools is a further prerequisite for avoiding damage to the glass. Separate cleaning tools must be used for glass, seals and frames. Cleaning tools can be backed up by the use of largely pH-neutral cleaning agents or commercially available domestic glass cleaners. If the dirt consists of grease or sealant residue, commercially available solvents such as ethyl alcohol or isopropanol can be used for cleaning. Alkaline solutions, acids and agents containing fluoride are all chemical cleaning agents which must never be used.

The use of pointed, sharp metallic objects, e.g. blades or knives, can damage the surface (scratches). A cleaning agent must not visibly attack the surface. Do not use a bladed scraper to clean whole areas of glass. If damage to glass products or surfaces caused by cleaning is noticed while cleaning is in progress, then work must be stopped immediately, and the right information on how to prevent further damage must be obtained without delay.



3.2 Specially finished and externally coated glass

The specially finished and externally coated glass types described below are high quality products. They require particular care and attention when cleaning. Damage to this glass can be more conspicuous or may impair its function. If necessary, separate recommendations from the individual manufacturers with regard to cleaning must also be observed, particularly with externally coated products. Do not use a „glass scraper“ for cleaning the glass surface.

- Some solar control glass types are designed as external coatings (position 1 = weather side). These can often be recognised by very high reflection, even in the spectral range of the visible radiation. At the same time, solar control glasses are often thermally tempered, particularly in the case of facade plates and sun skirts.
- Furthermore, reflection-reducing coatings (anti-reflection coatings), which by their very nature are difficult to detect, can be applied to the outside or inside of the glazing.
- External or internal heat insulation coatings are a special case here. In special window designs (box windows or composite windows), these coatings may, exceptionally, not face the cavity of the insulating glass unit. Mechanical damage to these coatings usually manifests itself in the form of streaks of surface abrasion due to the slightly rougher surface.
- Dirt-repellant/self-cleaning surfaces are visually difficult to identify. Because of the way they are used, these coatings are usually to be found on that side of the glazing unit exposed to the weather. Mechanical damage to self-cleaning coatings (scratches) not only constitutes visually discernible damage to the glass, but can also lead to a loss of functionality in the damaged area. Silicone and grease deposits on these surfaces should also be avoided. Rubber scrapers in particular must therefore be free from silicone, grease and foreign bodies.
- Toughened safety glass (TG) and heat strengthened glass (HS) is permanently marked in accordance with statutory regulations and may be combined with the above-mentioned coatings. The surface of ESG is modified by thermal tempering compared with normal float glass. Under certain circumstances, the surface tension which has been introduced makes damage more visible than with nontempered glass (sometimes after a time delay).

3.3 Further notes

The use of portable polishing machines for removing surface damage can cause considerable abrasion of the glass body. This can cause optical distortion, which is perceived as a „lens effect“ and leads to a reduction in strength. Do not use polishing machines, particularly on the specially finished and externally coated glasses mentioned above.

And by the way:

It may be that glass surfaces might not be evenly wettable due to marks left by such things as stickers, rollers, fingers, sealant residues and also environmental influences. This phenomenon can only be seen when the pane is wet, i.e. when it is being cleaned.