



GLASS HANDLING AND STORAGE GUIDELINES

HANDLING AND STORAGE

1. Implementing preventive measures is generally always cheaper than correcting errors later
2. Stickers and spacers should preferably be removed from the glass as soon as possible.
3. For lifting large-sized glass panes, the use of suction cups is recommended.
4. When storing both tempered and non-tempered glass for an extended period, the supporting edge of the glass must rest on a dry and cushioned surface (e.g. plastic, cardboard, rubber) – glass edges must not be placed directly on the floor or ground.
5. When storing multiple glass panes at the same time, spacers must be placed between tempered glass panes. Non-tempered glass panes of the same size may be leaned against each other; for non-tempered glass panes of different sizes, cardboard pieces must be placed between them.
6. Glass must be stored in a dry and well-ventilated area, away from direct sunlight.
7. Storage conditions are important because if water gets between the glass panes (for example from precipitation from above or evaporation from below), soda will leach from the glass, resulting in white stains on the glass surface that can no longer be removed. Such glass must be disposed of.
8. The weakest points of glass are the corners, therefore they must be protected with special care.
9. Glass must also be protected from the harmful effects of the external factors listed below.

EXTERNAL FACTORS HAZARDOUS TO GLASS

Construction	First and foremost, all types of glass must be protected on construction sites, where chemical and mechanical factors can permanently damage the glass surface. If continuous air circulation is maintained around the glass, it may be covered with polyethylene film. If air circulation is absent and the glass is covered with polyethylene film, the glass may break due to thermal stress.
Stickers and spacers	Päikesekiirguse mõjul kleebiste ja korkide liimaine kõveneb. Kui liimaine sisaldab aluselisi (pH=7,1-14) aineosakesi, võib tagajärjeks olla klaasi matistumine. Kui liimaine sisaldab happelisi (pH=0-6,9) aineosakesi ei ole klaasil küll nähtavaid kahjustusi, kuid kahjustada on saanud klaasi normaalne vananemisprotsess.
Silicones	Chemically etched and sandblasted (frosted) glass must not come into contact with silicone-containing substances, as this will cause the glass surface to become transparent and require replacement.
Mortars	During normal curing, mortars often release alkaline (pH = 7.1–14) particles, which can damage and etch the glass surface. Removing hardened mortar from glass may result in scratching of the glass surface.
Concrete splashes	Washing off fresh concrete with plenty of clean water can prevent damage to the glass. In contrast, removing dried concrete will scratch the glass surface and require the glass to be replaced.
Acid cleaning	Hydrochloric acid is used to clean brick and concrete surfaces, but it can damage reflective coatings and glazing silicones. Acid cleaning must be carried out before glazing.
Welding and cutting sparks	If such sparks come into contact with the glass surface, the glass will be permanently damaged and must be replaced. Therefore, welding and cutting work near glass surfaces must be avoided.



REMOVAL OF VARIOUS STAINS FROM GLASS

Grease stains, oils, fats, and various sealing compounds – stains may be removed using a cleaning agent containing a small amount of alcohol. After using the cleaning agent, the glass must be thoroughly rinsed with plenty of clean water.

Grease stains, oils, fats, and various sealing compounds – stains must be removed from the glass as soon as possible, i.e. before they dry, using plenty of clean water.

For small and difficult-to-remove dirt residues, The above-mentioned stains cannot be removed from sandblasted (frosted) and satin glass, as the glass surface will be permanently damaged and will require replacement.

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DOOR GLASS

If water gets onto door glass, the glass should be dried with a soft cloth or towel.



Storage of other materials against glass	Different materials stored against glass can scratch the glass surface – glass with reflective coatings is particularly sensitive in this regard.
Metal structures	Aging structural components release oxides (tin, copper, iron, zinc), which can be carried onto the glass surface by rainwater or cleaning water. These oxides can permanently damage the glass surface, requiring the glass to be replaced.
Large temperature fluctuations	Excessively large temperature differences create high internal stress in the glass, causing it to crack, i.e. thermal breakage occurs. Thermal breakage occurs when the temperature difference across the surface of non-tempered glass is approximately 40–50 °C. To prevent thermal breakage, it is recommended to use tempered glass, as tempered glass can withstand temperature differences of approximately 150–200 °C.
Organic mastics	They may release plasticizers, oils, and solvents that adhere very strongly to the glass surface. Organic mastics do not need to be in direct contact with the glass to cause damage— it is sufficient if water containing residues flows from one glass pane onto the surface of other glass panes.
Flowing water	If water flows over cement, concrete, plaster, organic coatings, or mastics before reaching the glass surface, residues will remain on the glass. A chemical reaction may occur between these residues and the glass surface, which can damage the glass surface.
Hard water	Minerals present in water precipitate onto the glass surface and adhere strongly to it. If the dried mineral residues are left uncleaned, their later removal may become impossible, and the glass will need to be replaced.
Air pollution	Air pollution may contain various chemicals that, especially during (acid) rain, adhere strongly to the glass surface. If air pollution is not removed, the resulting chemical reaction can cause matte stains on the glass surface.

GLASS CLEANING

1. Glass must not be cleaned in direct sunlight.
2. Glass cleaning intervals depend directly on the surrounding environment and the degree of soiling.
3. Glass cleaning includes washing, rinsing, and drying.
4. Glass cleaning begins with removing abrasive particles (e.g. dust) using clean water.
5. Then apply the cleaning agent to the glass using a soft cloth, towel, or sponge, using circular motions and moderate pressure.
6. When cleaning satin glass (i.e. frosted glass), it must be remembered that even if only one area of the glass is dirty, the entire glass surface must be cleaned (to avoid halo effects). Excessive pressure must not be used when cleaning frosted glass.
7. Rinse thoroughly with plenty of clean water.
8. To dry the glass, use a clean, soft cloth, towel, or sponge.
9. It is also important to remove any remaining water and cleaning agent residues from trims, seals, and frames after cleaning the glass, in order to prevent damage to these components.

