Maintenance and Cleaning of Aluminium and Aluminium-Glass Structures

1. Glass maintenance and cleaning

Glass is naturally hard, durable and easy to keep clean. Following the recommendations below will help keep it clean, clear and shiny for many years to come.

2. Cleaning glass at the construction site after installation

When first cleaned after installation, the glass may be heavily soiled. The following cleaning guidelines are recommended:

- do not use products containing hydrofluoric acid or fluorine derivatives for cleaning, as they may damage the coating and surface of the glass, or strongly acidic or strongly alkaline products, or abrasive products (pay attention to the compatibility of the products used with other elements of the aluminium-glass structure, such as protective coatings on aluminium, sealant material, sealing compounds);
- stickers and cork spacers should be removed as soon as possible;
- cement slurry and other building material residues should be promptly removed from the glass – prolonged exposure to such deposits may cause permanent damage to the pane (clouding);
- do not dry clean cement dust or other abrasive material residues;
- rinse the panes thoroughly with clean water to remove as much dust as possible, remove excess water with a rubber squeegee;
- carefully inspect the glass and remove any remaining dirt and carefully remove any remaining sealants, putty, mortar, etc., using a special glass scraper or razor blade (in such cases, there is always a high risk of scratching the window pane, so take extreme care, especially when cleaning different types of coated glass), wash again with clean water or water with added neutral cleaning agent or another commercially available window cleaning product;
- both the cleaning water and the cloths or sponges must be free of sand and other foreign matter.

3. Ongoing and periodic maintenance of glazing

3.1. Washing frequency

The frequency of washing depends on the prevailing environmental conditions and the degree of environmental pollution. Glass gets dirty more quickly in dusty industrial areas, in districts with heavy traffic, in coastal areas and in places where glass surfaces are rarely exposed to rain. Glass should be cleaned frequently enough that regular cleaning is sufficient to keep it clean. The minimum recommended interval is six months.

3.2. Regular washing

In most cases, it is sufficient to wash the glass with plenty of clean water. Sometimes, a small amount of neutral cleaning agent or another commercially available glass cleaner can be added to the water. Use rubber squeegees or special cloths. After washing, rinse the glass thoroughly with clean water and remove excess liquid with a rubber squeegee. Do not clean the glass when it is exposed to direct sunlight. Also avoid cleaning the glass when the temperature is very low or very high.

3.3. Special washing

If normal cleaning is ineffective, other methods can be used: grease stains and other organic contaminants should be removed using solvents such as isopropyl alcohol or acetone, applied to the soiled surfaces with a soft, clean cloth. Other contaminants should be removed by lightly polishing the surface with a cerium oxide suspension (diluted from 100 to 200 grams of powder per litre of water), then rinsing the surface with water and following the recommendations for regular cleaning.

3.4. Special conditions for the protection and maintenance of glazing

During the long-term use of the building, renovations and upgrades are carried out on the building and its rooms. Therefore, observe the following recommendations:

- avoid contaminating glass surfaces with plaster or concrete residue, rust, excessive dust, etc.;
- the panes should be protected so that metal droplets produced during welding work or filings produced during the cutting of metal components do not come into contact with the glass, as they may cause irreversible damage to the surface of the panes (if necessary, the glass surfaces should be covered with a tarpaulin or plastic sheet or plywood);
- protect glass surfaces from contamination with facade paints, facade treatment products, interior wall paints, etc.

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4. Maintaining coatings on aluminium profiles

The effects of painted and anodised coatings will be maintained as long as maintenance procedures are carried out frequently and correctly. The durability of coatings on aluminium structural elements is significantly affected by climatic and atmospheric conditions at the installation site, the effects of aluminium combining with other metals or certain building materials, the frequency as well as the method of maintenance.

4.1. Cleaning aluminium structures after installation

Once the structure has been installed, the panes fitted and the mechanisms adjusted, you can proceed with washing and cleaning. The most important operations include:

- immediate removal of the protective film, as exposure to sunlight and high ambient temperatures may cause chemical reactions, resulting in the tape bonding with the powder coating or other damage and discolouration;
- if, due to ongoing construction work, it is necessary to leave the protective film in place, and the structure is not directly exposed to UV rays and high temperatures, the film may be removed no later than three months after its installation – the installer is obliged to inform the user or builder of this in writing;
- if the protective tape carrier remains on the surface of the product, remove it by washing with mineral spirit using a soft cloth. If you have difficulty removing it, notify the manufacturer of the aluminium and glass structure;
- aluminium sections with anodised or painted oxide coatings should be cleaned with a soft cloth using clean water or water with the addition of mild cleaning agents; the temperature of the cleaning fluids and the surfaces of the cleaned elements must not exceed 250 °C (do not use hot water, steam or pressure washing);
- dry the surfaces of the sections by wiping them with soft cotton cloths. When doing so, do not press the cloth too hard against the surface being cleaned.

4.2. Maintenance and cleaning intervals for coatings

Aluminium structural elements should be maintained at intervals determined by their location and, in particular, by the corrosiveness of the natural environment:

- in low-corrosive environments (rural areas, small towns) - at least twice a year;
- in moderately corrosive environments (small towns on busy transport routes, medium-sized towns with low industrialisation) - at least 3 times a year;
- in highly corrosive environments (heavily industrialised towns with very heavy traffic) – at least 4 times a year.

4.3. Ongoing and periodic maintenance of coatings on aluminium and glass structures

- it is recommended to check each time on invisible surfaces of the structure whether the cleaning agent or cleaning agent solution (except for pure water) does not react with the coating;
- anodised or painted aluminium sections should be cleaned with a soft cloth using mild cleaning agents; do not use liquids based on strongly alkaline or acidic compounds, which may damage oxide or paint coatings;
- do not use cleaning agents with a pH below 5 or above 8, and the surface temperature of the structure and the water temperature must not exceed 25°C;
- after each wash, the surface must be rinsed immediately with clean cold water;
- when washing, do not use abrasive cleaning agents nor clean the surface by rubbing;
- it is acceptable to use soft cotton cloths designed for industrial cleaning, and when wiping, do not press the cloth too hard against the surface being cleaned;
- do not use organic solvents containing esters, ketones, alcohols, aromatic compounds, glycol esters, chlorinated hydrocarbons, etc. and do not use detergents of unknown origin.

4.4. Special conditions for the protection and maintenance of aluminium and glass structure coatings

During the long-term use of the building, renovations and upgrades are carried out on the building and its rooms. Therefore, observe the following recommendations:

- avoid contaminating the coatings with plaster or concrete residue, excessive dust;
- protect surfaces of the structure from contamination with facade paints, facade treatment products, interior wall paints, etc.;
- powder and anodic coatings are sensitive to organic solvents, concentrated alcohol, acids, bases and petroleum derivatives, among other things, and therefore contact between the coating and these substances is unacceptable;
- in particular, ensure protection against contact of coatings with lime, cement and other alkaline building materials by applying protective film to structural elements during renovation or by covering the entire structure with film;
- the section surfaces should be protected so that metal droplets produced during welding work or filings produced during the cutting of metal components do not come into contact with the coating, as they may cause irreversible damage to coatings (if necessary, the surfaces of sections and glazing should be covered with a tarpaulin or plastic sheet or plywood).

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