

## FILMS

Since National Glass has been manufacturing toughened glass, this product has been supplied with a clear semi-bonding film applied to both sides. This was done to protect toughened glass, as a value added product, during handling and transportation. Over time, customers have seized an opportunity to leave this film in situ as a site protection measure, often for long periods.

## NATIONAL GLASS SUPPLIES PLASTIC FILM COATED GLASS ON THE FOLLOWING BASIS:

- > It should be removed within the manufacturers recommended time frame. This time frame is generally within one month of glazing and exposure to sunlight;
- > If used onsite, no responsibility is taken for (1) the effects of damage to glass surface as a result of partial or full removal of the film by wind and/or rain and (2) staining that may occur as a result and (3) other contaminants that may leach between the glass and film.

## SCREENS

Temporary screens may be required if other trades (i.e. welding, sand blasting, floor sanding and cutting) are in progress near to the glass to protect it from damaging off spray and particles.

## STORAGE

When storing glass, it should be leaned against a structural frame with full vertical and horizontal support. The angle of lean should be approximately 7° from the vertical. Paper should be placed between the sheets to prevent rubbing or scratching during storage or transport. If the glass is wet, the panels should be removed and dried and paper interleaved with butcher paper.

## CLEANING AND MAINTENANCE GUIDE

### GENERAL

- > Carefully read and comply to any chemical agent or detergent material data sheets or instruction documents before use. When in doubt, contact the manufacturer. Try to limit their use to the very strict minimum.
- > All products containing hydrofluoric acid or fluorine derivatives are prohibited since they can damage the coating and the surface of the glass.
- > Highly acidic and alkaline products are prohibited, as they are abrasive products.
- > Ensure chemical compatibility between products used and other components (seals, paints used on the frame, aluminium, stone, etc.).
- > When carrying out the special cleaning regime as listed below, always start with a trial on a small area.
- > Do not wash glass when it is fully exposed to the sun. Avoid washing it when it is too cold or hot.
- > Make sure that cloths, sponges, squeegees and other tools are in good condition at all times and are free of grit.

**Low-E coated – Sunergy Coated glass** – the coatings on these glass products are generally more difficult to clean than ordinary non-coated glass. Running the clean palm of your hand across the surface of the glass will indicate that the coated side is more resistant or less smooth on touch than the non-coated side. Therefore, some caution should be applied with regards processing, handling, protection and cleaning of the glass.

### 1. NORMAL CLEANING

#### ORDINARY GLASS

- > In most cases, glass can be washed with plenty of clean water or with mild soap, detergent or recommended glass cleaner solution.
- > Before starting the clean, ensure jewellery and watches are removed and gloves should be worn.
- > Use only soft clean cloths, sponges free from grit.
- > Flood the glass surface with selected cleaning solution or with a cloth saturated with the cleaning solution. Be generous with the amount of solution applied.
- > Remove all traces of the cleaner by rinsing with water and remove the excess water with a cloth.
- > Never use abrasive cleaners on the glass surface.
- > Paint spots can attempt to be removed with a gem blade or scraper in conjunction with glass cleaner. Care should be taken not to damage or scratch the surface.

**Low-E coated/Sunergy Glass** – As per ordinary glass above, however, do not use squeegee on interior coated glass surfaces and avoid contact with metal objects.

### 2. FREQUENCY

How often the glass needs to be cleaned will depend on the surrounding environmental conditions and pollution levels. Glass gets dirtier in dusty, industrial areas, in areas with lots of road traffic, near the sea or when it is not exposed to very much rain. Failure to take certain precautions when designing the facade or installing the glass can also play a role. (e.g roof glazing shall have a minimum slope of 10° vs horizontal). Glass should be cleaned frequently enough to the normal cleaning procedure described above. The recommended minimum frequency is every six months.

### 3. SPECIAL CLEANING

When normal cleaning methods are not enough, other steps can be taken:

- > Before starting the clean, ensure jewellery and watches are removed and gloves should be worn.
- > Oily spots, fingerprint marks, mastic or silicone stains and other organic pollution can attempt to be removed with solvents such as isopropyl alcohol or acetone applied with a soft, clean cloth. Follow manufacturers guidelines and instructions before use.

- > Paint spots can attempt to be removed with a gem blade or scraper in conjunction with glass cleaner. Care should be taken not to damage or scratch the surface.
- > Rinse thoroughly and then follow the normal cleaning procedure.

#### 4. SPECIAL INSTRUCTIONS FOR COATED GLASS

Coated glass – such as Low-E or Sunergy Glass have a metal oxide coating that is applied to the glass. These coatings are very resistant and durable. No particular precautions need to be taken when the coating is positioned on the inside of an insulated glass unit (position 2 or 3, i.e. in contact with the air/gas layer).

For single glazing when the coating is facing the inside of the building, the normal and special cleaning procedures described above are also suitable. However, bear in mind that a transparent and very thin metal surface is being washed and that:

- > Any scratching will penetrate the surface of the coating and cannot be repaired.
- > Do not use squeegee on interior coated glass surfaces.
- > Any excessive mechanical treatment might remove the coating in localised areas.
- > Avoid all contact with metal objects.
- > Avoid all chemicals that would attack the surface and damage it irreparably.

Consequently, special care should be taken to follow the guidelines and precautions set out in this document. In areas with high levels of pollution, treatments and products supplied by experienced professionals could be a preferred solution.

#### 5. SPECIAL INSTRUCTIONS FOR ACID ETCHED GLASS

In most cases, acid etched glass can be washed with plenty of clean water and a soft sponge or glass cleaner. The following points should also be adhered to:

Never use aggressive cleaning materials such as razor blades, steel wool, abrasive materials to clean glass.

Always clean the full surface of the acid etched glass using water or glass cleaner even if only one small area of the glass is dirty. Never do spot cleaning, because it might create halos on the glass.

Once cleaned, the glass should be rinsed with clean water and wiped off all over with a soft lint free cotton cloth. If any stain still remains, repeat the sequence.

Use plenty of water to avoid scratching or damaging the surface of the glass. Never try to remove impurities with a dry and/or dirty cloth, as this may cause scratches on the glass surface by rubbing impurities on the glass.

During the whole cleaning process, never apply any excessive pressure as this may damage the acid etched glass surface by polishing it too much.

Heavily soiled surfaces may be washed using a high pressure cleaning device with water temperature of at least 30oC.

Always use standard glass cleaners containing alcohol to clean the acid etched glass.

Never use products containing hydrofluoric acid, fluorine, chlorine or ammonia derivatives because they can damage the surface of the glass.

Never use acidic or alkaline products as they can abrade the glass surface.

Consequently, special care should be taken to follow the guidelines and precautions set out in this document. In areas with high levels of pollution, treatments and products supplied by experienced professionals could be a preferred solution.

#### 6. PREVENTION

Taking steps to prevent the build-up of dirt is the best way to prevent cleaning problems and also to lower cleaning costs. For example:

##### DURING THE DESIGN PHASE:

- > Make sure that water drainage and discharge systems are in place to prevent runoff of polluted water over the glass. Water tends to gather pollutants as it runs over bricks, concrete, zinc, roofing materials and so on.
- > Make sure that it is possible to gain access to the glass so that it can be cleaned.

##### DURING THE INSTALLATION PHASE:

- > Prevent runoff from plaster, concrete, rust, excessive dust, etc.
- > Prevent pollution and splatters of paint, facade treatment products, etc.
- > Prevent metal particles from welding or grinding works to come in contact with the glass. This kind of damage cannot be repaired.
- > Where necessary, protect the glass with tarpauling or other suitable sheeting to provide a dry, well ventilated air space.
- > Do not use sealants, putties, oils, silicones, etc. that leave streaks on the glass.