your favourite glass

TECHNICAL DOCUMENT (FGTD-17.2)

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GLASS HANDLING AND MAINTENANCE

17.2.1 OVERVIEW

Architectural glass products play a major role in the comfort of living and working environment of today's homes and commercial office spaces. By providing natural daylight, views of the surroundings, thermal comfort and design aesthetics, glass usage and conditions often affect our selection of where we live, work, shop, play and seek education.

Architectural glass products must be properly cleaned during construction activities and as a part of routine maintenance in order to maintain visual and aesthetic clarity. Since glass products can be permanently damaged if improperly cleaned, FG Glass strongly recommends strict compliance with the following procedures for properly cleaning glass surfaces.

17.2.2 SITE STORAGE

1. Glass should always be stored vertically on its edge, in absolutely dry conditions. Whether storage is on the short or the long edge is dependent on size, substance, availability of space, etc.
2. The glass should not be in contact with any substance that is harder than itself, e.g. concrete, stone, ferrous metals or broken glass. This will minimize the risk of damage and breakage, and can be implemented by cladding all supporting structures with timber, felt, rubber or plastic material. Care should be taken to ensure that all nails and screws are countersunk below the surface likely to come into contact with the glass. Always ensure supporting bearers are clean.
3. The angle of inclination of the glass should be between 5° - 6°. If the angle is increased above 6°, it will tend to put extra weight on the back sheets and make sheet separation more difficult to achieve.
4. Some storage types include, but are not limited to, transportable racks, barrows, trolleys and stillages. The type of rack selected depends on the size of the glass to be held, the volume or number of sheets to be stacked, and the method of handling to and from the particular rack. All racks and trolleys should be constructed using sound quality materials. They should also should be examined periodically.
5. It is absolutely critical that glass is stored in a non-damp environment and without any water accumulation on its surface or edge. This will irreparably damage the surface and in case of laminated glass, cause delamination at the edges.

17.2.3 GLASS CARE DURING SITE CONSTRUCTION

FG Glass takes extreme care to avoid glass scratches by protecting all glass surfaces during glass processing, as well as during all shipping and handling required to deliver the glass to the end user. A large percentage of damaged glass results from non-glass trades working near glass. This will include painters, masonry workers, ironworkers, landscapers, carpenters and others who are part of the construction process. They may inadvertently lean tools against the glass, splash materials onto the glass and/or clean the glass incorrectly, any of which can permanently damage glass.

One of the common mistakes made by non-glass trade people, including glass cleaning contractors, is their use of razor blades or other scrappers on a large portion of the glass surface. Using 2, 3, 4, 5 inch and larger blades to scrape a window clean carries a large probability for causing irreparable damage to glass.

The entire industry of glass manufacturers, processors, distributors, and installers neither condones nor recommends widespread scraping of glass surfaces with metal blades or knifes. Such scraping will often permanently damage or scratch the glass surfaces. When paint or other construction materials cannot be removed with normal cleaning procedures, a new 1" razor blade may need to be used only on non-coated glass surfaces. The razor blade should be used on small spots only. Scraping should be done in one direction only. Never scrape in a back and forth motion as this could trap particles under the blade that could scratch the glass. This practice may cause hairline concentrated scratches, which are not normally visible when looking through the glass, but may be visible under certain lighting conditions.

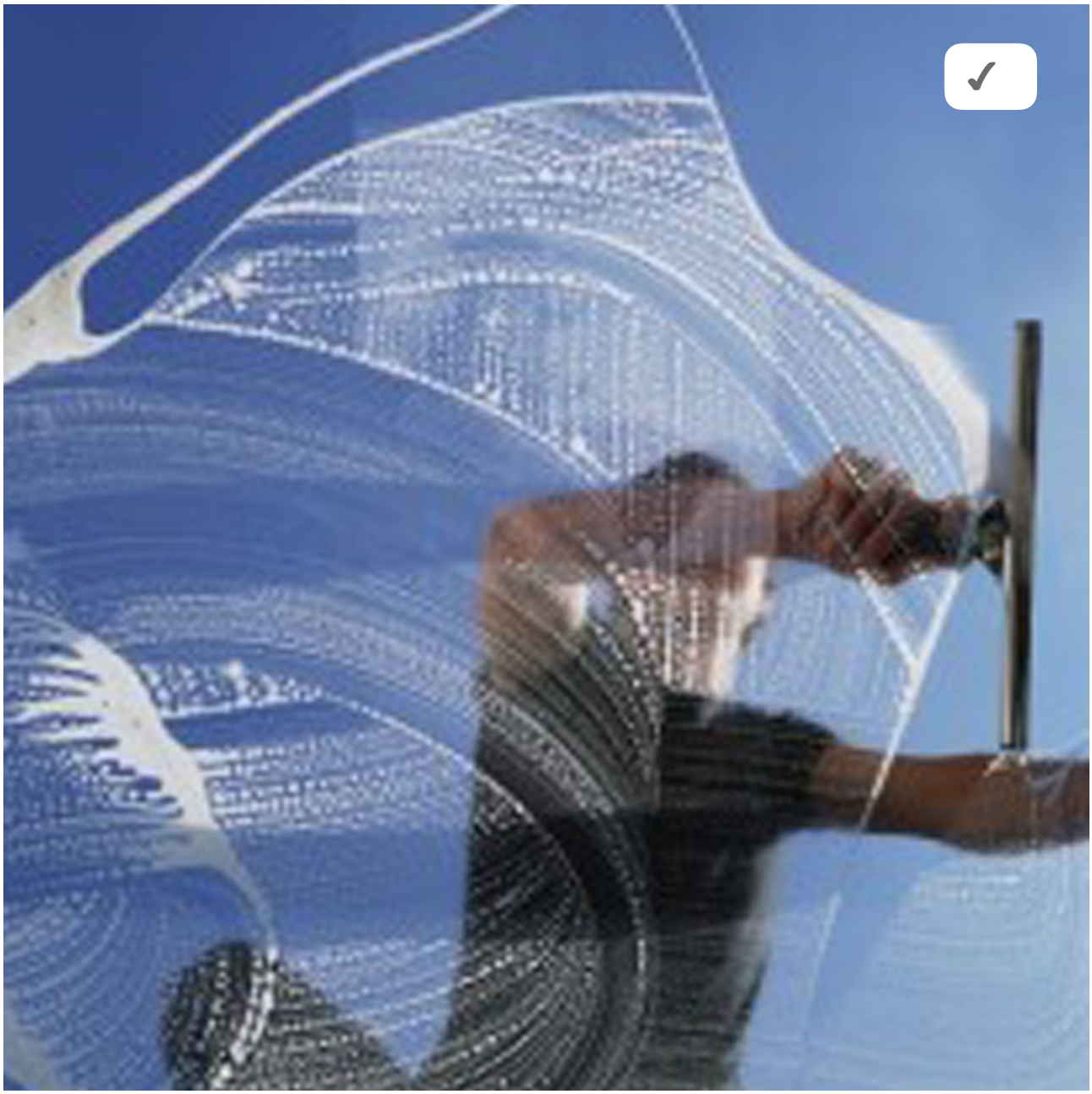
17.2.4 OTHER IMPORTANT CONSIDERATIONS

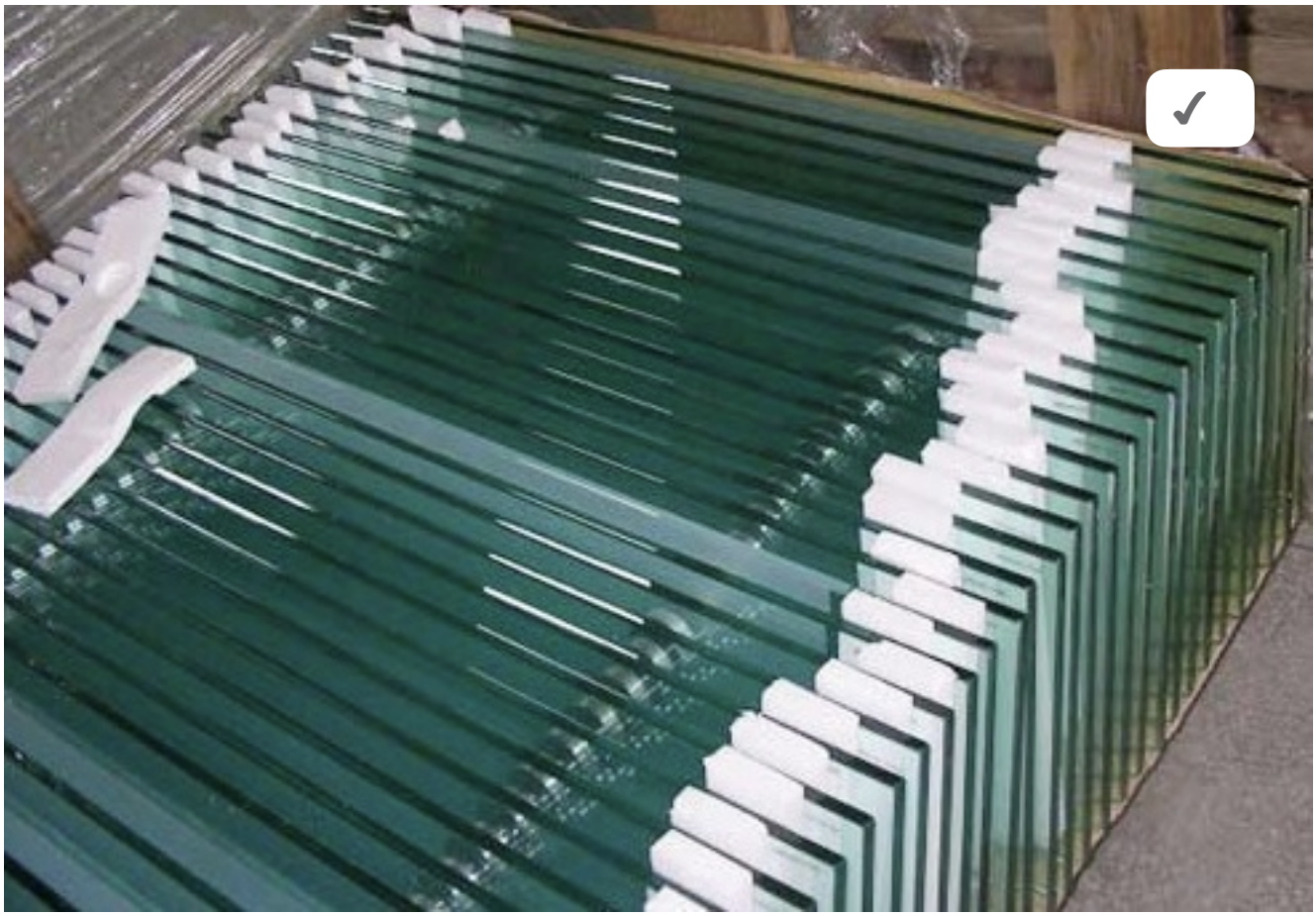
1. As dirt and residue appear, interior and exterior glass surfaces should be thoroughly cleaned. Concrete or mortar slurry which runs down (or is splashed on) glass can be especially damaging and should be washed off as soon as possible.
2. Before proceeding with cleaning, determine whether the glass is clear, tinted or reflective. Surface damage is more noticeable on reflective glass as compared with the other glass products. If the reflective surface is exposed, either on the exterior or interior, special care must be taken when cleaning, as scratches to the reflective glass surface can result in coating removal and a visible change in light transmittance.
3. Cleaning tinted and reflective glass surfaces in direct sunlight should be avoided, as the surface temperature may be excessively hot for optimum cleaning. Cleaning should begin at the top of the building and continue to the lower levels to reduce the risk of leaving residue and cleaning solutions on glass at the lower levels. Cleaning procedures should also ensure that the wind is not blowing the cleaning solution and residue onto already cleaned glass.
4. Cleaning during construction activities should begin with soaking the glass surfaces with clean water and soap solution to loosen dirt or debris. Using a mild, non-abrasive commercial window washing solution, uniformly apply the solution to the glass surfaces with a brush, strip washer or other non abrasive applicator. Immediately following the application of the cleaning solution, a squeegee should be used to remove all of the cleaning solution from the glass surface. Care should be taken to ensure that no metal parts of the cleaning equipment touch the glass surface and that no abrasive particles are trapped between the glass and the cleaning materials. All water and cleaning solution residue should be dried from window gaskets, sealants and frames to avoid the potential for deterioration of these materials as the result of the cleaning process.
5. It is strongly recommended that window washers clean a small area or one window, then stop and examine the surface for any damage to the glass and/or reflective coating. The ability to detect certain surface damage, i.e. light scratches, may vary greatly with the lighting conditions. Direct sunlight is needed to properly evaluate a glass surface for damage. Scratches that are not easily seen with a dark or gray sky may be very noticeable when the sun is at a certain angle in the sky or when the sun is low in the sky.

17.2.5 DO'S LIST

The following are things to DO:

- DO clean glass when dirt and residue appear
- DO store glass with proper separators to avoid surface-to-surface contact
- DO determine if coated glass surfaces are exposed
- DO exercise special care when cleaning coated glass surfaces
- DO avoid cleaning tinted and coated glass surfaces in direct sunlight
- DO start cleaning at the top of the building and continue to lower levels
- DO soak the glass surface with a clean water and soap solution to loosen dirt and debris
- DO use a mild, non-abrasive commercial window cleaning solution
- DO use a squeegee to remove all of the cleaning solution
- DO dry all cleaning solution from window gaskets, sealants and frames
- DO clean one small window and check to see if procedures have caused any damage
- DO be aware of and follow the glass supplier's specific cleaning recommendations
- DO caution other trades against allowing other materials to contact the glass
- DO watch for and prevent conditions that can damage the glass





17.2.6 DO NOT'S LIST

The following are things to NOT do:

- DO NOT start cleaning without reading and understanding proper cleaning procedures
- DO NOT use scrapers of any size or type for cleaning glass
- DO NOT allow dirt and residue to remain on glass for an extended period of time
- DO NOT begin cleaning glass without knowing if a coated surface is exposed
- DO NOT clean tinted or coated glass in direct sunlight
- DO NOT allow water or cleaning residue to remain on the glass or adjacent materials
- DO NOT begin cleaning without rinsing excessive dirt and debris
- DO NOT use abrasive cleaning solutions or materials
- DO NOT allow metal parts of cleaning equipment to contact the glass
- DO NOT trap abrasive particles between the cleaning materials and the glass surface
- DO NOT allow other trades to lean tools or materials against the glass surface
- DO NOT allow splashed materials to dry on the glass surface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