

## GENERAL

This document applies to the entire range of the VETROGARD product family and its insulating glass units (IGU).

VETROGARD panes only provide the optimum level of protection in each designated resistance classes when fully captured by a suitable frame on all (four) sides. The frames must comply with the individual resistance classes. Generally, glazing beads shall be installed on the side facing away from the anticipated attack.

VETROGARD typically consists of a variety of multilayer makeups. Therefore, the glazing guidelines and, in addition to EN ISO 12543 Part 5 and 6, the specific VETROGARD Quality Guidelines must be taken into consideration.

## For transport, storage and installation of VETROGARD, the following points must be strictly followed:

Extreme climatic conditions (-30 $^{\circ}$  C to +60 $^{\circ}$  C) and exposure to direct sunlight must be avoided. Condensation of water between the glass panes must be prevented during transport and storage.

For exterior applications, insulating glass units (IGU) with suitable coatings shall be used. When installed in a non-heated or air conditioned building, the transport and storage limitations above also apply.

All VETROGARD glazing units must be stored dry, and must not be exposed to direct sunlight or other heat sources. Similarly, all direct heat exposure by radiators, etc. as well as heat traps on the interior glass side caused by blinds, curtains, sun screens, etc., must be avoided.

Each glass must be transported and stored in such a way that each individual pane in the make-up is fully supported. Panes must only be stored and transported vertically. Only suitable intermediate layers or spacers are to be used to prevent direct contact between the glass surfaces, e.g. cork buttons.

For all panes, setting blocks made of polyamide, chloroprene, APTK, PE or flat silicone profiles (not PVC) with a Shore-A-hardness of 60 to 70 shall be used. These setting blocks must be at least 5 mm thick and 80 to 100 mm long.

## FINISHING/CLEANING

After production in the manufacturing plant, the VETROGARD panes must not be damaged or undergo any kind of further processing. This is particularly important for the seal, edge work and glass surfaces. Welding work in the area of fire-resistant glass requires full surface protection against welding beads, flying sparks and overheating.

For cleaning, VETROGARD panes must be washed with soft and nonabrasive cleaning means and agents. Generally, plenty of clean water shall be used. Sponges or cloths must not contain scratchy or abrasive dirt, such as sand or mortar residue.

Alkaline or acid cleaning agents with materials that contain fluoride are not suitable. Cleaning with abrasive, scratchy or scouring materials, such as glass scrapers, razor blades, steel wool, etc., is prohibited.

Concrete, cement or mortar residue shall not be removed when dry. Water containing concrete or cement must not come into contact with glass surfaces; if this does occur, immediately wash with plenty of clean water. Water remaining in contact with the surfaces for a prolonged period of time may result in irreversible glass surface damage.

## **INSTALLATION**

All VETROGARD panes must be checked for visible defects or damage before installing. Panes that are damaged or defective must not be installed. Stickers and notes relating to the installation orientation must be taken into consideration.

The rebate area must be ventilated and stagnant water or moisture must be avoided. The manufacturer assumes no liability for the compatibility of adhesive or sealing materials used in the rebate area.

In case of glazing in inclined or horizontal applications, glazing with high humidity, thermal, static or dynamic loads or insulating glass units at altitudes above 1200 meters above sea level, the client must check and validate product suitability for the conditions at the place of installation and the exposure of glass before ordering.

