



## HotMelt Sealant for insulated glazing **HOTSEAL (2011)**

HOTSEAL is a single-component thermoplastic sealant produced of polyisobutylene and butyl rubber, it is applied in the second sealing layer at double-glazed windows manufacture. It reliably fastens glass with spacer, thus protecting the first hermetic sealing layer. To be applied with standard industrial HotMelt-dispensors.

### Features and advantages

- High adhesion to glass, aluminium and steel spacers;
- Absence of solid waste in insulated glazing production;
- Absence of solvents;
- Fast solidification: primary curing in 2 minutes, time of sealant hardening for transportation 5 minutes;
- Low vapour and gas permeability;
- High elastic elongation and cohesion strength;
- Convenient packing for long-term storage;
- Compatibility with various types of HotMelt dispensors; equipment cleaning and washing is not required at transition from/to analogous materials;
- High thermal stability (standard tests being carried out in a thermal oven at a temperature of 185°C during 180 hours);
- High frost resistance (sealant piece frozen at —32°C remains flexible).

### Physical properties

- Appearance: elastic solid, high-viscosity liquid when melted.
- Colour: black, light grey if stretched out to thin film.
- Density: 1170-1190 kg/m<sup>3</sup>.
- Non-volatile substances content: 100%.
- Temperature range of application in glazing: from —40°C to +75°C.
- Extrusion temperature range: 170-185°C.
- Conditional solidification time: not more than 5 min.
- Flexibility (Rod test): not above —35°C.
- Softening temperature (Ring and Ball): not lower than 132°C.
- Bond strength at tearing-off from glass: not less than 0,65MPa.
- Bond strength at tearing-off from aluminium: not less than 0,52MPa.
- Percentage elongation at rupture: not less than 450%.

- Ultimate tension: not less than 0,09MPa.
- Shore A hardness at 23°C: 50-55.
- Vapour permeability: < 0,12 g/m<sup>2</sup> per day for a 2mm layer at 20°C 100%RH (ASTM method E96).
- Water absorption: less than 0,1% by mass.

### Packing

7 kg blocks and 2,5 kg 135mm drums.

### Application

Preparation: All surfaces should be dry and clean. Watch correctness of the dispenser adjustment for sealant drawing. Regularly measure the sealant temperature on exit from the extruder. If using glass with energy-saving film covering, the covering should be removed before insulation. Take a sealant brick from its siliconised package, immerse it into the extruder tank and wait a timewhile necessary for its thorough fusion. Exact value of drawing temperature is set after extruder adjustment. After full fusion get down to sealant spreading.

Sealing: the double-glazed window having passed primary hermetic sealing, should be securely fixed in a horizontal position (use a special table). The temperature indoors and glass temperature should not be lower than +15°C. Sealant heated to operating temperature is put on double-glazed window ambit into space between the spacer and glasses without making ruptures and beads, without any air locks between first and second sealing contours. It is necessary to pay special attention on angles treatment quality. Watch the sealant consumption and timely put new bricks of sealant into the dispenser tank, to avoid uncovering of heating elements.

Shortening of insulated glazing service life can be caused by following reasons:

- Depth of sealing layer being less than 6mm;
- Breach of heating temperature order;
- Insufficient clearing and drying of surfaces;
- Non-uniform drawing of sealant, presence of bubbles and hollows in the sealing layer.

### Safety requirements

The workroom must be equipped with plenum-and-exhaust ventilation. Above the extruders it is necessary to provide local ventilating cowls. Workers should always wear protective clothing and heatproof gloves.

**ATTENTION!** Careless handling of the fused sealant can cause thermal burns.

### Storage conditions

Sealant should be stored in its original packing in a dry cool place at temperatures from +5°C to +25°C. Storage life is not less than 18 months from manufacturing date.