

INJECTION MOLDING OF

VELVEX™ REINFORCED

ELASTOMERS



TRINSEO™

TECHNICAL INFORMATION

Drying

Trinseo recommends predrying for 2 to 3 hours at 80 °C. Moisture content in the material should be less than 0.1% wt.

Temperatures

Hopper zone: 190°C to 200°C

Nozzle zone: 230°C

A typical profile could be 230°C–225°C–215°C–200°C from the nozzle to the hopper.

In the hot runners, if used: ~ 220°C.

Mold temperature: we recommend temperatures between 20°C to 50°C. Temperature aim 40°C

Injection Molding Conditions

The injection stage of the injection Molding process should be as fast as possible in order to limit residual stress in the parts and to facilitate filling of the mold, while avoiding degradation of the material due to excessive shear. to-diameter ratio.

Back Pressure

VELVEX™ material is pre-colored. Typically, 5 bar is acceptable for molding VELVEX™. Higher back pressure only be required for mixing natural resin with color concentrates, or to achieve more screw shear mixing.

Typical First Stage Injection Pressure (Hydraulic)

70–100 bar Part / Tool Geometry Dependant

Typical Second Stage Injection Pressure (Hydraulic)

40–70 bar, 40–60% of first stage as possible.

First Stage Injection Time

As required to fully fill part.

Second Stage Injection Time

As required to freeze off all gates to prevent flow back.

Note

The above times can be determined by using cavity pressure transducers and plotting cavity pressure vs. time.

Shot size

As required to fill the part.

Cushion

3 mm to 6mm, prevents screw from bottoming out.

Screw speed

80–100 rpm allows shear mixing of concentrate with natural resin. Mix time rather than screw speed improves distributive mixing of color concentrate.

Venting

Vent generously if possible.

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