



MOLD SELECTION GUIDE – SULAPAC UNIVERSAL MATERIAL FOR INJECTION MOLDING

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Sulapac Universal Material for Injection Molding can be tested with a wide range of common injection molds. In order to achieve optimal results, certain material properties should be considered when choosing the test mold / part, such as high material stiffness and low material shrinkage. Please, see the Technical Data Sheet for Sulapac Universal grade for more mechanical properties, and processing conditions.

RECOMMENDATIONS FOR CHOOSING THE TEST MOLD

Mold Material

For short term testing purposes, Sulapac Universal Material for Injection Molding may be processed with molds constructed of common tool steels. It is not recommended to choose a mold with coated components, as the compatibility of the coating with the material cannot be ascertained.

For longer test runs and routine production, high corrosion resistant mold steels with adequate hardening on high wear areas are recommended, since the wood-containing material incurs mechanical and corrosive stress.

Gate Size

Minimum gate size for the Universal grade is $\varnothing = 1.0$ mm

Runner and Gate Type

Cold runner – Due to low shrinkage and high stiffness of the material, runner surfaces should be well polished and have adequate draft angles to ensure that the runner/sprue can be ejected without breakage. Suitable gate types are for example:

- Edge gate
- Pinpoint gate
- Direct / sprue gate
- Tunnel gate (when the gate is designed for similar high stiffness/low shrinkage material as Sulapac Universal).

Note: With certain gate types, such as curved tunnel/cashew gate, there is a risk of runner breakage due to stiffness of the material.

Hot runner – Both valve gate and hot tip solutions are suitable for testing. To avoid degradation of material properties, residence time inside the hot runner should be minimal.

Item Design

Items should have walls or sections with thicknesses of > 0.6 mm.

Undercut shapes are not recommended, unless formed by lifters/sliders.

RECOMMENDATIONS FOR NEW MOLDS

Mold Materials

It is recommended to choose corrosion resistant stainless steel for mold components which get in contact with molten material. As wood-containing material incurs mechanical and corrosive stress, in its own molds Sulapac uses stainless steel grades with maximum corrosion resistance which can be hardened up to 58 HRC. High hardness level is required especially on the high wear areas to ensure long service life of the mold.

For further information please contact Sulapac.

Gate Size

Minimum gate size for the Universal grade is $\varnothing = 1.0$ mm

Hot Runner

Hot runner selection and dimensioning should be done by a runner supplier who has all the needed information of Sulapac material characteristics. A wrongly chosen hot runner size may cause deterioration of the material properties or prevent successful molding process.

Hot runner flow channel components which get in contact with molten material should be made of corrosion resistant stainless steel. It is recommendable to choose channel design with rounded corners to avoid any dead spots inside the flow channel.

For further information please contact Sulapac.

Cold Runner

Good polishing of the runner surfaces and adequate draft angles are required to ensure that runner/sprue can be ejected properly.

Cooling and Venting

Efficiency of the mold cooling and venting are key factors for successful injection molding processes with Sulapac materials. To achieve good visual quality with the shortest possible cycle time, mold cooling and venting solutions shall be designed with extra attention. For example, external sliders should be equipped with cooling channels whenever possible.