

Basic Design Guide

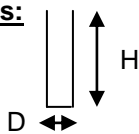
Note: Exact design constraints are strongly dependent of local and overall part geometry, molded density, and molding technology (crack fill or pressure fill). The following indications are given as guidelines only.

Part dimensional limits: Possible molded part dimensions depend on the exact size of the machine used. However as a general rule typical shapes with outer dimensions as large as 1800 x 1000 x 200 mm can be moulded in ARPRO®. Minimum thickness in the crack direction is approximately 5 mm.

Mold characteristics: Aluminium, of 10 to 12 mm thickness, is usually used as raw material for the tool. Supporting elements shall be installed behind the cavity. The tool is equipped with uniformly dispersed core vents for the diffusion of steam, and with several fill guns placed in suitable locations for best filling of the part according to its geometry. For aesthetic reasons avoid putting fill guns on visible surfaces. The external diameter of the fill gun tips usually range from 18 to 24 mm. Part ejectors should also be positioned in proper locations.

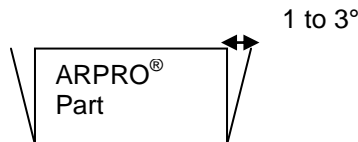
Design aspects:

H / D design
(thin parts)



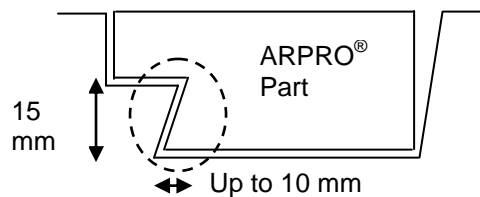
H < approx. 10 mm D: min. 1 bead (approx. 3 mm; ARPRO® 5635 2-3 mm)
 H < approx. 30 mm D: min. 2 beads (approx. 4-5 mm; ARPRO® 5635 3-4 mm)
 H < approx. 70 mm D: min. 3 beads (approx. 7-10 mm; ARPRO® 5635 5-8 mm)

Draft angles for easy demolding



All radii can be molded (except on the tooling partition line)

“Negative” angles are possible thanks to ARPRO® inherent flexibility



Dimensional tolerances:

Tool dimensions have to take into account part shrinkage. Users need to perform their own tests under end-use conditions. Tolerances are highly dependent on machine, part geometry, tool design and layout, molding parameters, pre-treatment, and post treatment.

Dimensions	Tolerance / Density			
	< 25 g/L	25 g/L to 50 g/L	51 g/L to 80 g/L	> 81 g/L
Linear / Thickness Foam Dimensions				
0 to 5 mm	± 0.5 mm	± 0.5 mm	± 0.5 mm	± 0.5 mm
6 to 15 mm	± 1.0 mm	± 1.0 mm	± 1.0 mm	± 1.0 mm
16 to 25 mm	± 1.5 mm	± 1.5 mm	± 1.0 mm	± 1.0 mm
26 to 50 mm	± 2.0 mm	± 2.0 mm	± 1.5 mm	± 1.5 mm
51 to 100 mm	± 2.0 mm	± 2.0 mm	± 1.5 mm	± 1.5 mm
101 to 250 mm	± 2.5 mm	± 2.5 mm	± 2.0 mm	± 2.0 mm
251 to 500 mm	± 3.5 mm	± 3.0 mm	± 3.0 mm	± 2.5 mm
501 to 1000 mm	± 5.0 mm	± 4.5 mm	± 4.0 mm	± 3.5 mm
1000 mm to 1500 mm	± 1.0 %	± 1.0 %	± 0.75 %	± 0.5 %