

# ARPRO® Expanded Polypropylene

## Basic Moulding Guide

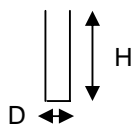
**Note:** Exact design constraints are strongly dependent of local and overall part geometry, moulded density, and moulding technology (crack fill or pressure fill). The following indications are given as guidelines only.

**Part dimensional limits:** Possible moulded part dimensions depend on the exact size of the machine used. However as a general rule shapes with maximum outer dimensions of 180 x 100 x 20 cm can be moulded in ARPRO®. Minimum thickness in the crack direction is approximately 5 mm.

**Mould 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. 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)

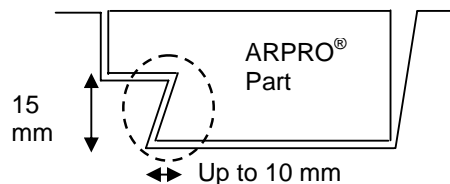


H < approximately 10 mm    D: minimum 1 bead (approximately 3 mm)  
H < approximately 30 mm    D: minimum 2 beads (approximately 4 - 5 mm)  
H < approximately 70 mm    D: minimum 3 beads (approximately 7 - 10 mm)  
Special bead sizes are also available for thinner part designs

Draft angles for easy demoulding



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



**Dimensional tolerances:** Tool dimensions have to take into account part shrinkage.

Dimensions	Tolerance / Density			
	< 25 g/L	25 g/L to 50 g/L	51 g/L to 80 g/L	> 81 g/L
<b>Linear / Thickness Foam Dimensions</b>				
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 %

Users need to perform their own tests under end-use conditions. Indeed, tolerances are highly dependent on machine, part geometry, tool design and layout, moulding parameters, pre-treatment, and post treatment.