



**PLEASE – BEFORE YOU TRY IT YOUR WAY, TRY IT OURS!**

## HYTAC Syntactic Foam Turning Guide

*Innovative Tooling Materials for Thermoforming*

HYTAC materials are generally easy to work with. Following the guidelines listed below will improve surface quality of the finished plug and ensure consistency in plug performance.

**Cutter type and geometry is critical to producing a smooth, consistent surface when turning any syntactic foam. Recommendations:**

Cutter Type and Geometry	Positive edge geometry, carbide non-coated insert. <b>Must be sharp. Dull cutters will result in poor surface quality. Use of separate cutter for finishing is recommended.</b>  Positive rake geometry.  Recommended tooling (available from Kennametal <a href="http://www.kennametal.com">www.kennametal.com</a> ) <b>Holder:</b> Catalog # CCLPR124B, Part # 1096903 (right hand) or: Catalog # CCLPL124B, Part # 1096898 (left hand) <b>Insert:</b> Catalog # CPG422 Grade K313, Part # 1183422
Cutting Speeds	400 - 1500 ft/min (120 - 450 m/min)
Roughing: Feed Rate* Radial Depth of Cut	0.007 - 0.014 in/rev (0.18 – 0.36 mm/rev) 0.070 - 0.100" (1.8 – 2.5 mm)
Finishing: Feed Rate* Radial Depth of Cut	0.0025 - 0.007 in/rev (0.06 - 0.18 mm/rev) 0.030 - 0.050" (0.8 – 1.3 mm)
Coolant	<ul style="list-style-type: none"> <li>None, or air</li> </ul>
Personal Protection	<ul style="list-style-type: none"> <li>For HYTAC-B1X, FLX, FLXT or C1R: Safety Goggles</li> <li>For HYTAC-W, WF or WFT: Enclose chip space, dust extraction, safety goggles, dust mask, protective gloves</li> </ul>

\* Too low a feed rate will lead to premature wear of tool and poor surface finish.

If chatter or pick-out of material is observed, try reducing RPM.

Experiment with settings above to achieve best surface finish based on your plug design and HYTAC material selection. In most cases, proper settings will result in a plug surface finish that requires no additional polishing.