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

# HYTAC Syntactic Foam Polishing Guide

HYTAC materials may be polished to a smooth surface finish condition. A properly polished plug will reduce scratching and aid in plug life/reduce sheet stick to the plug.   Follow the guidelines below for improved surface quality and consistency in plug performance.

1. Syntactic foams are a variety of combinations of epoxy, plastic and hollow glass microspheres. The same properties that make these foams the top choice for plug assist can create challenges in polishing. The goal of sanding is to smooth microscopic peaks to eliminate potential scratching, prepare the plug for use and to modify surface area for different frictional performance.
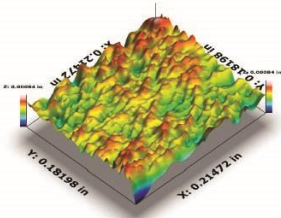
Computer image simulating typical machined surface. Color changes represent height variation from peak to valley. This surface would feel smooth to the touch but will typically offer improved performance after polishing.

Computer image showing polished surface. Color changes represent height variation from peak to valley.   Rounded peaks prevent scratching and reduce sticking while valleys create an air gap between plug and plastic for better release properties.
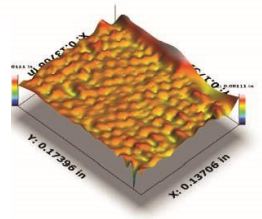
2. Thermoset (HYTAC-W, WF, WFT) and Copolymer (HYTAC-FLX , FLXT, C1R and HTF) epoxy based are generally easier to polish than Thermoplastic (HYTAC-XTL or B1X) based materials.   Using tools designed to cut abrasive plastics and following feed/speed recommendations as detailed in the CMT HYTAC Machining Guides will reduce the time required to polish and greatly improve plug quality.

Material	Recommendation
HYTAC-W, WF, WFT, FLX, FLXT, C1R or HTF	Wet or dry sand using random motion. Begin with 400 grit, then subsequent finer grits for finish, rub until desired surface is achieved.
HYTAC-B1X or XTL	Dry sand with Silicon Carbide Sandpaper (600 grit, 1200 grit then 1500 grit or finer until desired surface finish is achieved. (Incorrectly machined surfaces resulting in a melted surface cannot be sanded out.)