PRODUCT BULLETIN

MP-1075 INTERMEDIATE TEMPERATURE MODEL PLANK®

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DESCRIPTION:

Model Plank® MP-1075 is a higher temperature urethane tooling and model plank designed to be heat resistant up to 225°F (107°C). Its excellent tensile and compressive strength combined with its high temperature characteristics make the MP-1075 excellent for aerospace masters and lay-up tools, prototype foundry patterns and prototype vacuum-forming molds. **MP-1075** Model Plank® is well suited for forming large dimensionally accurate models where a higher processing temperature will be utilized.

HANDLING CHARACTERISTICS:

Color	Cream
Hardness @ 75°F	82 Shore D
Density	49.5 lbs/ft^3
Flexural Strength	9,495 psi
Flexural Modulus	418,000 psi
Tensile Strength	8,453 psi
Compressive Strength	14,040 psi
Compressive Modulus	425,000 psi
Izod Impact Strength	4.59 ft lbs/in
Heat Deflection Temperature @ 66 psi	241°F/116°C
Heat Deflection Temperature @ 264 psi	232°F/111°C
Tg by TMA	296°F/147°C
Coefficient of Linear Thermal Expansion (from 25°C to 100°C)	44.4 x 10^{-6} in/in/°C

High Temperature Adhesive System ..... **EL-336 R/H**
Patch Paste ..... **P-75 QuickFair with White Cream Hardener**

Standard Size Available: 2", 3", 4" T x 16"W x 60"L

STORAGE: Store all Tooling Planks on a flat surface at 60°F-100°F.

IMPORTANT!
For post-curing parts and to achieve homogeneous coefficient of thermal expansion of the tools: When either ramping up or cooling down, the temperature differential (delta T) between the center of the tool and the external surface must never exceed 50°F. To achieve this, a temperature soak of 6 hours for every 50°F up and down in the oven and temperature ramp rates of no more than 1°F per minute are recommended. Leave the tool in the oven for at least 6 hours below 100°F before opening doors and exposing the tool to ambient conditions.

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RECOMMENDED CNC MACHINING INFORMATION

(Carbide Cutters are highly recommended)

	Inches per minute (Feed IPM)	Plunge (mm)	Spindle Speed (rpm)
2" E-Mill for Roughing	100	25	6000
3/4" Ball	75	20	3000+
1/2" Ball	60-75	10-20	3000+
1/2" x 1/32" R	40	20	4000
1/4" Ball	60	10-20	5000

These are possible recommendations. There may be some variance depending on cutters and CNC mill capabilities.

CUTTING SUGGESTIONS FOR TOOLING PLANKS

CUTTING HORIZONTALLY ON A PLANNER MILL: Head is a 10 insert, 8" in diameter. For best results use 5 inserts. Inserts are SFE-42E-10J-C5. We have found a C2 Carbide insert does not chip as easily. RPM 2200-2400 – table feed 50-55 inches per minute. Some modifications may be needed.

SAW BLADES: A carbide-tipped, positive rake saw blade with air slots should be used, if possible. We suggest alternate top bevel ATB or triple chip grind TCG rpm, depending on the saw. We suggest 3,500 max rpm. Check with manufacturer on saw and blade size.

12" blade, 48 teeth
16" blade, 48 teeth
18" blade, 60 teeth

When sawing, you may need to back part away from blade to relieve heat and binding, then proceed with cut. It may be necessary to take more than one cut to achieve best finish.

MP-1075 Tech/Revised 10/28/09
Supercedes 3/28/08