



PP-1052 HD HIGH DENSITY PATTERN PLANK®



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DESCRIPTION:

PATTERN PLANK® PP-1052 HD is a harder, more dense, rigid and less costly version of its predecessor PP-1052 Pattern Plank. This plank is a tough, cost effective alternative to metal. Its tough, high-impact resistant properties will produce dimensionally stable tools. Applications include prototype and low-volume to high volume foundry patterns, core boxes, matchplates, gating and risers. Other uses include metalforming, hammerforming, stretch press dies, hemmingbucks and production checking and assembly fixtures.

HANDLING CHARACTERISTICS:

	<u>U.S. Test Results</u>	<u>Metric Test Results</u>
Color.....	Red	
Hardness @ 75°F.....	85 Shore D	
Density	83 lbs/ft ³	1.33 g/cm ³
Flexural Strength.....	14,196 psi	97.8 MPa
Flexural Modulus.....	430,000 psi	2,962.7 MPa
Tensile Strength.....	7,718 psi	53.2 MPa
Elongation	3.65%	
Compressive Strength.....	13,604 psi	93.7 MPa
Notched Izod Impact (complete break).....	6.37 ft lbs/in	340.2 J/m
Glass Transition Temperture (Tg by DSC).....	182°F	83°C
Coefficient of Linear Thermal Expansion.....	2.56 x 10 ⁻⁵ in/in/°F	4.6 x 10 ⁻⁵ mm/mm/°C
Machinability.....	Excellent	
Stability.....	See Below	

Ambient Use Adhesive System TCC-230 Adhesive with TCC-102 or TCC-104 Hardener
Patch Paste..... TCC-52 A/B
Fast Patch Paste TCC-5220 A/B Fast Patch Paste

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.

STABILITY OF PP-1052 HD PATTERN PLANK®

	<u>Weight(g)</u>	<u>Length(mm)</u>
Initial (4" x 4" piece)	704.99	101.80
After 24 hours at -30°F	705.69	101.54
After 24 hours at standard lab conditions	704.99	101.81
After 6 hours at 130°F	704.93	101.99
After 24 hours at standard lab conditions	705.00	101.82
After 168 hours at 100°F/100% Relative Humidity	706.21	101.88
After 24 hours at standard lab conditions	705.80	101.82
Additional 24 hours at standard lab conditions	705.77	101.88

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.

PP1052 HD Tech/New 5/11/09