



**FP-1050**

**FIXTURE PLANK®**

**PRODUCT BULLETIN**



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**DESCRIPTION:**

**FIXTURE PLANK® FP-1050** is a white, filled urethane Tooling Plank developed specifically to be a light-weight, tough, and cost effective alternative to aluminum for checking and assembly fixtures that experience abusive production environments. It is manufactured as a dimensionally stable material for fast and accurate machining of C.M.M. checking and holding fixtures by N/C tape or CAD/CAM systems. Other uses include vacuum-form tools, low-volume foundry patterns, and ceramic applications.

**HANDLING CHARACTERISTICS:**

	<u>U.S. Test Results</u>	<u>Metric Test Results</u>
Color.....	White	
Hardness @ 75°F.....	75 Shore D	
Density <sup>1</sup> .....	50 lbs/ft <sup>3</sup>	0.813 g/cm <sup>3</sup>
Flexural Strength <sup>2</sup> .....	7,630 psi.....	52.6 MPa
Flexural Modulus <sup>2</sup> .....	306,000 psi.....	2,110 MPa
Tensile Strength <sup>3</sup> .....	6,220 psi.....	42.9 MPa
Elongation <sup>3</sup> .....	1.81%	
Compressive Strength <sup>4</sup> .....	7,640 psi.....	52.7 MPa
Unnotched Izod Impact (complete break) <sup>5</sup> .....	2.38 ft lbs/in.....	125 J/m
Heat Deflection Temperature @ 264 psi <sup>6</sup> .....	185°F.....	85°C
Coefficient of Linear Thermal Expansion <sup>7</sup> .....	2.73 x 10 <sup>-5</sup> in/in/°F.....	4.91 x 10 <sup>-5</sup> mm/mm/°C
Machinability.....	Excellent	
Stability.....	See Page 2	

**Ambient Use Adhesive System** ..... **TCC-230 Adhesive with TCC-102 or TCC-104 Hardener**  
**Elevated Use Temperature Adhesive**..... **ADTECH EL-336 R/H**  
**Patch Paste**..... **P-14 White w/ white BPO**

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

**\*\*Other sizes available upon request**

Testing performed by an Independent Certified Laboratory.

- 1. ASTM D 792-91    2. ASTM D 790-92    3. ASTM D 638-91
- 4. ASTM D 695-91    5. ASTM D 256-92    6. ASTM D 648-88
- 7. ASTM D 696-91

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

**STABILITY OF FP-1050 FIXTURE PLANK®**

	<u>Weight(g)</u>	<u>Length(in)</u>
Initial(12" x 12" pieces)	1,371.11	12.025
After 24 hours at -30°F	1,371.79	12.000
After 24 hours at standard lab conditions	1,371.36	12.025
After 6 hours at 130°F	1,371.02	12.043
After 24 hours at standard lab conditions	1,371.15	12.025
After 168 hours at 100°F/100% Relative Humidity	1,373.04	12.034
After 24 hours at standard lab conditions	1,372.22	12.026
Additional 24 hours at standard lab conditions	1,372.29	12.026

**RECOMMENDED CNC MACHINING INFORMATION**

(Carbide Cutters are highly recommended)

	<b>Inches per minute (Feed IPM)</b>	<b>Plunge (mm)</b>	<b>Spindle Speed (rpm)</b>
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.

FP1050 Tech/Revised 5/20/10  
 Supersedes 1/29/07

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