

PRODUCT DATA SHEET

SikaBlock® DP151 (Formerly DP-1051)

Polyurethane Tooling Board

TYPICAL PRODUCT DATA (FOR FURTHER VALUES SEE SAFETY DATA SHEET)

Chemical base	Polyurethane
Color	Gray
Density at 74°F (23°C) ASTM D792-91	52 lbs/ft³ (0.83 g/cc)
Shore D hardness, ASTM D 2240	75
Flexural strength, ASTM D 790-95a	7,180 psi (49 Mpa)
Flexural modulus, ASTM D 790-95a	317,000 psi (2,190 MPa)
Tensile strength, ASTM D 638-95	2,910 psi (20 MPa)
Tensile elongation, ASTM D 638-95	2.0 %
Compressive strength, ASTM D 695-91	7,420 psi (51 Mpa)
Unnotched Izod Impact (complete break), ASTM D 256-93	2.52 ft-lb/in (135 J/m)
Heat deflection temperature, ASTM D 648-82	188 °F (87°C)
Coefficient of Thermal Expansion (CTE), TMA	28 ppm/°F (50 ppm/°C)

DESCRIPTION

SikaBlock® DP151 is an aluminum powder-filled, polyurethane-based tooling board for checking fixtures, molds, tools, and other applications.

PRODUCT BENEFITS

- Low density
- Very good dimensional stability (low CTE)
- Low dust formation when milled
- High dimensional stability
- Excellent machining characteristics
- Good heat distortion temperature
- Easy to seal and good to varnish
- Good compression strength and edge stability

AREAS OF APPLICATION

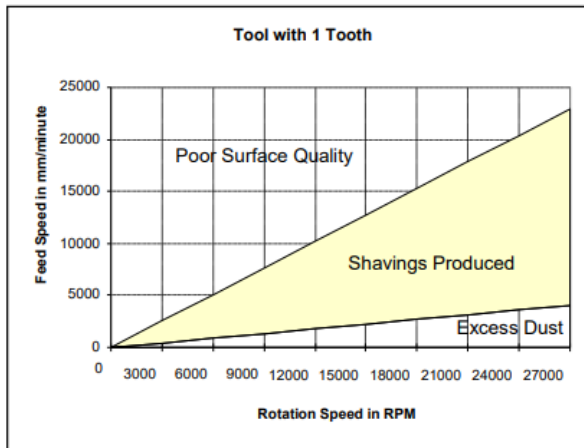
SikaBlock® DP151 is suitable for a wide range of applications including production of fast and accurate checking and holding fixtures, vacuum-form tools, low-volume foundry patterns, temporary models, and headliner tools.

Tests with actual materials and conditions have to be performed to ensure satisfactory performance.

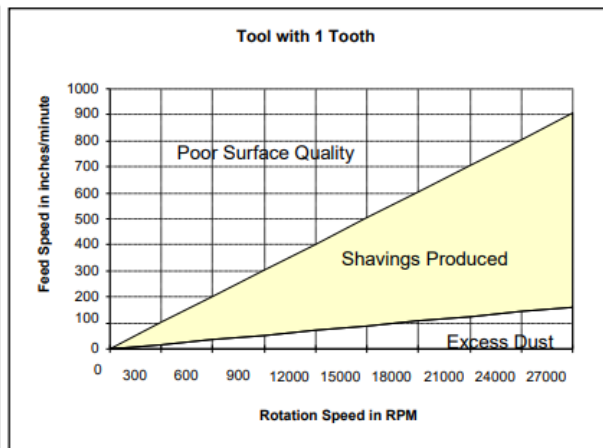
TYPICAL STABILITY DATA

Condition	Weight (g)	Length (mm)
Initial (2" x 4" x 4" pieces)	429.62	101.05
After 24 hours at -30°F	430.15	100.77
After 24 hours at standard lab conditions	429.57	101.03
After 6 hours at 130°F	429.58	101.28
After 24 hours at standard lab conditions	429.60	101.08
After 168 hours at 100°F/100% relative humidity	430.37	101.10
After 24 hours at standard lab conditions	429.97	101.09
Additional 24 hours at standard lab conditions	429.94	101.10

MACHINING RECOMMENDATIONS^A



Metric Machining Envelope



English Machining Envelope

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

MACHINING PARAMETERS^A

	Cutter Edge Velocity (Vc)	Feed per Tooth (fz)
Rough shape	328 – 1,640 ft/min (100 to 500 m/min)	0.006 – 0.028 in (0.15 to 0.70 mm)/revolution
Finish	1,312 – 2,625 ft/min (400 to 800 m/min)	0.003 – 0.004 in (0.07 to 0.10 mm)/revolution
	$N = \frac{(12 \text{ English or } 1,000 \text{ metric}) \times Vc}{\pi \times Dc}$ - Vc: Cutter edge velocity in ft/min (m/minute) - Dc: Cutting diameter in inches (mm) - n: Spindle speed in revolution/minute	$Vf = n \times fz \times Z$ - fz: Feed per tooth in inches (mm)/revolution - Z: Number of teeth - Vf: Feed speed in inches (mm)/minute

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

PROCESSING CONDITIONS

Cutting suggestions for tooling planks

cutting horizontally on a planer 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.

Assembly/Finish: SikaBlock® DP151 can be bonded with the TCC-230 epoxy adhesive. TCC-5220 is recommended to be used for the patch paste.

STORAGE CONDITIONS

Store flat in a dry place. Allow time for material to come to ambient temperature prior to bonding or machining.

PACKAGING INFORMATION

Packaging information is available upon request. Please contact your local Sika sales representative.

FURTHER INFORMATION

Advice on specific applications will be given on request. To contact Sika Corporation's Industry Technical Services Department, send an email to tsmh@us.sika.com. Copies of Safety Data Sheets and Product Data Sheets are available upon request.

BASIS OF PRODUCT DATA

All technical data stated in this document are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

LEGAL DISCLAIMER

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