BUILDING TRUST

PRODUCT DATA SHEET

SikaBlock® PP152 (Formerly PP-1052)

Polyurethane Tooling Board

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

Chemical base	Polyurethane
Color	Red
Density at 74°F (23°C) ASTM D792-91	71 lbs/ft³ (1.14 g/cc)
Shore D hardness (at 77°F/220°F and 25°C/104°C), ASTM D2240	80 and 55
Flexural strength, ASTM D790	12,800 psi (88 Mpa)
Flexural modulus, ASTM D790	331,000 psi (2,280 MPa)
Tensile strength, ASTM D638	8,900 psi (61 MPa)
Tensile elongation, ASTM D638	7.0 %
Compressive strength, ASTM D695	4,051 psi (28 Mpa)
Unnotched Izod Impact (complete break), ASTM D256	0.124 ft-lb/in. (6.62 J/m)
Heat deflection temperature at 265 psi	140 °F (60°C)
Coefficient of Thermal Expansion (CTE), ASTM E1545	36 ppm/°F (64 ppm/°C)

DESCRIPTION

SikaBlock® PP152 is a filled, polyurethane-based tooling board for foundry pattern making, molds, tools, and other applications.

PRODUCT BENEFITS

- Very good abrasion resistance
- Good toughness and impact resistance
- Easy to seal and varnish
- Low dust formation when milled
- High dimensional stability
- Easy machinability
- Good compression strength and edge stability
- Can be polished to a high gloss

AREAS OF APPLICATION

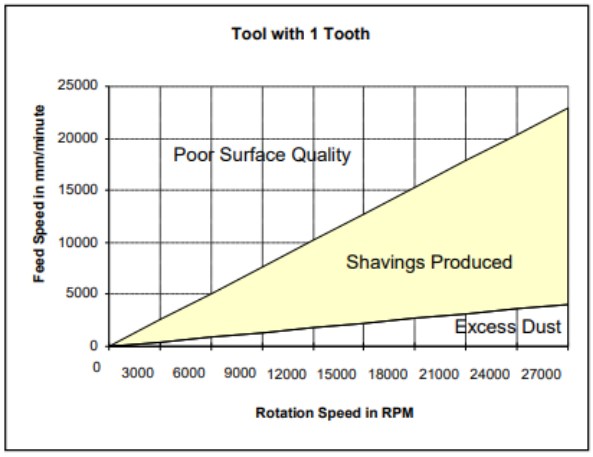
SikaBlock® PP152 is suitable for a wide range of applications, ranging from prototype and low-volume models and tools, to high-volume foundry patterns, core boxes, match plates, gating and risering. Other potential applications include metal forming, vacuum forming, headliner tools, hammer forming, stretch press dies, hemmingbucks and production checking, holding, and assembly fixtures.

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

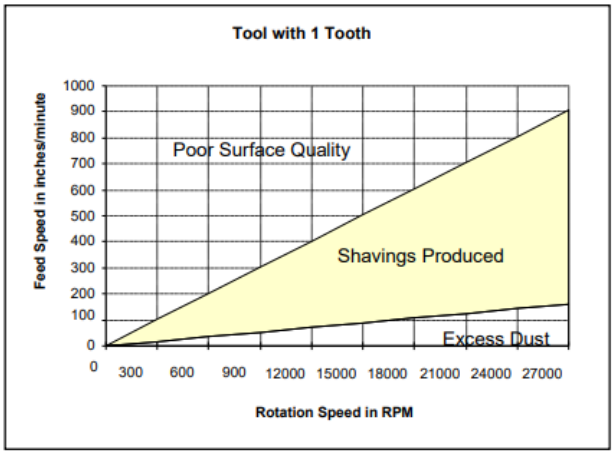
TYPICAL STABILITY DATA

Condition	Weight (g)	Length (mm)
Initial (2" x 4" x 4" pieces)	593.81	99.69
After 24 hours at -30°F	594.00	99.40
After 24 hours at standard lab conditions	593.85	99.68
After 6 hours at 130°F	593.80	99.94
After 24 hours at standard lab conditions	593.86	99.69
After 168 hours at 100°F/100% relative humidity	595.74	99.75
After 24 hours at standard lab conditions	594.32	99.70
Additional 24 hours at standard lab conditions	594.31	99.70

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 – 1,312 ft/min (100 to 400 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)	0.002 – 0.004 in (0.06 to 0.10 mm)/revolution
	N = ((12 English or 1,000 metric) X Vc) / (Pl X Dc) - Vc: Cutter edge velocity in ft/min (m/minute) - Dc: Cutting diameter in inches (mm) - n: Spindle speed in revolution/minute	**Vf = n X fz X 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® PP152 can be bonded with the TCC-230 epoxy adhesive. TCC-5220 is recommended to be used for the patch paste.

Normal health and safety precautions should be observed when handling these products:

- Ensure adequate ventilation
- Wear gloves, glasses, and protective clothes

For further information, please consult the Safety Data Sheets.

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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