BUILDING TRUST

PRODUCT DATA SHEET

SikaBlock® LAB 850 (Formerly LAB 850)

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	74 lbs/ft^3 (1.18 g/cc)
Shore D hardness (at 77°F/220°F and 25°C/104°C), ISO 178	80 and 55
Flexural strength, ISO 178	8,300 psi (57 Mpa)
Flexural modulus, ISO 178	203,000 psi (1,400 MPa)
Tensile strength, ISO 527	8,300 psi (57 MPa)
Tensile modulus, ISO 527	218,000 (1,800 Mpa)
Tensile elongation, ISO 527	35.0 %
Compressive strength, ISO 604	5,900 psi (41 Mpa)
Unnotched Charpy Impact strength, ISO 179/1eU	34 ft-lb/in^2 (72 KJ/m^2)
Glass transition temperature, ISO 11359	176 °F (80°C)
Coefficient of Thermal Expansion (CTE), ISO 11359	53 ppm/°F (95 ppm/°C)
Abrasion loss, ISO 5470-1	0.006 In^3 (93 mm^3)

DESCRIPTION

SikaBlock® LAB 850 is a filled, polyurethane-based tooling board for foundry pattern making, molds, tools, and other applications.

PRODUCT BENEFITS

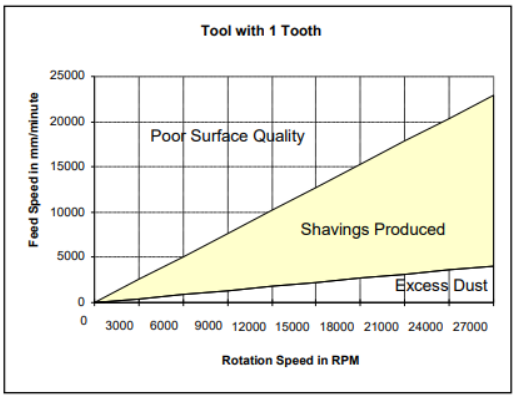
- Excellent abrasion resistance
- Good toughness and impact resistance
- Easy to seal and varnish
- Low dust formation when milled
- High dimensional stability
- Easy machinability
- Good compression strength and edge stability

AREAS OF APPLICATION

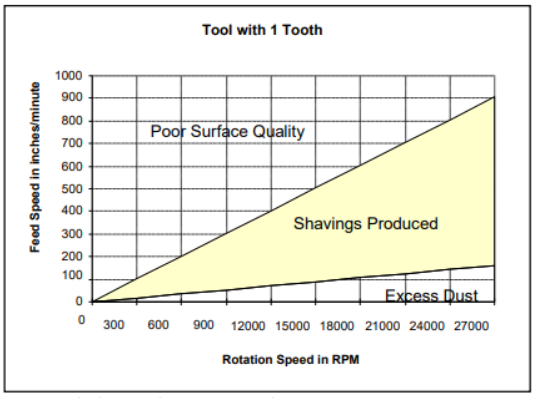
SikaBlock® LAB 850 is suitable for a wide range of applications, ranging from prototype and low-volume models and tools, to high-volume foundry patterns, core boxes, match plates, gating and risering. Other potential applications include metal forming, vacuum forming, headliner tools, hammer forming, 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.

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 = ((12 English or 1,000 metric) X Vc) / (PI 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® LAB 850 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

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by contacting SIKA's Technical Service Department via email at tsmh@us.sika.com. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product. SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. **NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.** Sale of SIKA products are subject to the Terms and Conditions of Sale which are available at https://usa.sika.com/en/group/SikaCorp/termsandconditions.html or by calling +1 800-933-7452.

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