



BUILDING TRUST



LAB 1000

Technical Data Sheet

POLYURETHANE TOOLING BOARD

Metal Forming Tools – Checking Fixtures

Density 104 lbs/ft³ (1.67 g/cc)

DESCRIPTION

Lab 1000 is an aluminum-filled polyurethane tooling board suitable for stamping tools, checking fixtures and hammer forming applications.

APPLICATIONS

- Stamping tools
- Checking fixtures
- Thermoforming tools

PROPERTIES

- Excellent surface aspect after machining
- Good dimensional stability
- Produces shavings with very little dust during machining
- Easily machined
- High compressive strength
- Low coefficient of friction

PHYSICAL PROPERTIES		
	Test Method	Test Results
Composition		Polyurethane
Color	Visual	Gray
Density at 77° F (25° C) lbs./ft. ³ (g/cm ³)	ISO 2781 :88	104 (1.67)

MECHANICAL AND THERMAL PROPERTIES AT 74° F (23° C)			
	Test Method	Units	Test Value
Hardness	ISO 868 : 85	Shore D1	89
Flexural strength	ISO 178 : 93	psi (MPa)	13,100 (90)
Flexural modulus	ISO 178 : 93	psi (MPa)	841,000 (5,800)
Compressive strength	ISO 604 : 97	psi (MPa)	16,000 (110)
Impact strength (CHARPY) <i>Unnotched specimens</i>	ISO 179:1994	ft.-lb/in ² (kJ/m ²)	6 (12)
Tg	T.M.A.-Mettler	°F (°C)	198 (92)
Coefficient of linear thermal expansion (C _L TE) 50 – 176°F (10 – 80°C)	T.M.A.-Mettler	10 ⁻⁶ .°F ⁻¹ (°C)	28 (50)

ASSEMBLY

Axson LAB 1000 tooling board can be bonded with AS 2020 and H9951 (application rate about 8 ft²/lb (600 g/m²)).

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MACHINING PARAMETERS		
	Cutter edge velocity (Vc in ft/min (m/min))	Feed per tooth (fz in inches (mm)/revolution)
Rough cut ⁽¹⁾	328 (100)	0.014 (0.35)
Finishing cut ⁽²⁾	1312 (400)	0.002 (0.06)

$n = (12 \text{ English or } 1000 \text{ metric}) \times Vc) / (\text{PI} \times Dc)$	$Vf = n \times fz \times Z$
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- Vc: Cutter edge velocity in ft/min (m/min)
- Dc: cutting diameter in inches (mm)
- n: Spindle speed in revolution/min
- fz: Feed per tooth in inches (mm)/revolution
- Z: number of teeth
- Vf: feed speed in inches (mm)/min

(1) **Rough cut:** Cutting parameters are determined with a carbide-insert ball nose endmill:

(2) **Finishing cut:** Cutting parameters are determined with a 2 teeth ball nose endmill:

STORAGE CONDITIONS

- Product is guaranteed for 12 months stored flat in a dry place.

HANDLING PRECAUTIONS

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

- Ensure good ventilation
- Wear gloves, and safety glasses.

For additional information, please consult the Safety Data Sheet (SDS).

DISCLAIMER

The information contained in this technical data sheet results from research and tests conducted in our laboratories under precise conditions. Seller cannot anticipate all conditions under which seller's products, or the products of other manufacturers in combination with seller's products, may be used. It is the responsibility of the user to determine the suitability of the SikaAxson's products, under their own conditions, before commencing with the proposed application. In no event shall SikaAxson US be liable for any direct, indirect, punitive, incidental, special, and/or consequential damages, to property or life, whatsoever arising out of or connected with the use or misuse of our products.

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