



## DESCRIPTION

**PROMASTER 576 is a high density polyurethane board specially formulated for the production of CNC-machining foundry pattern, core boxes and other tools which require both an high abrasion resistance and a good impact strength. This board is frequently used as a thermoforming tool for clear thermoplastic sheet as acrylic and polycarbonate.**

## CHARACTERISTICS

- Outstanding impact resistance
- Thermoplastic-like finish
- Good abrasion resistance
- Easily machined
- Excellent surface aspect after machining
- Available in 20" x 60" x 2, 3 and 4"  
in 24" x 60" x 2, 3 and 4"

## APPLICATIONS

Abrasion-resistant board designed for use in cnc-machining foundry patterns, core boxes and others tools.

## ASSEMBLY/FINISH

**PROMASTER 576** could be structurally assembled with the adhesive **8451** and **576** consumption about 400g/m<sup>2</sup>.

Please consult **POLYMERES TECHNOLOGIES** for more details based on your application.

## PHYSICAL PROPERTIES

Color			Red
Density	ASTM D 792	lbs/ft <sup>3</sup>	75 lbs

## MECHANICAL AND HEAT PORPERTIES<sup>1</sup>

CATEGORIES	METHOD	RESULTS	
Hardness - at 23°C - at 80°C	ASTM D 2240	Shore D	80
Flexural modulus	ASTM D 790	MPa <sup>2</sup>	1 450
Flexural strength	ASTM D 790	MPa	59
Tensile modulus	ASTM D 638	MPa	1 575
Tensile strength	ASTM D 638	MPa	37

<sup>1</sup> Average values obtained on slabs

<sup>2</sup> 1 MPa = 145 lb



# PROMASTER 576

**POLYMÈRES**  
technologies

## MECHANICAL AND HEAT PROPRTIES (CONTINUES)

CATEGORIES	METHOD	RESULTS	
Elongation at break	ASTM D 638	%	38
Compressive strength	ASTM D 695	MPa	44
Impact resistance (Charpy)		kJ/m <sup>3</sup>	73
Abrasion loss		mm <sup>3</sup>	91
Glass transition temperature (Tg)	ASTM D 3418	°C	84
Coefficient of thermal expansion (CTE) (+10 to +60°C)	ASTM D 3386	10 <sup>-6</sup> K <sup>-1</sup>	91

## MACHINING PARAMETERS

	Cut edge velocity (Vc in ft/min or (m/min))	Feed per tooth (fz in in or mm/revolution)
Rough shape	328 – 1312 (100 to 400)	0.021/(0.53)
Finish	1312/(400)	0.0020/(0.06)

## OPERATION PARAMETERS

$V_c$	Cutting Speed	200-600	[m/min]
$F_z$	Forward feed per tooth	0.15-0.35	[mm]
$a_p$	cutting Depth	2	[mm]
$a_e$	Width of cut / line spacing	0.2-0.4 x D	[mm]
Z	Number of tool teeth	2	
D	Tool diameter		[mm]
n	Revolutions		[mm <sup>-1</sup> ]
$V_f$	Forward feed rate		[mm/min]

Conversion formula	$n = \frac{V_c \times 1000}{D \times \pi}$ [min <sup>-1</sup> ]	$V_c = \frac{N \times \pi \times D}{1000}$ [m/min]	$V_f = f_z \times Z \times n$ [mm/min]	$f_z = \frac{V_f}{Z \times n}$ [mm]
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## PRECAUTIONS

- Consult Material Safety Data Sheet prior to use.
- Normal health and safety precautions should be observed when handling this product :
  - ensure proper ventilation.
  - wear gloves and safety glasses
  - do not smoke when machining.
- Boards should be stored flat in dry condition at room temperature.
- It is recommended to follow Provincial and Federal safety regulations. In case of eye contact, rinse well with water, in case of skin contact, rinse with soap and water. Keep away from children.

## GUARANTEE

Seller makes no warranty of any kind, express or implied, as to the merchantability, fitness for any particular purpose, or any other matter with respect to the product **PROMASTER 576**. Since conditions of use are beyond seller's control, buyer assumes all risk of use of this product. Under no circumstances will seller be liable for consequential or incidental damages arising out of the use of this product. Seller's sole obligation shall be to replace the product if found to be defective. It is the user's responsibility to determine the suitability for use of this product under the conditions present at the time of application. M.S.D.S. available upon request.

<sup>3</sup> 53.4 kJ/m = 1 lbf/inch