

## HYDLAR® Z natural - Stock Shapes (rods, plates, tubes)

### Chemical Designation

PA 66 (Polyamide 66)

### Colour

yellow-brown

### Density

1.19 g/cm<sup>3</sup>

### Fillers

aramide fibres

### Main features

- excellent wear properties
- excellent strength and stiffness
- minimizes mating surface abrasion
- easy to machine
- high mechanical load capacity

### Target Industries

- construction industry
- conveyor technology
- gear manufacturing
- power engineering
- mechanical engineering

Mechanical properties	condition	value	test method	comment
Tensile strength		16,000 psi	ASTM D 638	1) (1) Injection molded samples
Tensile strength		9,500 psi	ASTM D 638	2) (2) Extruded - property values dependent upon shape and cross sectional area
Modulus of elasticity (tensile test)		940,000 psi	ASTM D 638	3) (3) Extruded - property values dependent upon shape and cross sectional area
Modulus of elasticity (tensile test)		1,300,000 psi	ASTM D 638	4) (4) Injection molded samples
Elongation at break		4 %	ASTM D 638	5) (5) Injection molded samples
Elongation at break		4.0 %	ASTM D 638	6) (6) Extruded - property values dependent upon shape and cross sectional area
Flexural strength		23,000 psi	ASTM D 790	7) (7) Injection molded samples
Flexural strength		16,145 psi	ASTM D 790	8) (8) Extruded - property values dependent upon shape and cross sectional area
Modulus of elasticity (flexural test)		900,000 psi	ASTM D 790	9) (9) Injection molded samples
Modulus of elasticity (flexural test)		638,000 psi	ASTM D 790	10) (10) Extruded - property values dependent upon shape and cross sectional area
Compression strength	@ 73 °F, 1% strain	3,170 psi	ASTM D 695	11) (11) Extruded - property values dependent upon shape and cross sectional area
Compression strength	@ 73 °F, 10% strain	16,800 psi	ASTM D 695	12) (12) Extruded - property values dependent upon shape and cross sectional area
Compression modulus		359,000 psi	ASTM D 695	13) (13) Extruded - property values dependent upon shape and cross sectional area
Impact strength (Izod)		2.7 ft-lbs/in	ASTM D 256	14) (14) Injection molded samples
Impact strength (Izod)		0.82 ft-lbs/in	ASTM D 256	15) (15) Extruded - property values dependent upon shape and cross sectional area
Rockwell hardness	M Scale (R Scale)	92 (116)	ASTM D 785	
Wear rate	PV=2,500 psi-fpm	79-128 *10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr	ASTM D 3702	

Thermal properties	condition	value	test method	comment
Deflection temperature	@264 psi	470 °F	ASTM D 648	1) (1) Data obtained from public source
Service temperature	Long Term	200 °F	-	2) (2) Data obtained from public source
Service temperature	Intermittent	300 °F	-	3) (3) Data obtained from public source
Thermal expansion (CLTE)		1.6*10 <sup>-5</sup> in/in/°F	ASTM D 696	4) (4) Data obtained from public source

Other properties	condition	value	test method	comment
Moisture absorption	@ 24 hrs, 73 °F	0.37 %	ASTM D 570	(1) Data obtained from public source
Moisture absorption	@ saturation, 73 °F	6.3 %	ASTM D 570	1)

→ Resin specification:  
ASTM D6779-11 PA0100  
Shapes specification:  
ASTM D 5989  
S-PA0101R2052154000

This information reflects the current state of our knowledge and is intended only to assist and advise. It is given without obligation or liability. It does not assure or guarantee chemical resistance, quality of products or their suitability in any legally binding way. Values are not minimum or maximum values, but guidelines that can be used for comparative purposes in material selection. They are within the normal range of product properties and do not represent guaranteed property values. Testing under individual application circumstances is always recommended. Data is obtained from extruded shapes material unless otherwise noted. References to FDA compliance refer to the resins from which the products were made unless otherwise noted. All trade and patent rights should be observed. All rights reserved. Data sheet values are subject to periodic review, the most recent update can be found at [www.ensingerplastics.com](http://www.ensingerplastics.com).

