

HYDLAR® Z natural - Stock Shapes

Chemical Designation

PA 66 (Polyamide 66)

Colour

yellow-brown

Density

1.19 g/cm³

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
Modulus of elasticity (tensile test)		1,300,000 psi	ASTM D 638	1) (1) Injection molded samples
Modulus of elasticity (tensile test)		940,000 psi	ASTM D 638	2) (2) Extruded - property values dependent upon shape and cross sectional area
Tensile strength		9,500 psi	ASTM D 638	3) (3) Extruded - property values dependent upon shape and cross sectional area
Tensile strength		16,000 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, 10% strain	16,800 psi	ASTM D 695	11) (11) Extruded - property values dependent upon shape and cross sectional area
Compression strength	@ 73 °F, 1% strain	3,170 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 ⁻¹⁰ in ³ -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	Intermittent	300 °F	-	2) (2) Data obtained from public source
Service temperature	Long Term	200 °F	-	3) (3) Data obtained from public source
Thermal expansion (CLTE)		1.6*10 ⁻⁵ in/in/°F	ASTM D 696	4) (4) Data obtained from public source

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

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

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