

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

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	unit	test method	comment
Tensile strength		16,000	psi	ASTM D 638	(1) Injection molded samples
Tensile strength		9,500	psi	ASTM D 638	(2) Extruded - property values dependent upon shape and cross sectional area
Modulus of elasticity (tensile test)		1,300,000	psi	ASTM D 638	(3) Injection molded samples
Modulus of elasticity (tensile test)		940,000	psi	ASTM D 638	(4) Extruded - property values dependent upon shape and cross sectional area
Elongation at break (tensile test)		4	%	ASTM D 638	(5) Injection molded samples
Elongation at break (tensile test)		4.0	%	ASTM D 638	(6) Extruded - property values dependent upon shape and cross sectional area
Flexural strength		23,000	psi	ASTM D 790	(7) Injection molded samples
Flexural strength		16,145	psi	ASTM D 790	(8) Extruded - property values dependent upon shape and cross sectional area
Modulus of elasticity (flexural test)		900,000	psi	ASTM D 790	(9) Injection molded samples
Modulus of elasticity (flexural test)		638,000	psi	ASTM D 790	(10) Extruded - property values dependent upon shape and cross sectional area
Compression strength	@ 73 °F, 1% strain	3,170	psi	ASTM D 695	(11) Injection molded samples
Compression strength	@ 73 °F, 10% strain	16,800	psi	ASTM D 695	(12) Extruded - property values dependent upon shape and cross sectional area
Compression modulus		359,000	psi	ASTM D 695	(13) Injection molded samples
Impact strength (Izod)		2.7	ft-lbs/in	ASTM D 256	(14) Extruded - property values dependent upon shape and cross sectional area
Impact strength (Izod)		0.82	ft-lbs/in	ASTM D 256	(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	unit	test method	comment
Deflection temperature	@264 psi	470	°F	ASTM D 648	(1) Data obtained from public source
Service temperature	Intermittent	300	°F	-	(2) Data obtained from public source
Service temperature	Long Term	200	°F	-	(3) Data obtained from public source
Thermal expansion (CLTE)		1.6*10 ⁻⁵	in/in/°F	ASTM D 696	(4) Data obtained from public source

Other properties	condition	value	unit	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	

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

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