

HYDLAR® Z - 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)		940,000 psi	ASTM D 638	1)
Modulus of elasticity (tensile test)		1,300,000 psi	ASTM D 638	2)
Tensile strength		16,000 psi	ASTM D 638	3)
Tensile strength		9,500 %	ASTM D 638	4)
Elongation at break		4 %	ASTM D 638	5)
Elongation at break		1.9 %	ASTM D 638	6)
Flexural strength		23,000 psi	ASTM D 790	7)
Flexural strength		16,145 psi	ASTM D 790	8)
Modulus of elasticity (flexural test)		900,000 psi	ASTM D 790	9)
Modulus of elasticity (flexural test)		638,000 psi	ASTM D 790	10)
Compression strength	@ 73 °F, 10% strain	16,800 psi	ASTM D 695	11)
Compression strength	@ 73 °F, 1% strain	3,170 psi	ASTM D 695	12)
Compression modulus		359,000 psi	ASTM D 695	13)
Impact strength (Izod)		2.7 ft-lbs/in	ASTM D 256	14)
Impact strength (Izod)		0.82 ft-lbs/in	-	15)
Rockwell hardness	M Scale (R Scale)	92 (116)	ASTM D 785	
Wear rate	ASTM Thrust Washer Test @ PV=2,500	79-128	ASTM D 3702	

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

Other properties	condition	value	test method	comment
Limiting PV	P=250 PSI; V=10 ft/min	2,500 psi-fpm	ASTM D 3702	(1) Data obtained from public source
Moisture absorption	@ 24 hrs, 73 °F	0.37 %	ASTM D 570	
Moisture absorption	@ saturation, 73 °F	6.3 %	ASTM D 570	1)

- Resin specification: ASTM D6779-11 PA0100
- Shapes specification: ASTM D 5989-11 S-PA0101R3050000000

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