



Nycast® 12 (Low Moisture Absorption Cast Nylon)

Cast nylon offers a combination of good mechanical properties, excellent bearing and wear characteristics, and the large-size capabilities of the casting process. Its fatigue resistance, noise damping ability, corrosion resistance, and lightweight make Cast Nylon ideal for metal replacement applications, such as bearings, gears, sheaves, and sprockets. At one-eighth the weight of bronze, cast nylon is easier to handle and maintain than metals such as iron, aluminum, brass, and bronze, which it typically replaces in industrial wear applications.

Other materials that cast nylon commonly replaces because of its superior performance are laminated phenolic, elastomers, and wood. The excellent wear and abrasion resistance results in extended component life and lower maintenance costs. Various formulations are readily available in rod, plate, and tube. Non-standard shapes, such as rings, discs, and blocks can be economically produced in small quantities with short lead times. Custom parts can be cast-to-size or near-net-shape with relatively inexpensive tooling.

NYCAST® 12

The extremely low moisture absorption of type 12 cast nylon will virtually leave the other mechanical properties unaffected by in a wide range of environments. This type of nylon will offer superior design performance in applications where dimensional stability, chemical resistance, dielectric, abrasion resistance and impact strength are all important requirements.

Properties	ASTM Test Method	Units	Nycast® 12
Physical			
Specific Gravity	D792		1.03
Water Absorption, @ 24 hours	D570	%	0.1
Water Absorption, @ Saturation	D570	%	0.7
Mechanical			
Tensile Strength	D638	psi	7,900
Tensile Modulus	D639	psi	230,000
Tensile Elongation	D638	%	>50
Flexural Strength	D790	psi	9,000
Flexural Modulus	D790	psi	238,000
Compressive Strength	D695	psi	10,000
Compressive Modulus	D695	psi	224,000
Notched Izod Impact	D256	ft-lbs/in	3.02
Rockwell Hardness	D785	R Scale	108
Shore Hardness	D785	D Scale	76
Shear Strength	D732	psi	6,100
Deformation Under Load	D621	%	
Dynamic Coefficient of Friction	D1894	-	0.2-0.3

Properties	ASTM Test Method	Units	Nycast® 12
Thermal			
Heat Deflection Temperature			
@ 66 psi	D648	°F	343-351
@ 264 psi	D648	°F	122-126
Coefficient of Linear Thermal Expansion	D696\E831	in/in/°F	5.5 x 10 ⁻⁵
Continuous Service Temperature	-	°F	250
Intermittent Service Temperature	-	°F	300
Melting Point	D789	°F	351
Electrical			
Dielectric Strength	D149	V/mil	500-600
Dielectric Constant			
60 cycles	D150	-	3.7
1000 cycles	D150	-	3.7
100,00 cycles	D150	-	3.7
Compliance	FDA		-
	USDA 3A		-
	UL 94 HB		-

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.