

TECAMID 66 CF 20

Chemical Designation: Polyamide 66 CF 20
(Nylon 66)

DIN Abbreviation: PA 66

Colour, Filler: Black
20% carbon fibres

TECAMID 66 CF 20 is a 20% carbon fibre reinforced semi-crystalline high performance plastic with very high strength and rigidity.

Main characteristics:

- High Strength
- Extremely rigid
- Weathering resistant
- Resistant to many oils, greases, diesel, petrol, cleaning fluids
- Very abrasion resistant
- Good heat distortion resistance
- Not electrically insulating
- Easily machined
- Easily bonded

Preferred fields: Mechanical engineering, automotive engineering, transport and conveyor technology, gears, couplings and engine construction, textile, packaging and paper processing machinery, printing machinery, precision engineering

Applications:

- Diverse machine parts
- Levers
- Friction rings
- Support rings
- Housing parts
- Distance pieces
- Wiper blades
- Antistatic parts

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The following information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of certain properties or the suitability for a specific application. Existing commercial patents must be observed. A definitive quality guarantee is given in our general conditions of sales. Unless otherwise stated, these values represent averages taken from injection moulding samples. We reserve the right of technical alterations.

Properties	Unit	Test method DIN EN ISO / ASTM	Dry / Wet*
Mechanical			
Density	g/cm ³	527 / D 792	1.23
Tensile strength at yield	MPa	527 / D 638	
Tensile strength at break	MPa	527 / D 638	190 / 150*
Elongation at break	%	527 / D 638	2.5 / 6*
Modulus of elasticity in tension	MPa	527 / D 638	13500 / 11000*
Modulus of elasticity in flexure	MPa	178 / D 790	
Ball indentation hardness	MPa	2039 / 1	187 / 200
Impact strength	kJ/m ²	179 / D 256	45
Creep rupture strength after 1000 hrs with static load	MPa		
Time yield limit for 1% elongation after 1000 hrs.	MPa		
Coefficient of friction against hardened and ground steel p = 0,05 N/mm ² , v = 0,6 m/s	–		0.16 - 0.2
Wear conditions as above	µm/km		0.7
Thermal			
Crystalline melting point	°C	DIN 53 736	260
Glass transition temperature	°C	DIN 53 736	72 / 5*
Heat distortion temperature Method A Method B	°C °C	R 75 R 75	245 250

Properties	Unit	Test method DIN EN 150 / ASTM	Dry / Wet*
Thermal			
Max. service temperature short term long term	°C °C		170 110
Coefficient of thermal conductivity	W/(m · K)		0.43
Specific heat	J/(g · K)		1.8
Coefficient of thermal expansion	10 ⁻⁵ /K	DIN 53 483 / D 696	5.5
Electrical			
Dielectric constant at 10 ⁵ Hz		DIN 53 483	
Dielectric loss factor at 10 ⁵ Hz		DIN 53 483	
Specific volume resistance	Ω · cm	DIN 60093	10 ² – 10 ⁴
Surface resistance	Ω	DIN 60093	10 ² – 10 ⁴
Dielectric strength 1 mm	kV/mm	ASTM 149	
Tracking resistance		53 480	
Miscellaneous			
Moisture absorption: Equilibrium in standard atmosphere (23 °C / 50 % relative humidity)	%	62	2.2
Water absorption at saturation at 23 °C	%	62	6.5
Resistance to hot water, washing soda			limited resistance
Flammability according to UL standard 94			HB
Resistance to weathering			resistant

* after storage in a standard 23/50 atmosphere (DIN 50 014) to equilibrium

ENSINGER: Production and stock programme

- Semi-finished product, finished parts, injection moulded parts and profiles in more than 500 materials and modifications.
- Engineering plastics: PA extruded or cast, POM, PC, PET, PBT, PPE, PP, PE
- High temperature plastics: PI, TPI, PEEK, PPS, PES, PPSU, PEI, PSU, PVDF, PCTFE, PTFE
- Stock length: Standard 3 metres. Cast rod and sheet 2 mts. Tube up to 3.5 mts. PE, PP, PVC, and PTFE 2 mts
- Pressed/sintered semi-finished product: PI, PEEK, PPS, PTFE/PI and modifications, as well as PCTFE in special sizes ie, large discs, tubes and rings with diameters up to about 1400 mm
- Material modifications: eg. glass, carbon and aramid fibre, talc, MoS₂, graphite, PTFE, PE, silicone oil, internal lubrication