

PA66 + 50% Glass Fibre — Screws & Bolts

Glass-fibre-reinforced Nylon 66 ($\approx 50\%$ GF) provides very high stiffness and strength, improved heat resistance, and excellent dimensional stability vs. unfilled PA66. It is suitable for precision fasteners where high rigidity and creep resistance are critical. Observe the stated service temperatures and avoid strong acids.



Key specifications

Continuous Use Temperature	Flame Retardant Rating	Stiffness/Strength	Notes
130 °C / 266 °F	UL 94 HB	Very high stiffness & strength (GF reinforced)	High dimensional stability; low creep; moisture-sensitive polymer matrix

Torsional fracture torque (Nm)

Head type	M2	M3	M4	M5	M6	M8	M10	M12
Hex Socket Head	0.28	0.50	1.00	1.65	4.73	10.13	19.75	34.80
Hexagon Head	0.23	0.50	1.03	1.70	3.70	6.35	13.52	23.69
Crosshead Countersunk Head	0.10	0.20	0.90	1.38	3.60	3.75	9.11	15.95
Slotted Countersunk Head	0.23	0.45	1.00	1.40	2.30	2.90	6.94	12.15
Pan Head	0.10	0.37	0.85	1.75	2.96	7.27	14.49	25.38

Tensile fracture load (N)

Head type	M2	M3	M4	M5	M6	M8	M10	M12
Head-agnostic	513	886	1215	2010	2553	4296	7160	10400

Material properties — PA66 + 50% GF (typical)

Property	Test method	Typical value	Unit
Density	ISO 1183	1.50–1.60	g/cm ³
Melting temperature	ISO 11357	255–265	°C
HDT (1.8 MPa)	ISO 75	220–240	°C
Tensile strength (23 °C, dry)	ISO 527	200–260	MPa
Tensile modulus (23 °C, dry)	ISO 527	10–14	GPa
Flexural strength	ISO 178	250–340	MPa
Flexural modulus	ISO 178	9–13	GPa
Dielectric strength	IEC 60243	12–20	kV/mm
Relative permittivity (1 MHz)	IEC 60250	3.5–4.5	—
Dissipation factor (1 MHz)	IEC 60250	0.01–0.03	—

Notes

- Values are typical reference data for guidance only and are not guaranteed.
- Use a torque wrench; recommended tightening torque is approximately 50% of the listed breaking torque.
- When using bolts with nuts, select the same material for both.
- Keep the bolt end flash (end stump) length $L \leq 5\%$ of total bolt length.