



PRODUCT INFORMATION

TAROFORCE PP 60-12 C50

Polypropylene 60% long glass fibres reinforced chemically coupled to the resin matrix, resulting in high strength and stiffness combined with high heat deflection resistance. Impact properties and creep resistance are highly increased due to the fibre skeleton structure formed in the parts. This grade is concentrated and specially developed for dilution with PP homopolymer (dilution ratio 1:1), the percentage of additives and pigments is suitable for such an use.

ISO short Form ISO 1043: PP-GF60 Pellets (12 mm length)

Key Features

- Very isotropic shrinkage minimizing the warpage
- High impact strength and creep resistance
- High strength and stiffness combined with high heat deflection resistance

Availability

- L = UV stabilized grade
- HT = high heat ageing stability grade
- H = heat ageing stability grade
- E = Low emission grade
- Natural and Black colours

Process

- INJECTION MOULDING

Application

- Functional / structural parts with critical technical requirements
- Furniture
- Seat modules
- Central console carriers
- Hatchback door modules
- Lift-gate modules
- Gear shift boxes
- Battery holders
- Instrument panel carriers
- Door module carriers
- Front end carriers
- Automotive

Property	Method	Unit	Value	Condition	State
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PHYSICAL

The listed data are in the normal range of product properties, they should not be used to establish specification nor as the basis of design. Values are valid for natural coloured version only.

Unless specified to the contrary, the given values have been established on standardized test specimens at room temperature. These values are for natural colour only. The figures should be regarded as guide values only and not as binding minimum values. Please note that, under certain conditions, the properties can be affected to a considerable extent by the design of the mold/die, the processing conditions, pigments and any other additives.

All information, recommendation or technical advice provided by TARO PLAST S.p.A. are given in good faith but without warranty, to the best of its knowledge and based on current procedures in effect. Our advice does not release you from the obligation to check its validity and to test our products as to their suitability for the intended processes and uses. The application, use and processing methods and conditions of our products and the products manufactured by you on the basis of our technical advice are beyond our control and, therefore, entirely under your own responsibility.

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Density (+23°C)	ISO 1183	g/cm ³	1,48
Pellet length	Internal method	mm	12
Long Glass Fiber content	ISO 3451	%	60
Water Absorption (24h / +23°C)	ISO 62	%	0,2
Mould Shrinkage (Parallel)	Internal method	%	0,20
Mould Shrinkage (Normal)	Internal method	%	0,25

MECHANICAL

Tensile Modulus	ISO 527-1,2	MPa	14300	Speed 1 mm/min
Elongation at Break	ISO 527-1,2	%	1,5	Speed 50 mm/min
Tensile Break Strength	ISO 527-1,2	MPa	140	Speed 50 mm/min
Flexural Modulus	ISO 178	MPa	13300	Speed 1 mm/min
Flexural Break Strength	ISO 178	MPa	200	Speed 1 mm/min
IZOD Notched Impact (+23°C)	ISO 180/1A	kJ/m ²	24	
IZOD Notched Impact (+23°C)	ASTM D256	J/m	300	
CHARPY Notched Impact (+23°C)	ISO 179/1eA	kJ/m ²	25	
CHARPY Unnotched Impact (+23°C)	ISO 179/1eU	kJ/m ²	60	
CHARPY Notched Impact (-30°C)	ISO 179/1eA	kJ/m ²	22	
CHARPY Unnotched Impact (-30°C)	ISO 179/1eU	kJ/m ²	50	

THERMAL

Softening Temperature - 5 kg (VST/B/50)	ISO 306	°C	142
Deflection Temperature 1,80 MPa (HDT A)	ISO 75A	°C	153

FLAMMABILITY

Flame Behaviour (1,6 mm)	UL94	Class	HB
Burning Rate (US-FMVSS 302)	ISO 3795	mm/min	< 80 Thickness > 1,5 mm
Oxygen index	ASTM D2863	%	20

INJECTION MOULDING

	Value
Drying Temperature (Desiccant Dryer)	80 - 100°C

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Drying Time (Desiccant Dryer)	2 - 4 hours
Suggested Max Moisture	0,2%
Melt Temperature	240 - 260°C
Feed Temperature	50°C
Rear Temperature	210°C
Middle Temperature	240°C
Front Temperature	250°C
Nozzle Temperature	250°C
Mould Temperature	40 - 80°C
Injection Rate	50 - 150 mm/s
Injection Pressure	60 - 120 MPa
Packing Pressure	30 - 80 MPa
Back Pressure	As low as possible (< 0,3 MPa)
Screw Revolving Speed	25 - 50 rpm
Screw Revolving Speed	50 rpm @ Diameter 40 mm
Screw Revolving Speed	35 rpm @ Diameter 55 mm
Screw Revolving Speed	25 rpm @ Diameter 75 mm
Cushion	5 - 8 mm
Vent Depth	0,05 mm

Notes It is normally not necessary to dry TAROFORCE, however should there be surface moisture (condensate) on the moulding compound as a result of incorrect storage, drying process is required. TAROFORCE can be stored in standard conditions until processed. TAROFORCE can be processed on a standard injection moulding unit. A general purpose metering screw is recommended with a zone distribution of 40% feed, 40% transition and 20% metering. A free flow check ring assembly is recommended. When a machine is being shut down from moulding TAROFORCE long glass fibres reinforced materials, the machine should be purged with PE or PP. When the heating cylinder is completely purged of Taroforce material the machine may be shut down. When using blended materials, special care should be taken to prevent segregation in the feed hopper.

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