



1 | PRODUCT INFORMATION

NYLAFORCE® A 60 **TW2**

With the feed up – polymer NYLAFORCE® A 60 TW2 LEIS Polytechnik polymere Werkstoffe GmbH is for the first time introducing a material with 60% glass fibre reinforcement for use in the drinking water sector. First, NYLAFORCE® A 60 TW2 having been granted ACS approval in France for contact with drinking water, then KTW (plastics/drinking water) approval in Germany followed in 2009. Besides positive listing of the components of the composition, TZW (Water Technology Centre) Karlsruhe also certified that, from a microbiological point of view, the new material also meets the requirements of DVGW (German Association of the Gas and Water Sector) Worksheet W 270.

This high-performance material is impressive with its outstanding strength properties of 235 MPa with an impact strength of over 70 kJ/m². The combination of these properties predestines NYLAFORCE® A 60 TW2 as a structural material for technical functional parts. In particular its outstanding mechanical properties prove themselves useful with parts subjected to pressure. The material has already shown its suitability for this purpose in various endurance tests. Renowned manufacturers of water meters have tried NYLAFORCE® A 60 TW2 and they are already using it for various parts (photo: Caps for water meters). Other areas of use can be seen in the field of valves, filters and pumps. This provides the designer with a technical alternative to metal materials such as brass. Its thermoplastic workability and its low price per volume also provide clear economic advantages over metals and metal alloys.

2 | TECHNICAL DATA

NYLAFORCE[®] A 60 **TW2**

property	standard	unit	value
density	ISO 1183	g/cm ³	1,71
tensile strength dry 23 °C	ISO 527	MPa	235
tensile strength conditioned 23 °C ¹⁾	ISO 527	MPa	170
elongation at break dry 23 °C	ISO 527	%	2,0
elongation at break conditioned 23 °C ¹⁾	ISO 527	%	3,0
tensile modulus dry 23 °C	ISO 527	MPa	20 600
tensile modulus conditioned 23 °C ¹⁾	ISO 527	MPa	16 000
charpy impact strength unnotched dry	ISO 179/1eU	kJ/m ²	72
charpy impact strength conditioned 23 °C ¹⁾	ISO 179/1eU	kJ/m ²	70
charpy impact strength notched dry	ISO 179/1eA	kJ/m ²	10
charpy impact strength notched conditioned 23 °C ¹⁾	ISO 179/1eA	kJ/m ²	11
melt temperature	ISO 3146 (10K/min)	°C	260
heat deflection temperature HDT/A	ISO 75	°C	250
moulding shrinkage ²⁾	ISO 294-4	%	0,1-0,5

¹⁾ Conditioned based on EN ISO 1110.

²⁾ Internal test method (test specimen 60 mm x 60 mm x 2 mm).

These property values are guide values and should only inform about application possibilities. The suitability for concrete application purposes will not be assured. It must be examined for each individual case. We also refer to our terms of sale and supply.

3 | TECHNICAL DATA

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Processing guidelines

NYLAFORCE® A 60 TW2 can be processed on all the usual injection moulding machines. The same processing conditions apply as for standard polyamides. It is essential for the plasticising unit to be made of a wearresistant material because of the heavy abrasion caused by glass fibres. In order to achieve an even temperature throughout the solid mass and consistent geometry of components, the injection volume may only be a maximum of 70% of the machine's capacity. Open nozzles are preferable to closed nozzles. *NYLAFORCE® A 60 TW2* is dry packed in moisture-proof packaging after manufacture. It should be stored in a dry, protected place.

Drying: For *NYLAFORCE® A 60 TW2* we recommend drying in a vacuum or dry air oven. The drying time should be about 4 hours at a temperature of 80 to 90°C.

Recommended machine parameters | tool temperature

parameter	range	recommendation
solid mass temperature	280 to 310 °C	290 °C
filling pressure	800 to 1500 bar	1200 bar
injection speed	high	high
tool temperature	80 to 140 °C	140 °C

The technical data is only for orientation and advice. For any construction and especially for the required grade of part quality the necessary adjustments have to be done. Therefor no obligation can be derived from this data.