



# 1 | PRODUCT INFORMATION

## **NYLAFORCE® B 50**

The stricter requirements for headrests for children's seats were the reason why RECARO GmbH & Co. KG in Kirchheim/Teck chose **NYLAFORCE® B 50** for the development and manufacture of the integrated headrest for the "RECARO start" child's seat.

The accelerations occurring in side crashes demand a material with both high kinetic absorption potential and the greatest strength. On the one hand, the headrest must not break in a crash and on the other, a high level of shape stability (rigidity) must be guaranteed. Qualities that in principle are contradictory but which are mastered without difficulty by **NYLAFORCE® B 50**.

A special manufacturing process known as the "feed up process" permits the glass fibres to be incorporated in a manner that affords the greatest protection. The strength values of **NYLAFORCE®** materials produced in this way are significantly superior to the values of conventionally produced compounds. Despite the high level of glass fibre reinforcement, processing **NYLAFORCE® B 50** presents no problems. Moreover, **NYLAFORCE® B 50** stands out thanks to its high thermal resistance and low moisture absorption compared with standard polyamides.

# 2 | TECHNICAL DATA

## NYLAFORCE® B 50

property	standard	unit	value
density	ISO 1183	g/cm <sup>3</sup>	1,57
tensile strength dry 23 °C	ISO 527	MPa	250
tensile strength conditioned 23 °C <sup>1)</sup>	ISO 527	MPa	180
tensile strength 80 °C	ISO 527	MPa	140
tensile strength 120 °C	ISO 527	MPa	105
elongation at break dry 23 °C	ISO 527	%	3,0
elongation at break conditioned 23 °C <sup>1)</sup>	ISO 527	%	5,0
elongation at break 80 °C	ISO 527	%	7,4
elongation at break 120 °C	ISO 527	%	7,6
tensile modulus dry 23 °C	ISO 527	MPa	17 500
tensile modulus conditioned 23 °C <sup>1)</sup>	ISO 527	MPa	12 500
tensile modulus 80 °C	ISO 527	MPa	7 600
tensile modulus 120 °C	ISO 527	MPa	7 400
charpy impact strength unnotched dry	ISO 179/1eU	kJ/m <sup>2</sup>	100
charpy impact strength conditioned 23 °C <sup>1)</sup>	ISO 179/1eU	kJ/m <sup>2</sup>	n. b.
charpy impact strength notched dry	ISO 179/1eA	kJ/m <sup>2</sup>	19
charpy impact strength notched conditioned 23 °C <sup>1)</sup>	ISO 179/1eA	kJ/m <sup>2</sup>	29
melt temperature	ISO 3146 (10K/min)	°C	221
heat deflection temperature HDT/A	ISO 75	°C	> 200
moulding shrinkage <sup>2)</sup>	ISO 294-4	%	0,1-0,5

<sup>1)</sup> Conditioned based on EN ISO 1110.

<sup>2)</sup> 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

## **NYLAFORCE® B 50**

### Processing guidelines

*NYLAFORCE® B 50* 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 wear-resistant 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® B 50* is dry packed in moisture-proof packaging after manufacture. It should be stored in a dry, protected place.

Drying: For *NYLAFORCE® B 50* 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	250 to 320 °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. Therefore no obligation can be derived from this data.