

ForTii® Ace MX53B

Print Date: 2024-09-20

This quick start instruction gives an indication of the key settings for processing ForTii® Ace MX53B to ensure best crystallization and prevent material degradation as a result of hydrolysis or thermal load. It is a summary of the Injection Molding Recommendations which can be found in our Plastics Finder at <https://envalior.plasticsfinder.com>. Our online guidelines are recommendations to help with material processing and/or to evaluate and resolve potential processing issues.

MATERIAL HANDLING

Drying

ForTii® Ace grades are hygroscopic and absorb moisture from the air relatively quickly. Moisture absorption is fully reversible under the following drying conditions without compromising material quality. Preferred driers are de-humidified driers with dew points maintained between -30 and -40°C / -22 and -40°F . Vacuum driers with N_2 purge can also be used. Hot air ovens or hopper driers are not suitable for pre-drying ForTii® Ace grades; the use of such driers may result in non-optimum performance.

Moisture content	Time	Temperature	
[%]	[h]	[$^{\circ}\text{C}$]	[$^{\circ}\text{F}$]
0.1 – 0.2 and as delivered	2 – 4	100 – 130	212 – 266

TEMPERATURE SETTINGS

Barrel temperature

Due to the high melting point of ForTii® Ace this temperature should be set high enough to provide a homogeneous melt without getting too near to the degradation temperature of 370°C / 698°F . A flat or rising temperature profile is recommended. Optimal settings are governed by barrel size and residence time.

Mold/Tool	Measured melt	Nozzle	Front	Center	Rear
140 – 200 $^{\circ}\text{C}$ 284 – 392 $^{\circ}\text{F}$	340–360 $^{\circ}\text{C}$ 644–680 $^{\circ}\text{F}$	330–360 $^{\circ}\text{C}$ 626–680 $^{\circ}\text{F}$	330–360 $^{\circ}\text{C}$ 626–680 $^{\circ}\text{F}$	330–350 $^{\circ}\text{C}$ 626–662 $^{\circ}\text{F}$	320–340 $^{\circ}\text{C}$ 608–644 $^{\circ}\text{F}$

MELT RESIDENCE TIME

The Total Residence Time (TRT) is the time difference between the compound fed into the throat of the barrel and the melt leaving the machine via the nozzle (and hotrunner if applicable). The Melt Residence Time (MRT) is the time difference between the melt-front of the compound in the barrel and the melt leaving the machine via the nozzle (and hotrunner i.a.).

Generally the TRT is about 2 – 2.5 x MRT.

The recommended maximum MRT for ForTii® Ace MX53B is ≤ 4 minutes, valid for mid-temperatures (350°C / 662°F). For lower and higher temperatures (e.g. 340°C / 644°F and 360°C / 680°F) resp. 6 and 2 minutes are recommended.

Screw size

To comply to given information on MRT and to have best melting homogeneity we advise to use 2 to 3 D of the max dosing stroke of your molding machine.

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Typical values are indicative only and are not to be construed as being binding specifications. Colorants in the product or other additives may cause significant variations in typical values.

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A full self-service MRT calculation can be done using the following [link](#).