

Technical Specification

UPM Formi EcoAce SPB

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The Biofore Company



UPM

Material UPM Formi EcoAce SPB is renewable biocomposite made from 20-50% cellulose fibers and wood waste derived ISCC certified polypropylene. It is specially designed for injection moulding applications. Very high renewable content is ensured by cellulose fibres and renewable polypropylene. Cellulose fibres significantly increase stiffness and strength of polypropylene.

Applications UPM Formi EcoAce biocomposite material can be used in injection moulding applications instead of polypropylene, filled polypropylene or several other plastics.

Environment UPM Formi EcoAce is manufactured from renewable cellulose fibers and ISCC-certified polypropylene, which are together reducing the usage of fossil based plastics. Material is fully recyclable or can be burned for energy. All cellulose fibres are from sustainably managed forests.

Physical and mechanical properties	Property	Test method	SPB 20	SPB 30	SPB 40	SPB 50
	Density, g/cm ³	ISO 1183	0.99	1.03	1.08	1.13
	Tensile strength, 50mm/min, N/mm ²	ISO 527-2	45	55	62	66
	Tensile modulus, 1mm/min, N/mm ²	ISO 527-2	2600	3500	4600	5500
	Elongation at break, 50mm/min, %	ISO 527-2	7.5	6.0	4.5	3.5
	Charpy impact strength, notched +23 °C , kJ/m ²	ISO 179-2/1eA	5.0	5.5	6.0	7.0
	Charpy impact strength, unnotched +23 °C , kJ/m ²	ISO 179-2/1eU	34	35	36	37
	Cellulose content, weight %		20	30	40	50

Pretreatment UPM Formi granulates are ready to use, but it is highly recommended to dry granulates before injection moulding. Recommended drying temperature and time is 115 °C and 3 hours in a desiccant air dryer.

Injection moulding UPM Formi does not need special equipment for processing. Recommended processing parameters for typical injection moulding machine are:

Temperature profile from nozzle	190/185/180/175 °C
Injection pressure	<1200 bar
Mould temperature	+60 - +120 °C
Injection speed	As high as possible

Safety Maximum recommended processing temperature is 200 °C. Overheating may cause risk for thermal degradation. Auto-ignition of UPM Formi material is possible after purging the injection moulding machine.

Storage UPM Formi granulates should be protected from UV-light and stored in closed packages in dry conditions at temperature below 50 °C. Air humidity can increase moisture content of the material and have negative effects on the end product properties.

All information is based on our knowledge and experience. This information has as sole purpose to act as a manual for safe handling, use, processing, transport, storage, removal and release and cannot be used as guarantee or identification of quality.