BAMBACORE

Organic Plastic Composites Made to Endure!

Durable compounds & sheets explained

A **durable compound** is defined as a durable, fossil-based polymer that is reinforced with natural fibres, blended with bio-polymers or filled with other biomass. The reinforcement, blend or filler reduces the use of traditional plastics by using up to 75 weight-% of biomass. The used biomass will additionally remove CO_2 from the atmosphere and store it in the material. Spectadur and Biodur durable compounds are labelled with **"Made to Endure"**.

Reduction of CO_2: Plants, bamboo and rice husk absorb atmospheric carbon dioxide (CO_2) as they grow. Using this biomass (through bio-based polymers, through natural fibre reinforcements or both) to create products constitutes a more permanent removal of CO_2 from the atmosphere.

Biomass rice husk – an agricultural by-product

Spectadur and Biodur grades

Spectadur is a line of materials reinforced with bamboo fibres, rice husk or wheat straw/husk. **Biodur** compounds are blends of different bio-polymers and/or filled with mineral fillers. All materials have improved thermal and mechanical properties with reduced cost levels.

Spectadur and Biodur compounds

All materials are delivered as **compounds** suitable for injection & extrusion moulding and as **sheets** suitable for compression moulding & thermoforming. To suite different product needs, we have grades with varying mechanical, thermal and processing properties. All grades are ready-to-use feedstock moulding grades (delivered as compounds) or thermforming/compression moulding grades (delivered as sheets, glossy finish, available in sizes up to 2.00 m (in extrusion direction) to 1.30 m (perpendicular), thickness of 0.6 mm to 2.5 mm).

Based on specific needs, we can tailor and customise all material grades to customer requirements.

Availability

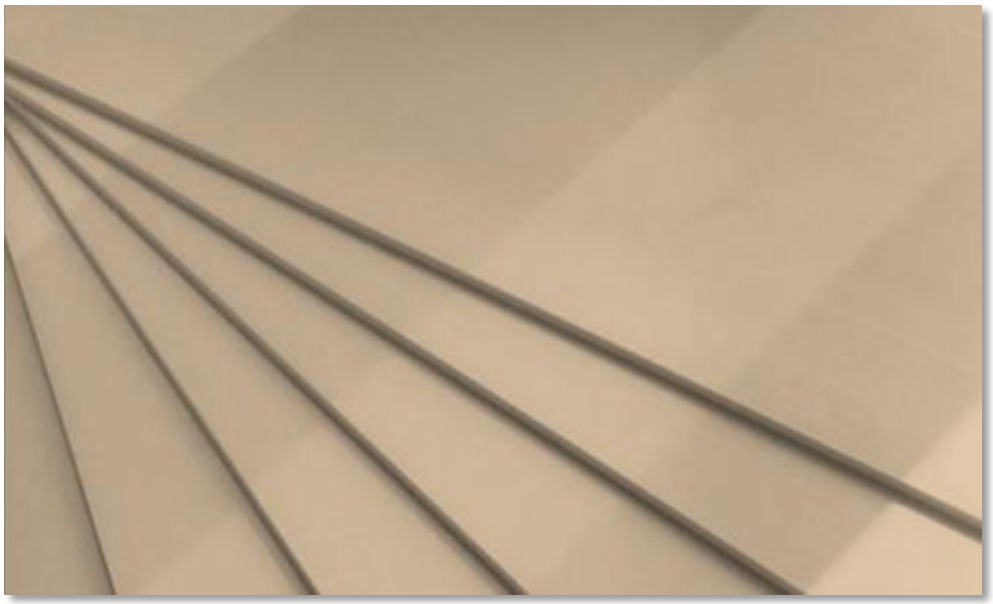
Globally

Certificates

Material Safety Data Sheets (SDS), detailed Technical Data Sheets (TDS), REACH compliance certificates and other certificates are available on request.

Material transport, storage and handling shall be according to Material Safety Data Sheets (SDS); processing shall be according to relevant Process Guidelines.

All materials are food contact safe according to relevant EN and ASTM regulations.



Spectadur sheets

Spectadur PB30MB

Spectadur PB30MB is a 30 w.-% bamboo fibre reinforced, durable Poylpropylene (PP) compound. The grade is labelled with "Made to Endure".

Spectadur PB30MB is used for General Purpose injection moulding applications. It exhibits good impact properties as well as balanced flow, strength and stiffness properties. The material is UV/AO stabilized.

Key characteristics

- 30 w.-% bamboo fibre reinforced
- Minimum part wall-thickness 1.50 mm
- Type B is top-rack dishwasher safe
- BPA free, ROHS compliant, food contact safe, toy safe

Typical applications

Consumer goods, kitchenware, houseware, toys, outdoor, personal care, etc.

TYPICAL CHARACTERISTICS			
Property	**Test Method**	**Unit**	**Typical Value***
Density		g/cm^3	1.01
Type A: Melt Flow Rate (190°C/2.16 kg)	ASTM D1238	g/10 min	23.2
Type B: Melt Flow Rate (190°C/2.16 kg)	ASTM D1238	g/10 min	5.8
HDT-B (@ 0.46 MPa)	ASTM D648	°C	135.0
Tensile Strength (50 mm/min)	ASTM D638	Mpa	28.2
Flexural Strength	ASTM D790A	Mpa	40.4
Flexural Modulus (1% secant)	ASTM D790A	Gpa	2.6
Elongation (50 mm/min) @ Yield	ASTM D638	%	8.2
Elongation (50 mm/min) @ Break	ASTM D638	%	8.4
IZOD Notched Impact Strength (@ 23°C)	ASTM D256	J/m	38.2
Mold Shrinkage		%	0.8

Spectadur PB30MB

Spectadur PB grades can be deliverd with different bamboo fibre reinforcements; reinforcement loadings can be anything between 0 w.-% and 40 w.-%; fibres can be either medium or long in length. Typical characteristics will change according to the chosen bamboo fibre reinforcement. Polyethylene (HD-PE and LDPE) can be used as matrix system on customer request as well.

Peg made with **Spectadur PB30MB**

Petware made with **Spectadur PB30MB**

Spectadur PB40MS

Spectadur PR40MS is a 40 w.-% rice husk reinforced, durable Poylpropylene (PP) compound. The grade is labelled with “Made to Endure”.

Spectadur PR40MS is used for General Purpose injection moulding applications. It exhibits good impact properties as well as balanced flow, strength and stiffness properties. The material is UV/AO stabilized.

Key characteristics

- 40 w.-% rice husk reinforced
- minimum part wall-thickness 1.30 mm
- BPA free, ROHS compliant, food contact safe, toy safe

Typical applications

Consumer goods, kitchenware, houseware, toys, outdoor, personal care, etc.

TYPICAL CHARACTERISTICS			
Property	**Test Method**	**Unit**	**Typical Value***
Density		g/cm^3	1.01
Melt Flow Rate (190°C/5 kg)	ASTM D1238	g/10 min	8.7
HDT-B (@ 0.46 MPa)	ASTM D648	°C	140.0
Tensile Strength (50 mm/min)	ASTM D638	Mpa	32.8
Flexural Strength	ASTM D790A	Mpa	50.8
Flexural Modulus (1% secant)	ASTM D790A	Gpa	2.4
Elongation (50 mm/min) @ Break	ASTM D638	%	6.8
IZOD Notched Impact Strength (@ 23°C)	ASTM D256	J/m	21.3
Mold Shrinkage		%	0.7

Spectadur PR grades can be deliverd with different rice husk loadings; reinforcement can be anything between 0 w.-% and 40 w.-%; alternatively, we can reinforce with wheat straw/husk. Typical characteristics will change according to the chosen rice husk content. Polyethylene (HD-PE and LDPE) can be used as matrix system on customer request as well.

Spectadur PB40LS SH

Spectadur PB40LS SH sheets are targeting Automotive and General Purpose applications. The sheets exhibit good strength and impact properties as well as excellent flexural properties. The grade is labelled with "Made to Endure".

Spectadur PB sheets have a glossy finish. They are available with a width up to 1.30 m (perpendicular to extrusion direction). Available thickness varies between 0.6 mm to 2.5 mm.

Key characteristics

- 40 w.-% long bamboo fibre reinforced
- Compliant to Renault RNES- B-20116 & Renault RNES-B-20118 (Automotive Interiors VOC and aldehyde emissions)
- BPA free, ROHS compliant, food grade safe, toy safe

Typical applications

Automotive interiors (lower IP parts, parcel shelf, etc.), transportation, consumer goods, houseware, etc.

TYPICAL CHARACTERISTICS			
Property	**Test Method**	**Unit**	**Typical Value***
Density		g/cm^3	1.04
Melt Flow Rate (190°C/5 kg)	ASTM D1238	g/10 min	3.85
HDT (@ 0.46 MPa)	ASTM D648	°C	143.1
Properties in Extrusion Direction			
Tensile Strength (50 mm/min)	ASTM D638	Mpa	34.64
Flexural Strength	ASTM D790A	Mpa	47.50
Flexural Modulus (1% secant)	ASTM D790A	Gpa	4.1
Elongation (50 mm/min)	ASTM D638	%	8.4
IZOD Notched Impact Strength (@ 23°C)	ASTM D256	J/m	48.86
Properties Perpendicular to Extrusion Direction			
Tensile Strength (50 mm/min)	ASTM D638	Mpa	21.18
Flexural Strength	ASTM D790A	Mpa	37.28
Flexural Modulus (1% secant)	ASTM D790A	Gpa	3.0

Biodur PS40S

Biodur PS40S is durable Poylpropylene (PP) compound blended with up to 40 w.-% starch and mineral fillers. The grade is labelled with “Made to Endure”.

Biodur PS40MS is used for General Purpose injection moulding applications. The grade can be extruded into sheets and foils. Biodur PS40S is suitable to be used a masterbatch material with virgin PP. It exhibits moderate strength and good stiffness properties.

Biodur PS grades are suitable for food contact.

Key characteristics

- > 40 w.-% reduction of fossil-pased PP by use of biomass
- Suitable for foils and sheets with a thickness of below 1 mm

Typical applications

Packaging, single-use kitchenware applications like cutlery and food containers, etc.

TYPICAL CHARACTERISTICS			
Property	**Test Method**	**Unit**	**Typical Value***
Density		g/cm^3	1.07
Melt Flow Rate (230°C/2.16 kg)	ASTM D1238	g/10 min	13.5
HDT-B (@ 0.46 MPa)	ASTM D648	°C	128.0
Tensile Strength (50 mm/min)	ASTM D638	Mpa	25.2
Flexural Strength	ASTM D790A	Mpa	32.6
Flexural Modulus (1% secant)	ASTM D790A	Gpa	2.1
Elongation (50 mm/min) @ Yield	ASTM D638	%	8.4
Elongation (50 mm/min) @ Break	ASTM D638	%	8.6
Mold Shrinkage		%	1.2

We can deliver Biodur PS grades as sheets or foils with a glossy finish. They are available with a width up to 1.30 m (perpendicular to extrusion direction). Available thickness varies between 0.6 mm to 2.5 mm.

We have many more grades, we can customise to meet your requirements.
Get in touch with our experts for more information!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All values given are typical values; properties are minimum values and might be slightly higher than indicated (for density, lower). All mechanical properties as per ASTM norms. Detailed Technical Data Sheets (TDS) are available on request. Colors can be customised; references are given for natural colors. White or bright colors are not available.

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Product Catalogue
Durable compounds & sheets