



BIOREL

BIODEGRADABLE PRODUCTS





BIOREL

BIOREL's **toe-puffs and counters** have been certified as totally biodegradable and compostable materials accordingly to the international regulations EN 13432 and ASTM D6400.

BIOREL materials' features are flexibility, elasticity and moldability, which can be done at room temperature or after warming the material.

This certifies comfort, shape retention and long lasting of the shoes.

Composition:

95% of biodegradable and compostable polymers

5% of biodegradable natural cotton

TOE-PUFFS:

BIOREL P04	thickness: 0.45 - 0.55
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BIOREL P06	thickness: 0.60 - 0.70
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BIOREL P08	thickness: 0.75 - 0.85
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BIOREL P10	thickness: 0.95 - 1.05
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COUNTERS:

BIOREL V08	thickness: 0.75 - 0.85
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BIOREL V10	thickness: 0.95 - 1.05
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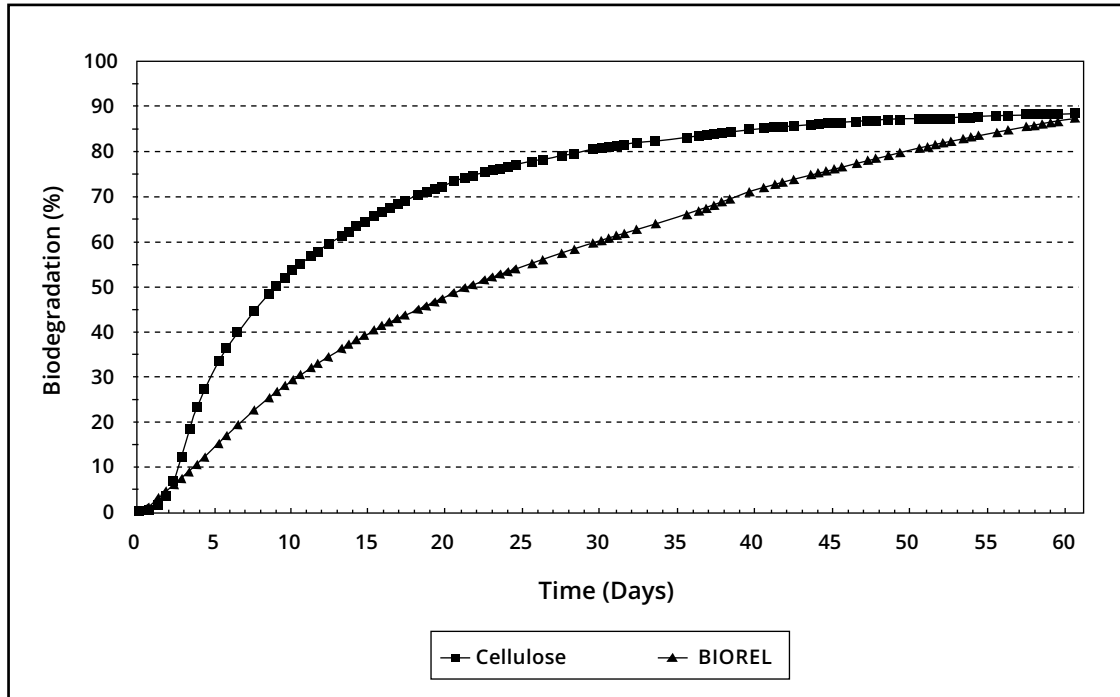
BIOREL V12	thickness: 1.10 - 1.20
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Organic Waste Systems

AEROBIC BIODEGRADATION UNDER CONTROLLED COMPOSTING CONDITIONS



Evolution of the average biodegradation percentage of cellulose and test item.

The inoculum showed a background activity of 146 mg CO₂/g VS after 10 days, which is between the optimal range of 50 mg and 150 mg CO₂/g VS as prescribed by the international standard ISO 14855 and indicates a good quality of the inoculum.

After 60 days (at the end of the test) cellulose reached a biodegradation of 88.3%, while a biodegradation percentage of 87.2% was observed for test item BIOREL.

From the results it can be concluded that test material BIOREL does fulfill the biodegradation requirement of CEN norm EN 13432 (2002) '*Requirements for packaging recoverable through composting and biodegradation - Test scheme and evaluation criteria for the final acceptance of packaging*' and ASTM D6400-04 '*Standard Specification for Compostable Plastics*' within 60 days. The maximum allowed test duration is 180 days.



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Guper reinforcements in BIOREL's family are made by 100% pure cotton textiles, washed and desized to remove any chemical residual of the production.

The adhesive is biodegradable, as well as the cotton, therefore not polluting.

The washing treatment contributes to confer a noticeable softness and the dots adhesive grants a complete transpirability.

Working conditions

Application temperature:	90° - 150°
Contact time:	from 5 to 12 seconds
Pressure:	3 to 5 ATM

Range:

WOVEN for reinforcements

720/W/61	Cotton woven 30/30	17x17	100 gr/mq ±10%
721/W/61	Cotton woven 20/20	20x20	150 gr/mq ±10%
725/W/61	Cotton woven 20/4	18x10	230 gr/mq ±10%
732/W/61	Cotton woven 20/10	13.5/9.5	160 gr/mq ±10%
735/W/61	Cotton woven 20/10	14.5x12	140 gr/mq ±10%
72G/61	Cotton woven 20/20	24x24	170 gr/mq ±10%
74G/61	Cotton woven drill 20/12	39x22	265 gr/mq ±10%

JERSEYS

749/61	Cotton Jersey	180 gr/mq	210 gr/mq ±10%
749/46R/61	Cotton Jersey (interlock)	350 gr/mq	380 gr/mq ±10%
785/61	Cotton Jersey (punto Milano)	210 gr/mq	240 gr/mq ±10%
785/46i/61	Cotton Jersey (punto Milano)	350 gr/mq	380 gr/mq ±10%





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REF

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**Toe-puff and counter materials for shoes.
Reinforcement materials.**

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