

# Technical Data Sheet

CEBICO rPP30 22RID129



CEBICO Polypropylene

## Description

CEBICO rPP30 22RID129 is a natural fibre composite, primarily consisting of post-industrial recycled PP mixed with TMP, or thermo-mechanical pulp based on Norwegian Spruce. The composite is an injection grade with good fibre dispersion, high strength, and good filling properties. Being based on a post-industrial polypropylene, the material is clean with good and stable properties. A small amount of biobased slip-agent is added to improve mould release. The material is natural black.

## Other product names/terms

Bio Composite (BC), Natural Fibre Composite (NFC), Wood-Plastic Composite (WPC)

## Key features

Post-industrial recycled, very low carbon footprint, good flow properties, high strength, high stiffness

## Typical characteristics

| <b>Physical properties</b> | <b>Value</b> | <b>Unit</b>            | <b>Test method</b>     |
|----------------------------|--------------|------------------------|------------------------|
| Specific density           | 950          | kg/m <sup>3</sup>      | ISO 1183               |
| Moisture content           | < 0.2        | %                      | Internal               |
| Fibre content              | 30           | %                      | Internal               |
| Melt flow rate             | 13           | g/10 min               | ISO 1133, 5 kg @190 °C |
| Carbon footprint eq.       | 0.82         | kg CO <sup>2</sup> /kg | Internal               |

| <b>Mechanical property</b> | <b>Value</b> | <b>Unit</b>       | <b>Test method</b>     |
|----------------------------|--------------|-------------------|------------------------|
| Tensile modulus            | 2600         | MPa               | ISO 527-2              |
| Tensile stress at break    | 35           | MPa               | ISO 527-2              |
| Tensile strain at break    | 2.5          | %                 | ISO 527-2              |
| Charpy impact strength     | 3            | kJ/m <sup>2</sup> | ISO 179-2, 1eA @ 23 °C |

## Processing

It is important that the composite is not processed at temperatures above 190 °C as this can start degradation of the natural fibre. Processing above recommended temperature will affect colour, odour and affect have negative on mechanical properties.

RPM of screw during metering should be low-medium with backpressure about 5-10 bars to avoid air and vacuum. Metering should finish a few seconds before new cycle will take place to reduce degradation time.

Injection speed and pressure should be at a moderate to low levels to minimize generated shear heat in the material to maintain correct melt temperature. CEBICO is highly shear thinning so processability will improve significantly at higher pressures levels.

Hold pressure should be medium to avoid sink marks. Reduce as necessary to avoid stress and warpage.

## Chemical composition

The primary component is polypropylene, where part of the material is substituted with thermo-mechanical pulp. Dispersed into the plastic polymer, the TMP reinforces the polymer matrix to modify and improve mechanical properties. Low dosage of additives has been used to bond TMP fibre and polymer.

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## *Equipment*

It is recommended that steel equipment and mould to contain a minimum of five percent chrome.

## *Packaging*

Buckets (20-80 litres), octabins (100-120 litres) and big bags (900-1100 litres). Minimum orders are 20 kg.

## *Recycling*

CEBICO can be grinded, melted and remoulded like standard thermoplastic. Recycling is recommended as this extends the material lifetime and thus further reducing the total carbon footprint of the material. TMP fibres may be further dispersed during recycling, which may lead to improved strength, stiffness, and other key mechanical properties.

## *Environment*

CEBICO can replace normal plastic and glass fibre reinforced plastic as a more environmentally friendly alternative. The fibres are produced from renewable and certificated raw materials and has very low carbon footprint additional to being processed using clean electric energy. CEBICO rPP30 22RID129 have a carbon footprint equivalents of 0.82 kg CO<sup>2</sup>/kg.

Contact us for more in-depth information about environmental impact of CEBICO natural fibre composites.

## *Storage*

Avoid prolonged exposure to UV-light, extreme temperatures and high humidity. Store in ambient room temperature. Improper storage can have negative effects on physical, visual, and mechanical properties.

## *Shelf life*

Following CEBICO storage instructions will maximize the shelf life of the material, maintain optimal properties, and minimize degradation.

## *Disclaimer*

The information in this document is provided in good faith and to the best of our knowledge accurate and reliable as of the date of publication. We do not assume any liability, direct or indirect with respect to shelf life, performance, suitability with application or equipment, or fitness for intended use in any application. Each customer must determine the suitability of the material for their particular use through appropriate testing and analysis. The customer is responsible for the appropriate, safe, and legal use, processing, and handling of our products before use, during use and after use.

## *Contact:*

For any inquires, technical or sales, please contact by sending email to [cebico@norskeskog.com](mailto:cebico@norskeskog.com)

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