

CERTIFICATION

RECYLED PLASTIC - REBNEW

REBNEW is our range made of **100% recycled polymer, which is also recyclable**, recovered from used plastic selective collection.

The products made with the ReBnew material are ecological, because they reduce the volume in landfills giving a second life to the containers and do not pollute the environment.

The slats are MAINTENANCE FREE and offer a 20 year warranty*.

REBNEW, ADVANTAGES OF THE RECYLED PLASTIC

Sustainability

Post consumer material. **100% recyclable.**

Maintenance Free

Maintenance Free material, only cleaning required. It remains unchanged over the years.

Resistant to salinity.

It does not degrade.

It does not splinter.

It does not absorb moisture or humidity.

It does not fade.

Vandal Proof.

Resistant to graffiti or other paint.

It can be cleaned by using chemical products.

Resistant to oil and weak acids



Conventional Plank



REBNEW Plank

It offers a better surface finish, on both, the upper part, but specially on the sides as they are not cut. It also presents subtle convexity to avoid accumulation of water.



Discover the CITIZEN ECO Bench, the first bench fully manufactured in recycled plastic.

* Warranty does not cover a misuse or vandalism.

BENITO

- Street Furniture
- Street Lighting
- Playground Equipment
- Manhole Covers & Grates

tel. **93 852 1000**

info@BENITO.com

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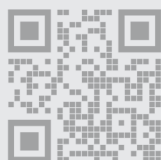
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Manufacture of REBNEW recycled plastic material.

The planks are manufactured from post-consumer plastic waste of domestic origin, consisting mainly of high- and low-density polyethylene, and also polypropylene, polystyrene, and terephthalate polyethylene .

This material, due to its composition, has been designed in accordance with the provisions of resolution TES / 608/2015 of March 30, 2015, due to its classification as recycled plastic.

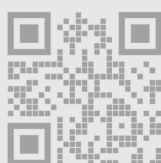
The raw material that we use in the manufacture of REBNEW boards comes from a waste manager certified by EU-CERTPLAST that has a management system certificate according to ISO 14001 and the energy management certificate according to ISO 50001, and the “blue Ángel” .



Discover how do we manufacture the REBNEW plastic recycled boards.

Scratch repair.

BENITO's REBNEW recycled plastic is a material with a dark ocher hue that is applied so that the material is mass colored. This, together with its uneven surface finish, makes the plank extremely durable, since it perfectly conceals possible scratches caused by acts of vandalism. Even so, if someone wants to repair the scratches and make the plank surface look like new, it is possible to do so by following the instructions in the following video.



Discover how to repair the scratches on a REBNEW board.

Graffiti cleaning on a REBNEW recycled plastic material.

In front of the problems found in our towns and cities with regards to graffitis, the ReBnew material has outstanding qualities allowing it to be used in the entire public realm. Due to its surface finishing without pores or cavities, paint and graffiti is very difficult to adhere and easy to clean. Cleaning graffiti does not require much time or effort, and still, it leaves the material completely clean, without traces of paint. To do a good cleaning it is necessary to have a BENITO type graffiti cleaner, this cleaner is an aerosol that creates a gel-like film on the applied area. This gel has to be left on the surface between 10-15 minutes, once it has worked it should be cleaned with a clean cloth and water.

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Optional: engravings

BENITO REBNEW recycled plastic planks can be customized with exclusive engravings of municipalities and companies' logos. This option is available for orders where there is a minimum number of slats of 150 pc., which is the equivalent of, for example, 25 CITIZEN ECO benches. It is a very interesting option to give value to the social contribution done by using this material, as, otherwise, it would be waste dumped on a landfill or on the sea.



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Technical Characteristics of the REBNEW recycled plastic boards.

Finishing of the REBNEW boards.

Unlike conventional recycled plastic slats, REBNEW slats present a slightly arched top face as well as a high quality surface finishing which texture resembles the original wood grains. Thanks to the forming process by a single operation called “Alles in Einem”, the finish of the ends is perfect, with no air bubbles or visible mix impurities. The upper and lateral edges have a generous rounding shape that makes them pleasant to the eye and to the touch.



Conventional Plank



REBNEW Plank

The slat features an arched design in order to prevent water and dirt from remaining stagnant on the surface. Therefore, there are no accumulations of water or dirt, preserving the good look of the slats and providing the right comfort for the user.

The ends of the slats offer a very good finish, being pleasant to the touch, due to the manufacturing process which avoids the presence of holes or air bubbles. It also prevents the accumulation of dirt or water that could shorten the use life in the long term. The slats do not require maintenance.

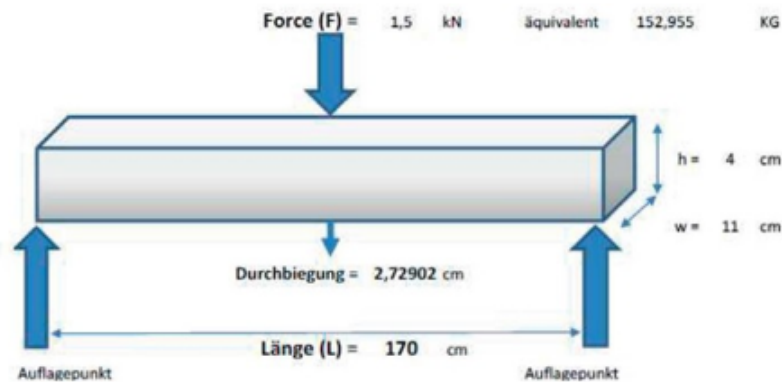
In order to achieve a good robustness of the seat, a removable steel tubular reinforcement system is incorporated in the slat. The internal core of the reinforcement is a standard square tube of dimensions 20×20×2mm with a galvanized finish.

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Designing the slat.

An exclusive procedure called “Alles in Einem” has been developed that allows the finished slats to be obtained from a single manufacturing process, without the need for cutting or machining operations. Even the seat slat incorporates already molded cavities for metal reinforcements. With this innovation it is possible to eliminate industrial processes that consume energy, time and resources, in addition to not having any waste material derived from machining processes by chip removal. The dimensions of the slats, 110×40×1800mm, do not correspond to previously existing market measurements, but have been specially designed for this bench in order to obtain the best combination of durability, resistance, ergonomics and economy of raw material. During an initial phase of the design, simulations were carried out to see the flexural strength of the finished strip and whether the inclusion of metal reinforcements allowed ensuring sufficient mechanical properties for the entire assembly.



	Applied Force (kN)	Equivalence kg of applied force	Separation between slats	Deflection at center point of slat (cm)
Slats without reinforcement	1,5	153	1700	21
Metal reinforced slat	1,5	153	1700	2,7

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Density.

1.0529 g / cm³ according to ISO 1183-1A: 2004 for the determination of the density of non-cellular plastics.

Shore hardness.

63 Shore according to UNE EN ISO 686: 1998 of plastic and ebonite for the determination of the penetration hardness by durometer. Ultra base material rating is 62 degrees. With the ECOSENS slat die casting manufacturing process, the manufacturer ensures values above 63 degrees.

Tensile strength.

15.6 Mpa according to UNE EN ISO 527: 1996-1197 for plastics for the determination of tensile properties before and after UV exposure.

Elongation at break.

1.7% according to UNE EN ISO 527: 1996-1197 of plastics for the determination of tensile properties before and after UV exposure.

Impact resistance.

12kJ / m² according to UNE EN ISO 179-1 / 1eA of impact resistance according to the Charpy method. Flexural strength.

24Mpa según la UNE EN ISO 178-2003 de plásticos para la determinación de las propiedades de flexión.

Module.

1424 Mpa according to UNE EN ISO 178-2003 for plastics for the determination of bending properties.

Resistance to the elements.

The resistance of the material to climatic factors has been verified by tests carried out according to the standards EN 131-2 and EN ISO 4892-2, in which changes in color and mechanical properties (elasticity, tensile strength and elongation), a determined in subjecting the samples to UV radiation and climatic aging cycles. The result has been that the material can be considered resistant to UV radiation, and to environmental aging factors.

Metal migration.

The pigments used in the manufacture of slats are free of lead, nickel, cadmium, hexavalent chromium, and mercury. They have been proven, through tests according to EN 71-3, that they are suitable for use in children's games.