

LEGO

Tags:

Country: Spain, Turkey, The Netherlands, Slovakia; Other EU countries Non EU

Sector: Agriculture/Food, Textile, Construction, Automotive, Household

Appliances, Packaging, Tourism & Leisure, Health & Well-being,

Logistics/Transportation, Industry/Machinery, Other

Size of Enterprise: Small MediumLarge

Plastic revaluation process: Analysis, Planning & Implementation, From Prototype to Market

PR Result: Product, Prototype, Technology/ Process Service

Cooperation with others: Civil society collaboration, Other companies, Education, No.

EXAMPLE

The LEGO Group introduced a prototype LEGO® block made from recycled plastic, the next step in its drive to create LEGO goods from sustainable resources. The new prototype, which uses PET plastic from discarded bottles, is the first brick built from a recycled material to exceed the company's stringent quality and safety standards.

It will be some time before recycled-material bricks arrive in LEGO product packaging. The team will continue to test and refine the PET formulation before deciding whether to proceed to the pilot production phase. This next step of testing will take at least a year. The prototype is built of recycled PET from US vendors that employ FDA and EFSA-approved techniques to assure quality. A one-litre plastic PET bottle contains enough raw material to make ten 2 x 4 LEGO bricks.

A team of more than 150 individuals is striving to discover long-term solutions for LEGO goods. Over the previous three years, materials scientists and engineers examined over 250 different PET materials and hundreds of additional plastic compositions. The end product is a prototype that fulfills numerous of their quality, safety, and play standards, including clutch power. It will take some time before recycled-material bricks emerge in LEGO product packaging. The team will continue testing and developing the PET formulation before deciding whether to proceed to the pilot production phase. This next round of testing is likely to take at least a year.

The prototype is manufactured from recycled PET acquired from US sources that employ FDA and EFSA certified techniques to assure quality. A one-litre plastic PET bottle offers enough raw material for ten 2 x 4 LEGO bricks on average. The patent-pending material composition improves the durability of PET, making it suitable for LEGO bricks. The revolutionary approach combines recycled PET with strengthening chemicals using a proprietary compounding technology.

The recycled prototype brick is the latest advancement in making the LEGO Group's products more environmentally friendly. The firm said in 2020 that it will begin eliminating single-use plastic from its packaging. It started making components from bio-polyethylene (bio-PE) manufactured from sustainably obtained sugarcane in 2018. Many LEGO sets have bio-PE parts, which are ideal for building smaller, softer pieces such as trees, branches, leaves, and minifigure accessories. Bio-PE is currently unsuitable for the production of tougher, stronger parts such as the classic LEGO bricks.

The LEGO Group's focus on sustainable material innovation is only one of several programs in place to make a positive impact. The LEGO Group will invest up to \$400 million over three years, through 2022, to advance its environmental goals.

MORE INFORMATION

Website: <https://www.lego.com/es-es/aboutus/news/2021/june/prototype-lego-brick-recycled-plastic>

Social Media:

Facebook: <https://www.facebook.com/LEGO/>


Twitter: https://twitter.com/LEGO_Group

Instagram: <https://www.instagram.com/legoturkeyofficial/>

Youtube: <https://www.youtube.com/user/LEGO?app=desktop>

Pictures:

FROM PLASTIC BOTTLE TO PROTOTYPE BRICK



We have tested more than 250 different variations of PET plastic and developed a prototype solution using recycled bottles. It's a patent-pending material that increases the strength and durability of the recycled plastic.

This is just one milestone on the journey to making our products from sustainable sources.

Here's how we turn a plastic bottle into a prototype LEGO® brick...

- 1.** Our partners source drinking bottles made from PET plastic. These raw materials are ground down into flakes.
- 2.** The PET flakes are cleaned to ensure safety and purity and then granulated.
- 3.** The cleaned granulate undergoes an innovative process to strengthen the recycled PET and make it suitable for LEGO products.
- 4.** The granulate is molded into test specimens that are evaluated for their mechanical properties.
- 5.** Once the team is confident that the material has the right properties, we mold bricks and test them on quality and performance. If they don't meet our standards, we go back to step 3.
- 6.** As with all LEGO bricks, the prototype bricks are further checked for safety, durability, and playability in our quality testing labs.
one plastic bottle can make ten of our 2x4 LEGO bricks!
- 7.** The testing is far from complete. Among other things, we now need to find out how the material can be colored.
- 8.** Once all necessary tests of the bricks check out, we start analyzing the production setup needed to manufacture bricks using the new material!
- 9.** If all goes well you might one day find a brick made from recycled PET in your LEGO sets!

WHERE WE'RE CURRENTLY AT...

At the LEGO Group, we're playing our part in building a sustainable future and creating a better, brighter world for our children to inherit.

For more information on how the LEGO Group wants to rebuild the world for the better, visit: LEGO.com/sustainability



