The recyclable rubber polymer is designed to incorporate construction waste | Photo source Markus Spiske on Unsplash

Sustainable building materials made from recyclable rubber and construction waste

The new rubber is made from sulfur and canola oil and does not melt

Spotted: A team of researchers from South Australia’s Flinders University have created a recyclable rubber polymer designed to incorporate construction waste. The new rubber is made from sulfur and canola oil and does not melt. It can be used when combined with a range of waste materials that would otherwise go to landfill.

The rubber is recycled through reactive compression moulding, which involves gentle pressure and heat of around 100 degrees Celsius. The team has experimented with mixing fillers ranging from carbon fibre and PVC to agricultural waste with the resulting powder. Each mixture produces a substance with slightly different characteristics, making it possible to replace some of the construction industry’s most toxic building materials, including concrete.

Additionally, the rubber’s versatility makes it a useful starting point for communities to improve the greenness of their construction in ways that are specific to their area and the particular environmental challenges. Local waste streams could be reduced by diverting some of the components into building projects.

Other means that Springwise has recently spotted of using rubber to reduce pollution include a recycled rubber pavement that repairs itself when it rains and a microplastic collection device that reduces airborne pollutants from vehicle tyres.

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Takeaway:

Global rubber use is rising, while the production of natural rubber was decreasing, even before the pandemic. As PPE becomes a requirement in many public places, recyclable, sustainable versions have become exceptionally important – for reducing both the strain on agriculture and pollution. With vegan leathers grabbing many of the materials science headlines, it will be interesting to see how further developments in eco-rubber help bolster meaningful change in a range of industries.