Researchers from University of British Columbia have infused concrete with fibres from recycled tyres, which strengthen the concrete and reduce cracking.

With concrete being one of the most used building materials globally, it’s no wonder we cover a lot of projects looking at how to improve its performance, such as making porous concrete structures to reduce runoff in built-up areas, or glow-in-the-dark cement to aid road safety, and now a team from the University of British Columbia has found a method that makes it stronger and more eco-friendly.

The team’s motivation came from the fact that concrete production alone contributes 7 percent of global greenhouse emissions, so, to offset some of this, they upcycled used tyres as a reinforcing material. Each recycled tyre produces 1kg of elastic fibres and the team added various concentrations of tyre fibre into the concrete mix, with a 0.35 percent concentration proving in stress-tests to reduce crack formation by 90 percent, as the elastic fibres bridge gaps that open in the concrete. The researchers suggest that while the concrete is stronger, using it in all building material could have a secondary but dramatic impact on the waste of both the concrete and tyre industries. Six billion cubic meters of concrete are produced globally each year and a billion tyres, most of which end up burning in landfill sites. As well as laboratory tests, the concrete has also been used in the reparation of some on-campus steps at UBC, with embedded sensors monitoring real-world performance.
We've seen how collected beach plastic can be used in *construction blocks*, so how else can upcycled materials provide structurally sound and eco-friendly solutions to the industry?

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Email: lou.bosshart@ubc.ca
Website: www.news.ubc.ca
Contact: lou.bosshart@ubc.ca