

Product category Civil Infrastructure

Product description

Protectiflex: Blast protective concrete

Potential annual TDP

635 tonnes

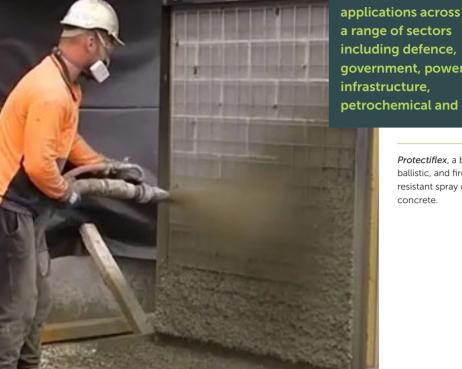
Turning used tyres into fire and blast resistant concrete material

Protectiflex is an ingenious product using recycled rubber tyres to produce a spray-on concrete that is blast, ballistic and fire-resistant.

Through funding, Tyre Stewardship Australia (TSA) supports Flexiroc Australia in its research and development of this ground-breaking product.

Flexiroc managing director Gary Bullock says Protectiflex is a game changer: a

one-stop solution that can be sprayed on buildings and structures to strengthen and protect them – and the people within them – from explosions, weapons and ballistics attacks, forced entry and fire. **ProtectiFlex has**



a range of sectors including defence, government, power infrastructure, petrochemical and retail. Protectiflex, a blast,

> ballistic, and fireresistant spray on concrete.

"When subjected to extreme blasts, ballistics and impact, conventional concrete masonry materials can create deadly shrapnel," says Mr Bullock. "We saw a need to create an innovative, eco-friendly and cost-effective concrete-like material to meet security and safety design." TSA partnered with Flexiroc and the University of Wollongong to conduct

composite creates blast resistant walls.

a series of simulation and field testing to demonstrate how the spray-on



industry.

demonstration of Protectiflex to the



at the University of Wollongong (UoW) and Gary Bullock, Director of Flexiroc who produce Protectiflex, in front of the concrete panels that were hit with shock loadings. similar to a car bomb explosion from a distance of 20 metres.

(L to R) Alex Remennikov, Professor of Structural Engineering

And with an estimated 635 tonnes of tyre derived product (TDP) per year consumed, based on projections across multiple end markets, Flexiroc and

performance results, and the absence of competitive alternatives.

enhance their blast, ballistic and fire-resistance ratings.

It can be applied to both new and existing walls and buildings to develop or

TSA Chief Executive Lina Goodman says: "It is the role of TSA to work with organisations like Flexiroc and products like Protectiflex to see more rubber crumb being used in alternate markets."

TSA view the technology as highly promising, given the breadth of markets,

OTHER TSA FUNDED CIVIL INFRASTRUCTURE PROJECTS

Permeable Pavement - University of Melbourne

Protectiflex Pumped & Composite Blast Mitigation Project

Development of reinforced concrete - recycled tyre bale sandwich structural

University of Wollongong/Flexiroc Concrete road barriers University of Melbourne

Spayed Protectiflex Blast Mitigation

Curtain University and Lomwest Enterprises **Equine Air Pakenham Racing Club Project**

Flexiroc, Tuff Turf and Pakenham Racing Reinforced crumbed rubber concrete

wall system

for residential construction University of South Australia & Australian Research Centre

A green lightweight composite panel system using recycled tyres University of Melbourne & PreFab Australia Recycled tyre in permeable pavement applications

University of Melbourne & Merlin Site Services



TSA Case Studies

FOR MORE INFORMATION

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