

TexBack

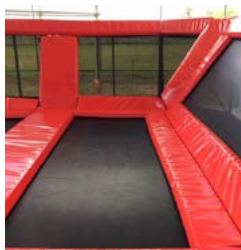
An industry-driven initiative to retain polyvinyl chloride (PVC)-polyester (PES) composite textile products in a circular economy in Australia.

A 2020 recipient of a grant from the Commonwealth's National Product Stewardship Investment Fund.

A trial of an Australian world-first chemical separation technology designed to produce high quality recyclate streams from composite polymer materials.

A solution for a wide range of commonly used products such as grain covers, tarpaulins, advertising banners, tents and marquees, roofing and grounds sheets, truck tarps, marine fabrics, swimming pool liners and upholstery fabrics.

A diversion of tens of thousands of tonnes of PVC coated textiles that reach the end of their first useful life each year and end up in our landfills.



Key Figures

21,700 tonnes of PVC-PES products estimated to be consumed p.a.

1 local manufacturer of PVC-PES textiles

6 key distributors have 80% of the market

>4,000 fabricators nationally

Goals

A viable and self-sustaining national stewardship scheme for PVC-PES textiles. It represents a significant endeavor by industry to deliver on our circular economy objectives and ensure that valuable resources are retained in the Australian domestic economy.

A solution for a manufacturer who plans to use thousands of tonnes of PVC recyclate in new product applications that will be made in Australia.

This new manufacturing enterprise is expected to stimulate further investment and create new and ongoing jobs.

Who is involved?

TexBack is a collaboration between the Vinyl Council of Australia and the Specialised Textiles Association along with their respective members and is supported by a number of key actors in the industry, including investors and consumers.

For more information, contact the Vinyl Council *TexBack* Project Manager on 03 9510 1711.

www.vinyl.org.au

www.specialisedtextiles.com.au



The Material Flows Analysis feeds into the next two steps of the project by providing the data needed to identify the applications and sectors generating the largest volumes of potentially recoverable waste to aid the reprocessing technology development and the design of a product stewardship scheme.

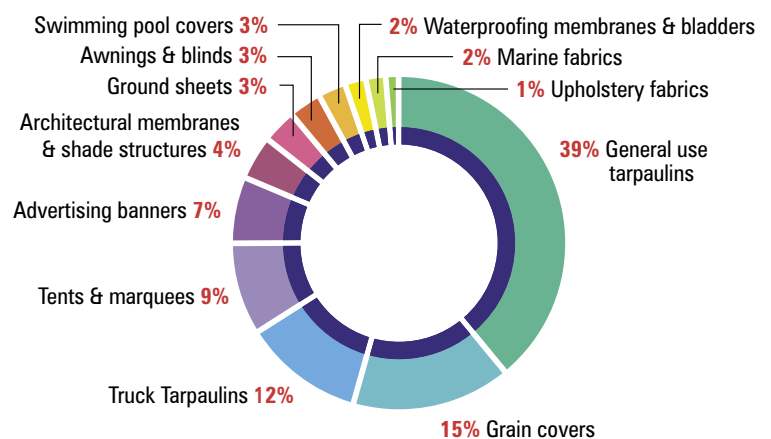
Step 1: Material Flows Analysis

A Material Flows Analysis has been completed under Step 1 following the project's 2020 grant of almost \$350,000 from the Commonwealth Government's National Product Stewardship Investment Fund. This Analysis uses assumptions about product life spans and historical and present consumption to estimate the stocks of PVC Coated Textiles (PCT) currently in use in Australia and the flow of these products reaching end of life annually. The work has quantified potentially recoverable waste by product category and explores consumption and waste generation by state and regional or urban area.

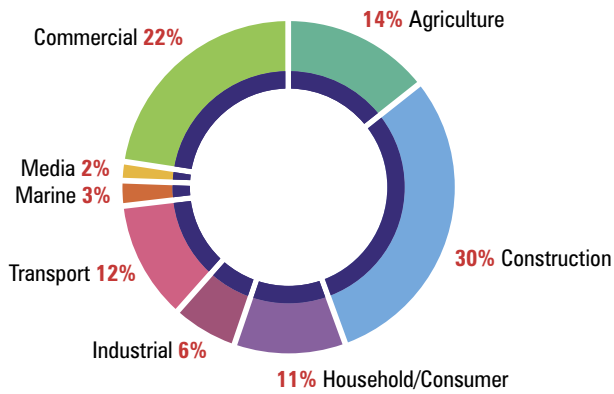
Key findings:

- In 2020, approximately 115,000 tonnes of PCT products were in use around Australia, with 21,000 tonnes estimated as reaching end of first life.
- The largest sector consuming PCT products annually is the construction sector where they are used as tarpaulins, ground sheets, site mesh, architectural membranes, shade structures and pool covers. The sector accounts for approximately 30% of PCT consumption and 49% of waste generated annually.
- Grain covers from the agriculture sector accounted for an estimated 3,600 tonnes (18%) of waste in 2020.
- The commercial sector produces approximately 12% of the waste in the form of products such as awnings & blinds and tents & marquees.
- Truck tarpaulins from the transport sector account for about 10% of the annual waste stream.

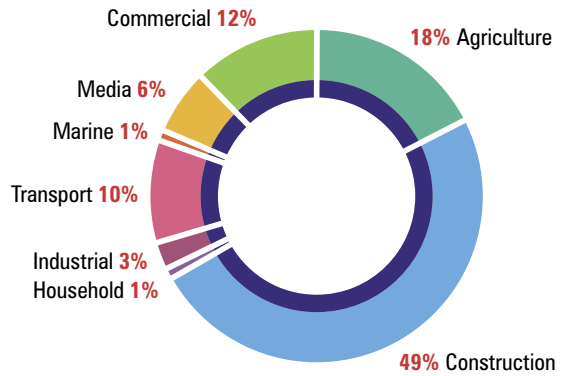
ANNUAL CONSUMPTION BY APPLICATION



2020 PCT STOCKS IN USE BY SECTOR



SHARE OF TOTAL PCT WASTE GENERATED BY SECTOR



Step 2: Testing and Piloting Technology

Utilising the project’s funding from the Commonwealth Government, a PVC Separation™ pilot plant was designed, built and commissioned in late 2021 in Ballarat, Victoria. Over an area of 400 square metres, the plant includes a granulator, reactor, hydraulic dewater press, dryers and chemical cleaners which allow for processing of 100kg batches of material at a time. The plant separates the polyester from the polymer coating or lamination producing two recycle feedstock streams. The pilot plant has commenced processing samples of PCT waste to produce recyclates which will undergo chemical analysis to assess quality and composition as well as processing consistency.

“The exciting part about developing a separation technology such as this are the endless possibilities... by the end of the TexBack project, we anticipate that full scale plants will be designed and ready to launch to begin recycling laminated PVC products Australia-wide.”

Luke Benfield, PVC Separation plant operator.

Step 3: The Business Case for Product Stewardship

Step 3 began in late 2021 and involves the development of the business case and design of an effective, economically viable product stewardship scheme for these materials in Australia. It began with a review of programs in other parts of the world for the recovery and recycling of PCT and similar materials.

Informed by data from the Material Flows Analysis, this step will include engagement with the supply chain and other key stakeholders to identify and develop potential scheme options. It will include impact assessments of the options and economic modelling. The consultants and *TexBack* team, including the Industry Steering Group, will be consulting with industry and end use sectors throughout this process to ensure that the perspectives of stakeholders are accounted for.

Contact TexBack on 03 9510 1711 or sustainability@vinyl.org.au to be part of the solution.



The PVC Separation™ pilot plant in Ballarat, Victoria.