

Vinyl Council of Australia and Armstrong Australia: giving PVC flooring a new lease of life

Introduction

The Vinyl Council of Australia has been working with its members to increase the recycling rates of polyvinyl chloride (known as PVC or vinyl) flooring products through the Product Stewardship Program since 2002. The Product Stewardship Program is a voluntary initiative which sets out commitments that address environmental and health issues associated with the life cycle of PVC.

The program has 26 signatories who have committed to taking action in areas such as manufacturing emissions, additives, and end-of-life management.

Armstrong Australia, the world's largest manufacturer of resilient vinyl flooring products, is a signatory to the program. Armstrong Australia's head office is located in Braeside, Victoria, from where it oversees two Australian manufacturing plants.

Armstrong Australia collects the off-cuts and end-of-life flooring that would have previously gone into landfill from construction sites and factories for recycling and processing into a new product.

This case study details the recycling activities conducted by Armstrong Australia on a project to install new PVC flooring at the Royal Children's Hospital in Melbourne.

Use of recycled and re-used material

PVC is a thermoplastic, which means it becomes plastic, or softens, upon heating and hardens upon cooling, making it relatively easy to recycle.

There are three main opportunities for recycling in the PVC flooring life cycle:

- factory waste recovery
- installation off-cuts
- end-of-life recovery.

Factory waste recycling rates are very high within the industry, as clean waste can be reprocessed in-house for most applications. The rate of off-cut recycling is the next highest, as it is also relatively clean. However, processes are required for back-loading product.

Recycling end-of life materials can be complex because of:

- contamination by other materials
- hygiene, health and safety issues
- accessibility of collection infrastructure
- dispersion of product rather than concentrations of available waste near collection and recycling infrastructure.

In the 12 months to May 2011, 21 tonnes of end-of-life material has been collected from RCH and returned to Armstrong Australia in Braeside for recycling into other flooring applications.

The total end-of-life returns in 2011 are expected to be around 30 tonnes, double that of 2010. As the Vinyl Council's Product Stewardship Program approaches its 10-year anniversary, it is projected that 300 tonnes per year of PVC material will be returned to the production process from the three waste streams.

The returned PVC material is recycled to make standard Armstrong Australia sheet-flooring products. End-of-life returns are converted into a new 70 per cent recycled material called vinyl composition tile.



Drivers and benefits

Drivers:

- the Vinyl Council of Australia's PVC Product Stewardship Program
- the need for construction projects to demonstrate good waste management outcomes
- the value of the waste materials through partial material replacement in the production process
- avoiding the cost to construction project managers of landfill charges.

Potential benefits:

Benefits include significant life cycle improvements in carbon dioxide emissions, landfill reductions and avoidance of PVC toxicity from landfill disposal.



As the Product Stewardship Program project has evolved, a market for PVC waste has been created. This has increased awareness that PVC can be and is being recycled.

Problems and challenges

The main challenge with PVC flooring product recovery is the contamination of end-of-life material from mixed construction and demolition waste. This will eventually improve as awareness of the Product Stewardship Program grows, construction managers learn to separate waste, and opportunities increase to recycle end-of-life PVC products, avoiding the cost of landfill disposal.

Solutions

The Vinyl Council of Australia is continuing to raise awareness about the Product Stewardship Program and about improving recycling rates.

Opportunities for other projects

The key opportunity is for construction project managers to divert PVC construction and demolition waste from landfill by working with the Vinyl Council of Australia to identify options for achieving success in PVC recycling.

Contacts and links

Vinyl Council of Australia:

www.vinyl.org.au

Vinyl Council of Australia Product Stewardship Program:

<http://www.vinyl.org.au/ProductStewardship>

Armstrong Australia:

<http://www.armstrong-aust.com.au>

Consultation

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