

On Vinyl

September 2010



Baled PVC bottles at SKM Recycling

Vinyl Cycle and SKM Recycling commence optical sorting of PVC bottles

Vinyl Cycle, the Australian PVC industry's voluntary post consumer bottle recycling initiative, and SKM Recycling (SKM) are collaborating to recover PVC cordial bottles from kerbside municipal waste. Vinyl Cycle has provided capital to SKM Recycling to enable the recycler to include optical sorting of PVC bottles in its operations. The first shipment of 24 tonnes of recovered PVC bottles has just been delivered to Vinyl Cycle's PVC recycler in Geelong.

Under the contract, SKM will deliver a minimum of 80 tonnes of PVC bottles – or over 1.5 million PVC cordial bottles a year. SKM uses an automated machine to separate PET, HDPE and PVC plastics.

Vinyl Cycle was launched 11 years ago to develop the market for PVC recycling and to encourage councils to specify PVC in kerbside collections. Today, PVC bottles are collected from kerbside by most councils in Australia, and where the Materials Recovery Facilities (MRF's) sort out the PVC,

they are reprocessed into new products under the Vinyl Cycle program. The program is funded by users of the PVC bottles, principally Schweppes Australia.

Schweppes Australia's Sustainability Manager, Greg Menz, sees the contribution as an opportunity to promote more post-consumer recycling. "Schweppes has a long-standing involvement in the Packaging Stewardship Forum of the Australia Food and Grocery Council and Vinyl Cycle which both address the issues of post-consumer waste. We would like to improve the level of post consumer recycled material we are working with and encourage other MRF's to start sorting PVC bottles, and other plastics, automatically."

Vinyl Cycle Project Manager, Linda Terry, endorses the views of Mr Menz, saying "Our commitment to the vinyl industry is to have PVC recycled here in Australia. We would definitely encourage

more MRF operators to commit to sorting PVC and to take advantage of our long term fixed pricing on offer".

Vinyl Cycle purchases baled PVC bottles from recyclers nationally. The bottles are sent to Cryo Grind Australia's Geelong depot where they are washed, granulated and cryogenically ground to a powder which is sold as a replacement for virgin PVC resin.

SKM Recycling has the capacity to sort 7 grades of plastic at its Coolaroo site. Business Manager, Rob Italiano, says "Once again SKM Recycling are setting the benchmark for the recycling industry in Australia by being the first recycler to mechanically extract and isolate PVC from within the recycling stream. We are proud to be involved in the Vinyl Cycle program and know that we are in a partnership that is proactive in its approach to the care of our environment."

SKM Recycling will deliver over 1.5million PVC cordial bottles a year



P1 Vinyl Cycle and SKM Recycling commence optical sorting of PVC bottles



P2 PVC form work contributes to project's environmental focus



P3 Australian PVC industry Product Stewardship Program



P3 PVC participates in Monash trial to turn waste plastic into fuel

PVC form work system assists construction productivity

Determined to improve on-site productivity, Associate Director of A.W. Edwards, Mr Greg D'Arcy, specified the use of a permanent PVC form work system for construction of several aspects of Chatswood Civic Place. Currently two years into its three year build, the \$150 million "piazza-styled" Civic Centre has incorporated 2500 square meters of the Dincel wall system.

Having realised the benefits of working with the versatile Dincel Construction System previously, Mr D'Arcy, Project Manager for Civic Place, was adamant it had a role to play at the Chatswood site. He believes the form work is ideal for a range of retaining walls, irrigation tanks, detention tanks and blade columns and has found the innovative Australian form work to be cost-effective and practical.

"Overall you'd have to say there are less

transport costs. It's easy to work with on site, light-weight and the concept is clever", Mr D'Arcy said. "It cuts out a step and means you don't have to remove the timber forms. Timber form work normally gets stripped back and creates other problems. Here you get a better quality, long term."

Made from interlocking PVC panels, the Dincel wall system uses a patented concrete forming technology with rigid PVC, accommodating a concrete fill. The result is a waterproof, non-load bearing or load bearing, fire and acoustic wall. The construction system ensures that the concrete infill is protected by the presence of the permanent PVC skin.

It also contributes to the sustainability focus of the Chatswood project. "The Dincel wall is a pre-ordered form work system whereby you have

the opportunity to predetermine what lengths of product you want, so as to minimise waste", Mr D'Arcy added. "It can be installed quickly and efficiently", he explained. "I would like us to have used more."

Any offcuts that do occur on installation can be returned to Dincel's Sydney-based factory where it is sent to pipe-maker, Vinidex, who recycle the waste into new pipe products.

Due to open in July 2011, the Chatswood Civic Place project is running on time and will consist of a 400 space underground carpark, public library, civic hall, 500 seat theatre, 1000 seat concert hall, retail shops, cafes and restaurants.

Mr D'Arcy says he would be happy to work with the form work again and looks forward to any further development of the highly innovative Dincel product.

Did you know?

5 Facts about PVC design for durability and long life

1
Over 90 per cent of PVC applications are designed for medium or long-term use.

2
PVC is resistant to weathering, chemical rotting, corrosion, shock and abrasion.

3
Some PVC applications, such as underground pipe and wall formwork, are expected to have service lives of more than 100 years.

4
Exhumed PVC pipe that had been buried in Australian soils for 30 years has been tested and found still to be in excellent condition.

5
Studies have indicated that over 60 per cent of PVC window profiles and cable insulation applications will have working lives of more than 40 years.



A.W. Edwards uses the Dincel Construction System.

Armstrong a winner at Australian Business Awards

Vinyl Council Member and Product Stewardship Signatory, Armstrong World Industries (Australia) Pty Ltd was presented with an Australian Business Award in the Environmental Sustainability category at the 2010 Awards.

Armstrong was one of 105 Australian Business Award recipients selected out of a total of 1849 separate entries received from 962 organisations.

The Australian Business Award for Environmental Sustainability recognises an organisation's performance in several categories, in particular, those that demonstrate leadership and commitment to the enhancement, preservation and protection of the environment.

Commenting on their win, Michael Jenkins, Vice President Southern Asia/Pacific said "This award further encourages, as well as reinforces, our commitment to industry leadership in environmental enhancement. Simply put, our objective is to leave as small an environmental footprint as possible and this award recognizes outstanding achievements by our people."

The Australian Business Award for Environmental Sustainability was received on behalf of Armstrong World Industries (Australia) Pty Ltd by Robert Murphy, Manufacturing Manager and Michael Keam, Marketing Manager – Commercial Flooring.



PVC Product Stewardship Program

The Vinyl Council recognises that PVC products add significant environmental benefits to society, as a function of their excellent performance, durability and affordability.

However, as with any manufactured product, there are impacts which need to be understood, characterised and addressed along the PVC product life cycle.

This was the means for establishing the PVC industry's Product Stewardship Program in 2002. The Program commits Signatories to improving manufacturing practices and products.

The Program's Technical Steering Group (TSG) held a meeting in June at the NSW Department of Environment, Climate Change and Water (DECCW) in Sydney. This provided an opportunity for Sharon Owens, the Executive Officer in the Sustainability Programs Division of DECCW, to provide the group with an update on the NSW

Extended Producer Responsibility strategy. With Ms Owens explaining the Government's priority for waste action and discussing the Federal Government's National Waste Policy Framework, the Group explored opportunities for PVC under these emerging policy directions.

Information was shared by a manufacturer on the application of Epoxidised Soybean Oil (ESBO) as a plasticiser and its potential for replacement of phthalates use.

The use of emulsion PVC was discussed and consideration given as to whether development of an emission standard is appropriate within the Program.

95% reduction in lead Continued progress has been made in the phase-out of lead stabilisers. Feedback from the recent data survey indicates that consumption has fallen by 95% between 2005 and 2009. Usage

by Signatories was 65 tonnes in 2009. Remaining users have confirmed phase out by the end of 2010, in line with the Program commitment.

Data on Program progress during 2009 has been collected for the next annual report and will be released shortly. The report is independently verified together with the 2009 performance of eight Signatories.

If you would like to receive an electronic copy of the annual report, please email info@pvcproductstewardship.org.au "Add me to mail-list," in the subject line.

New Signatories Rojo Pacific Pty Ltd, Altro APAC Pty Ltd, and Specialty Polymers & Chemicals Pty Ltd have been welcomed. See a profile of these businesses on page 4.

For more information about the Program visit the website at www.pvcproductstewardship.org.au.

PVC participates in Monash trial to turn waste plastic into fuel

PVC has been included in a Monash University trial which is endeavouring to convert waste plastics into fuel.

Funded by the Victorian State Government's Department of Primary Industries and the Australian Research Council, the objective of the study is to identify the relative quantities of PVC and other polymers that can be used in a waste plastics mix to produce

diesel and lubricants, while maintaining emissions to permissible limits.

To do this requires developing an understanding of the formation of chlorinated hydrocarbons during the pyrolysis of mixed plastics containing PVC. This is being done through experimental investigation using an array of reactors and modern analytical instruments.

Project leader and

Associate Professor of the pilot study at Monash University, Mr Sankar Bhattacharya, says "It has been reported that PVC accounts for 50 – 65% of chlorine (Cl) in municipal waste. This is one of the main reasons we have diversified the feedstock and are investigating the effects of the incorporation of PVC in the plastic feedstock." (continued on page 4)

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Given PVC's widespread use as a polymer, there is a need to develop new technology to produce diesel from the pyrolysis of mixed waste plastics that include PVC.

Almost all of the aromatics present in the fuel generated from the plastics are formed during the pyrolysis process itself. While not as common as other plastics in the waste mix, the high chlorine content in PVC means that even small amounts of PVC could produce

chlorides, including organic chlorides. The presence of chlorides in the pyrolysis product could result in aromatic chloride emissions during combustion, which would render the product worthless as an automotive fuel.

The research will help inform how to control aromatic and chlorinated hydrocarbon contents in diesel.

"The ultimate aim is to understand the reaction pathways for the

formation of various aromatic and chlorinated hydrocarbon structures during the pyrolysis of waste plastics under the conditions pertinent to the Ozmotech process", says Mr Bhattacharya. Ozmotech are a project partner. The final result would be a more robust process which is able to effectively treat a wider range of waste polymeric materials.

The Vinyl Council of Australia welcomes new members Rojo Pacific Pty Ltd, Altro APAC Pty Ltd, and Specialty Polymers & Chemicals Pty Ltd.

Rojo Pacific Pty Ltd is a Victorian-based operation. Rojo Pacific imports wide format outdoor signage materials and supply direct to screen and digital printers. They have a network of authorised distributors in Australia, mainly in non Victorian states selling their products.

Importing PVC coated fabrics, Rojo Pacific sources from a RoHS*-compliant supplier in China.

One of Managing Director, John Wright's interests is, to explore the recovery and recycling of PVC coated fabrics in Australia.

The Vinyl Council (VCA) has recently arranged a trial to recycle 100kgs of Rojo's PVC coated fabric with PVC recycler SRM Plastics and since joining, the VCA and Rojo have successfully recycled rigid PVC sheet scrap. The recyclate was used in PVC pipe product. For more information visit www.rojopacific.com.au

* RoHS: Restriction of Hazardous Substances – a European regulatory directive.

Altro APAC Pty Ltd is an Australian company with a UK parent. Altro UK manufactures and supplies interior vinyl surfaces. Its principal activities are within the areas of high performance safety flooring and wall cladding, with its focus on the healthcare, hospitality, education and other markets. Altro's Asia-Pacific marketing and distribution subsidiary has joined the Vinyl Council and become a Product Stewardship Program Signatory.

Distributed in more than 50 countries around the world, Altro works with its "6 Steps" Sustainability program (www.altro6steps.com). As part of this work, the company has developed a recycling process which allows recycled chip from its safety flooring, to be scattered onto the surface of the undercoat of certain products.

Marketing Manager – Asia Pacific, Warwick Duncan, says "This process diverts waste from landfill and further increases the recycled content and sustainability of its flooring products. Altro was also instrumental in setting up the Recofloor and Recowall vinyl take-back schemes in the UK, where post-installation waste is recycled and diverted from landfill."

In recognition of its environmental achievements Altro was listed in The Sunday Times (UK) Top 60 Best Green Companies in 2009. For more information visit www.asf.com.au

Speciality Polymer & Chemicals Pty Ltd (SP&C) was established over 3 years ago utilising the industry experience gained over the past 35 years. SP&C deliver products and services to PVC and other markets and industries.

SP&C's objective is to work closely with its customers and suppliers to provide solutions and products that meet today's environmental objectives. The team at SP&C is dedicated to offering technical support and coordination to meet environmental objectives. They have already experienced new directions and changes in the manufacturing processes of major critical raw materials that enable customers to comply with international standards.

Managing Director of SP&C, Martin Mallia, says "We believe that the challenges facing industries such as automotive, mining, building and construction and packaging industries will continue to put pressure on us as suppliers to comply with rigorous standards and remain competitive at the same time."

