On Vinyl

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Vinyl Council Australia

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ReSource Workshop: Advancing the future of PVC Recycling

The Vinyl Council of Australia recently brought together a wide range of representatives from across the plastics, government, community, recycling and waste sectors to explore a persistent dilemma – how to facilitate greater recovery and recycling of PVC products in Australia.

Gathered together at the PVC industry's 2011 ReSource Summit in May around 60 delegates worked together to develop a strategic outline of what will be required to advance commercially viable PVC recycling in Australia, a challenge particularly given the country's population size, the diverse use of PVC (or vinyl), and its geographic spread.

The Summit was a unique opportunity for delegates to influence the future of PVC recycling. Through a facilitated process, they shared experience and knowledge on the current state of play in recycling PVC, and were encouraged to think in new ways about the potential for PVC recycling.

A panel of four guests from across industry opened the event with discussion about the 'elephants in the room' in the context of PVC waste, recovery and reuse.

"Learning from natural ecosystems, we can see that sometimes being small and local is more effective and sustainable than trying to attain ever-increasing scale," Rob Coombs, President of the Asia Pacific division of carpet manufacturer, InterfaceFLOR, and a panel member, told the delegates at the event.

"A viable recycling sector should shift from centralised, large scale infrastructure to a model of small-scale localised reprocessing," Coombs explained.

Coombs' approach was one of many initiatives proposed by delegates at the summit. Through a highly interactive process, delegates worked to identify and develop the broad strategies required to advance PVC recycling (see side panel).

The outcome is a collaborative strategy to develop new ways of managing PVC waste and resources in Australia.

Recognising the need for the whole supply chain to work better together, Coombs and others reported that the summit was a great source of energy to progress the issue.

"It was particularly advantageous to meet and discuss strategies with the industry as a whole," Coombes said.

Continuing the dialogue with interested stakeholders, the VCA will now move towards finalising the strategy, prioritising actions and facilitating the establishment of a Steering Group. To stay in touch with this process, or to get involved, visit http://www.vinyl.org.au/2011ReSourceSummit

Dincel: A Construction Solution for Major Earthquakes

An Australian innovative wall construction system that uses PVC profiles has been confirmed by sophisticated tests and analysis to withstand major ground motions measuring as high as magnitude 9.0 on the Richter scale.

Over a period of 20 months, the Dincel permanent PVC formwork system underwent testing at the Structures Laboratory at the University of Technology Sydney by a team from accessUTS Pty Ltd. The resulting analysis found that the Dincel system is safe and practical, and offers a reliable, seismic-resistant solution.

Professor Bijan Samali, Professor of Structural Engineering, School of Civil and Environmental Engineering and a Specialist Consultant at accessUTS Pty Ltd, said he has no reservations in recommending the system to the global community on the basis of its proven performance under most hostile loading environments.

The tests included subjecting specimen Dincel wall panels to motion equivalent to that recorded during the 1995 Kobe earthquake in Japan and the 1940 El Centro earthquake in California which represent large magnitude near field and far field earthquakes respectively.

Additional tests established and directly compared the resilience of the Dincel wall system with that of a conventional wall in sustaining large deformations, well in excess of what current building codes allow. These tests found that the Dincel wall outperformed the conventional wall.

The report found that an obvious advantage of the Dincel Wall system was the provision of sound confinement to the concrete by the cellular PVC formwork which incorporates the outer skin as well as the integral internal webs. This prevents the deterioration of stiffness and possible collapse of the wall by not allowing the concrete to spall after several loading cycles, even if fully cracked.

"This is a welcomed safety feature for walls subjected to strong ground motions" the report states.

These tests proved to be "very conclusive", the report's author said, in demonstrating the capacity of the Dincel system to protect human life and withstand major damaging earthquakes of up to magnitude 9 on the Richter scale.

"...withstand major ground motions measuring as high as magnitude 9.0 on the Richter scale."

Bio-Solar House works with PVC

In Thailand, a bio-solar home has showcased the benefits of using uPVC (unplasticised PVC) windows frames.

Designed by Dr Soontorn Boonyatikarn, professor and director of the Centre of Excellence Building and Environment Technology for the faculty of Architecture at Chulalongkorn University, the objective of the bio-solar house was to demonstrate a house that produced no greenhouse gas emissions, heat, noise, air, water, waste and toxic pollution during its use, making it a bio-ecological home for the future.

Dr Boonyatikarn selected uPVC window frames in this home because an assessment suggested they would significantly reduce energy consumption compared to windows made out of alternative materials such as wood and aluminium.

Traditional window profiles in Thailand have low thermal resistance; high infiltration rates; expansion and contraction issues; high maintenance and complicated installation processes. By using uPVC, Boonyatikarn's bio-solar home improved performance, resulting in a mean radiant temperature (MRT) of 34°C, compared to 47°C for wood and 59°C for aluminium.

Recognised for his innovative work in improving the sustainability of buildings, Boonyatikarn has received a number of awards including the ASEAN Energy Award (2004), the ASHRAE Regional Technology Award (2002-2003) and the ASHRAE Thailand Chapter Award (2002-2003).

"By using uPVC, Boonyatikarn's bio-solar home improved performance, resulting in a mean radiant temperature (MRT) of 34°C, compared to 47°C for wood and 59°C for aluminium."

Members

The Vinyl Council of Australia would like to take this opportunity to acknowledge **Primaplas PTY LTD** who have become full members of the VCA.

The Vinyl Council provides a unique vehicle for contact between member companies on issues relating to the environmental aspects of PVC and PVC products, and the public and industry perceptions of PVC.

Did you know?

5 Facts about the Product Stewardship Program

1 The PSP is a voluntary initiative established in 2002 administered through the Vinyl Council.

2 In 2010, 30 companies were Signatories to the PSP representing about 80% of local manufacturing.

3 Under the PSP, the use of cadmium has been phased out by Signatories and the phase out of lead is almost completed.

4 The PSP commitments have been extended in 2011 to include an emission standard for PVC & a commitment to avoid mercury.

5 There is a dedicated webiste for the PSP at http://www.vinyl.org.au/ProductStewardship/PVCProductStewardship

Australian PVC Industry Moves Closer to Lead Phase Out

During 2010, Australian signatories to the PVC industry's Product Stewardship Program (PSP) reduced their use of lead based stabilisers to 25 tonnes from 65 tonnes in 2009.

The PSP is a series of commitments agreed to by signatory companies in the PVC industry to address environmental aspects of the PVC life cycle. The undertakings relate to responsible production and emissions, storage, the safe use of additives, waste management, research and public reporting.

The Program established a phase out date of end 2010 for the use of lead stabilisers, historically used in small quantities in products to improve thermal stability and processing. The stabiliser is tightly bound into the polymer matrix and is therefore safe within the product during use. Nevertheless the PVC industry recognised community concern about lead in the environment and the occupational exposure risks posed by production of lead compounds. It therefore agreed in 2002 to commence the technical work required to substitute these stabilisers with alternatives.

In 2002, when the Program was launched, Signatories reported 1,200 tonnes of lead was used in manufacturing.

All but three signatories using these stabilisers have confirmed that they had completely phased out the use of lead in manufacturing PVC products by the end of 2010. The three remaining signatories have committed to continue to work towards phasing out the small quantity of lead stabiliser stock remaining in their operations by the end of 2011.

In addition to the significant voluntary reduction in use of lead stabilisers, the Program introduced in 2010 a new commitment that Signatories will confirm the avoidance of mercury in the supply chain,

The PSP Annual Report of Progress for calendar year 2010 is currently being independently verified by the NetBalance Foundation, and is due for release in the coming weeks.

Visit the PVC Product Stewardship website for more updates and information at:

www.pvcproductstewardship.org.au

A new industry body formed in Asia to improve health and safety performance

A new Vinyl Council has been launched as an association of PVC producers in the ASEAN countries with the objective of encouraging a responsible and sustainable industry in the region.

The ASEAN Vinyl Council's members include twelve PVC resin producers drawn from the ASEAN countries of Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. Motivated in part by the impending ASEAN Economic Community that is to commence from 2015, which will operate somewhat like the European Community, the establishment of the ASEAN Vinyl Council shows a desire to promote a stronger PVC industry in the region. It provides a forum for ASEAN PVC producers to work together to advance the health and safety of the industry.

The Council will cover issues related to PVC production including processing, logistics and recycling of PVC, leading to stronger environmental management within the ASEAN industry.

With the intention of developing a responsible production charter, the Council will encourage participating members will comply with governing and applicable standards and industry best practices.

Recycling vinyl in Europe reaches record levels

The European industry's voluntary commitment program, Vinyl 2010, recently released its results for 2010, and has achieved a record recovery of 260,000 tonnes of post-consumer vinyl waste for that year, marking the culmination of the 10 year program.
The latest progress report shows that in 1999 there was no infrastructure for recycling of PVC in Europe and it was dismissed by many as an "unrecyclable" material. Now, an audit shows that in the last year alone 260,842 tonnes of PVC waste was recycled by Vinyl 2010's network of PVC recyclers across Europe. This achievement exceeded the goal originally set by Vinyl 2010: 200,000 tonnes of PVC recycled per annum by 2010. The 2010 results includes 25,000 tonnes of pipe, 107,000 tonnes of profiles such as window frames, 2,200 tonnes of vinyl flooring, and 6,000 tonnes of rigid films reprocessed.
In the 10 years of the Vinyl 2010 program, recycling of available post-consumer PVC waste from non-regulated waste streams reached 900,000+ tonnes ; lead stabiliser use has been reduced by 79.5 percent, on track to phase out by end 2015; cadmium stabilisers have been phased out in the EU-15 (2001), EU-25 (2006) and EU-27 (2007), and the industry has improved dialogue with the broader community.

"This achievement exceeded the goal originally set by Vinyl 2010: 200,000 tonnes of PVC recycled per annum by 2010."

VinylPlus Collaborates with The Natural Step on a New Initiative.

As Vinyl 2010 draws to a close, a new long term Product Stewardship initiative has been developed by the industry.
The European PVC industry has just launched a new initiative called VinylPlus, a voluntary commitment that aims to enhance the sustainable production, and use of PVC by 2020. Following the success of the Vinyl 2010 programme which revolutionised the PVC value chain in Europe from 2000 onto 2010, VinylPlus has an ambitious new set of targets for the future of sustainable development in Europe.
One of VinylPlus' targets is to move towards greater "controlled-loop management" of PVC. This includes efficient use and control of all materials throughout their life cycle. Building on the work already started under Vinyl 2010, VinylPlus aims to achieve a quantum leap in recycling rates and ensure that 800,000 tonnes of PVC are recycled on an annual basis by 2020.
Josef Ertl, Chairman of VinylPlus commented on the launch by stating, "VinylPlus is even more ambitious in its targets and scope than Vinyl 2010. The aim of the industry is to continue to contribute to Europe 2020 goals on sustainable growth through results-driven self-regulation."
Developed with the input and guidance of The Natural Step (TNS), an international NGO at the forefront of research and dialogue on sustainable development, VinylPlus strives to be transparent and open with its communications with internal and external audiences. The new commitment places significant emphasis on ongoing stakeholder dialogue as a means of ensuring that the industry's efforts translate into concrete and far reaching benefits for society as a whole.

FSANZ Reviews Migration from Packaging into Food

A survey has been released by Food Standards Australia New Zealand (FSANZ) to determine the extent of migration of a range of chemicals from packaging into foods.

FSANZ looked at a total of 65 foods and beverages packaged in glass, paper, plastic or cans. Samples were selected with the intention of representing foods and beverages likely to be purchased by the general consumer from Australian supermarkets.

Among the chemicals assessed, were vinyl chloride, phthalates and epoxidised soy bean oil (ESBO) relevant to PVC packaging materials.

The survey found that there were no detections of phthalates, or vinyl chloride in any of the foods analysed. There were detections of ESBO in three samples, but the detected levels were below international migration limits, including those set by the European Union. The dietary exposure to ESBO from these foods is estimated to be very low, and does not pose a human health and safety risk to consumers, FSANZ's report states.

Overall, FSANZ concluded that the results from this survey provide reassurance that the packaging materials assessed do not pose a human health and safety risk. This supports previous assessments undertaken by FSANZ.

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