

Ontera Modular Carpets: a commitment to life cycle thinking

Introduction

Ontera Modular Carpets have been designing and manufacturing modular carpet tiles in Australia since 1985. The product is made of a fibreglass polymer matrix backing with nylon. Sixty-six fibres are embedded in the surface to create the carpet. Ontera implements the principle of 'precycling', whereby the original product is made more durable to maximise its first life to ensure that it is able to withstand additional life cycles.

Ontera guarantees to take the product back at the end of its first life for re-use or recycling at no cost to the customer. The tangible benefit, above the direct cost saving, is the reassurance that the product is not ending its life in landfill, but entering a second life.

Use of recycled and re-used material

Ontera's principle is to retain the energy embodied in their products as far as possible by extending products' life cycle and by not wasting the energy embodied in the products. Ontera's EarthPlus[®] environmental program provides an option to re-use any used Ontera carpet tiles without any destructive processes or measurable additional energy input. Used Ontera carpet tiles can be given a second (and possibly third) life through a proprietary process that 'super-cleans' the surface, retextures it and superimposes a new design to refresh the appearance. This extends the warranted life of the carpet tile by a further seven years for the same end use.

The EarthPlus[®] program is a re-use process, not a recycling process. Ontera's studies have shown this to be the most environmentally benign way to extend product life. All of the embodied energy used in the creation of the original product is retained, enabling the product life to be significantly extended without the need for significant additional energy and resources.

A summary of resource efficiency savings includes:

- take-back and re-use of over 120 000 m² (approximately 600 tonnes) of used carpet tile
- saving of approximately 2000 litres of water per month in dye recycling
- incorporation of post-consumer recycled component of between 5–10 per cent of the backing using polymer component obtained by recycled used or waste carpet tiles
- reduction of energy and water consumption by over 40 per cent per square metre of finished product
- reduction of waste sent to landfill by 25 per cent
- reduction of on-site CO² emissions by over 19 per cent
- increase of recycled content in product by 50 per cent.



Drivers and benefits

Ontera Modular Carpets have founded a business based on supplying a sustainable product to the market, and this is the main driver. Re-use initiatives are recognised by the New South Wales Government through involvement and achievement in the Sustainability Advantage Program, and this recognition is good for business. There is also inherent value in a re-used product, leading to worthwhile economic returns.

Ontera have ensured that maximum available credit points can be achieved by specifying their product in the Green Building Council of Australia's Green Star rating tool. Ontera has a certified Environmental Management System, certified to ISO 14001, which requires ongoing environmental improvement.

Each 1000 square metres of modular carpet re-used through the EarthPlus® process results in over 5 tonnes of waste being saved from landfill or incineration.

In terms of product recycling, there will always be some process waste and post-consumer product that is not suitable for re-use. Ontera has developed and implemented a process which recovers all of the components of the product without the need for energy-intensive thermal processes. The yarn is separated from the backing and sold to third-party polymer extruders, and the backing is ground into a fine powder form and re-used by Ontera as a post-consumer recycled component of new carpet tile backing.

Ontera has made significant improvements in resource efficiency through the implementation of a range of programs and processes. As part of its ongoing ISO 14001 certification, it monitors monthly: its consumption of water, electricity and gas; and levels of waste to landfill, waste recycled, and greenhouse gas emissions. It reports its results against annual reduction targets. Ontera is achieving a decreasing trend in all resource areas and is working towards achieving their sustainability targets.

Re-use and recycling delivers the following benefits for Ontera:

- reputation and market stature
- improved economic returns
- increased staff engagement and loyalty
- reduced landfill costs
- reduced utility costs.

Problems and challenges

Challenges remain for greater re-use, which include availability of technical knowledge and expertise for further process improvements, local availability of equipment, and geographic diversity of product to be returned for re-use or recycling.

Solutions

Ontera routinely uses external consultants to identify production and consumption efficiencies, some of which have been funded and provided through the New South Wales Office of Environment and Heritage Sustainability Advantage Program.

Opportunities for other projects

There are opportunities for Ontera to work with other manufacturers of products that use similar materials and Ontera are willing to explore opportunities for by-product exchanges with other companies. There are opportunities for greater process efficiencies, which include the development and up-scaling of an in-line recycling unit.

Contacts and links

Ontera Modular Carpets

www.ontera.com.au

New South Wales Office of Environment and Heritage Sustainability Advantage Program

<http://www.environment.nsw.gov.au/sustainbus/sustainabilityadvantage>

Consultation

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Photo

Ontera Modular Carpets

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