



**Newspec Eco-Revive™**

**Products Recycling & Environmental  
Sustainability Program**



# Towards A Sustainable Cycle of Matter on Earth.

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As our product and development here are making advancement and reaching globally, we are also making most of our effort to minimize impact of development on environmental sustainability.

## Eco-Revive™

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With our constantly improving manufacturing technology, we have truly achieved zero emission that we completely eliminate discharging of wastewater & gas emission from the process.

By screening materials content used in production, we minimize the release any harmful substance during use and Volatile organic compounds (VOCs) are tested well below standard threshold.

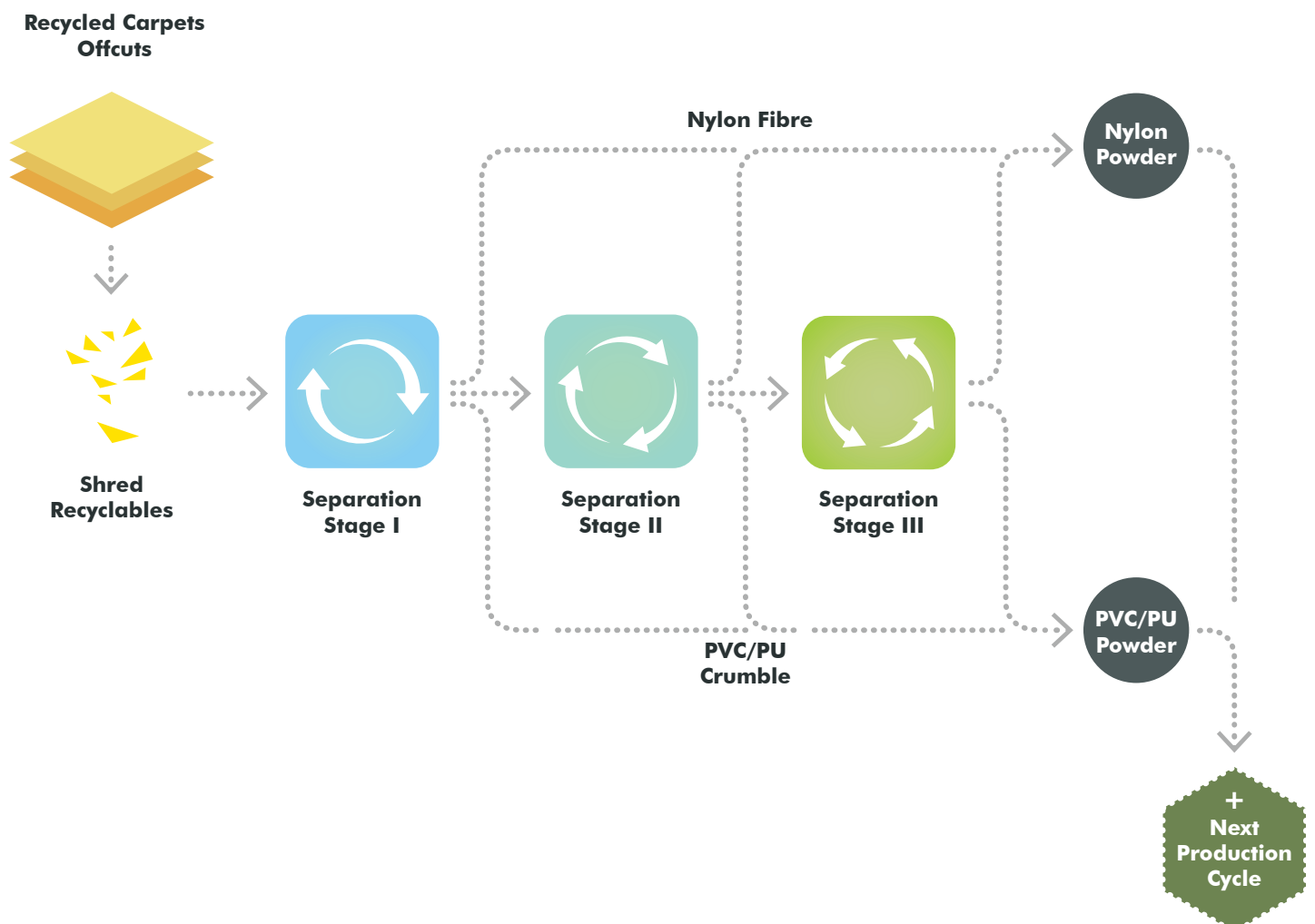
## Eco-Revive™

Alongside of manufacturing quality end products, as part of social and environment responsibility, our aim is to minimizing emission, waste through undertaking recycling process in the cycle of sustainable manufacturing.

When our product reaches end of life, we spend most effort to bring it back and recycle the materials. Our three-stage separation recycling process is a key factor in contributing towards zero emission scheme. Recycled carpet tiles go through rigorous stages of separation and filtering, those material which meets standard will go into the production of next line of carpet tile.

During the production cycle, we eliminate all possible waste emission. For instance, with our Infinity dye™ Injection production technique, we completely eliminated discharging waste water and minimized raw material and energy consumption. This is achieved by direct ink injection into yarn face thus redundant or by-products are brought down to minimal level.

### Three Stage Separation Process



## **Yarn Separation & Recycling**

By choosing INVISTA ® fibre from antron ®, not only we are committed in producing the highest quality carpet tile, we are making an impact in material and energy sustainability development. Nylon Yarn is made from 100% recyclable nylon 6,6, with its melting point of 264 Celsius degree, it can be re-melted for recycling into next production.

Firstly, end of life carpet tile is recycled by negotiation with our participating clients. When carpet tile needs to be replaced, we collect and categorize them according to material classifications for recycling preparation. In the process of recycling, material goes into further stream of identification, this is to maximize recycling efficiency and a pre-elimination of toxic waste material.

## **PVC Backing Recycling**

1. Recycled PVC backing is separated by three stages crushing as an initial raw material. During the process, it transforms to PVC crumble and finally to a relatively fine powder. We are able to recycle back 80% of waste material into PVC powder. The powder can replace calcium carbonate as a filler for the new PVC in subsequent production, resulting in a stronger PVC layer.

1. Recycled PVC backing carpet tile, separated by three-stage crushing with similar principle, nylon blanket yarn can get up to 70% nylon powder, the powder is granulated by granulation, up to 20% of the amount in the new material can be added to manufacture next line of carpet tile.

3. The rest of non-recyclable material are filtered and treated then enters thermal power plant for incineration, used as fuel source for power generation.

## **PU Backing Recycling**

1. Undergoes the first yarn separation and material categorization, the three-stage separation process again transform recycled PU backing into 70% of PU powder, PU powder can be used as recycled PU foam, foam chips can be made into PU carpet liner and cushion, these are then introduced into the next product cycle.

2. Recycled PU backing carpet tile, after three-stage separation, nylon blanket yarn is transformed up to 70% nylon powder, the powder is granulated by granulation of nylon crumbles. Again, as a result, up to 20% of the amount of recycled materials can be introduced in the next cycle of fabrication.

3. The filtered down material in the end which are not suitable for recycling, these can be treated and then enter thermal power plant for incineration, used as fuel source for power generation.

## **Production Procedure of Dye Injection**

Our Dye Injection production lines and process have undergone a comprehensive technical improvement, utilizing automatic color selection, pigment is brought from blanket surface down to the bottom of the carpet through pressurized air press printing technology, this eliminates the need for water washing/rinsing process to completely avoid discharge of sewage, truly realize zero emission daily production, certified with environmental assessment of production. Utilization of digital printing allows material to be more efficiently used, this translate to energy efficiency and ultimately means less pollution to our environment and earth. By having accurately calculated dye injection, not only dye/pigments are conserved but also reduces off cuts in nylon blankets and backing material as they can be made exact in dimension at the first place of fabrication.

## **Product Materials and Performance**

ESC elastic carpet tile eliminates the use of volatile glue, choosing INVISTA nylon 66 for carpet surface, DOP-free PVC paste for the back end (low-carbon DOTP), high density polymer PU for elastic layer. Our ESC carpet tile also eliminates the use of glue during installation, as to avoid damage to floor base and difficulty in recycling. Newspec can recycle all used carpet, it will undergo through a three-stage negative pressure decomposition, nylon, PVC, PU powder are then collected separately and reprocessed to the next level of recycling.

## Health & Safety Assurance

As a product that will present to occupants on a daily basis, material health and safety to human is our first priority. With series of laboratory test performed in U.S to measure harmful substance presence, we ensure no toxic substance are presented in our carpet. With measurement of Volatile Organic Compounds, the substance released to air which can be inhaled to human body is minimal and well under specified value in International Standards and U.S regulations criteria.

During unexpected situation such as fire emergency, our carpet tile meets flammability regulation in U.S, Australian and International standards. With self-extinguishable properties of our backing material, fire propagation will be retarded.



Newspec Carpet Australia Pty Ltd

Newspec Carpet (Ningbo) Co., Ltd

