

Updated February 2020

Should Nylon and PET plastic pile carpet be banned in Australia and New Zealand?

The answer in my opinion is **YES**.

*This document contains the current opinion of Greg Galt
(Managing Director of Supertuft Pty. Ltd.)*

Health concerns:

Concerns for public health, the health of children and their ability to develop normally and concerns for our natural environment prompt me to express this opinion.

Nylon is highly flammable and releases asphyxiate gases such as Hydrogen Cyanide (HCN) if burned. Therefore Nylon pile carpets may only comply with building regulations if fire retardant chemicals are applied. Stain resist chemicals are among other treatments often applied to nylon pile carpets.

My concern is that the chemicals used in making Nylon pile carpets may present a substantial health risk.

“Eliminating Toxics in Carpet: Lessons for the Future of recycling”

October 2017 produced by the Healthy Building Network is a report that I believe all carpet industry participants should read.

Extracts of this report appear below in *italics*.

“Although most carpets contain substances of concern, they are often labelled with product certifications that imply safety. However most of the certifications do not currently address the significant toxicity issues for carpet identified in this report. Some commonly used certification standards reward recycled content and ignore toxic content. Some including the industry-led Green Label Plus certification, conduct ‘indoor air quality’ testing that is limited in scope to VOC emissions”

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The Carpet Institute of Australia Limited website 'Consumer Health Information' states; "With good room ventilation, new carpet V.O.C. emissions will drop below most indoor air quality criteria within a few days." Volatile Organic Compound emissions are **NOT** the concern of this document.

It is the toxic fire retardants and the stain resist treatments that I believe are reasons to ban the use of nylon pile carpet.

It is hard to assess how harmful the chemicals given-off by a particular nylon pile carpet may be. It may be impossible to accurately assess their contribution (if any) to rising rates of blood cancers, asthma and autism (now estimated to be 1 in 59 children in the U.S.A) as we are often exposed to many volatile organic compounds and toxins both in and outside of our homes.

"Halogenated flame retardants are among the chemical industry's most notorious products. They are linked to hyperactivity, learning disabilities, reproductive harm and cancer. Common replacements for the halogenated flame retardants are organophosphate flame retardants, which are linked to endocrine disruption and infertility."

"Historically the carpet industry used long-chain PFAS - mainly perfluorooctane sulfonic acid and perfluorooctanoic acid (PFOS and PFOA, C-8) - in the production of polymers for stain repellent treatments. Long chain PFAS are widely acknowledged as being very persistent in the environment and human blood."

I remain concerned about chemical substitutes that may pose the same, similar, or worse dangers to long-chain PFAS that have since been replaced by short-chain PFAS by some nylon manufacturers.

In Australia and New Zealand there is no independent testing required for the chemical content and toxicity of fire retardant and stain resist chemicals that have been applied to the carpet pile.

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“Replacing a known toxic chemical with a chemical having similar hazards is often referred to as ‘regrettable substitution’. Short-chain PFAS are now in the sights of environmental health scientists and the healthy building community.”

“Children are likely to be exposed to PFAS through hand-to-mouth transfer from treated carpet. According to the U.S. Centers for Disease Control (CDC), “Major types of human exposure sources from PFAS include ... Hand-to-mouth transfer from surfaces treated with PFAS- containing stain protectants, such as carpets, which is thought to be most significant for infants and toddlers”. The CDC also warns that people can inhale PFAS in dust released from carpet.”

Environmental concerns:

Informed people worldwide are trying to reduce the production of greenhouse gases and the pollution of our air, waterways and oceans by micro plastics and hazardous chemicals.

Nylon pile carpets are made from refined oil products that contribute significantly to the production of greenhouse gases and air pollution. Nylon pile carpet is a massive source of non-biodegradable waste, a source of massive amounts of micro plastics, fire retardant and stain resist chemicals that find their way into our waterways and oceans.

The Stockholm Convention Article 6 requires that products that contain certain chemicals upon becoming wastes are:

“(iii) Not permitted to be subjected to disposal operations that may lead to recovery, recycling, reclamation, direct reuse or alternative uses of persistent organic pollutants”.

The U.S.A. has NOT ratified this agreement and therefore recycling of plastic carpet that contain these chemicals is legal in the U.S.A.

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Extended producer responsibility (EPR) legislation went into effect in California in 2011 where nylon and recycled PET carpet accounts for most of the market. The law required carpet mills to come up with a plan for the reclamation and recycling of post-consumer **synthetic pile carpet**. By July 2015 the organisation formed to develop this recovery and recycle plan (Carpet America Recovery Plan) was deemed to be non-compliant with only 10% of total discards estimated to be recycled.

Mohawk Industries completed the acquisition of Godfrey Hirst Group on July 2, 2018. The total value of the acquisition was **U.S. dollars** - \$400,894,000. Mohawk industries claim to have recycled 6.2 billion plastic bottles into polyester carpet in 2017. Now they are planning to sell polyester carpet in Australia and New Zealand. Based on the 'California experience' there will be **a massive disposal problem created by these products** when they are discarded at the end of their life.

Recycled PET bottles may contain the additional hazardous and banned chemical 'Bisphenol A' (BPA). Accumulating evidence suggest that prenatal BPA exposure may be associated with symptoms of anxiety, depressed mood, aggression, and hyperactivity in children.

Researchers at Washington State University have advised that some chemicals used to replace 'BPA' have similar adverse effects on reproduction as 'Bisphenol A' itself.

“Plastic products that show signs of damage or ageing cannot be considered safe,”

says professor Patricia Hunt, the researcher who led the study.

This means that **plastic pile carpet may become increasingly hazardous as it ages on the floor!**



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Carpets that have a toxic and non-biodegradable pile are accumulating on the floors of residences and offices all over our country. When it comes time to replace these carpets, local municipalities and governments will realise that they have an environmental catastrophe on their hands. The state of California has already realised this.

The idea that manufacturers of nylon pile and other synthetic pile fibre carpet may recover and recycle significant quantities of the fibre in the future is a 'fantasy'. Recovered nylon will be contaminated by flame retardants and stain-resist chemicals and also be in short fibre form making it dangerous and difficult to reuse for any safe purpose.

Carpets often have a long life. By the time the carpet is ready for collection the manufacturer may have shut down or its assets been sold to a new venture to avoid responsibility for promises made to "recycle".

Cheaper Nylon and PET plastic pile carpet may tend to be uplifted and discarded much more readily than a wool carpet that is seen as a longer term investment.

Why allow hazardous products into Australia and New Zealand when we have access to wool and other safe natural fibres?

Non-biodegradable carpet goes to landfill or becomes the fuel for toxic or illegal disposal methods. Illegal disposal may fly under the banner of 'recycling'. Illegal disposal may include dumping at a remote site on land or at sea, illegal incineration or exporting waste to another country where illegal methods are used.

A report by an independent engineer estimates that the U.S.A sent 157,000 shipping containers of plastic waste to other countries in 2018. Why should we allow foreign companies to create more non - biodegradable and toxic waste in our country.

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One nylon pile manufacturer's website suggests that carpet could be used as a "source of energy". That is to say that it could be burned. This should never be allowed to occur anywhere (See Stockholm Convention) as the carpet would first have to be stockpiled (a high risk situation) and then would release toxic gases when burned. See "Fire Toxicity – What's in the smoke"

<https://www.birmingham.ac.uk/Documents/college-les/gees/conferences/nercpops/Conference2014/Fire%20smoke%20toxicity.pdf>

We have recently seen in Melbourne how multiple toxic waste collection facilities can 'mysteriously' catch fire and cause enormous environmental damage, illness and death.

Our company manufactures carpet with a woolen pile.

A wool pile requires no flame retardant or stain-resist chemicals. Wool is naturally flame resistant, is a renewable resource and bio-degradable once the product life has expired.

Wool requires no new government scheme.

I call on all carpet specifiers and industry participants to consider the concerns described in this document and to make the shift to **safe natural fibres** such as wool.

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GREG GALT
MANAGING DIRECTOR