

PVC Position paper

EMEA
2021



Context

PVC is one of the most versatile and widely used plastic in the world, with applications in everything from construction to water distribution, fashion or medical equipment. In the building and construction industry, PVC accounts for more than 40%¹ of total plastic usage, and is used for everything from cabling to windows and pipes. Indeed, PVC is the best choice for durable products where versatility, high functionality, cost-effectiveness and extended life² are needed. In addition, PVC is made of 57% of salt³, and is therefore less energy intensive to produce than other comparable plastic polymers such as PE, PP, PET and PS which are 100% fossil based.

PVC is a safe and non-toxic material to humans. In June 2007, the European legislation on chemicals, known as REACH, came into force. This regulation is one of the most stringent worldwide in terms of transparency and chemicals management. Thanks to REACH, and with support from VinylPlus and Eurochlore voluntary programmes, problematic additives - cadmium compounds, lead based stabilisers and some phthalates - have been banned and replaced by innovative, safe and sustainable alternatives.

In the event of a fire, PVC prevents the spread of flames, creates little smoke and is difficult to ignite. This applies even more to PVC flooring: placed on the ground, air cannot pass through to fan the fire. PVC combustion releases small quantities of hydrochloric acid (HCl), an irritant non-asphyxiant gas, which irritates the mucous membranes rapidly alerting people to a fire. In fact, the primary cause of death in case of a fire is carbon monoxide (CO) poisoning. This colourless and odourless gas has a high intoxication rate factor because people can die from inhaling it in their sleep⁴. Last but not least, if a space contains materials likely to burn in the event of a fire such as paper, cardboard or wood, it's important to know that PVC flooring, by virtue of its composition, has intrinsic flame retardant properties, making it difficult to ignite, with a burning temperature of 150°C above wood.

PVC is a 'smart' material for a sustainable society. When it reaches end of life, there are now virtuous solutions so no valuable resources go to waste. The first option is to recycle PVC material - as a thermoplastic, it can be recycled up to eight times⁵. VinylPlus⁶ has set ambitious goals to increase PVC recycling: by 2030, it aims for one million tonnes to be recycled annually. The other option is incineration. Like all other wastes containing chlorine, e.g. salty foods, incinerated PVC generates hydrogen chloride acid gas (chlorine is converted into HCl) and dioxins. In order to meet severe emission standards, all EU incineration facilities must have at least one flue gas cleaning system installed to collect the fly ash and neutralise the acid gases.

Tarkett Position

At Tarkett, we promote the responsible use of PVC.

Promoting vinyl flooring for versatile usage and superior characteristics

We supply flooring solutions for all segments: workplace, hospitality, stores and shops, healthcare and education, sports and residential. We primarily use PVC to develop and offer floors with superior user properties such as extended life cycles (up to 30 years), high wear resistance, low maintenance costs, attractive designs, good hygiene and ease of installation.

Pioneering material assessment and radical transparency

We only use raw materials and additives that meet high standards on sustainability, design and technical performance, in line with the Cradle to Cradle[®] principles⁷. We share detailed information about our products through third party-assessed documents: Material Health Statements and Environmental Product Declarations⁸. We also pride ourselves in taking the utmost care in the selection of our partners and suppliers.

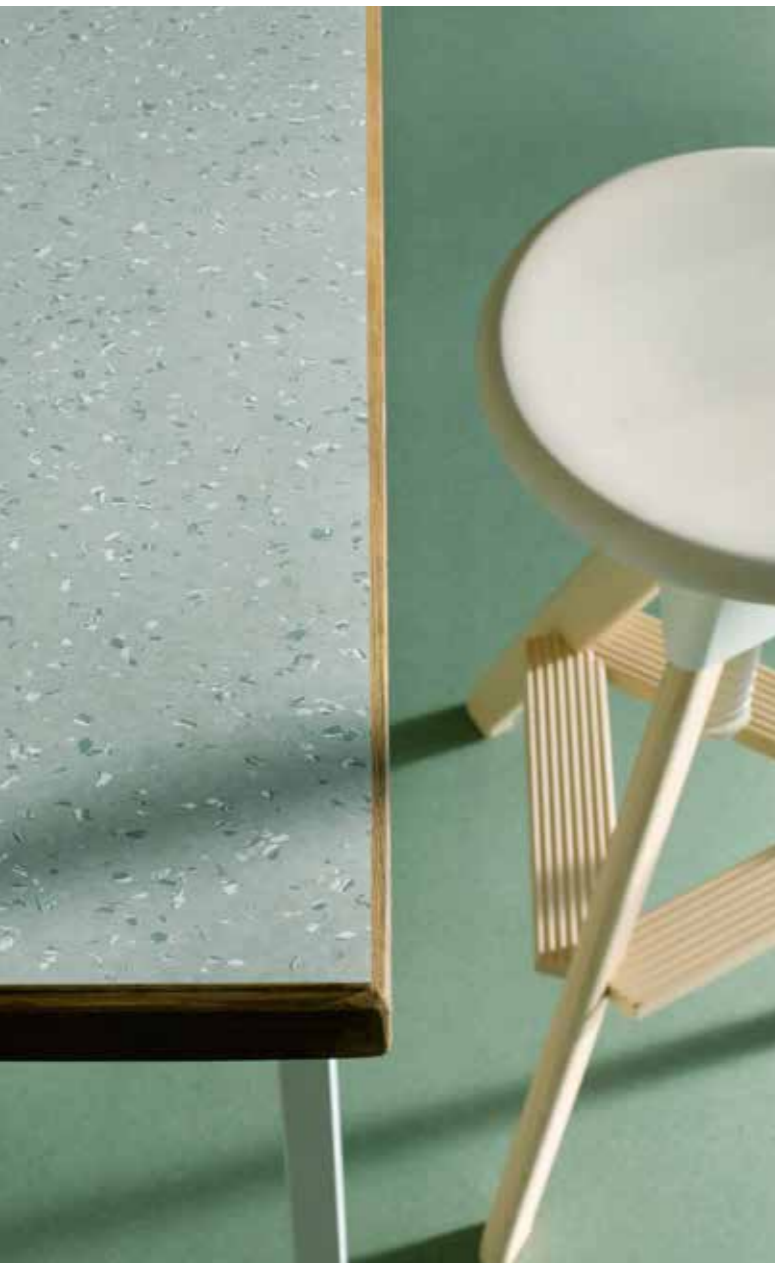
Exceeding regulations and standards on raw materials, technical and environmental characteristics

Tarkett does not only abide by the most stringent EU regulations, we exceed them. We decided to go phthalate-free ahead of evolving regulations. Similarly, our PVC products' VOC emissions are between 10 to 100 times lower than the strictest standards. In 2020, we took an important step by introducing iQ Natural, the world's first floor with bio-attributed PVC, which offers a greenhouse gas emission reduction of 60%,⁹ when compared to average homogeneous vinyl floors.

Committing to a circular economy and PVC recycling

We have always been strong advocates of recycling and the circular economy. We began recycling our first homogeneous flooring in Sweden in 1957. Our ReStart[®] take-back and recycling programme has been operational since 2010 in many European countries. We already offer installation waste recycling and post-use recycling for loose-lay products. Now, we're pioneering closed-loop post-use recycling for glued-down PVC products¹⁰ to create new products delivering the same high quality and technical performance. Through this major innovation, Tarkett is also moving further towards achieving its circular economy and carbon neutral ambitions.

This is how we make **responsible use** of PVC in our floors today:



- In 2018, we **replaced phthalates** in our European products (recycled content included) with plasticisers that are approved for use in young children's toys and food packaging.
- Our PVC products do **not contain biocides**.
- Our PVC products are REACH-compliant and do **not contain heavy metal** stabilisers.
- Our PVC suppliers **do not use mercury cell or asbestos** based membrane technology in their chlorine production process.
- **100%** of our PVC products have **low VOC** emissions.
- **98% of the raw materials** used in our production are third party-assessed by EPEA according to the rigorous Cradle to Cradle® principles.
- We declare the climate and health impact of our products through our **EPDs and MHS**.
- We **collect and recycle** PVC floors through **ReStart®**, our take-back and recycling programme. Since 2010, we have recaptured 109,000* tonnes globally at our own facilities. Recycling our flooring waste is essential to reducing climate impact. Recycling 1sqm of iQ homogeneous vinyl installation waste saves 10kg* of CO₂. Recycling 1sqm of iQ homogeneous vinyl post-use waste saves 11.8kg* of CO₂.
- We develop **glue-free solutions**, both click and loose-lay, to facilitate floor disassembling and recycling.
- We have **three PVC recycling centres** in Europe - Ronneby, Jaslo and Clervaux.

*Calculation methodology is based on the incineration scenario of an average Tarkett homogeneous iQ range with surface weight 2.75 kg/sqm. Calculation methodology for incineration values of the raw material is based on the data from specific EPD N° S-P-01346. Raw material substitution calculations are based on A1 and A2 values from background report of said EPD. Our EPDs and our background reports are third-party verified by LCIE Bureau Veritas.



To further **improve our PVC**, we will:

Tackle climate change

- **Eco-design 100% of Tarkett's new products** to reduce our carbon footprint by 2030 at least **30%*** (Scope 1, 2 and 3)¹¹ compared to 2019 and reach **30%*** of recycled content in production by 2030.
- Continue to investigate **bio-attributed** options for vinyl flooring.

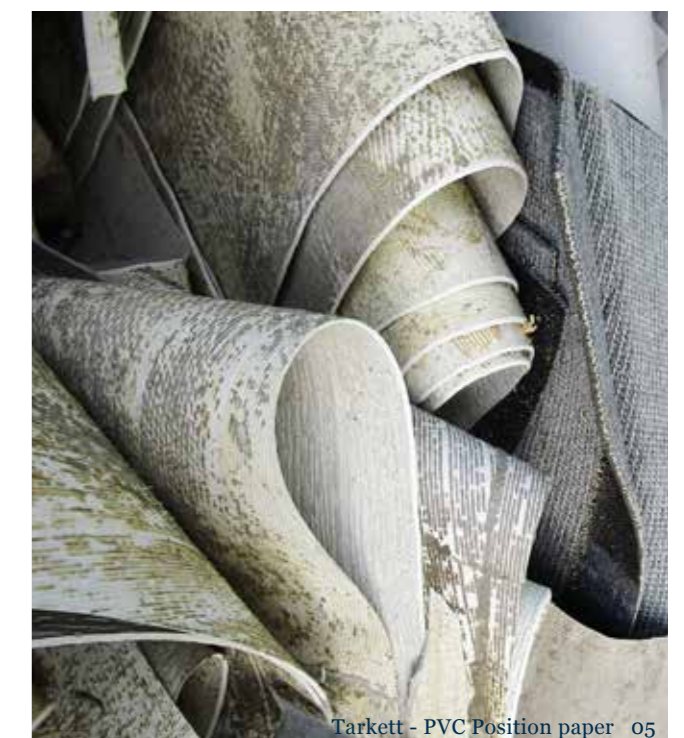
Accelerate circularity through ReStart®

- Further improve our recycling technologies and expand our ReStart® programme with **100% closed-loop recyclable vinyl products**: pre and post-consumer recycling into new high quality products in all our EMEA countries. By 2030, we aim to recycle more than **30,000 tonnes**¹² of PVC flooring in EMEA. This will contribute to reducing Tarkett's carbon impact by 30%* by 2030.

*Group figures

Contribute to better indoor environmental quality

- **Improve indoor air quality** by combining low to ultra-low-VOC PVC flooring with loose-lay solutions for all types of PVC floors.
- Offer **best-in-class acoustic solutions** in all our segments.





This is how we make **responsible use** of PVC in our floors today:



No phthalates



No biocides heavy metals



100% Low VOC



98% Materials assessed



Bio-attributed PVC options



Recycling through **ReStart®**



3 PVC Recycling centres



Glue-free solutions



2030 ambitions



-30% carbon footprint by 2030 compared to 2019 (Scope 1, 2 and 3)



30% recycled content



100% closed-loop recycling



Optimal indoor air quality



Best-in-class acoustic solutions

¹ https://vinylplus.eu/uploads/Modules/Documents/understanding_the_basics_hcl.pdf

² PVC products have an average lifetime of 30 years, with some reaching 50 years or more. Source <https://www.bioenergyconsult.com/recycling-polyvinyl-chloride/>

³ https://vinylplus.eu/uploads/Modules/Documents/understanding_the_basics_hcl.pdf

⁴ https://envorinex.com/web_assets/docs/products/PVC%20and%20Fire.pdf – https://www.vinylinfo.org/wp-content/uploads/2018/12/Fire-Properties-of-Polyvinyl-Chloride_0.pdf - www.elsevier.com/locate/fire saf

⁵ Vinyl Plus <https://vinylplus.eu/recycling/a-smart-material/sustainable-recyclable>

⁶ https://vinylplus.eu/uploads/Modules/Documents/understanding_the_basics_hcl.pdf

⁷ The assessment criteria used by Cradle to Cradle® is based on the following steps: Registration and identification of products and their constituent substances by CAS Registry Number / Use of the comprehensive EPEA database and, if necessary, research in external databases / Incorporation of the likelihood of exposure in a relevant scenario and recyclability for estimating the resulting overall risk / Creation of an overall recommendation for future handling of the product or substance in question.

⁸ Tarkett's EPDs (Environmental Product Declarations) provide a detailed overview of the health and environmental risks associated with our products. Our MHS (Material Health Statements) deliver even greater granularity – exploring the health and environmental risks of individual materials, based on an independent analysis of our product composition (down to 0.01%). All the data is verified by EPEA, an expert in Cradle to Cradle consultancy.

⁹ Based on A and C modules from our EPD N° S-P-01508 with a recycling scenario through ReStart® in comparison to generic EPD-ERF-20180176-CCI1-EN with an incineration scenario.

¹⁰ Post-use vinyl recycling for homogeneous vinyl flooring produced after 2011 (without phthalates).

¹¹ Greenhouse gas emissions are categorised into three groups or 'Scopes' by the most widely-used international accounting tool, the Greenhouse Gas (GHG) Protocol. Scope 1 covers direct emissions from owned or controlled sources. Scope 2 covers indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting company. Scope 3 includes all other indirect emissions that occur in a company's value chain.

¹² Including installation and post-use waste.

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