

# REIMAGINE THE PROPOSITION

What is the value proposition of this product? Design out chemicals of concern by exploring new ways to deliver the value of the product to the user. If you can't design out the chemicals of concern in any other way, use them sparingly. In addition, offer the product as a service or design a take-back programme to keep the chemicals of concern out of the waste stream.

## **STARTING POINT**

Could your product be transformed into a new and better service experience? Look at the Circular Design Guide method 'Service Flip' to explore how you might turn common products into a service model.



# REDEFINE THE PRODUCT

Consider the functional and emotional needs the product fulfills and the design requirements to achieve them. What value do the chemicals, materials and parts provide?

## **STARTING POINT**

What is the value of the product and its requirements? The durability and stain resistance of certain hard surface flooring like bamboo, tile, or stone may make them suitable substitutes to commercial carpet, especially if the application (like in an office space) does not require flooring to be soft or buoyant.



# REDESIGN THE PART

Question the functionality of the component that contains the chemical of concern. Improve the component by designing out the chemical, while redesigning the structure and the shape to retain or improve functionality.

## EXAMPLE

Many commercial carpet tiles use polyvinyl chloride (PVC) as their primary backing material. PVC is classified as a halogenated polymer, and both the production and incineration of PVC after use can result in the release of toxic dioxins in effluent and into the air. To avoid the potentially hazardous impacts of PVC, one solution could be to use a different backing material that is non-halogenated.



# RETHINK THE CHEMICAL

Rethink the use of the chemical of concern. Question the functionality of the chemical. Explore the possibility of removing it from the material or product, or substitute it with a safer one with similar or better features.

## EXAMPLE

These days, many products – ranging from cleaning and personal care products to apparel and textiles – are infused with antimicrobial materials and chemicals. Scientific evidence has shown that antimicrobials can do more harm than good. They are actually hazardous to human health, cause environmental harm throughout their lifecycle, and have little success in preventing disease and infection. Rather than habitual inclusion, the toxic antimicrobial chemical can be designed out without any need for replacement.



# REDUCE EXPOSURE TO THE CHEMICAL

When it is not possible to design out the chemical of concern, make sure that exposure to it is reduced throughout the lifecycle. Exposure includes handling the raw material, exposure to humans during the manufacturing process, exposure to product users, and to the product's recyclers/processors.

## **STARTING POINT**

Use the Circular Design Guide method 'Safe and Circular Systems Mapping' to explore where exposure to chemicals of concern happens in the lifecycle of the product. What can you implement in your design to protect humans and the environment from the harmful effects of chemicals of concern?

