



## California Carpet Stewardship Program

An initiative of CARE: Carpet America Recovery Effort

### **Innovation and Design Grants (Pilot Cycle I&D) Questions and Answers**

***Question:* What is the nature of the material to be recycled/reused? Is it mainly nylon 6 and nylon 66?**

*Answer:* The components in post-consumer carpet (PCC) are primarily nylon 6 and 66, PET, polypropylene and backing, which contains calcium carbonate, polypropylene, latex and other materials (referred to as post-consumer carpet calcium carbonate, or PC4). Presently the calcium carbonate is most challenging to recycle as it has no real value in the marketplace, followed by the PET and PP.

***Question:* What impurities are in the post-consumer carpet components?**

*Answer:* The whole carpet is typically processed into fiber, pellets/agglomerate and/or the backing material, which looks like a fine powder or sand. The range of PP remaining in the other fibers may be between 2 and 12 percent. The ash content in the fiber is anywhere from 3 to 20 percent, depending on the processor and their process. One of the PCC processors makes the backing material with a bit of fiber content, while the other two have essentially fiber-less backing material; one processor makes wet or dry calcium carbonate.

***Question:* Is it possible to get a small sample or photos of the PCC material to be repurposed?**

*Answer:* It is certainly possible for CARE to assist applicants in obtaining PCC samples. Please email Abbie Beane, CARE grants manager, at [abeane@carpetrecovery.org](mailto:abeane@carpetrecovery.org) in order to arrange for samples through one of the companies processing California PCC. Photos of processed PCC can also be found on processor websites, listed below:

<https://circularpolymers.com/products/>

<https://lafiber.com/aboutus.html>

<https://www.aquafil.com/locations/acr-phoenix-arizona/>

**Question: What approaches to creating more sustainable post-consumer carpet content products have been tried before so that we do not attempt to reinvent the wheel?**

*Answer:* CARE has a catalog of product categories made with California-sourced PCC and offered by companies across the US at <https://carpetrecovery.org/california/products/>. The PC4 has been used as a one-time absorbent, as a filler in rubber products, and in cement applications. The nylons are traditionally recycled into higher end applications such as automotive parts and even new carpet. The PET material is often recycled into insulation and similar batting products, composite building materials, and back into plastic products through molecular recycling. The polypropylene is used in compounding operations for lower value materials.

**Question: What is the primary goal of this initiative?**

*Answer:* This grants program is largely interested in applicants discovering new, more recyclable carpet designs that can go back into carpet or other value-added products. There has been considerable work done on finding new uses for the current materials used to make carpet, thus this is a lower priority focus. Product designs that also have a smaller environmental footprint are considered important.

**Question: What are the bottlenecks in terms of processing existing post-consumer carpet material or creating a more recyclable carpet design?**

*Answer:* The primary bottleneck is having an intimate mixture of materials that are polymeric and non polymeric, which are intimately mixed. All of the value is in the polymer and half of the weight of PCC is in the backing. A recycler's main challenge is how to separate PCC in a way that creates a new, valuable product. CARE is also concerned with how to engineer carpet or PCC processing so that there are not bottlenecks in the future.