



CARE Guidelines for In/On-Ground Application of Post-Consumer Carpet

CARE is establishing the following draft guidelines for any use of post-consumer carpet materials that go into an application that involves on the ground or in the ground usage. Such applications might include equestrian products, water filtration products, soil amendments, etc.

It's important to recognize that there are a number of parameters for which CARE has little or no scientific guidance at this point in time. Currently there are no statutory or regulatory requirements around micro plastics. In addition, there exists great ambiguity around several organics of concern for example: PFOA, PFOS, and BFRs. However, there are limits for drinking water for these chemicals. Trying to do the right thing in an environment of such ambiguity can be difficult. In addition, there are many other sources of these materials.

Laid upon this ambiguity is the challenge of a 24% recycling rate by the end of 2019, making the challenge even more difficult with such a short timeline. Extensive work has been done by CARE's members to find outlets for PC4 which represents approximately 40% by weight of every square yard sold. Failure to find outlets for this material is unacceptable from an environmental stewardship point of view, a recycling efficiency perspective and from our ability to hit the 24% target. The challenge with PC4 is further exacerbated by the fact that virgin material is so inexpensive and greenhouse gas impacts are minimal.

CARE desires to aid its recyclers to take the right actions regarding the potential for adverse impacts on human health and the environment. It is also clear that there are background levels of many materials the implications of which are not manifest at the present time. To aid understanding, CARE has been working with U.C. Davis and Humboldt State University (HSU) to conduct scientifically rigorous studies to guide decision making. Results will be published when the work is complete.

As a result, and in an effort to continue to make progress, CARE is establishing a set of working guidelines to help aid the development of products and markets for these materials. Recyclers should be aware that the science is unfolding, and these guidelines are subject to change at any time. In addition, subsidies tied to such applications may be adjusted. It is the responsibility of any supplier or manufacturer to insure they are in compliance with any federal, state or local regulations.

1. CARE will continue to discuss and bring the best science available to provide guidance as we chart these unknown waters.

2. CARE will do its best to work with each individual recycler to provide guidance on how best to proceed to find acceptable in/on ground applications when appropriate.
3. It is the responsibility of each product producer to secure their own testing and clearances for any application in/on ground and to comply with all local, state and federal regulations that may apply.
4. Any product that is inserted into the ground or mixed into material that will go on the ground, must meet all local water board requirements, in addition to any other state or local agency requirements or permits for intended applications.
5. We now know that any PC4 derived from PET PCC sources contains antimony, a catalyst used in the production of PET polymers. This product will be unacceptable for ground-based applications unless the levels are below any regulatory limits. In the absence of regulatory limits, concentrations at or below local background levels will be required. Accomplishing such levels may be achieved through blending the product with other materials prior to use or further processing steps, such as washing/extracting. Analytical testing will be necessary to demonstrate compliance.
6. Any application involving PC4 will have to demonstrate that in-ground applications meet all water quality specifications.
7. Any fiber-based applications be it PET, nylon, or polypropylene must be tested for leaching and demonstrate that the product in its intended application meets all water quality requirements and any other permitting requirements in the locales where it will be used.
8. In the case of PET fiber, CARE advises that any application that is to be used in stormwater infiltration be washed and tested to confirm leaching of antimony or organics meets all regulatory requirements.
9. To the extent State agencies exist that regulate certain applications or industries, those specifications shall take precedence in terms of acceptability.
10. Any process to treat either PC4 or fibers to remove materials of concerns will be deemed acceptable if approved by the local authorities, especially local water quality boards.
11. Applications that involve encapsulation or sequestration, including use under an impervious surface, are deemed acceptable at this time. Such applications are considered to immobilize materials such that they cannot be eroded into the environment or percolate into the aquifer.
12. To be eligible for future subsidies regarding in/on ground applications, the product producer is responsible for supplying CARE with copies of all regulatory approvals including water board approvals, prior to qualifying for subsidy payouts as applicable.

13. Recyclers are advised that CARE will be developing additional Agreed Upon Procedures (AUPs) to address in/on-ground applications consistent with these guidelines.
14. The draft guidelines will apply to all subsidy recipients regardless of their geographic location.
15. CARE will provide a list of CA state regulatory agencies that may be consulted for various applications to provide guidance or to secure appropriate performance requirements within the state (see below).
16. Due to a lack of analytical methodology and removal technology, at this time CARE takes no position on micro fibers.

It is important to recognize the CARE has engaged experts in the areas described above. We are working with U.C. Davis specifically on PC4 for the quantification of inorganics, organics, and micro plastics that may be present. We are working with GHD Engineering and Humboldt State University in the application of fiber-based systems for various environmental uses. Periodic updates will be posted as they become available. The objective is to conduct peer reviewed science followed by publication in peer reviewed journals. Ongoing progress and results will be periodically shared with CalRecycle. As a result, CARE considers current efforts as pilot studies to seek further understanding.

Here are additional steps a recycler may undertake when considering a new product application:

- a) Nutrient Claims – if the product is being applied to land for soil amendments and/or a nutrient claim is involved, then contact should be made with California Department of Food and Agriculture, Ag Commissioners, UC Cooperative Extensions
- b) Water Quality – if the product is being applied near a water source, then contact should be made with the Regional Water Quality Control Board (note that application may need to be consistent with existing storm water permit or WDR or a new permit or WDR may be required)
- c) Test Data – it is advisable to do upfront testing on the product to see if there are any contaminants of concern and share the data with the appropriate agency prior to the product being applied. For example, Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) are chemicals of concern and it is advisable to test for and share data on the product that shows the contaminant level of these chemicals. There are water quality thresholds and types of constituents of concern that the Regional Water Quality Control Boards regulate.
- d) California Fish and Wildlife – they have surface water programs as well so if the product is being applied to land near surface water that impacts fish and wildlife, then contact should be made with this agency as well.
- e) Caltrans – conducts testing on Best Management Practices for new products used in road construction and may be able to offer helpful advice on what to test for, etc.

From a practical perspective, all of the constituents found in PCC are present in the environment at various levels and are derived from a multitude of sources. It is not feasible to reach zero levels. More realistically we are striving to be below background levels involving any chemical of concern. In addition, it is generally CARE's belief that PCC contributes a tiny fraction to the environmental burden of many of these chemicals of concern (micro plastics is a good example when compared to textile laundering). Further, there are secure/sequestered applications which pose no threat to the environment as currently envisioned. Finally, the regulatory agencies currently have in place strict guidelines for many of these materials for both content and containment, for example such as equestrian applications. CARE intends to allow such regulatory mechanisms to guide usage.

The bottom line: It is important to conduct due diligence with the development of any new product that is being applied to land, or which goes on or in the ground, to ensure that the product provides beneficial performance and no harmful impacts to human health or the environment. While CARE does not have much familiarity with equestrian and infiltration applications, CARE encourages producers of these products to reach out to the appropriate agencies identified above should you have any questions.

Disclaimer: CARE does not make recommendations and makes so warranties expressed or implied. All decisions are at the sole discretion of each the business entity.