



CARE Operational Guidelines for Handling and Processing Post Consumer Carpet

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Background

Handling and processing of Post-Consumer Carpet (PCC) is significant to the quality of the finished product and to the continued health of the employees. As such, each handling/processing step will be addressed and include the use of Personal Protective Equipment (PPE) for employees performing the job. While an attempt to proscribe all types of PPE or even all processing steps in the sequence each entrepreneur must perform them is impossible, we will provide a general overview and recommend that OSHA guidelines be followed at all times.

CARE has provided guidelines for storage in a separate document. These guidelines for storage will be assumed in this document as best practices. The guidelines listed here are to provide best case practices and support the recycling of PCC. If there are any questions, your local code authority will always take precedence over these recommendations.

1. Handling and Processing

- a. Unloading – the process starts at the loading docks or unload point
 - i. Hand unload – may be required due to the manner in which PCC has been loaded (rolled face out products, precut to processing size, etc.)
 1. PPE requirements are:
 - a. Leather gloves
 - b. Safety vests
 - c. Safety goggles
 - d. Hearing protection – may be required
 - e. Steel toed boots – may be required (bales of material)
 - ii. Unload with equipment – forklift, front end loader, squeeze lift, etc.
 1. Employees should be licensed with appropriate training to safely operate the equipment
 2. PPE requirements are:
 - a. Safety goggles
 - b. Hearing protection



- c. Safety vests
 - d. Leather gloves – if required to touch PCC material by hand
 - e. Steel toed boots – if required to get off of equipment to work with PCC material bales
 - iii. Unloaded PCC material will be moved either to Sorting, Processing, or Storage
 - iv. PCC material that has been contaminated with biologics (urine, feces, etc.) should be immediately set aside for disposal and not moved further into the operations
- b. Sorting – consists of determining the type of PCC material present. During this step, the following tasks may be performed:
 - i. Bales may have to be broken open – this is required to get to the PCC material within the bale for identification testing
 - ii. Identification of material
 - 1. Material is generally identified by a scan gun (operation will not be covered here – refer to your user’s manual)
 - 2. Material can also be sampled and taken to a lab for identification (process for identification with lab techniques will not be covered here)
 - 3. Some material is also grouped at this point by backing type (PVC)
 - 4. Once identification has been made, material is segregated by various means (fiber type, backing type, use, or source) and prepared for next steps of processing
 - iii. At this point, PCC material may be cut to size for next processing steps
 - iv. Sorted PCC material may also be baled for further transport or storage
- c. Processing – consists of various activities (some of which may be repeated as required)
 - i. Hammer Mill – this process is used to break the latex backing away from the PCC material
 - 1. PCC material must be pre-cut to the width required by the Hammer Mill
 - 2. PCC material is then fed through the Hammer Mill and latex is collected under the impact point(s)
 - 3. In some cases, PCC material may be run through the Hammer Mill process several times to break away most of the latex backing and provide a cleaner product to further steps
 - 4. Latex filler collected from the Hammer Mill is packaged, labeled and shipped for other use or sent to the landfill
 - 5. Safety – standard PPE (hearing protection, safety vests, leather gloves, safety goggles, etc.)
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- b. Mask – to prevent inhalation of fiber fly and latex filler
 - c. Steel toed boots – may be required if tied to a baler
 - ii. Shearing operation – in many cases, PCC material may move directly on conveyors from the Hammer Mill process or be hand fed into the shearing machine
 1. Shearing removes the face fiber and deposits in into collection bins or a bale press operation
 2. This sheared material is packaged, labeled and prepared for shipment or storage
 3. PCC material may be run through the shearing machine multiple times (or through several shearing machines in sequence) to allow more face fiber to be removed
 4. After shearing has occurred, the carcass is collected and either baled for disposal (or later processing) or taken to another process
 5. Safety – standard PPE (hearing protection, safety vests, leather gloves, safety goggles, etc.)
 - a. Standard PPE (hearing protection, safety vests, leather gloves, safety goggles, etc.)
 - b. Mask – to prevent inhalation of fiber fly and latex filler
 - c. Steel mesh gloves – required when working on the shear heads (sharpening)
 - d. Steel toed boots – may be required if tied to a baler
 - iii. Shredding operation
 1. Shredding is the process of taking the carcass and other PCC material (possibly fiber types which have little or no outlet) and mechanically tearing the material into small pieces
 2. This step reduces physical bulk and volume required by PCC material and prepares material for some further processes and uses
 3. During the shredding process, additional latex filler will be released from the PCC material as is runs through the shredder.
 4. Latex filler material is collected and is packaged, labeled and shipped for other use or sent to the landfill
 5. Shredded PCC materials are baled, labeled and shipped for other use or stored
 6. Safety – additional PPE and precautions may be required due to the nature of shredding machines



- a. Standard PPE (hearing protection, safety vests, leather gloves, safety goggles, etc.)
 - b. Mask – to prevent inhalation of fiber fly and latex filler
 - c. Steel mesh gloves – may be required for certain work functions
 - d. Steel toed boots – may be required if tied into a baler
- d. Baling – since baling can occur at several points during the processing of PCC material, additional details are handled here
- i. Hand loaded – smaller units which have limited through put and are loaded by hand
 - ii. Top load or conveyor or continuous load balers – large units which process a high volume of PCC material with minimal direct loading by employees
 - iii. Due to the nature of balers, safety must be the first consideration. The manufacturer of the baler provides operating and safety instructions specific to their model which must be followed to prevent serious injury or death.
 - iv. Baling of shredded or sheared PCC material requires the bale to be wrapped to prevent loss of material in handling (wrap may be plastic, woven material, etc.). This may occur at the baler as the bale is doffed, or after doffing (shrink wrap and manual wrap)
 - v. Safety – additional PPE may be required for employees working on the baler
 1. Hearing protection
 2. Safety goggles
 3. Leather gloves
 4. Steel toed boots
 5. Safety vests
 6. Masks
- e. Latex Filler collection
- i. Latex filler may be collected in various ways:
 1. Waste dumpsters – conveyor system may feed to dumpster or it may be hand loaded (shovels, etc.)
 2. Drums and boxes – latex filler is collected and loaded by hand (shovels)
 - ii. Latex filler may have contaminants and small amounts of fiber present based on where it was collected. This may limit the use and require separation from other latex filler.
- f. Labeling of PCC material
- i. During processing, very little labeling occurs. After identification and sorting, PCC material is generally kept separate physically (storage locations or processes) until processed.



- ii. After processing, PCC material should be labeled adequately to prevent mixing of materials that have been sorted and stored accordingly.
- iii. Use of standard plastics labeling (HDPE, etc.) can be used
- iv. Labels for the various skus should be attached to the bales, boxes, shrink-wrapped pallets, etc. on at least 2 sides (center of the side)

Notice: These guidelines are meant to provide general guidance for the processing and storage of post-consumer carpet. It is the responsibility of the owner/operator to ensure compliance with all local, state and federal guidelines, regulations, rules and statutes. CARE makes no warranty and assumes no liability for decisions and actions taken by individual owners/operators with respect to these guidelines or the reliance thereon.