



# DRAFT

## Product Verification Committee Clarifications Report Number 5

### I. BACKGROUND

See Clarification Report number one for the background on the authority of the Product Verification Committee (PVC) and the context for PVC Clarifications.

Some manufacturers have asked how postconsumer recycled content should be calculated. These three clarifications address three different aspects of the calculation of postconsumer recycled content. All three clarifications address conformance with the following criteria:

#### 4.2.1.1 Required—Declaration of postconsumer recycled plastic content

**Product Criterion:** Manufacturer declares whether product contains postconsumer recycled plastic greater than 5.0% by weight, measured as a percentage of total plastic (by weight) in each product, or does not. Manufacturer may declare actual percentage of postconsumer plastic.

#### 4.2.1.2 Optional—Minimum content of postconsumer recycled plastic

**Product Criterion:** Product shall contain on average a minimum of 10% postconsumer recycled plastic, measured as a percentage of total plastic (by weight) in the product.

#### 4.2.1.3 Optional—Higher content of postconsumer recycled plastic

**Product Criterion:** Product shall contain on average a minimum of 25% postconsumer recycled plastic, measured as a percentage of total plastic (by weight) in the product.

### II. PVC CLARIFICATIONS

#### Clarification Request 5-1:

Shall glass filler in plastic components be included, or not included, in the calculation of the weight of plastic in the component? Should the weight of the glass filler be added into the denominator along with the weight of the other plastic?

A corollary question is whether glass filler should be included in the numerator as part of the recycled plastic.

#### **Background:**

Glass filler is blended with resin to form a plastic with special characteristics that is used in certain internal electronic components. Other materials may also be added, including, but not limited to, flame retardants or plasticizers.

The postconsumer recycled plastic content for the product as a whole is calculated as a percentage, whereby the total amount of postconsumer plastic in all the components is divided by the total amount of plastic in the product, and multiplied by 100. PCBs and packaging are excluded from the calculation.

Note that the criterion uses the term “plastic”, versus “resin” or some equivalent. The clarification hinges on this. The term plastic (the noun) is defined as “a plastic substance”,

and plastic (the adjective) is defined as “capable of being molded or modeled”. Plastic is therefore defined by its physical characteristics.

**PVC Clarification 5-1:**

1. *The denominator – weight of plastic in the product* – The weight of the glass filler, and all other additives that are blended to formulate the plastic used to make the component, shall be included in the calculation of the total weight of the plastic for the purpose of calculating postconsumer recycled content.

**Rationale:** Glass filler is an integral part of the plastic used to make the component and, when blended with the resin and other additives has the characteristics of a plastic material.

2. *The numerator – weight of recycled plastic in the product* – Glass filler that is added as glass to the plastic, regardless of whether it is recycled or virgin glass shall not be included in the calculation of the amount of recycled plastic (the numerator). However, if the source of the glass filler is from postconsumer recycled plastic that contains glass filler, it shall then be included in the calculation of the amount of recycled plastic. The same applies to other additives.

**Rationale:** The criteria address plastics only. As noted, the definition of plastic references its physical characteristics. Therefore, it is the physical characteristics of the source material that determines whether it is recycled plastic. In the form of glass, it is not a plastic. However, when the source of the glass is from recycled plastic that contains glass filler, it is then in the form of plastic.

**Example 1:** Start with a 100g part that is made of a glass filled plastic. This part is ground and formed into pellets, and reformed into a new 100g part. Even though this part has a glass content, because I have recycled the entire glass filled plastic part into a new glass filled plastic part, the postconsumer recycled content would be 100%.

$$\frac{\text{Total Weight of Recycled Plastic Content in Part}}{\text{Total Weight of Plastic Part}} = \frac{100\text{g of recycled plastic}}{100\text{g of total weight of part}} = 1 \times 100 = 100\%$$

**Example 2:** Start with 20g of glass fill (either virgin or recycled glass) and 80g of plastic resin. This plastic resin is 50% by weight postconsumer recycled plastic and 50% by weight virgin plastic giving a total of 40 g of recycled plastic. The glass fill is blended with the plastic resin (containing 50% recycled resin) to create a 100 g part.

$$\frac{\text{Total Weight of Recycled Plastic Content in Part}}{\text{Total Weight of Plastic Part}} = \frac{40\text{g of recycled plastic}}{100\text{g of total weight of part}} = .4 \times 100 = 40\%$$

**Clarification Request 5-2:**

How shall the amount of recycled feedstock be calculated in the case where the recycled feedstock material is separated into parts (either at the molecular or material level) and only some portion of the feedstock is incorporated into the final plastic? Should the full weight of recycled plastic entering the plastic manufacturing process be counted, or only the portion that makes it into the final plastic used in the product?

**Background:**

Some plastic manufacturing processes break down recovered plastic materials into their chemical constituents and then reformulate resins using these chemical feedstocks. Likewise, recovered plastic parts may be separated by resin type for further processing. In either case, a portion of the incoming material stream may be discarded or used in another application.

***PVC Clarification 5-2:***

Recovered plastic parts or material that enter the manufacturing process, but are not included in the resulting plastic material that is used in the product, shall not be counted as recycled content in the product.

Determination of the recycled content of a plastic material in a product shall be a simplified mass balance that determines the weight of recycled material that enters the manufacturing process and calculates the weight of recycled material that is included in the “total plastic (by weight) in each product” (wording from the standard).

***Rationale:***

The criteria clearly refer to the recycled content of the product declared to EPEAT. Therefore, any portion of recovered plastic material that is discarded or diverted to another application would not be included in this calculation.

**Clarification Request 5-3:**

Should certain plastic components that do not lend themselves to recycled content due to functional or performance issues be excluded from, or included in, the calculation of the amount of plastic in the product (denominator)?

***Background:***

A subscriber expressed the opinion that only molded plastic parts/mechanical parts are currently being counted towards the total plastic weight in the product by subscribers and in verification. They expressed that certain plastic parts due to performance issues (e.g. clarity, product safety, etc.) are not good candidates for biobased or postconsumer recycled plastics, such as cable jackets, insulating sheets, light guides, and optical films. Furthermore, the subscriber believes that this was the intention of the standard development team.

The subscriber also noted that for equipment that uses a high percentage of highly recyclable metal the only plastics in the product may be the light guides, optical films and cable jackets. The overall objective of minimizing fossil fuel use in plastics, and waste from unrecyclable plastics, is achieved, but the product is disadvantaged by not being able to claim the recycled plastic points.

***PVC Clarification 5-3:***

All plastics in the product, regardless of their function, shall be included in the determination of the total weight of plastics in the product, except those components specifically excluded in the standard.

***Rationale:*** The 1680 Standard does not provide a basis for excluding some plastic parts, or portions of parts, according to the function they serve, other than PCBs. PCBs (and packaging in one criterion) are specifically excluded, and therefore there is no basis to believe that the standard developers intended to exclude other plastic components.