



**EPEAT Clarification #1-3**  
**Elimination of paints or coatings that are not compatible with recycling or reuse**

**This Clarification applies to the following IEEE Standards and criteria:**

<b>Applicable Standards:</b>	<b>Applicable Criteria</b>
<input checked="" type="checkbox"/> IEEE 1680.1 – Computers and Displays	4.3.1.2
<input type="checkbox"/> IEEE 1680.2 – Imaging Equipment	
<input type="checkbox"/> IEEE 1680.3 – Televisions	

**PVC Determination:**

The 3.2.2 definition is compatible with either option above. The measure is if there has been >25% reduction in the IZOD test results in comparison with un-painted plastic, but it does not specify how the test level for un-painted plastic be defined.

The criterion should be applied to whole parts >100g in size as molded and pre-assembly, i.e. plastic housings. In other words, the manufacturer is not required to speculate as to how a recycler might disassemble the product, but rather should test the parts in the form they occur prior to assembly.

Note that neither the lab 3R reports nor the TUV assertion cited above are either a “manufacturer test” (unless, of course, 3R or TUV supported their assertion by the applicable test) or a “supplier verification”, so they would not meet the verification requirements.

**Background analysis:**

*The following question came from one subscriber:*

*ASTM D256 method does not specify the sampling preparation procedure. It is not clear whether we need to imitate the typical recycling process for the IZOD impact test including extrusion or whether we could run a test by making test samples by molding plastic pieces. 2) Recycled resin will have potentially impacted by 1) recycling process including heat exposure and 2) paint coating mixed into the resin. It is not clear whether we will need to run two series of test, one without paint (either obtaining the part without pain or scraping the paint) and one with paint and compare the IZOD impact results.*

*A second question about this criterion came from a potential future subscriber:*

*As IEEE 1680, 4.3.1.2, says: All covered products shall not contain paints and coatings on larger plastic parts that are not compatible with recycling and reuse.*

*However, we’ve got some lab 3R reports analyzing that EMI shielding film (composed of metal) on plastic parts is so small quantity that could be neglected when recycling. Therefore, could it be acceptable for EPEAT?*

*A third similar question came from a subscriber:*

*Is it accepted in case the front bezel of the monitor has painting on it (silver color)? I have checked it with TUV and TUV said even if it has painting on it, it is recyclable.*

The standard requires that “compatible with recycling” refers only to the resulting physical/mechanical properties of the recycled resin and is defined in 3.2.2 by a specified ASTM lab test that compares the properties of a sample of the plastic with the coating relative to a sample of the same plastic without the coating. Clearly the samples of each must be prepared in a process that involves grinding, melting and molding in some manner, because that is how a recycled plastic material is produced. If the precise manner of doing so is not specified in the ASTM procedure, then the subscriber would have flexibility in how they would simulate the recycling process.

The verification requirements specify that the subscriber will provide the results of such a test, or the supplier verification of such, if paints/coatings are used.

The intent of the criterion is that large plastic parts (>100g) can be separated from the product and processed into a recycled plastic that retains characteristics that do not compromise its functionality. It uses the definition of “compatible with recycling” which is defined in 3.2.2 by the IZOD impact test.

In conducting the impact test, the following options have been defined:

Option 1 (preferred): Compare IZOD impact of two parts, following a recycling process simulation (i.e., grinding, pelletizing): 1) painted plastic part; 2) same part, but unpainted.

Option 2: Compare the IZOD impact of a painted plastic part, following a recycling process simulation, to the IZOD specification for the resin. The IZOD specification could be the manufacturer specification or supplier-provided material properties data.

*Note: This clarification was adapted / adopted from IEEE 1680.1: Clarification regarding 4.3.1.2 – Required criterion – Elimination of paints or coatings that are not compatible with recycling or reuse.*

**Change History:**

Created: January 2007