



**EPEAT Clarification #1-1
Elimination of intentionally added lead**

This Clarification applies to the following IEEE Standards and criteria:

Applicable Standards:	Applicable Criteria
<input checked="" type="checkbox"/> IEEE 1680.1 – Computers and Displays	4.1.4.1
<input type="checkbox"/> IEEE 1680.2 – Imaging Equipment	
<input type="checkbox"/> IEEE 1680.3 – Televisions	

PVC Determination:

The wording of the criterion prevails over the title of the criterion wherever there is a conflict or inconsistency. In this case, the criterion defines the threshold to which the determination of no added lead must be measured – “50ppm by weight per listed part”.

- Demonstration that parts do not exceed the 50 ppm level is required according to the wording of the criterion.
- See Interpretations 1-5 and 1-6 for further detail on these questions.
- See the Conformity Assessment Protocols for quality control procedures to satisfy these data requirements.

Background analysis:

Question came from one subscriber:

1680 requires lead levels less than 50ppm. The verification requirements require either empirical data from supplier demonstrating compliance or analytical test data. The subscriber specifies that their suppliers not intentionally add lead. They also require their suppliers to provide test data at the level of 100ppm. The subscriber states that it is likely that other subscribers do not require test data at all, and that 50ppm is very low given testing capabilities. Is this sufficient?

1680 actually includes two different implicit standards for this criterion: 1) no intentionally added lead (in the criterion title and apparently the intent of the criterion) and 2) lead below 50ppm (the requirement in the criterion itself). This has implications for verification.

In addition the verification requirement in 1680 reads: “Evidence of certification from component manufacturers that is based on either empirical data demonstrating compliance or analytical test data demonstrating compliance.” Thus verification does not necessarily require testing to a specified level, but it does require either empirical or analytical data that demonstrates conformance to that level. The question is what “empirical data” is satisfactory. The “certification from component manufacturer” would seem to be an attestation by the component manufacturer that they have not added lead to the product and that none of their

suppliers have added lead through any process. The certification can be backed up by empirical data that includes assurance of conformance through a quality control program.

This could be further supported, though not required, by evidence that the manufacturer has placed such requirement on their suppliers, that is, that they have specified no lead.

The specific subscriber that asked the question states that their documentation requires no added lead of suppliers. They would also need to provide evidence from the supplier that no lead was added, and then that would appear to meet the intent of the criterion for empirical data demonstrating conformance. However, in the requirements of their suppliers they specify testing at a less stringent level (100 ppm versus 50 ppm) than 1680 requires at 50ppm. Does the specification of a higher testing level imply that the product may not, in all cases, meet the criterion, even though “no added lead” is also specified? Since the standard wording cites specifically 50ppm, does this imply that there should be a test at that level?

The standard is not internally contradictory; it simply includes two different requirements for demonstration of conformance, separated by an “or”. Meeting either of those requirements would suffice for demonstration of conformance based on manufacturer-supplied verification data. Of course, nothing would prevent the PVC from having analytical tests performed to confirm the representation of the manufacturer.

Further Background Analysis: Subsequent to the adoption of this Clarification, two Interpretations were adopted by an IEEE Interpretations Group related to this criterion – Interpretation 1-5 and Interpretations 1-6. The Interpretations address all elements of the Clarification, with the exception of a specific reference to the 50 ppm threshold. Therefore, edits were made to the Clarification to result in the following.

Note: This clarification was adapted / adopted from IEEE 1680.1: Clarification regarding 4.1.4.1 – Optional criterion – Elimination of intentionally added lead. Please review that clarification for more information.

Change History:

Created: January 2007