1.0 PURPOSE

To determine the mechanical strength of encapsulation material used to enclose and isolate potentially hazardous electrical circuitry from a potentially explosive atmosphere.

2.0 SCOPE

Encapsulated assemblies and parts evaluated per ACRI2010.

3.0 REFERENCES

ACRI2010, "Encapsulation Criteria"

4.0 DEFINITIONS

4.1. Significant Damage – Any crack, chip, flaw or any other type of damage that would diminish the safety provided by encapsulating the electrical assembly.

4.2. Superficial Damage – Any Minor damage, chipping of paint, or other similar damage that would not diminish the safety provided by encapsulating the electrical assembly.

5.0 TEST EQUIPMENT

Drop test apparatus or other means of dropping the encapsulated electrical assembly in a free-fall, without obstruction. The floor of the apparatus shall be horizontal and constructed of 1-inch or greater oak planking.

6.0 TEST SAMPLES

Two samples of the encapsulated electrical assembly in their marketable form that have completed the ASTP2245 – Encapsulation Thermal Endurance Test, the Pressure Test – ACRI2010 (if applicable), the ASTP2224 – Force Test of Encapsulated Electrical Assemblies, and the ASTP2219 – Impact Test of Encapsulated Electrical Assemblies.

7.0 PROCEDURES

7.1. Take a photograph of the sample. The photograph can be added to the test sheet as a reference and used for comparison to the after drop photographs.

7.2. Inspect the two encapsulated electrical assemblies for any visible damage. Visible damage shall be any crack, chip, flaw or any other type of damage that could affect the safety of the assembly.

7.3. Conduct the test in an ambient temperature of 25 (± 10) °C. Record the ambient temperature on the test sheet.

7.4. Adjust the drop test apparatus or equivalent to drop the encapsulated electrical assembly from a height of 3 feet ± 1 inch above the oak planking. Measure and record the height on the test sheet.

7.5. Drop the encapsulated electrical assembly in a free-fall to strike the oak planking with the surface(s) or edge(s) a total of six times, attempting not to impact the same point on the sample more than once.

7.6. After each drop, inspect the sample for any significant or superficial damage. Record a narrative description of any superficial damage on the test sheet. Photographs of the damage may be attached to the test sheet. .

7.7. Record all data on an appropriate test sheet.

8.0 TEST DATA

8.1. Ambient temperature.

8.2. Test equipment identification (e.g. model number, part number, serial number).

8.3. Before drop test photographs and after drop test damage photographs (if applicable).

8.4. Sample identification (e.g. manufacturer, model number, part number, serial number).

8.5. Impact surface. A numbered photograph or pictorial sketch of the test sample may be used to identify where the sample first struck the oak planking.

8.6. Results of the visual inspection after each drop. Include an explanation for failure, if applicable.

8.7. Determination of whether or not each sample met the acceptance criteria.

8.8. Any additional information, comments, or observations about the test and the rationale for any additional testing conducted.

9.0 PASS/FAIL CRITERIA

No damage shall be incurred by any sample tested that would affect the isolation of the assembly from the hazardous atmosphere. Damage shall be defined as any crack, chip, flaw or any other type of damage that would diminish the isolation provided by encapsulating the electrical assembly.