# IEEE Standards Interpretation for IEEE Std 1482.1™-1999 IEEE Standard for Rail Transit Vehicle Event Recorders



This is an interpretation of IEEE Std 1482.1-1999.



January 2005

**Interpretation Request #1**
**Topic:** Crashworthiness **Relevant Clause:** 4.5, Table 3

In Standard IEEE 1482.1-1999, Clause 4.5 Crashworthiness. Table 3 - Crashworthiness requirements the following is mentioned:

Fire: 650ºC (1200ºF) for 30 minutes, followed by 300ºC (570ºF) for 60 minutes, followed by 100ºC (212ºF) for 5 hours.

How should this procedure in reality be performed? Is it meant as follows:

Apply a temperature (fire) of 650ºC for 30 minutes, immediately after that continuing with a fire of 300ºC for 60 minutes, immediately followed by a fire of 100ºC for 5 hours; or Apply a temperature (fire) of 650ºC for 30 minutes. Cooling (naturally) down to 300ºC and continuing with a fire of 300ºC for 60 minutes, cooling down (naturally) to 100ºC and continuing with a fire of 100ºC for 5 hours; or as similarly requested for Flight Data Recorders and/or Cockpit Voice Recorders:

Apply a temperature (fire) of 650ºC for 30 minutes. Restore a stabile internal temperature equivalent to that reached after operation at ambient pressure and temperature of 25ºC. Apply a fire of 300ºC for 60 minutes. Restore a stabile internal temperature equivalent to that reached after operation at ambient pressure and temperature of 25ºC. Apply a fire of 100ºC for 5 hours.

**Interpretation Response #1**
It is the Committee's interpretation that the natural reading of the text corresponds to your first suggested interpretation, which is "Apply a temperature (fire) of 650ºC for 30 minutes, immediately after that continuing with a fire of 300ºC for 60 minutes, immediately followed by a fire of 100ºC for 5 hours."

**Interpretation Request #2**
**Topic:** Type and hardness of steel **Relevant Clause:** Table 3

In the standard mentioned, Table 3 requires a penetration test that should be performed with a "23 kg weight with a protruding 6.4 mm diameter steel pin dropped from a height of 1.5 m."

What type of steel should be used? What hardness should this steel have?

**Interpretation Response #2**
The standard has no requirements for the type or hardness of the steel. Therefore, you are free to select the material and hardness of your choice, insofar as this standard is concerned.

A typical approach would be to select a pin that has no substantial deformation after the test, but this is not a requirement of the standard.