MODIFIED MECHANICAL IMPACT TEST SYSTEM CAPABILITIES

SUMMARY

In this test method, test samples are clamped in a chamber allowing pressurization of either liquid or gaseous oxygen on the puncture side of the sample. Once the appropriate conditions are reached, the sample is impacted with enough force to result in a puncture. The sample is then evaluated to determine if any evidence of an ignition is present.

TEST APPARATUS AND PROCEDURE

The test apparatus consists of a base, upper chamber, and clamp. The test sample is clamped between the base and the upper chamber. A seal is present between the upper chamber and the sample, allowing the chamber to be pressurized. The striker pin has a 1/2 in. full round end and penetrates through the top of the chamber. The assembly containing the sample is placed under an instrumented plummet, which can be dropped remotely.

TEST SAMPLES

Test samples are usually configured as 102 mm (4 in.) square plaques. Thickness ranges from approximately 2 mm (0.08 in.) to about 5 mm (0.20 in.).

TEST CAPABILITIES

Tests can be conducted in gaseous oxygen at temperatures of up to 150 °C (302 °F) and pressures of up to 3.0 MPa (435 psi), and in liquid oxygen at pressures of up to 3.0 MPa (435 psi). The impact force can be varied up to a maximum of 98 J (72 ft-lbf) to ensure the test sample is punctured.

CONTACT

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