

ENECON CeramAlloy Systems PASS DBA Test Standards per ASTM D 3911-89

This ASTM test method establishes the most up-to-date procedures for evaluating protective coating systems test specimens under simulated design basis accident (DBA) conditions. Included in this procedure are a description of conditions and apparatus for temperature-pressure testing, conditions for radiation testing, and procedures for preparing, examining, and evaluating the samples.

DBA is a generic term for any one of a family of accident conditions which can result from postulated events. These conditions are generally associated

with the rupture of high energy piping. The more commonly recognized accident conditions used to evaluate coating systems for primary containment are the LOCA (loss of coolant accident) or main steam pipe break.

This test method is designed to provide a uniform test to determine the suitability of coatings used inside of primary containment of light-water nuclear facilities under simulated DBA conditions.

This test is intended to demonstrate that under DBA conditions, the coatings will remain

intact and not become debris which could compromise engineered safety systems.

Working under the guidance and direction of a major power company in the northeast, a total of 32 test specimens (representing 8 different CeramAlloy systems) were prepared in accordance with ANSIN512.

They were then sent out to a laboratory for nuclear irradiation and decontamination as per ASTM D 4082-89 and D 4256-89, respectively, slightly modified at the direction of the nuclear plant's engineers so as to conform to the plant's

specific requirements.

This DBA test also stipulates specific acceptance criteria, namely:

Peeling shall not be permitted.

Delamination shall not be permitted.

Cracking is not considered a failure unless accompanied by delamination or loss of adhesion.

Blisters shall be limited to intact blisters which are completely surrounded by sound coating bonded to the surface.

