

**DETERMINATION OF BRITTLINESS OF HIGH STRENGTH BOLTS
BY STRESS CORROSION TESTING****Application**

This method is used to determine the brittleness of high strength bolts (with a hardness of more than 310 HV) caused by phosphate diffusion.

Apparatus Required

Clamping Device (Figure 1)

Torque Wrench

Salt Spray Cabinet (according to ASTM B 117)

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

The bolts to be tested have to be dipped into a 5 % NaCl solution prior to assembly.

Assemble the bolts in a test device according to Figure 1 so that the 0.2 % yield strength of the bolts is reached. This can be achieved by use of yield control meters, e.g. SPS Unbrako or by accurate load/extension techniques.

Place the assembled test device into the salt spray cabinet for a minimum of 48 h with the bolts in a horizontal position.

Evaluation

Re-torque the bolts after testing to the 0.2 % yield strength. Failure is determined as any bolt fracture.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.

Date	Action	Revisions
2000 11 09		Editorial – no technical change A. Cockman
1994 02 28		

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Page 1 of 2

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