
WATER INDUSTRY SPECIFICATION

WIS 4-52-03
December 1994: Issue 1
(Page 1 of 2)
(Amendment: April 1995)

UK Water Industry
Engineering and Operations Committee

AMENDMENT TO: SPECIFICATION FOR ANTI-CORROSION COATINGS ON THREADED FASTENERS

This amendment forms an integral part of the Specification and replaces elements of the original as indicated below:

pp 3, 5, and 7: The issue date of this Specification should read December 1994.

6.3.5.1. Replace with "When tested in accordance with Appendix D, the coating shall exhibit no adhesive disbondment."

6.3.8. Replace with "Coated test pieces, when tested in accordance with Appendix C, shall exhibit no red rust."

Appendix A: To A.2 (Equipment), add "Thickness measuring equipment complying with the requirements of Clause A.3"

Add "A.5 Reporting.

For each test piece examined, the maximum, minimum and mean coating thickness shall be recorded.

In production situations, thickness measurements may be carried out on a pass/fail basis. In these cases, the coating thickness acceptance limits shall be recorded together with the pass/fail results"

Appendix B: Add "**B.5 Reporting.**

This test will be used on a pass/fail basis. The test voltage and the pass/fail results shall be recorded."

Appendix C: Renumber clauses C.5 - C.8 to C.1 - C.4

Add new Appendix D as follows:

APPENDIX D - ADHESION

D.1 General

This appendix specifies the procedure for assessing coating adhesion using a V-cut test.

D.2 Procedure

For type testing purposes, this test shall be carried out on the head or unthreaded part of shank of the bolt, and on the nut.

Make two incisions through the coating to the substrate (using a sharp knife blade as illustrated in Figure D.1). The incisions shall be as long as the surface allows, up to 20mm long, and shall meet to form a 'v' with an intersection angle of between 30° and 35°.

This document has been prepared by the UK Water Industry Engineering and Operations Committee and published by WRc plc.

Further copies from:

WRc, Henley Road, Medmenham, Marlow, Bucks, SL7 2HD Tel:(0491) 571531 Fax: (0491) 411059

Technical enquiries to:

WRc, Frankland Road, Blagrove, Swindon, Wilts, SN5 8YF Tel:(0793) 511711 Fax: (0793) 511712

UK WIR © 1994

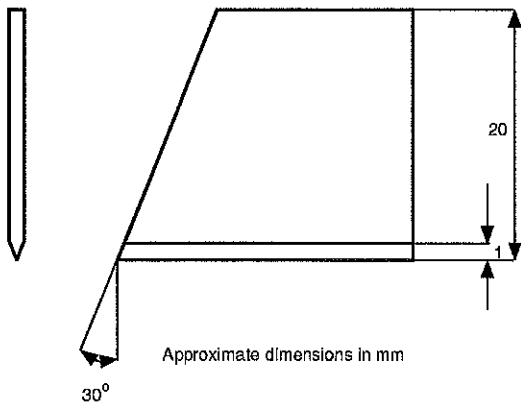


Figure D.1 - Knife blade details

In order to assess the level of coating adhesion, insert the point of the knife under the coating at the point of intersection of the cuts, such that the blade point is at the metal surface.

Using a levering action against a fulcrum (such as a steel rod), force the flat point of the blade up from the metal surface, describing a single, vertical (i.e. at 90° to the surface) motion in an attempt to prise the coating off.

The test shall not be repeated at the same point nor shall the coating be prised at in any other position along the 'v' cut or by any other method.

D.3 Analysis of results

A 'pass' shall be recorded when:

- (a) the coating will not disbond from the substrate;
- (b) the coating refuses to disbond but fails cohesively.

A 'failure' shall be recorded when there is partial or complete adhesive failure between the coating and the substrate.

Where a failure has been recorded, the length of disbondment from the 'v' tip shall be reported. NOTE: Disbondment of the very tip of the 'v' is common even for well adhered coatings. It is therefore appropriate to ignore the first millimetre of coating disbondment from the 'v' tip when measuring the length of adhesive disbondment.

D.4 Reporting

The report shall include the following:

- (a) a full identification of the specimens;
- (b) observations and results of the test;
- (c) date of the test.