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BS 7371-1:2009



BSI British Standards

Coatings on metal fasteners – Part 1: Specification for general requirements and selection guidelines

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ISBN 978 0 580 55382 0

ICS 21.060.01, 25.220.01

The following BSI references relate to the work on this standard:

Committee reference FME/9

Draft for comment 08/30133813 DC

Publication history

First published January 1992

Second (present) edition, August 2009

Amendments issued since publication

Date	Text affected
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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 16, an inside back cover and a back cover.

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Publishing information

This part of BS 7371 is published by BSI and came into effect on 31 August 2009. It was prepared by Subcommittee FME/9/1, *Mechanical properties of fasteners*, under the authority of Technical Committee FME/9, *Fasteners*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This part of BS 7371 supersedes BS 7371-1:1991, which is withdrawn.

Relationship with other publications

Other published Parts of BS 7371 are as follows:

- BS 7371-2, *Coatings on metal fasteners – Part 2: Specification for torque/clamping force relationship*;
- BS 7371-3, *Coatings on metal fasteners – Part 3: Specifications for electroplated zinc*; ¹⁾
- BS 7371-4, *Coating on metal fasteners – Part 4: Specification for electroplated nickel, nickel/chromium and copper/nickel/chromium coatings*;
- BS 7371-6, *Coatings on metal fasteners – Part 6: Specification for hot dipped galvanized coatings*;
- BS 7371-7, *Coatings on metal fasteners – Part 7: Specification for mechanically applied zinc and zinc based coatings*;
- BS 7371-8, *Coatings on metal fasteners – Part 8: Specification for sherardized coatings*;
- BS 7371-9, *Coatings on metal fasteners – Part 9: Specification for phosphate or phosphate and oil coatings*;
- BS 7371-10, *Coatings on metal fastenings – Part 10: Specification for organic coatings*;
- BS 7371-11, *Coatings on metal fasteners – Part 11: Specification for zinc flake non-electrolytically applied cured coatings*; ²⁾
- BS 7371-12, *Coatings on metal fasteners – Part 12: Requirements for imperial fasteners*.

The Parts of BS 7371 listed describe coatings for:

- a) corrosion protection;
- b) appearance;
- c) electrical conductivity;
- d) controlled lubricity;
- e) identification; and
- f) avoidance of hydrogen embrittlement.

Attention is drawn to Clause 4 and Annex A which provides advice on the suitability and limitations of the coatings for these purposes.

¹⁾ Being reviewed, replaced by BS EN ISO 4042 but remains current.

²⁾ Obsolete, replaced by BS EN ISO 10683 but remains current.

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This is a full revision of the standard, and introduces the following principal changes:

- Change to Figure C.1.
- Exclusion of cadmium.
- General revision.

Product certification/inspection/testing. Users of this British Standard are advised to consider the desirability of third-party certification/inspection/testing of product conformity with this British Standard. Users seeking assistance in identifying appropriate conformity assessment bodies or schemes may ask BSI to forward their enquiries to the relevant association.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

The attention of the user of this Part of BS 7371 is drawn to the restrictions placed on the use and supply of hexavalent chromium-containing substances by ECC Directive 2000/53/EC on End of Life Vehicles [1] and amendment of Annex II by Commission Decision June 2002 [Document No. C(2002) 2238] [2], and Non-Use on Motor Vehicles marketed after July 2007.

Attention is drawn to The Waste Electrical and Electronic Equipment (WEEE) Directive (2002/96/EC) [3], which came into force on 31 December 2006.

Attention is drawn to the restrictions placed on the marketing and use of cadmium and its compounds by in the Environmental Protection (Controls on Injurious Substances) (No. 4) Regulations 1992 [4]. Cadmium has thus been excluded from this Specification.

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This Part of BS 7371 specifies general requirements that apply to coatings covered by all other Parts of BS 7371, including:

- a) preparations before coating;
- b) hydrogen embrittlement avoidance;
- c) sampling for inspection;
- d) thickness testing;
- e) area tables for metric parallel threaded fasteners (area tables for imperial fasteners can be found in BS 7371-12); and
- f) selection of coatings (including the opportunity to select non-hexavalent chromium-containing coatings).

Specific requirements are given in each Part of BS 7371.

2 Normative references

The following references are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 6041:1981+A1:1981, *Method of sampling of electrodeposited metallic coatings and related finishes: procedures for inspection by attributes*

3 Terms and definitions

3.1 significant surfaces

areas visible on a part when assembled

3.2 batch average thickness

average thickness of the coating on all components of a batch

3.3 production run

batches of parts processed continuously without any changes in coating techniques or constituents within a single working day

4 Selection of coatings

The coating shall be selected with regard to:

- a) corrosion resistance;
- b) appearance;
- c) shape and size;
- d) embrittlement;
- e) conductivity;
- f) lubricity;
- g) application limitations;
- h) colour (if applicable); and
- i) whether hexavalent chromium can be tolerated.

NOTE Annex A provides guidance on suitable coatings for specific components.