This Standard is obsolescent.
See the BSI Catalogue for details.
April 1999

BS 5493 : 1977

UDC 624.014.2 : 691.71 : 620.197.6

Code of practice for

Protective coating of iron and steel structures against corrosion

(Formerly CP 2008)

Code de bonne pratique pour l'enduisage des constructions en fer et en acier pour la protection contre la corrosion

Richtlinie für Beschichtung von Eisen- und Stahlbauten zum Schutz gegen Korrosion

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Amendment No. 2
published and effective from 15 November 1993
to BS 5493 : 1977

Code of practice for protective coating of iron and steel structures against corrosion

Revised text

AMD 7898
November 1993

Foreword

In paragraph 3, line 6 delete the existing text and substitute 'omitted entirely and reference should be made to BS 7361 : Part 1.'

After paragraph 6 insert the following paragraph.

'BS 5493 has been amended to accord with current UK health and safety legislation, as a holding exercise pending changes in legislation resulting from EC Directives. References in BS 5493 to other British Standards have also been updated.'

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November 1993

Clause 1. Scope

Delete paragraph 3.

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Table 4B. Group B systems. Zinc coatings other than sprayed (as amended by Amendment No. 1)

Immediately following the title delete 'For continuously galvanized sheet (BS 2989) or electroplated sheet (BS 3083) see DD24.'

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Clause 11.1.2 Galvanizing (as amended by Amendment No. 1)

In paragraph 3, lines 4 and 5 delete '(with further reference in DD 24)'.

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Clause 12.1.4 Compatibility

In line 12 delete 'CP 1021' and substitute 'BS 7361 : Part 1'.

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Clause 13.4 Protection of steel by cement and allied products

In line 7 delete 'Codes of practice CP 110 and CP 114 to CP 117' and substitute 'All Parts of BS 8110 and BS 5950'.

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Clause 14.3.1.5 Standards of blast cleaning

Delete the existing text and substitute the following.

'The four qualities of blast-cleaning given in BS 7079 : Part A1 are listed as follows:

Sa1	Light blast-cleaning
Sa2	Thorough blast-cleaning
Sa2½	Very thorough blast-cleaning
Sa3	Blast-cleaning to visually clean steel

NOTE 1. The equivalent of the three qualities Sa2, Sa2½ and Sa3 in the Swedish Standard SIS 05 59 00 have similar designations.

BS 7079 : Part A1 should be referred to for the complete requirements for the preparation of steel substrates.

NOTE 2. Until further Parts of BS 7079 are published the methods of measuring cleanliness given in appendices F and G may be used.'

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Clause 14.3.1.6 Surface profile

Delete lines 1 to 6 and substitute the following.

'The method of assessment of the abrasively blast-cleaned profile is given in BS 7079 : Parts C1 and C2 for qualities Sa2½ and Sa3. Three qualities of profile grades are given: fine, medium and coarse but for most protective coatings it is generally advantageous to'

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Clause 16.2.1.2 Blast-cleaning for painting

In lines 3 and 12 delete 'BS 4232' and substitute 'BS 7079'.

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Clause 53. Standards of preparation

In line 16 delete 'BS 4232 2nd quality' and substitute 'BS 7079 : Part A1, Sa2½'.

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Section 6. Safety and health

Delete the existing text and substitute the following.

'NOTE 1. This section of the code gives recommendations for dealing with typical aspects of safety and health which arise in the work of coating iron and steel structures. It does not give complete coverage of all such aspects, because that is beyond the scope of this code. It is the duty of users of the code, in so far as they are responsible for safety and health, to ensure that all statutory requirements are met.

NOTE 2. The legislative references in clauses **56** and **57** provide a holding position in view of the impending changes in legislation resulting from European Directives. The Framework Directive which will be implemented by the Proposals for Health and Safety (General Provisions) Regulations and Approved Code of Practice and other directives stemming from this means that some of the legislative references (in clauses **56** and **57**) may become obsolete.

56. Legislation

56.1 General. A number of Acts of Parliament contain provisions relevant to surface coating work and these should be taken into account when planning such work. The Acts should be studied directly for detail and coverage, together with any other legislation relevant to particular situations.

The Health and Safety at Work etc. Act 1974 imposes a general duty on employers to protect persons at work against risks to health or safety.

Note should be taken of The Control of Lead at Work Regulations 1980, The Control of Substances Hazardous to Health Regulations 1988 and the Approved Code of Practice 1988, and Carcinogenic Substances Approved Code of Practice 1988.

The Noise at Work Regulations 1989 deal with the legal obligations of employers to prevent damage to hearing.

56.2 Factories Act 1961. The provisions of the Factories Act 1961 and the Regulations and Orders made under the Factories Act remain in force but are now subject to the enforcement procedures of the Health and Safety at Work etc. Act 1974. The relevant provisions within the Factories Act itself include the following.

Section 131 'Prohibition of employment of women and young persons in painting buildings with lead paint'.

Section 132 'Prohibitions supplementary to sections 129 to 131'.

Relevant Orders and Regulations under the Factories Act include the following.

The Factories (Cleanliness of Walls and Ceilings) Order 1960 (S.I. 1974 as amended by S.I. 1974 No 427) which states the time limits for, and the methods of, cleaning and painting factory interiors.

The Construction (General Provisions) Regulations 1961 (S.I. 1580), which deal with the appointment of safety supervisors, ventilation, work adjacent to water, and the safe transport of materials.

The Construction (Working Places) Regulations 1966 (S.I. 94), which deal with scaffolding, slung scaffolding, bosun's chairs, etc.

The Construction (Health and Welfare) Regulations 1966 (S.I. 95), which deal with first aid, washing, toilet and messing facilities.

The Construction (Lifting Operations) Regulations 1961 (S.I. 1581).

The Protection of the Eyes Regulations 1974 (S.I. 1681 as amended by S.I. 1875 No. 303) which apply to all surface preparation (except sand papering) and spray painting.

Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972 (S.I. 917).

56.3 The Control of Pollution Act 1974. This Act covers environmental pollution such as noise and the disposal of toxic wastes.

57. Operational hazards

57.1 General. Some of the operations involved in the surface protection of a structure give rise to conditions that are potentially hazardous to the structure itself and/or surrounding property, whilst others pose hazards to the health and safety of the operatives.

Especially prevalent among these hazardous conditions are the fume and vapours which rise naturally by evaporation of solvents in some paints and strippers; and the pollutants which are induced by operations, such as:

(a) fumes from lead-based paints when flame-cutting or flame-cleaning;

(b) dust from lead-based paints when rubbed-down dry;

(c) dust or fumes from some modern hard-setting paint;

(d) fumes from heating cadmium-coated components.

Caution should always be exercised in any operation which generates dust or fumes.

The potential hazards of fumes are greatly increased in confined spaces where dust and fumes can accumulate and where there is little or no ventilation, for example, inside a tank or small room or between girders under a bridge deck. It should be remembered that similar conditions can also occur in the open air if the air is still and/or there is a ventilation trap. Such conditions usually necessitate the use of respirators supplying clean air and/or forced ventilation. Persons working in such conditions should be within sight of others outside the danger area. In these cases the advice of the Health and Safety Executive should be sought.

57.2 Hazards to structure and surroundings. Any operation is hazardous if it involves naked flame or the production of sparks in a restricted area. In such a case, flammable vapours (arising naturally by evaporation of solvents or induced artificially by operations) can accumulate and create a risk of fire, which becomes a risk of explosion if the working space is confined or poorly ventilated. The risk of damage to the structure and surroundings in these conditions is apparent and paralleled by the risk of injury to people nearby. Therefore such hazards should be identified and suitable precautions taken.

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57.3 Risk of injury

57.3.1 *Eyesight.* Many of the operations involved in surface preparation produce particles which can damage the eyes directly, and dust and some types of fumes, which can also cause eye afflictions. Eye protection is essential for operatives doing such work and for those nearby.

57.3.2 *Hearing.* Many of the operations involved in surface preparation give rise to a high level of noise. Further information is contained in the Health and Safety Executive leaflet, IND(G)75(L), Introducing the Noise at Work Regulations, a brief guide to the new requirements for controlling noise at workplaces, and in HSE Noise Guides 1 – 8.

See also BS 5228.

57.3.3 *Respiratory system.* Some of the operations of surface preparation and paint application give rise to dust or fumes which necessitate the provision of good ventilation and respiratory protection for operatives and those nearby. If other methods of controlling exposure are not possible, suitable respiratory protective equipment which is either type approved or conforms to a standard approved by HSE, should be worn. See also BS 2091, BS 4275 and HSE Guidance Notes EH 40, Occupational Exposure Limits, and EH 16, Isocyanates, toxic hazards and precautions.

Some fumes, notably from cellulosic materials, not only affect the respiratory system directly but can have further unpleasant effects on the gastric system.

Further advice can be obtained from the Health and Safety Executive.

58. General hygiene

The various materials encountered in dealing with old paint and applying the new paint include some that are potentially harmful, and it is therefore necessary to maintain a high level of personal hygiene. In particular, hands should be protected with silicone free barrier cream before work starts and impervious industrial gloves may be needed if heavy contamination of skin is likely. Afterwards hands and exposed areas of skin should be cleaned with an approved hand cleaner. Hands should not be cleaned with paint solvent or thinners.

Overalls worn for work should be removed before eating or going home and should be laundered at frequent intervals, and all possible steps should be taken to avoid paint getting on to the skin.

Some materials will require additional precautions and advice and these should be sought from the manufacturer.

When operatives are working in such conditions (for example, inside a box girder) that access to toilet facilities is not quick and easy, consideration should be given to the provision of toilet facilities nearer to the work site.'

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