BRITISH STANDARD

BS 6270-3: 1991

Code of practice for

Cleaning and surface repair of buildings —

Part 3: Metals (cleaning only)

Confirmed October 2008

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Elements and Components (of Diverse Materials) for Buildings Standards Policy Committee (ECB/-) to Technical Committee ECB/30, upon which the following bodies were represented:

Aluminium Federation
Brick Development Association
British Cement Association
British Ceramic Research Ltd.
British Steel Industry
Concrete Society
Council for the Care of Churches
Department of the Environment (Building Research Establishment)
Ecclesiastical Architects and Surveyors' Association
Glassfibre Reinforced Cement Association
Historic Buildings and Monuments Commission for England
Local Authority Organizations
National GRP Construction Federation
National Trust
Patent Glazing Contractors' Association
Royal Institute of British Architects
Society for Protection of Ancient Buildings
Steel Window Association
Stone Federation

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Contents

Foreword

This Part of BS 6270 has been prepared under the direction of the Elements and Components (of Diverse Materials) for Buildings Standards Policy Committee. It is intended to give building owners, architects, surveyors, engineers and contractors general background information when considering cleaning.

Part 3 of BS 6270 describes the main methods in common use for cleaning of metals and alloys and draws attention to some of the problems encountered in practice. However, in view of the widely differing ages and locations of buildings, only general guidance is given to enable the user to select the most appropriate method for the particular building concerned. This Part of BS 6270 should be used in conjunction with section 1 of BS 6270-1:1982.

Where the code recommends seeking specialist advice, information may be obtained from organizations represented on the committee (see the committees responsible on the inside front cover).

WARNING. This British Standard calls for the use of substances and/or procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

In particular attention is drawn to the Control of Substances Hazardous to Health Regulations (1989).

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of BS 6270 gives recommendations for the cleaning of metals and alloys which are not intended to be covered with a protective coating, renewable on site in the course of maintenance.

Structural repairs are not covered by this code. Whilst in a few cases it may be possible to effect surface repairs to metals, because of the specialist nature of such processes and the wide range of metals involved, no recommendations are given in this code. No recommendations are given for the cleaning of wrought iron or mild steel which are normally provided with a protective coating.

NOTE 1 For the preparation of iron and steel surfaces prior to protective coating, reference should be made to BS 5493.

NOTE 2 Where work on features of historic or artistic importance is being considered, guidance from specialists should be sought, since the general recommendations given in this code may need to be supplemented.

NOTE 3 For guidance on the structural use of steel and aluminium, reference should be made to BS 5950 and CP 118[1)] respectively.

NOTE 4 Where there is any doubt about the structural nature of defects, advice should be sought from a chartered civil or structural engineer or other appropriately qualified person.

NOTE 5 The cleaning recommendations in this standard may not, in some cases, be effective against agents applied during acts of vandalism.

NOTE 6 The titles of the publications referred to in this code are listed on the inside back cover. See also Appendix A for a bibliography.

2 Definitions

For the purposes of this code the definitions given in BS 6100 or in the British Standard for the given material or component apply, together with the following.

structural repairs

repairs required to ensure that a structure will continue to carry existing loads, and/or to enable the structure to carry additional loads, with an acceptable factor of safety

3 Preliminary considerations

3.1 General

Since there is no such thing as a maintenance-free construction, the following essential points should be borne in mind.

a) The past history of the building should be examined, first checking any records that may exist.

b) The need for surface repairs should be distinguished from the need for structural repairs (see clause **2**). If in doubt, specialist advice should be sought.

c) Where cleaning and/or surface repair work is to be undertaken, the causes of the dirt, corrosion or defects should be established.

3.2 Reasons for cleaning

3.2.1 *Introduction*

It is convenient to classify reasons for cleaning under two headings: aesthetics and maintenance. In practice, cleaning a building for aesthetic reasons may reveal the need for maintenance.

Dirt does not necessarily harm building materials and a visually acceptable and established pattern of weathering need not be disturbed. However, the primary aim should be to keep the structure or components free from deterioration.

If maintenance has been sufficiently frequent, the dirt will be loose and corrosive products will not have had time to do serious harm.

The principal factors affecting frequency of cleaning are given in Table 1.

3.2.2 *Aesthetics*

Even where maintenance is not required, cleaning may be required in order to:

a) reveal the nature, colour or details of an existing building;

b) unify the appearance of a building which has been altered, extended or repaired;

c) facilitate the choice of suitable materials for a proposed extension or for repairs;

d) reflect more light on to other buildings;

e) promote personal or civic pride.

3.2.3 *Maintenance*

It may prove necessary to clean the building for the following reasons:

a) to remove harmful deposits from the fabric;

b) to expose defects or corrosion in order to establish the extent and nature of repairs needed.

It should be borne in mind that the cost of normal maintenance cleaning of metalwork is only a fraction of the cost of restoration after neglect.

3.3 Buildings of architectural or historic interest

Where the building concerned is statutorily listed or in a conservation area, the local authority may discourage or even prohibit the cleaning of individual buildings, so as to conserve the uniform appearance of whole streets or areas.

[1)] In course of revision.

Where work on features of historic or artistic importance is being considered, guidance from specialists should be sought, since the general recommendations given in this code may need to be supplemented.

Care should be taken not to remove traces of the original design, surface treatment or colouring where these may be of architectural or historic interest.

NOTE Scheduled monument consent from the Secretary of State for the Environment is required before any works are carried out on a scheduled ancient monument. Listed building consent from the local planning authority is required before any works are carried out for the demolition of a listed building or for its alteration or extension in any manner which would affect its character as a building of special architectural or historic interest.

4 Choice of method

As there are many ways of cleaning buildings, and a wide range of building and materials has to be considered, it is not possible to recommend general methods to suit every case encountered in practice. Each project should be considered carefully in the light of all available methods and of previous experience with the building in question or other similar buildings. It is essential to identify correctly the type of metal and any special finishes.

Any one building is likely to display a variety of surfaces and sometimes a variety of materials. Each surface and material needs to be cleaned by an appropriate method, which might mean that more than one method needs to be used when cleaning the whole building. Unless adequate protection, is provided, treatment of one material or surface may harm another adjacent material or surface, e.g. sealants and movement joint fillers may be affected by chemical cleaning agents.

Where heavy soiling, deposits and corrosion have occurred, treatments intended for cleaning neglected metalwork are likely to damage or remove completely some surface finishes. In such cases, it is necessary to decide whether to proceed with the basic cleaning method and accept some deterioration of the surface or to use a more severe cleaning method and subsequently replace the damaged surface.

If the metal is pitted or perforated, it will be more difficult to wash down and clean. Attempting to clean metals which are found to be perforated may cause damage to fixings, adhesives, etc.

Given the relative cost of different methods, the choice of method should take into account all the factors listed in Table 1. After choosing a method, a trial area should be cleaned using this method. Before tenders are invited, the chosen method and the finish to be achieved should be agreed.

Table 1 — Summary of factors affecting choice of method and frequency of maintenance

	Factor to be considered	Remarks
1	Type and condition of metal	See clause **4**
2	Type and condition of finish	
3	Amount and type of deposits to be removed	
4	Type and use of building	See notes 1 and 2
5	Location of building	See notes 1, 3 and 4
6	Effect of method on structural elements	See note 5
7	Adjacent materials or surface	See clause **4**
8	Disturbance to public and occupants: dirt, dust, noise, chemicals	See clause **8**
9	Availability of services	See clause **5**
10	Means of access	See clause **6**
11	Speed of work	
12	Likely weather conditions	See note 1

NOTE 1 The height of a building and its relationship to public ways may make the use of abrasion or chemicals hazardous particularly in very windy conditions (see clause **8**).

NOTE 2 Buildings of architectural or historic interest need special consideration (see **3.4**).

NOTE 3 The type of environment may be significant, e.g. industrial or marine.

NOTE 4 The nature and condition of adjoining buildings also may influence the extent and method of work.

NOTE 5 Certain cleaning processes can give rise to increased stresses following reductions in the cross section of structural elements.

5 Services

Before choosing a method, it is necessary to ascertain which of the services listed below are adequate and in working order:

a) water supply;

b) drainage;

c) electricity.

6 Means of access to work

The choice of the means of access depends on the geometry and construction of the building, the type of work and the duration of the work. The cost of access should be treated as part of the total cost and not considered in isolation, since expensive systems may sometimes prove to be more economical in total cost. Reference should be made to clause **7** of BS 6270-1:1982, BS 5516, BS 5973, BS 5974 and BS 6037.

7 Protection of buildings

Before any cleaning work is done, it is necessary to consider what protection or temporary support the building or adjacent buildings will require.

The principal precautions to be considered are described in clauses **7** and **8** of BS 6270-1:1982.

8 Protection of workers and public

To ensure protection of the public, the area where work is being carried out may need to be close sheeted. In addition, protective barriers may be required to prevent people passing under or near the working area.

All electric cables and fittings likely to be affected by the work should be disconnected or suitably protected before any work is begun.

Apart from taking these and other safety precautions common to all construction work, special measures are necessary when using certain cleaning methods, which are dealt with in clause **9** of BS 6270-1:1982. Recommended first aid treatments are given in Appendix B.

9 Aluminium

9.1 Types of finish

The following types of finish are dealt with in this clause.

a) *Mill finish*. Aluminium which has been given no special protective treatment but forms a natural protective oxide film on its surface. When subjected to exposure and weathering, the lustre of the bare metal is likely to change to a dull matt grey.

b) *Anodized*. Aluminium protected by a uniform oxide coating produced by an electrolytic process. Anodized coatings may be coloured.

In case of doubt, the following method may be used to determine whether a surface is anodized.

Thoroughly clean a small area and rub a clean pencil eraser on the surface. If there is no protective coating the surface of the eraser will turn black.

9.2 Cleaning

9.2.1 The surface of mill finish or anodized aluminium will be scratched or removed by abrasives and acid or alkali based agents. Furthermore, reaction with certain metallic salts can accelerate corrosion. Thus it is essential to select an appropriate cleaning method, as given in Table 2. Anodized finishes should be treated with care, as they cannot be replaced on site.

9.2.2 Neglect of aluminium may result in the formation of unsightly encrustations on the surface of the metal. Also deep pitting may be present. To remove the encrustations it may be necessary to use cleaning methods which will damage the original surface finish. However, in such cases the corrosion will already have broken through this finish.

9.2.3 On some surfaces a protective lacquer may have been applied. If soiled or broken down, this may have to be removed prior to cleaning operations, using a suitable solvent or paint stripper.

9.2.4 The frequency of cleaning will depend on the factors given in Table 1. On certain buildings exposed to an industrial atmosphere, washing may be necessary every month to maintain the aluminium in good condition.

10 Cuprous metals (copper, brass and bronze)

Cuprous metals will oxidize slowly in air unless protected by a lacquer or similar coating. The original surface may have been treated by an oxidizing, bronzing or chemical colouring process. The condition and colour of the resultant surface will depend upon the length of exposure and the nature of any pollutants present.

Natural oxidation results in a dull brown/black or green surface appearance, or patina, and this can occur quite rapidly when the metal is exposed to external weathering, particularly in cities, where sulphurous and nitrous compounds are present. This patina is considered to be desirable in many cases and can be produced artificially by chemical treatment. It is essential to verify whether any existing finish or patina is to be retained or removed before cleaning is attempted.

Where it is decided to remove the existing patina, it is also essential to specify what treatment the metal is to receive following the cleaning operation. For example, polished brass or copper would need to be lacquered if constant re-polishing is to be avoided; sheet copper roofing might be left to weather naturally or treated chemically to produce a suitable patina more quickly. Similarly, bronze may be left to re-assume its natural patina, or may have chemicals applied to produce surface finishes in a wide variety of colours and shades. Both the naturally occurring and artificially produced patinas on bronze may be kept in good condition, once clean, by the regular application of proprietary waxes or machine oil, according to the situation. Lacquer may also be applied to bronze patinas in order to preserve them and avoid too frequent maintenance.

Previously applied lacquer films which have been damaged, worn, or degraded by time need to be stripped before cleaning is commenced.

The retention of mirror-like finishes during cleaning operations may be difficult and special care should be taken to avoid scratching them. Such surfaces which have been neglected may be very difficult, or impossible to restore to their original condition, due to pitting or other corrosion. The use of wax polish will help to delay subsequent tarnishing.

Newly cleaned cuprous metals are very easily tarnished by perspiration, if touched, and it is advisable that gloves should be worn when handling them before they are treated with chemicals or lacquer.

Where corrosion has occurred, due to electrolytic action between cuprous and other metals in combination in wet conditions, cleaning will not provide a cure. It is necessary to insulate one metal from the other in order to prevent further damage.

Methods for cleaning cuprous metals are given in Table 3.

Table 2 — Cleaning of aluminium

Surface finish (see **9.1**)	**Basic method**	**Methods for neglected or very dirty surfaces**	**Substances to be avoided**
Mill finish	Remove any local oil, grease and tar marks, using white spirit and a cloth. Wash down with a cloth, sponge or soft bristle brush, using a neutral 1 % to 2 % aqueous solution of a non-ionic detergent. Wash down with clean water, using water spray or high pressure water lance, and wipe dry or remove water droplets using a clean leather.	First use the basic method. If unsuccessful, use either an abrasive or chemical cleaning method with a suitable acid-based agent (see note 1). Finally, wash down with clean water, using water spray or high pressure water lance, and wipe dry or remove water droplets using a clean leather.	Alkali-based agents. Concentrated acid and mixtures containing hydrofluoric or sulphuric acids. Ferrous and cuprous abrasive materials, including wire wool (other than stainless steel wool).
Anodized	As for mill finish.	First use the basic method. If unsuccessful, use one of the following methods (see note 2). (a) Carefully apply a mild abrasive on a cloth or pad. If necessary use pumice powder. It is essential to keep an abrasion method and rubbing to a minimum (see note 3). Thoroughly wash down. (b) Completely remove the finish and surface, using an abrasive method and/or a suitable acid-based agent.	As for mill finish.

NOTE 1 Special proprietary formulations are necessary because aluminium is attacked by many acids.

NOTE 2 These methods are likely to damage or remove the anodized finish. Restoration of the original finish to the metal in situ is not possible.

NOTE 3 When using abrasives, e.g. stainless steel wool, the direction of the rubbing strokes can remain visible on the finished bare metal. To prevent the appearance of random circular scratch marks, up and down rubbing movement restricted to complete panels should be used.

NOTE 4 Certain proprietary cleaning agents are sometimes used for cleaning anodized aluminium. They have neutral pH values of between 6 and 8 and have been tested and found to have no harmful effects on the anodized coating.

Table 3 — Cleaning of cuprous metals (copper, brass and bronze)

Surface finish	Basic cleaning method	Cleaning method for neglected or very dirty surfaces	Substances to be avoided
Smooth surface where the patina is not to be retained	Rub lightly with a clean soft cloth, using a paste of paraffin with fine grain abrasive or a proprietary copper/brass metal polish[a].	First use the basic method. If unsuccessful, wash the metal surface with a solution of ammonia in water or comparable ammonia based formulation.	Any material which could cause deep scratch marks, e.g. coarse abrasive powders, papers, cloths or stiff brushes. Strong acids or acid mixtures which would attack the metal and etch the smooth surface.
Smooth surface where the patina is to be retained	Wash using a soft cloth and a clean water solution containing 1 % to 2 % of non-ionic detergent to remove grease and surface dirt. Then wash down with clean water and dry off with a clean cloth or washed out leather. If necessary, finish off with a proprietary non-abrasive emulsified wax polish[a].	First use the basic method but in badly affected areas also use a soft fibre brush, taking care not to scratch the surface.	Any abrasive materials. Any acid-based or ammonia or alkali based agents.
Matt or rough surface where the patina is not to be retained	Lightly rub, using a cloth or soft brush and a paste of paraffin with fine grain abrasive or a proprietary copper/brass metal polish. If necessary, finish off with a proprietary non-abrasive emulsified wax polish[a].	First use the basic method. If unsuccessful use one of the following methods. (a) Repeatedly brush, using a soft bristle brush or a fine bristle phosphor-bronze wire brush, with either a solution of ammonia in water or a proprietary ammonia based copper cleaner. Then thoroughly wash off with clean water. (b) Abrade the surface, using a light wet-grit blasting, and wash down.	Very hard or coarse abrasive materials. Any acid-based cleaning agent likely to cause pitting in the metal.
Matt or rough surface where the patina is to be retained	Wash using a soft cloth and clean water solution containing 1 % to 2 % of non-ionic detergent to remove grease and dirt. If necessary use a soft bristle brush in places. Wash down with clean water and dry off with a clean cloth, or washed out leather. If necessary, finish off with a proprietary non-abrasive emulsified wax polish[a].	First use the basic method but in badly affected areas also use a soft fibre brush, taking care not to scratch the surface.	Any abrasive materials. Any acid-based or ammonia or alkali based agents.

[a] Care should be taken to avoid staining adjacent masonry or other light coloured materials.

11 Ferrous metals

11.1 Cast iron

Cast iron exposed to the air forms a thin protective layer of brown rust and thereafter decays very slowly. The only maintenance normally required is occasional painting, after removal of rust and old paint (see BS 5493).

When cleaning adjacent surfaces, cast iron should be protected from all acids and very concentrated alkalis.

11.2 Stainless steel

11.2.1 *Surface finishes*

The finish on stainless steel may be bright annealed, mirror polished, matt, grained or textured. Some of these finishes may be coloured.

In normal atmospheric conditions little discoloration is likely but marine exposure or pollution can result in weathering of the surface finish, blue/black stains and rust staining over a prolonged period. Regular cleaning will prevent most discoloration problems.

11.2.2 *Cleaning*

On mirror and bright annealed surfaces and on all coloured surfaces, dirt and stains which cannot be removed by following the basic cleaning method given in Table 4 are frequently found not to be removable without leaving scratch or etch marks or causing some discoloration.

On grained surfaces treatment of complete panels by rubbing or abrasive action should be carried out by always moving the rubbing pad in the same direction as the grain. This procedure will make any scratch marks less objectionable. Circular and cross grain movements should not be used.

Abrasives should never be used on coloured surfaces.

The frequency of cleaning depends in part on the quality of appearance that is required and the factors detailed in Table 1. As a general guide, where appearance is a prime consideration, cleaning should be carried out at three-monthly intervals in industrial and marine environments and at six-monthly intervals in rural locations. Cleaning of window sections can be conveniently carried out when the glazing is being cleaned.

12 Lead

With rain, or in damp conditions, new lead will form an uneven, white surface deposit of carbonate which usually slowly changes into a sulphated form. These uneven deposits are unsightly and can also lead to the formation of stains on adjacent materials as the chemicals run down with weathering. The application of patination oil[2)] to new lead controls the formation of the patina, making a uniform, acceptable surface change, and reduces the tendency to form run-down stains. Methods for cleaning lead are given in Table 5.

13 Zinc (including zinc-coated steel)

13.1 Rolled zinc

13.1.1 On exposure to the atmosphere the initial brightness of zinc is gradually lost and replaced by a matt grey coat of basic zinc carbonate which provides long term protection to the underlying metal. In general no attempt should be made to remove the grey layer, as the result will be an unattractive patchy appearance, and as removal of the basic carbonate shortens the life of the remaining zinc. If other materials adjacent to the zinc are being cleaned, care should be taken to prevent cleaning agents getting on to the zinc surface, particularly if they are strongly acidic or alkaline.

13.1.2 If very small areas of zinc collect dirt, the dirt may be removed using a bristle brush and water or by light abrasion with stainless steel wire wool. In the latter case the whole area of the zinc should be treated to avoid leaving conspicuous bright spots.

13.1.3 If droplets of water condense on a fresh, bright zinc surface, spots of bulky white corrosion products[3)] may form.

NOTE This does not happen once weathering has taken place.

The spots may be removable using a stiff bristle brush.

13.2 Zinc coatings on steel

13.2.1 *Galvanized steel*

The surface of galvanized steel, whether it is strip or tube galvanized before fabrication or structural steelwork galvanized after fabrication, behaves on exposure like rolled zinc. (See **13.1.1**.)

Consequently, no attempt should be made to clean large expanses, as this will result in a patchy, unattractive appearance and will shorten the life of the coating by removing some of the protective zinc.

[2)] Patination oil is a proprietary product which can usually be obtained from lead suppliers.

[3)] Sometimes referred to as white rust.

If it is desired to improve the appearance of old galvanized steel, it should be washed down with water, dried and painted, using a primer specially formulated for use on zinc or galvanized steel.

13.2.2 ***Other zinc coatings***

The only other zinc coatings used extensively in building construction are sprayed zinc coatings and zinc-rich paints. Sprayed zinc coatings are generally sealed or painted immediately after application unless the life requirement is such that no corrosion protection maintenance will be needed. An unpainted sprayed zinc surface, if it becomes unsightly, can only be washed down, dried and painted with an appropriate primer. Zinc-rich paints are generally used as primers and so are overcoated with finishing paints. If they have been left unpainted, they can be washed down, dried and overpainted.

Table 4 — Cleaning stainless steel

Surface finish (see **11.2.1**)	**Basic method**	**Methods for neglected or very dirty surfaces**	**Substances to be avoided**
Bright annealed, mirror polished and all coloured finishes	Wash down with warm water containing soap or detergent and a little ammonia, using a sponge or soft cloth. Rinse off well with clean water and wipe dry.	First use the basic method. If unsuccessful, use a mild acid-based agent, e.g. phosphoric acid, acetic acid, citric acid, or a proprietary chemical cleaner, taking care to comply with the contact times recommended by the manufacturer. Then wash off with clean water and dry with a sponge.	Hydrochloric, hydrofluoric, sulphuric acids. Oxidizing agents containing free chlorine, e.g. chlorites, hypochlorites. Any abrasive cloths, papers or powders. Copper, phosphor-bronze or steel wire brushes or pads.
Matt and grained finishes, except coloured finishes	As for bright annealed and mirror polished finishes.	As for bright annealed and mirror polished finishes. In addition, mild fine grain abrasive cloths, papers or powders may be suitable. Stubborn stains can frequently be removed by washing with a hot 10 % solution of phosphoric acid *or* with solutions of acetic and/or citric acid *or* with proprietary acid-based agents. Treatment with acid should be followed by thorough washing, preferably including a little ammonia in the rinsing off water. Treatment with abrasives should be followed by thorough washing down using the basic cleaning method.	Hydrochloric, hydrofluoric, sulphuric acids. Oxidizing agents containing free chlorine, e.g. chlorites, hypochlorites. Coarse grain abrasive powders, cloths and papers which could leave deep scratch marks. Copper, phosphor-bronze or steel wire brushes or pads.

Table 5 — Cleaning lead

State of surface	Basic method	Methods for neglected or very dirty surfaces	Substances to be avoided
New, with no patination oil	Apply 5 % nitric acid solution. Wash down well with clean water and dry. Apply an even coat of patination oil, using a clean dry cloth, in dry weather.	—	Any abrasive materials. Any sodium hydroxide based agents. Strong solutions of nitric or acetic acids; organic acids. (See note 3)
New, with patination oil	Remove patination oil using paint removing fluid. Wash down well, then treat as above.	—	
Old, with even patina	Do not clean (see note 1)	—	
Old, with uneven patina and/or black carbon encrustations		No recommended method (see note 2)	

NOTE 1 Lead on which there is a satisfactory patina should not be cleaned, since this would necessitate treatment with patination oil, resulting in a fresh patina.

NOTE 2 Black carbon dirt cannot be removed without using abrasive or chemical methods which would damage the lead. It may be possible to use the basic method for new lead with patination oil.

NOTE 3 Many acid-based agents used for cleaning masonry will form unsightly white streaks on lead or its patina.

Appendix A Bibliography

Technical Information Bulletin No 12. The Maintenance of Architectural Aluminium. British Alcan Aluminium Co.

Information Sheet No 1. Looking after domestic aluminium window frames. Aluminium Federation.

Specifiers Guide to Standard and W20 Steel Windows. Steel Window Association.

Appendix B First aid treatments

Chemical	Treatment
Potassium hydroxide[a]	Wash off chemical with copious amounts of clean water. If burns are severe, refer to hospital without delay.
Sodium hydroxide[b]	
Ammonia	Wash off chemical with clean water and soap.
Hydrochloric acid[c]	Wash off chemical with copious amounts of clean water. On open skin areas, a paste for burns containing magnesium oxide may be applied. If burns are severe, refer to hospital without delay.
Phosphoric acid	Wash off chemical with copious amounts of clean water.
Organo-tin formulations	Wash off chemical with clean water immediately. Do ***not*** use soap.
Siliconates	Wash off chemical with copious amounts of clean water. If burns are severe, refer to hospital without delay.

NOTE For further information, see "A guide to the safe use of chemicals in construction" 1981, Construction Industry Research and Information Association, 6 Storey's Gate, London, SW1P 3AU.

[a] Commonly known as "caustic potash".
[b] Commonly known as "caustic soda".
[c] Commonly known as "spirits of salts" or muriatic acid.

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Publication(s) referred to

BS 5493, *Code of practice for protective coating of iron and steel structures against corrosion.*
BS 5516, *Code of practice for patent glazing.*
BS 5950, *Structural use of steelwork in building.*
BS 5973, *Code of practice for access and working scaffolds and special scaffold structures in steel.*
BS 5974, *Code of practice for temporarily installed suspended scaffolds and access equipment.*
BS 6037, *Code of practice for permanently installed suspended access equipment.*
BS 6100, *Glossary of building and civil engineering terms.*
BS 6270, *Code of practice for cleaning and surface repair of buildings.*
BS 6270-1, *Natural stone, cast stone, and clay and calcium silicate brick masonry.*
CP 118, *The structural use of aluminium.*

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