

**BS 8221-1:2012**

*Incorporating corrigendum No. 1*



**BSI Standards Publication**

# **Code of practice for cleaning and surface repair of buildings –**

**Part 1: Cleaning of natural stone,  
brick, terracotta and concrete**

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Published by BSI Standards Limited 2012

ISBN 978 0 580 80052 8

ICS 91.040.01

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

Committee reference B/560

Draft for comment 11/30241242 DC

**Publication history**

First edition April 2000

Second (current) edition July 2012

**Amendments issued since publication**

Date	Text affected
July 2012	C1- See foreword

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### Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 40, an inside back cover and a back cover.

## Foreword

### Publishing information

This part of BS 8221 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 July 2012. It was prepared by Technical Committee B/560, *Conservation of tangible cultural heritage*. A list of organizations represented on this committee can be obtained on request to its secretary.

### Information about this document

The start and finish of text introduced or altered by Corrigendum(a) No. 1 (and No. 2) is indicated in the text by tags Ⓒ1 and Ⓒ1.

### Supersession

Ⓒ1 This part of BS 8221 supersedes BS 8221-1:2000, which is withdrawn. Ⓒ1

### Hazard warnings

WARNING. This British Standard calls for the use of substances and/or procedures that can 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.

### Use of this document

As a code of practice, this part of BS 8221 takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this part of BS 8221 is expected to be able to justify any course of action that deviates from its recommendations.

### Presentational conventions

The provisions in this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

*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.**

## Introduction

This British Standard is intended to give building owners, architects, surveyors, engineers, and contractors general information on cleaning.

Buildings are cleaned either to enhance their appearance or to assist maintenance and/or conservation.

Reasons for wanting to enhance appearance include:

- a) removal of disfigurements (e.g. stains, graffiti); revealing the nature, colour or details of a building; and
- b) unification of the appearance of a building that has been altered, extended or repaired.

Reasons for cleaning a building prior to maintenance and/or conservation include:

- 1) removal of harmful or undesirable deposits or applied materials from the fabric in order to slow down the rate of decay;
- 2) exposure of concealed defects, where surfaces are very thickly soiled, in order to establish the extent and nature of repairs required;
- 3) preparation of a surface for additional treatments; and
- 4) to fulfil the terms of a lease that requires periodic cleaning of a building.

Buildings have a variety of surfaces and materials and types of soiling that each need to be cleaned with appropriate methods and materials. It is essential to identify, in advance, the type, properties, and condition of masonry (in particular, whether it is limestone or sandstone) and jointing materials.

## 1 Scope

This part of BS 8221 gives recommendations on the removal or partial removal of deposits from the original surface or substrate of a building.

It includes the principal cleaning methods in use and the characteristics of surface deposits. It is applicable to the cleaning of natural stones, clay brick, calcium silicate brick, glazed and unglazed terracotta/faience, and cast concrete and concrete products such as cast stone, concrete brick and concrete blockwork.

## 2 Normative references

The following referenced documents 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 1139-2 *Metal scaffolding – Part 2: Couplers – Aluminium couplers and special couplers in steel. Requirements and test method*

BS 1139-4 – *Metal scaffolding – Part 4: Specification for prefabricated steel splitheads and trestle*

BS 2482, *Specification for timber scaffold boards*

BS 6037 (all parts), *Code of practice for permanently installed suspended access equipment*

BS 6100-5, *Building and civil engineering – Vocabulary – Part 5: Civil engineering – Water engineering – environmental engineering and pipe lines*

BS 6100-6, *Building and civil engineering – Vocabulary – Part 6: Construction parts*

BS 8221-2, *Code of practice for cleaning and surface repair of buildings – Part 2: Surface repair of natural stones, brick and terracotta*

BS EN 39, *Loose steel tubes for tube and coupler scaffolds. Technical delivery conditions*

BS EN 1004, *Mobile access and working towers made of prefabricated elements. Materials, dimensions, design loads, safety and performance requirements*

BS EN 12811-1, *Temporary works equipment. Part 1: Scaffolds. Performance requirements and general design*

BS EN 15898, *Conservation of cultural property. Main general terms and definition*

### 3 Terms and definitions

For the purposes of this part of BS 8221, the terms and definitions given in BS 6100-5, BS 6100-6 and BS EN 15898 the following apply.

#### 3.1 faience

masonry, similar to terracotta, with some surfaces covered with a clear or coloured glaze

#### 3.2 fireskin

thin, smooth, outer layer on unglazed terracotta, containing a high proportion of fines

*NOTE In traditional firing processes, fireskin is vitrified to a greater degree than the body of the clay beneath. Fireskin is protective and retention of it is a priority in cleaning and repair works.*

#### 3.3 glaze

mixed paste of fluxes and colouring ingredients that, applied to a surface and fired, fuses with the open-pored underbody to form a thin, vitreous, transparent, or coloured coating of glassy, opaque or translucent consistency

*NOTE Glazes can be plain, mottled or textured and can range from high-gloss to egg-shell finish.*

#### 3.4 historic masonry

masonry that forms an integral part of a building or structure which is listed, scheduled or in a conservation area or is of acknowledged historic merit

#### 3.5 specialist contractor

contractor who has demonstrable expertise that is based upon knowledge and experience of best practice

#### 3.6 terracotta

fired-clay, fine textured and unglazed, usually yellow to brownish-red

### 4 Considerations affecting cleaning decisions

*COMMENTARY ON Clause 4*

*All cleaning operations present different criteria to consider, including a suitable method, the materials of construction, and their condition.*

#### 4.1 General

The following should be determined prior to carrying out a cleaning programme: