

BRITISH STANDARD

Code of practice for lightweight temporary cladding for weather protection and containment on construction works

ICS 91.200; 91.220



NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

Publishing and copyright information

The BSI copyright notice displayed in this document indicates when the document was last issued.

© BSI 2007

ISBN 978 0 580 53076 0

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

Committee reference B/514/27

Draft for comment DC01/105835

Publication history

First published September 2007

Amendments issued since publication

Amd. no.	Date	Text affected
-----------------	-------------	----------------------

Contents

Foreword *ii*

Introduction *1*

- 1** Scope *1*
- 2** Normative references *1*
- 3** Terms and definitions *2*
- 4** Selection of lightweight temporary cladding *3*
- 5** Precautions to be taken for particular applications *4*
- 6** Structural recommendations *8*
- 7** Fixings *9*
- 8** Erecting and dismantling temporary cladding *10*
- 9** Care of lightweight temporary cladding *15*

Annexes

Annex A (informative) Sources of information relating to LTC products *18*

Annex B (informative) Causes of deterioration of LTC and its fixings *19*

Bibliography *21*

List of figures

Figure 1 – Typical fixing arrangement for nets and sheets *10*

Figure 2 – Methods of ensuring continuity of cladding *12*

List of tables

Table A.1 – Properties of containment nets and sheets *18*

Table A.2 – Properties of rigid GRP profiled sheets *18*

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 21 and a back cover.



Documents

Document Sharing Hub

© BSI 2007 • 1

Foreword

Publishing information

This British Standard is published by BSI and came into effect on 28 September 2007. It was prepared by Subcommittee B/514/27, *Nets and sheets*, under the authority of Technical Committee B/514, *Access and support equipment*. A list of organizations represented on this committee can be obtained on request to its secretary.

Use of this document

This British Standard is intended for use by designers, engineers, scaffolding contractors, safety net erectors and authorities having jurisdiction.

As a code of practice, this British Standard takes the form of recommendations and guidance. 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 British Standard 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

Containment nets, sheets and glass-reinforced polyester (GRP) rigid profiled sheets are materials used to temporarily clad scaffolds or buildings and are intended to:

- a) assist in the control of the environment, both inside and outside the contained area, so as to minimize health risks;
- b) reduce the impact from environmental effects on the process being carried out in the contained area, in order to improve the quality of the work and productivity;
- c) assist in the containment of debris within construction, refurbishment or maintenance sites;
- d) provide weather protection to those in the contained area;
- e) reduce the risk of injury to people or damage to property by influencing the route of fall of debris and/or objects;
- f) provide improved levels of security;

while at the same time minimizing the loss of natural light to the containment area.

In many cases such lightweight temporary cladding (LTC) is fitted by scaffolders, sometimes as a means of protecting themselves, but mostly for use by other construction workers or for the protection of the general public. However, it is essential that those fitting and maintaining the equipment ensure that it is fixed so that it will perform as intended.

1 Scope

This British Standard gives guidance and recommendations on the application and use of lightweight temporary cladding systems on construction and similar sites where weather protection and/or containment of dust and debris is required. It is applicable to containment nets and sheets conforming to BS 7955, and to GRP sheets conforming to BS EN 1013-1 and BS EN 1013-2.

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 476-3, *Fire tests on building materials and structures – Part 3: Classification and method of test for external fire exposure to roofs*

BS 476-7, *Fire tests on building materials and structures – Part 7: Method of test to determine the classification of the surface spread of flame of products*

BS 7955:1999, *Containment nets and sheets on construction works – Specification for performance and test methods*

BS EN 1013-1, *Light transmitting profiled plastic sheeting for single skin roofing – Part 1: General requirements and test methods*

BS EN 1013-2, *Light transmitting profiled plastic sheeting for single skin roofing – Part 2: Specific requirements and test methods for sheets of glass fibre reinforced polyester resin (GRP)*

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

3 Terms and definitions

For the purposes of this British Standard the following terms and definitions apply.

3.1 attachment point

designated point within a containment net or sheet through which ties can be threaded

3.2 competent person

person who has training and experience relevant to the matter being addressed, and has an understanding of the requirements of the particular task being approached

NOTE Such a person is expected to understand the hazards and the methods to be implemented to eliminate or reduce the risks that may arise. For example, when on site, such a person is expected to recognize at all times whether it is safe to proceed.

3.3 containment net

wind-permeable or semi-permeable temporary cladding net, conforming to BS 7955, intended to restrain small objects or tools and debris, to restrict dust, to reduce the effects of weather and to provide protection for persons from falling objects

3.4 containment sheet

translucent, semi-permeable or non-permeable LTC sheet, conforming to BS 7955, intended to protect a structure from inclement weather, to contain dust and other pollution, and to prevent small objects, tools and debris from falling

3.5 GRP sheet

rigid profiled translucent impervious LTC sheet conforming to BS EN 1013-1 and BS EN 1013-2, intended for longer term projects or where the cladding is vulnerable to high winds or heavy loads, and for temporary roofing

3.6 lightweight temporary cladding (LTC)

containment net, containment sheet or rigid GRP profiled sheet usually, but not exclusively, supported by scaffold, which provides protection from the environment for workers, or protection of the environment from airborne materials such as dust

3.7 tie

means used to join separate sheets or nets into larger configurations and to secure them in position

4 Selection of lightweight temporary cladding

4.1 Lightweight temporary cladding is particularly vulnerable to cutting and chafing and therefore liable to damage easily.

NOTE 1 For major long-term projects, building control officers might have requirements for LTC, and might require materials of a particular specification.

NOTE 2 The durability and performance of nets and sheets is also dependent on the type, number and quality of the fixings; see Clause 7.

NOTE 3 See Annex A for background information relating to LTC.

NOTE GRP sheets embrittle quite slowly and will retain their strength for many years.

4.2 All synthetic fibres and textiles can be damaged through weathering and UV light. Normally, this results in a reduction in strength and embrittlement. Where the sheets might be in position over several seasons, the material should be regularly replaced or advice should be sought from the supplier or manufacturer. However, if care is taken in the design, positioning, erection, maintenance and use of the temporary cladding, these disadvantages can be largely controlled.

4.3 When ordering the LTC for a temporary structure, at least the following information should be provided:

- a) dimensions of the structure to be clad (height, length, width and lift heights), including a drawing of the structure if possible;
- b) time to be allowed for the cladding to be erected;
- c) time over which the cladding is needed;
- d) confirmation that the structure has been designed for the extra loads that could be applied due to the presence of the cladding [see 4.4a), 4.4b) and 4.4j)];
- e) what operations are going to be carried out from the structure to be clad;
- f) what materials are needed for the operation to be carried out, e.g. chemicals for washing brickwork;
- g) any special needs, for example, flame-retardant materials, dust sheets, noise reduction, complete weather-proof enclosure, etc.;
- h) site location and likely climatic conditions.

4.4 The selection of LTC and its fixings should be made following a risk assessment based on individual site requirements. The risk assessment should take into account:

- a) size, nature and weight of any object(s) to be contained;
- b) additional loading that might be transferred to the structure or access scaffold from the containment net or sheet;
- c) whether the cladding needs to be flame-retardant;
- d) degree of protection required from rain or washing-down operations;

NOTE 1 Where high dust concentrations occur inside the clad area, consideration should be given to the use of personal protective equipment for persons working in those areas.

NOTE 2 The appearance of the net or sheet deteriorates as dust builds up on them, their ability to transmit light is reduced, and the flow of air through nets and woven sheets is progressively impeded.

- e) need to prevent dust and debris from escaping to the environment;
- f) need to exclude airborne dust and debris from the work area;
- g) need for ventilation;
- h) possible reaction to chemicals used in facade cleaning, etc.;
- i) need for light transmission;
- j) ability of ties or sheeting to fail at a load below that which would endanger the supporting structure;
- k) area and protection required for safe handling of the LTC;
- l) need for intermittent access through the cladding;
- m) size of sheet, etc., pattern and frequency of attachment points;
- n) ability to retain heat;
- o) availability of independent test data;
- p) level of site security required;
- q) durability of cladding for longer term projects.

4.5 Details of material performance should be sought from manufacturers or suppliers when selecting containment nets and sheets for use in highly abrasive, chemically aggressive or extreme temperature situations.

5 Precautions to be taken for particular applications

5.1 Fixing to scaffolds

Advice on scaffold construction is given in BS EN 12811-1. The number and frequency of scaffold fixings from the supporting scaffold framework into the main permanent structure should be calculated in accordance with BS EN 12811-1 to ensure that the loads from the temporary cladding can be carried effectively.

LTC should preferably be fixed to the outside of the scaffold standards so that it will detach easily if the wind load becomes excessive.

LTC on normal scaffolds should be supported by the framework of ledgers and standards.

The containment nets and sheets should be in direct contact with and fixed firmly to the open edges of the platforms, handrails, etc., leaving no gaps where possible. Where they are designed to overlap, the lower edges of the upper nets or sheets should be tucked inside the top edges of the lower nets/sheets to ensure that falling dust and debris is retained inside the cladding. Where the nets and sheets are being used to contain material thrown out by explosions, etc., it will be necessary to allow the upper sheet/net fall outside the lower one (see 5.3, Note 2).

NOTE 1 If LTC is fixed to the inside of the scaffolding, it could have added implications for the scaffold design.

NOTE 2 Guard rails provide an additional intermediate fixing position.