

Absac

TECHNICAL OPINION

No.

97

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HOOBLERSTONE CAST CONCRETE*

JULY 1988

***Formerly covered by Technical Opinion No. 45**

AUSTRALIAN BUILDING SYSTEMS APPRAISAL COUNCIL LTD.
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Technical Opinions are not Approvals.

A Technical Opinion is intended to help all those concerned with the approval, specification and use of the subject of the Opinion.

Special note should be taken of:

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ABSAC TECHNICAL OPINION NO. 97 (1988)*

1. IDENTIFICATION

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| 1.1 | Title: | Hooblerstone Cast Concrete |
| 1.2 | Date of issue: | July 1988 |
| 1.3 | Purpose: | Decorative cladding for walls |
| 1.4 | Applicant: | Hooblerstone Victoria, 30 Clairmont Avenue, Bentleigh, Victoria 3204
(Manufacturer) |

2. DESCRIPTION

This description is taken from the manufacturer's literature.

2.1 Material:

Hooblerstone is a system of cast concrete reproductions of natural stone and bricks. Each piece is installed individually to produce a finish similar to stone work or brickwork. The pieces are fixed to the walls by mortar which contains a bonding additive supplied by the manufacturer.

Each piece is flat backed to ease bonding onto a plane surface. Moulds are made from pieces of natural stone or bricks. Special corner stones are made for external corners.

Two densities of the stones are made - normal, from Scoria aggregate, and lightweight, from Vermiculite aggregate.

For cladding purposes, two thicknesses of the product are manufactured. Firstly, the irregular shape stones which are a nominal 19 mm, have a finished mass per unit area including mortar backing of 60 kg/m² (Scoria) and 38 kg/m² (Vermiculite). Secondly, the clay brick shape which is 12.5 mm thick having a finished mass per unit area including mortar backing of 42 kg/m² (Scoria) and 30 kg/m² (Vermiculite).

2.2 Installation:

The surface which is to be covered must be smooth and clean. Cement sheeting, brickwork or concrete are suitable materials. If the surface is not smooth (e.g. over weatherboards) treated cellulose cement sheeting is recommended, with sheets laid horizontally and with vertical joints staggered. The recommended thickness of the cement sheet is 6 mm and the flat head nails used to fix it should penetrate the studs by at least 25 mm and be at 300 mm centres.

A bonding coat is then applied to the wall surface and allowed to dry for at least 30 minutes. Specifications for the bonding coat and mortar are detailed in the manufacturer's specification. The mortar adhesive is supplied by the manufacturer.

If corner stones are used, these are laid first by applying a 20 mm thickness of mortar to their back and pressing them into place starting from the base. For flat stones, a 12 mm thickness of mortar is applied to the wall and the stones are pushed into the mortar until the mortar has oozed around all edges. Any smudging is removed with a damp cloth. When the mortar has cured to a crumbly consistency, the joints can be raked to the desired depth.

3. BASIS OF APPRAISAL

3.1 Report by ACI Technical Centre Pty Ltd (August 1978):

This report covered an extensive testing on the concrete castings covering flexural strength, compressive strength, specific gravity, absorption, thermal expansion, efflorescence, chemical resistance and accelerated weathering. The product showed satisfactory performance for each test.

*Hooblerstone Cast Concrete was formerly covered by Technical Opinion No. 45. This is a complete reappraisal of the system.

- 3.2 Inspections:**
An ABSAC representative has inspected the manufacturing process, the quality control procedures, and several installations. These inspections found each aspect to be satisfactory. However, the serviceability and appearance of the finished work is dependent on the workmanship of the installation.
- 3.3 Specifications:**
The specifications of the concrete mixes used to manufacture the castings have been supplied to ABSAC and found to be satisfactory.
- 3.4 Design:**
ABSAC has only appraised the system when attached to frame construction to a 3.5 m height. Loadings to both the structure and the fixing of the stone in installations above this height have not been considered in this Opinion.

4. TECHNICAL OPINION

In the opinion of ABSAC, the Hooblerstone Cast Concrete system provides suitable external and internal wall cladding for buildings in locations other than in cyclone areas as defined in AS 1170 'SAA Loading Code' Part 2-1983 'Wind Forces', provided that:

- 4.1 It is installed in strict compliance with the manufacturer's instructions as detailed in their brochure, 'The new Stone Age', June 1984.
- 4.2 It is limited to the following heights:
(a) for detached dwellings where the backing is solid construction (masonry, concrete, etc.) – two storeys including gables, or
(b) all other construction - 3.5 m.
- 4.3 The building's foundation and footings have an adequate capacity to carry the substantial load of the cladding.
- 4.4 Any under-cladding over which Hooblerstone system is applied is firmly attached to the frame and both cladding and frame are in sound condition, i.e. free from decay and infestation by insects.
- 4.5 A masonry or concrete wall to be clad with the Hooblerstone system is not subject to dampness and incorporates effective damp-proof courses.
- 4.6 If taken to ground level, the installation of the Hooblerstone system incorporates an effective damp-proof course.
- 4.7 The installation of the Hooblerstone system does not bridge an existing damp-proof course.
- 4.8 Adequate flashing is provided around openings and any protrusions of services through the Hooblerstone system and drainage from all existing flashings is extended to the external face of the Hooblerstone system.
- 4.9 Adequate provision for movement joints is made in walls over 10 m in length.
- 4.10 Provision is made for ventilation openings as required by local regulations and/or existing ventilation openings remain unobstructed, including sub-floor ventilation.

5. BUILDING CODE of AUSTRALIA (Draft 1986)

In the opinion of ABSAC, the system described in section 2 of this Technical Opinion and installed under the conditions listed in this Technical Opinion will satisfy the requirements of Clause F1.4, 'Weatherproofing of Roofs and Walls' of the Building Code of Australia (Draft 1986).

6. VALIDITY OF THE OPINION

- 6.1 Conditions:**
This Technical Opinion applies only to the use of the Hooblerstone Cast Concrete system as described herein.
- 6.2 Withdrawal:**
This Technical Opinion will be withdrawn or amended if ABSAC considers that a change in design or manufacturing quality renders the basis of appraisal invalid, or if reported field experience convinces ABSAC of unsatisfactory quality or performance.
- 6.3 Term of Validity:**
This Technical Opinion will lapse three years after the date of issue.

7. RELEVANT DOCUMENTS

Hooblerstone brochure on the installation of Hooblerstone, 'The new Stone Age', June 1984.
Standards Association of Australia AS 1170, 'SAA Loading Code', Part 2-1983, 'Wind Forces'.

8. APPROVED OPINION EXTRACT

The Hooblerstone Cast Concrete system as manufactured by Hooblerstone Victoria, Bentleigh, Victoria, is suitable for the cladding of external and internal walls of buildings if the conditions of ABSAC Technical Opinion No. 97 are fulfilled.



R S Harrison
Appraisal Officer

19/7/1988



K G Deacon
Chairman ABSAC

NOTE: The inclusion of clause 5 in this Technical Opinion with reference to the Building Code of Australia (BCA) is aimed at assisting local government authorities relate the Appraisal to their relevant regulations.

ABSAC considered that to include all State and Territory regulations in this clause would be beyond ABSAC's current resources. Referring to the Australian Model Uniform Building Code was considered but this is to be replaced in 1988 by the BCA and, therefore, would not be relevant to the Appraisal in the future.

Any changes made to the BCA will be reviewed during the term of validity of this Technical Opinion and, where necessary, any amendment required to clause 5 will be published in ABSAC News.