

Absac

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TECHNICAL OPINION 231

February 1998

Tech-Dry Waterproof Block wall system

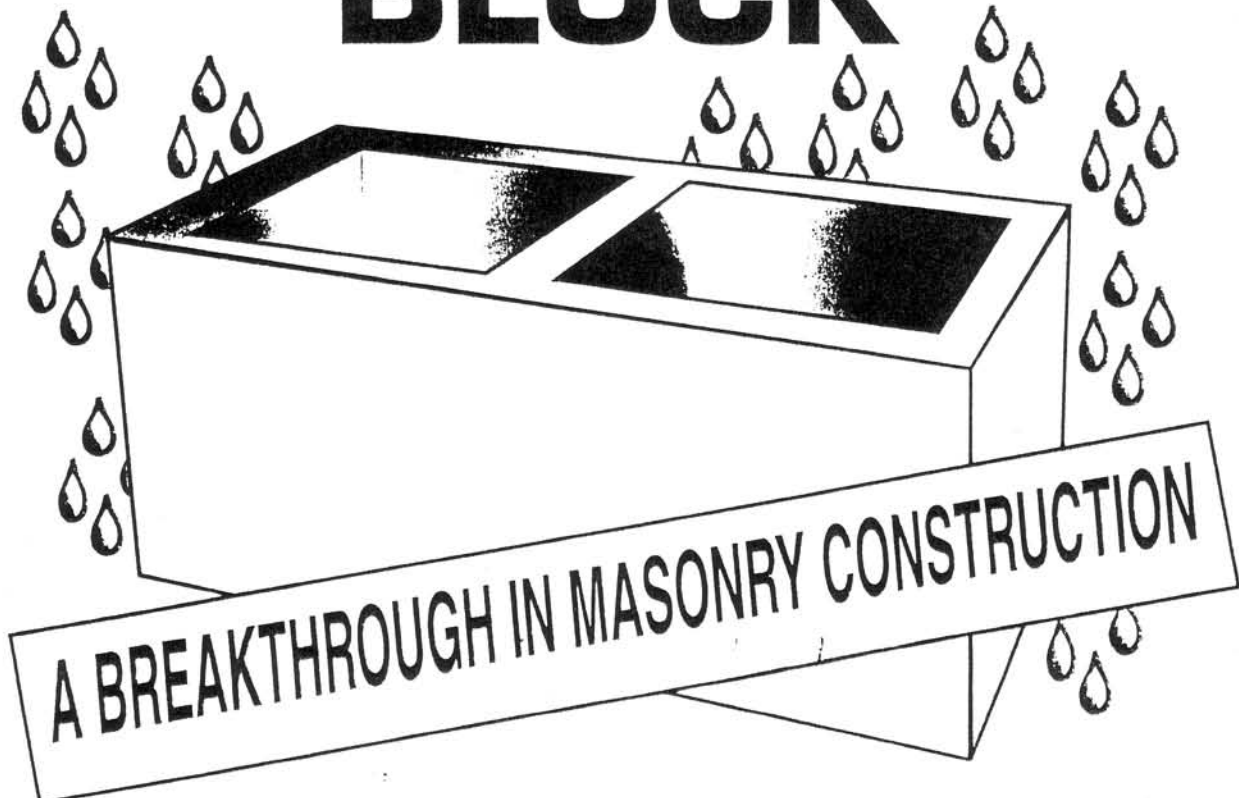
PURPOSE

To prevent water penetration in walls by wind driven rain and rising damp

APPLICANT

TASCO Bricks Blocks and Pavers, 26 Bass Highway,
Burnie, Tasmania 7320 (Manufacturer of blocks and
marketer of system)

TECH-DRY WATERPROOF BLOCK



TECHNICAL OPINION

In the opinion of ABSAC, the Tech-Dry Waterproof Block wall system will prevent water penetration in walls by wind driven rain and rising damp provided that:

1. The Tech Dry Waterproof Blocks are laid using Tech Dry Mortar Additive mixed and applied according to TASCOS Bricks Blocks and Pavers, 'Specification Tech Dry Mortar' (January 1997).
Note: Tech Dry Waterproof Blocks, Tech Dry Mortar Additive and instructions are available from distributors throughout Australia.
2. The wall is constructed in accordance with Australian Standard, AS 3700-1988 'SAA Masonry Code' (Amdt 1 January 1989, Amdt 2 March 1991, Amdt 3 April 1992, Amdt 4 July 1994).
3. Control and articulation joints are designed to prevent water penetration.
4. Weep holes are included in the bottom course.

Note: The performance of the system is reliant on the wall being crack free.

BUILDING CODE of AUSTRALIA

BCA 1990

In the opinion of ABSAC, the system described in this Technical Opinion and installed under the conditions listed herein will satisfy the relevant requirements of F1.4 'Weatherproofing of roofs and walls' of the Building Code of Australia (BCA) (2nd Edition, 1990 including Amendments 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10).

BCA 1996

In the opinion of ABSAC, the system described in this Technical Opinion and installed under the conditions listed in this Technical Opinion will satisfy the performance requirements of Clause FP1.4 (Volume 1 - Class 2 to Class 9 buildings) and Clause P2.2.2 (Volume 2 - Class 1 and Class 10 buildings Housing Provisions) of the Building Code of Australia (including Amendments 1 and 2).

Notes:

- (i) The inclusion of this clause with reference to the Building Code of Australia (BCA) is aimed at assisting those involved in the building permit/process to relate the Appraisal to their relevant regulations.
- (ii) Any changes made to the BCA will be reviewed during the term of validity of this Technical Opinion and, where necessary, any amendment required will be published in the annual ABSAC Directory of publications.

RELATED INFORMATION

VALIDITY OF THE OPINION

Condition:

This Technical Opinion applies only to the use of the Tech Dry Waterproof Blocks and Tech Dry Mortar Additive as described herein.

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.

Term of Validity:

This Technical Opinion will lapse three years after the date of issue unless revalidation has been requested and granted (see back page).

RELEVANT DOCUMENTS

Standards Australia, AS 3700-1988 'SAA Masonry Code' (Amdt 1 January 1989, Amdt 2 March 1991, Amdt 3 April 1992, Amdt 4 July 1994)
TASCOS Bricks Blocks and Pavers, 'Specification Tech Dry Mortar' (January 1997)

APPROVED OPINION EXTRACT

The 'Tech Dry Waterproof Block' wall system as manufactured and marketed by TASCOS Bricks Pavers and Blocks, Burnie, Tasmania is suitable to prevent water penetration in walls by wind driven rain and rising damp when the conditions listed in ABSAC Technical Opinion 231 are fulfilled.

APPRAISAL

DESCRIPTION

The following description is based on information supplied by the applicant.

General:

TASCOS Tech-Dry Waterproof Block is a concrete block which has a waterproofing material blended throughout the entire block. A mortar additive is supplied to create waterproof mortar joints to establish a totally waterproof

wall. The blocks are available in a series of sizes. They are designated 10.01 for the 100 mm series, 15.01 for the 150 mm series, 20.01 for the 200 mm series and 30.01 for the 300 mm series. Each series includes half bricks, and corner bricks

Installation:

Any masonry is constructed in accordance with Australian Standard, AS 3700 'SAA Masonry Code'. The Tech Dry mortar is mixed at the rate of two (2) litres of additive to 20 litres of water. Cement ratio must be 1 to 3 using a 'fatty brickies sand'. Neither plasticisers nor lime should be added to the mix.

DESIGN INFORMATION

General:

TASCO Tech-Dry Waterproof Block is a concrete block which has a waterproofing material blended throughout the entire block. A mortar additive is supplied to create waterproof mortar joints to establish a totally waterproof wall.

Durability:

In the opinion of ABSAC, the Tech-Dry Waterproof Block wall system will give a waterproof life in excess of 25 years provided there are no cracks developed within the walls.

BASIS OF APPRAISAL

ABSAC has assessed the following aspects in undertaking this appraisal:

- (a) The applicant's installation instructions.
- (b) The physical properties of the material.
- (c) The ability of the system to cope with movements.
- (d) The ability of the system to prevent moisture ingress.

The following documents and inspections were used in carrying out the appraisal.

Manufacturer's Information:

1. TASCO Tech-Dry, 26 Bass Highway, Burnie, Tasmania 7320. Material safety Data Sheet 'Block Emulsion' (15 April 1996).
2. TASCO Bricks, Blocks and Pavers, 'Specification Tech Dry Mortar' (January 1997):
This provides mixing ratio of the additive to water and liquid to cement. It provides estimating data for the mortar mix and size of block.
3. TASCO Tech-Dry, 26 Bass Highway, Burnie, Tasmania 7320 (24 October 1997):
This letter provides details of in-house quality assurance procedures. Quality assurance procedures and testing used by the manufacturer of the mortar additive and the supplier of the sand material used in the blocks.

Testing:

1. Victoria University of Technology, Ballarat Road, Footscray, Victoria. 'Salt erosion resistance of concrete blocks' Reference BPSU/120 (6 July 1995):
This report is on a comparison of untreated concrete blocks and concrete blocks containing Tech-dry block emulsion. The blocks containing the emulsion showed significant less weight loss and were still intact after 15 cycles of testing.
 2. Victoria University of Technology, Ballarat Road, Footscray, Victoria. 'Water absorption of concrete blocks' Reference BPSU/128 (15 August 1995):
This report is on concrete blocks containing Tech-dry block emulsion. A capillary water absorption over a 24 hour period of treated blocks compared to untreated blocks showed a reduction of 90% water absorption.
 3. Victoria University of Technology, Ballarat Road, Footscray, Victoria. 'Water absorption of mortar containing Tasco/Tech-Dry Mortar Additive' Reference BPSU/134 (18 October 1995):
This report is on concrete blocks containing Tech-dry block emulsion. A capillary water absorption over a 24 hour period of treated blocks compared to untreated blocks showed a reduction of 90% water absorption.
 4. Brick & Mortar Research Laboratory (NATA registered), Kinnoull Grove, Syndal, Victoria 3150. 'Breaking and compressive strength of concrete paving slabs' Test Certificate No. Z5087B (24 April 1996):
Testing was performed on coloured concrete paving slabs containing emulsion. The slabs were supplied by Tech-Dry.
 5. CSIRO, Building Construction and Engineering. Confidential BCE Doc 97/177 (M) 'Report on Tech-Dry Waterproof Block Wall System to ASTM E514-90 'Standard Test Method for Water Penetration and Leakage Through Masonry' (September 1997):
This is a qualitative test. The wall showed minimal water penetration at two mortar joints which would be approximately equal to an area of 0.04% of the wall after 4 hours. (It should be noted that the mortar was hand mixed). Even though the test time is specified as 4 hours, the test was allowed to run for 72 hours. (It was noted that the slight signs of dampness had evaporated within 24 hours of commencement of the test.)
- Reports:**
1. Tech-Dry Building Protection Systems Pty Ltd, Melbourne, Australia. 'Water Repellent Admixtures for Concrete' Kebao Ren, Anthony Caselli, Douglas Kagi (Not Dated):
This paper discusses the effects on treated concrete due to the addition of a silicone admixture. The paper also includes discussion of the above tests relating to water absorption, salt erosion and strength.

Inspections:

Inspections of installations have been undertaken by representatives of ABSAC and found to be satisfactory.



B. L. Schafer
Appraisal Officer



K. G. Deacon
Chairman ABSAC

Absac

AUSTRALIAN BUILDING SYSTEMS APPRAISAL COUNCIL LIMITED

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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 new products or systems. Special note should be taken of the provisions and limitations set out and the period of validity of the Technical Opinion.

Each Technical Opinion is prepared on behalf of the ABSAC by its Technical Advisory Committee (TAC) after careful consideration of the evidence available. TAC draws on the service of specialists, the Appraisal Officers, who are appointed for each application. ABSAC makes the appraisals on a national basis. To take account of variations in local building regulations, practice and local climatic

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