



**APPRAISAL of a Building Product:
The SAS Render system – for use on Fibre-
cement, Masonry Block, Brick and Autoclaved
Aerated Concrete.**



**BEAL APPRAISAL C514 – Completed March 2006
Verification of Compliance with Clauses B2, E2 and F2 for –**

SAS PACKAGING

20 Findlater Street
Matamata
Ph 07-888 5551

Building Regulations

SAS Five mm render, SAS One mm Sponge and SAS Solid Sponge (the SAS Render system) are suitable for use on Fibre-cement, Concrete Block, Brick and AAC (Autoclaved Aerated Concrete) as part of an exterior cladding system. When used over fibre cement board or AAC an approved primer or key coat should be used. When the render system is over-coated with a weather protective coating meeting the requirements of BQI C503i, such cladding systems are designed to comply with E2 of the New Zealand Building Code. The use of render is described in the Compliance Document E2/AS1 under S9.3 Stucco.

The SAS Render system subject to the conditions in this appraisal will meet or contribute to the following performance requirements described in the New Zealand Building Code;

- Clause B2 – Durability
- Clause E2 – External Moisture
- Clause F2 – Hazardous Building Materials

B2 Material Durability

For assessing the durability of **The SAS Render system** the BQI Interim Performance Standard (IPS) **C502i – Ver 2, Interim Performance Standard for Render and Stucco** was referred to. Refer to the BQI web site www.bqi.org.nz

Tests described in the interim performance standard for renders include:

- Density when cured (7 days)
- Adhesion
- Accelerated Ageing (Freeze-Thaw)
- Flexibility
- Resistance to Shrinkage
- Water Absorption
- Compatibility with adjacent materials

The test results confirm that **The SAS Render system** meets the requirements of Clause B2.3.1 (b) (i) (15 years Durability) of the NZ Building Code.

E2 Performance Assessments

To demonstrate how **The SAS Render system** contributes to the compliance of E2, the External Moisture requirements of the Building Code, tests were carried out in a cladding system incorporating a fibre-cement sheet **and** painted render system. The render system incorporated the **SAS Five mm render and SAS One mm Sponge** was evaluated using **BQI Test Method 414 – Ver 1, Weathertight Test for Masonry Veneer Claddings** - modified to suit fibre-cement sheeting.

In addition to the test described above the **SAS Render system** was evaluated in practical building situations to assess the following:

- Ease of installing the product /system
- Potential risks of non performance when being installed
- Any external factors that could effect the quality of the installed product /system

E2 Performance Assessments, continued...

- Ability to prevent the ingress of external moisture, taking into account the New Zealand environment, including typical adverse conditions
- Ease of repair or maintenance (where applicable)
- The impact of other building products /systems when in contact
- Comparison with other similar products
- Any practical limitations or special considerations for the installation process

Many of these assessments were carried out in both workshop and field conditions. Where appropriate, experienced tradesmen have assisted in the assessments. Assessments are principally a practical evaluation of the product or system or information.

The results of the testing and performance assessments confirm that **The SAS Render system** contributes to the requirements of Clause E23.2 (External Moisture) of the NZ Building Code.

F2 Hazardous Building Materials

For assessing the potential for **The SAS Render system** to become hazardous to health BEAL considered the in-service history of the materials used in the manufacture of renders and coatings. When mixing these products, safety glasses and a dust mask should be worn.

Product QA Information

The SAS Render system is manufactured to high standards. All products are part of a Quality Assurance programme to verify the stated performance in the New Zealand.

Product Data -

- Render is supplied in 25 kg paper bags.
- Renders are cement based dry mixes containing graded quality mineral fillers and additives to control curing, shrinkage and adhesion.
- Before painting renders typically take 24 hours to dry per 1mm thickness applied.
- A fibreglass mesh must be used in conjunction with the render.
- Clean up of The SAS Render system is with clean water.

Design Considerations

The SAS Render system should be applied from 5mm to 10mm and will provide a strong impact resistant surface ready for a suitable protective coating finish.

Render applied to smooth non-absorbent surfaces will require an approved adhesion promoter. Contact SAS Packaging for advice.

In order for **The SAS Render system** to contribute to meeting the performance requirements of E2 of the New Zealand Building Code, the system must be protected from the weather using a coating system meeting the interim Performance Requirements of **BQI C503**.

For a copy of the latest **The SAS Render system data sheet** contact SAS Packaging.

Verification of Compliance

Test Results based on BQI Interim Performance Standard C502i – Ver 2:

TEST	METHOD	CRITERIA	RESULT
Density & Curing of render	BQI TM 510	No visible cracking	Pass
Adhesion	AS/NZS 1580.5	No delamination	Pass
Freeze-Thaw	NZS 2908.2	No visible change	Pass
Flexural Strength	ASTM C 947-89	No visible cracking	Pass
Shrink Resistance of render	BQI TM 510	No visible shrinkage	Pass
Weathertightness	BQI TM 414	No water penetration	Pass
Compatibility	BQI TM 503	No incompatibility	Pass

NOTE

For information about ASTM Test Methods, refer to <http://www.astm.org>

For information about AS/NZ Test Methods, refer to <http://www.standards.co.nz>

For information about Test Methods developed by BEAL, refer to <http://www.bqi.org.nz>

Installation Information

Any competent plasterer using the appropriate tools and equipment can apply the **SAS Render system**.

The **SAS Render system data sheet** explains the methods for the preparation and application of the render.

The choice of render system is dependant on the substrate. For most masonry substrates an initial 2-3mm thick base coat using SAS 5mm render is applied, followed by the incorporation of the reinforcing fibreglass mesh, followed by the application of a further 2-3mm of SAS 5mm render. This is then trowelled or screeded to a flat finish. A 1-2mm coat of either SAS 1mm Sponge or SAS Solid Sponge is applied to provide the required textured finish.

When the plaster is completely dry, a waterproof, elastomeric paint system meeting interim Performance Standard BQI C503i, should be applied.

Ordering Information

SAS Five mm render, SAS One mm Sponge and SAS Solid Sponge can be purchased in 25 kg paper bags (40 to a pallet) from –
SAS Packaging, Factory Road, Waharoa
Ph 07-888 5551

Health & Safety, Handling & Storage Information

When mixing these products, safety glasses and a dust mask should be worn. In case of contact with eyes, rinse thoroughly with clean water. If irritation persists medical advice should be sought. In case of ingestion medical advice should be taken.

The SAS Renders can be stored for up to six months when kept dry and out of the weather.

Maintenance Information

Once applied, the painted or textured **SAS Render system** should be cleaned on a yearly basis using warm soapy water and a soft brush. Rinse thoroughly. The system should also be inspected twice yearly with any damage being rectified immediately as per manufacturers instructions.

Reference Information

BQI Interim Performance Standard C502i – Ver 2, Interim Performance Standard for Render and Stucco

BQI Test Method 414 – Ver 1, Weathertight Test for Masonry Veneer Claddings

BRANZ Good Practice Guide - **Stucco**.

Conditions of this APPRAISAL

1. The Products continue to comply with the quality assurance measures of SAS Packaging. These quality assurance measures have been viewed and approved by BEAL.
2. The products comply with the conditions of this appraisal and with the **SAS Render System Data Sheet**.
3. SAS Packaging continues to have the products reviewed by BEAL.
4. The overall quality and performance of the products are maintained.
5. SAS Packaging shall notify BEAL of any changes in specification or quality assurance measures prior to them coming into effect.
6. BEAL staff use BQI Interim Performance Standards (in the absence of a relevant AS/NZS Standard) for carrying out field-testing and assessment of External Moisture factors. These assessments are performed either on site or in BEAL's facilities and carried out by experienced and qualified specialists.
7. The system has been tested against one or more of the following criteria which was applicable at the time of the initial assessment:
 - a measurable criteria described in the Building Code
 - a relevant New Zealand or Australian Standard
 - a requirement set out in a Building Quality Institute interim Performance Standard
 - an appropriate requirement set out in a New Zealand Department of Building & Housing document
8. BEAL's verification of the building product or system as complying with one or more criteria is given on the basis that the criteria used were those that were used to demonstrate compliance with the Building Code at the time of the initial assessment. In the event that the criteria are withdrawn or amended at a future date, this Appraisal may no longer remain valid.

Authorised Signatory for BEAL



24 March 2006

C R Prouse – Building Scientist

Date

Statutory Information

The Building Act 2004

The Building Act applies to the construction, alteration, demolition and maintenance of new and existing buildings throughout New Zealand and includes Government building work.

The Building Act establishes a simple, three-part framework of building controls:

1. The **Building Act 2004** - describes what is covered by building controls and sets down the law for building work in New Zealand.
2. The **Building Regulations** - contain the mandatory New Zealand Building Code and details about the processing of building approvals.
3. **Approved Documents** - are (non-mandatory) documents written by the BIA – now replaced by the Department of Building & housing, to assist people to comply with the Building Code.

The Building Code

The New Zealand Building Code is the First Schedule to the Building Regulations 1992. **All building work must comply with the Building Code.**

It is a performance-based code, setting out objectives to be achieved rather than prescribing construction methods. The emphasis is on how a building and its components must perform as opposed to how the building must be designed and constructed.

The Building Code consists of 35 clauses. Each clause sets out performance standards that buildings must meet. These cover things like durability [clause B2], fire safety [clause F2], energy efficiency [clause H1] and access [clause G1].

Approved Documents

Approved Documents provide a 'prescriptive' means of complying with the relevant clause of the Building Code. That is, buildings built to the method described in an Approved Document are automatically deemed to comply with the Code.

Standards

A territorial authority (or Building Consent Authority) is bound by section 19 of the Building Act to grant a building consent, only if it is satisfied on reasonable grounds, that the provisions of the building code would be met if the building work is properly completed in accordance with the plans and specifications submitted with the application. The easiest way to satisfy a territorial authority is to use an Acceptable Solution written to suit the New Zealand Building Code. In the absence of a relevant Acceptable Solution, reference to a New Zealand or Australian Standard helps demonstrate compliance. A Building Quality Institute interim performance standard is an alternative means of demonstrating compliance.

Contact Details

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The Building Quality Institute (BQI) can be contacted through:

Web Site <http://www.bqi.org.nz>