

Our aim is to provide professional engineering services and cost-effective building solutions.

Quasar

Management Services Pty Ltd

Incorporated in NSW ABN 21 003 954 210



The Association of
Consulting Engineers
Australia

Rod Johnston B Tech, M Eng Sc, MICD, CP Eng, NPER, MIE Aust, RPEQ

49A Parklands Road, Mt Colah NSW 2079

www.electronicblueprint.com.au

Ph +61 2 9482 5750 M 0407218926 Fax +61 2 4360 2256 rod@electronicblueprint.com.au

Technical Report

Astec Paints Australasia Pty Ltd Energy Star Coatings

Rod Johnston

B Tech, M Eng Sc, MICD, MIE Aust, CP Eng, NPER, RPEQ

Quasar Management Services Pty Ltd works in close association with **ELECTRONIC BLUEPRINT**, the principal point of reference for Architects, Engineers and Builders and the only package that fully integrates regulatory and standards requirements with comprehensive, editable specifications, CAD details and approved industry training.



**ELECTRONIC
BLUEPRINT**
AUSTRALIA'S PREMIERE BUILDING SPECIFICATION, DETAILING & TRAINING REFERENCE

Name

Rodney Kentwell Johnston

Address

80A The Scenic Road
Killcare Heights NSW 2257

Qualifications and Experience

Refer to Appendix

Statement of Expert's Expertise Relevant to the Report

My experience in the engineering and building industries, together with service on many relevant Standards Australia technical committees and the Building Codes Committee of the Australian Building Codes Board, provide the experience relevant to the writing of this report.

Report Prepared For:

Mr Peter Galanis

Astec Paints Australasia Pty Ltd

262 Marion Road.

Netley, South Australia, 5037

peter@astecpaints.com.au

Scope

This report provides an assessment of the Energy Star Coatings produced by Astec Paints Australasia Pty. Ltd. for compliance with the requirements of BCA Vol 1 and BCA Vol 2¹ compliance.

This report covers only those matters listed in the "Scope" and should not be interpreted as covering any other matter or any incomplete works. This report must be read and interpreted in the context of:

- Basis of Report
- Appendix 1 - Background to BCA Compliance
- Appendix 2 - General BCA Clauses Establishing the Certification Options
- Appendix 3 - Specific BCA Clauses and Referenced Documents.

Limitation

The scope of this report has been limited to Energy Star Coatings, consisting of paints and coatings that have been specially formulated and tested to achieve enhanced radiation reflectance (including infrared, visible and ultraviolet radiation). The scope is limited to the property of solar absorptance (in the context of emissivity and solar reflectivity), and its use in BCA Deemed-to-Satisfy Methods and as input for the BCA Verification Methods.

Validity

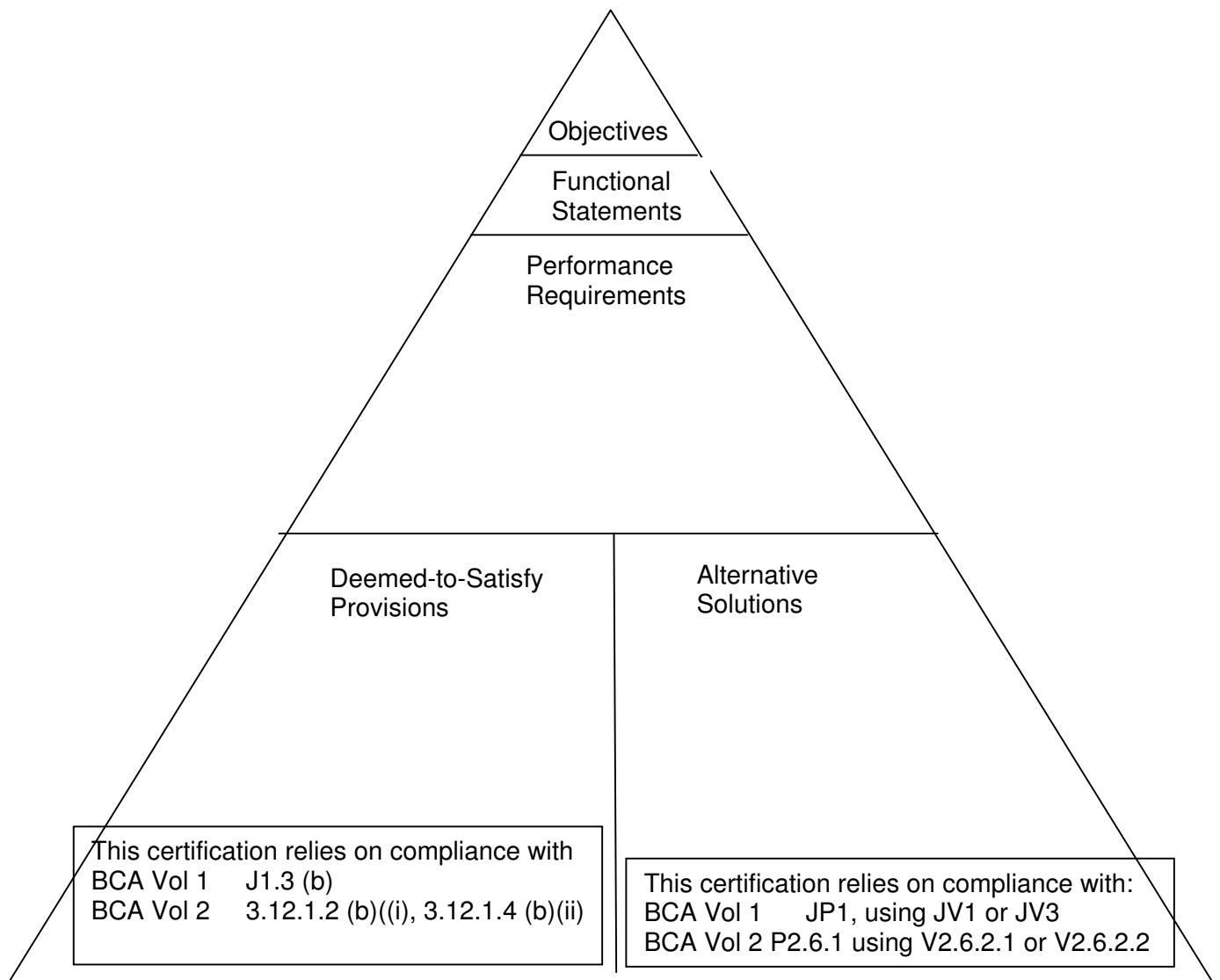
Energy Star Coatings are currently the subject of an application for third-party certification against the requirements of the BCA under the CodeMark scheme. The validity this report is limited to the current period up to the date of an outcome of the CodeMark application.

¹ BCA = Building Code of Australia (Published in two volumes, 1 and 2)

Deemed-to-Satisfy and Alternative Solutions

There are three possible uses of the reported properties:

1. Using the product in a Deemed-to-Satisfy application.
2. Using the reported properties of the product in a Deemed-to-Satisfy Solution requiring calculation.
3. Using the reported properties of the product in an Alternative Solution based on calculation from “first principles” or, where appropriate, comparison to some Deemed-to-Satisfy provisions.



Technical Opinion

Subject to confirmation of the veracity of the test data presented in Appendix 3, it is my opinion that Energy Star Coatings (listed below) produced by Astec Paints Australasia Pty Ltd comply with Building Code of Australia (BCA as follows):

1. Volume 1 – J1.3 (b) – Compliance as tabulated
2. Volume 2 – 3.12.1.2 (b)(i), 3.12.1.4 (b)(ii) – Compliance as tabulated

Building Code of Australia Clause	Volume 1 J1.3 (b)	Volume 2 3.12.1.2 (b)(i)	Volume 2 3.12.1.4 (b)(ii)	NSW BASIX Classification	Building Code of Australia Clause
Solar Absorptance requirement	0.55	0.35	0.55	0.45	Solar Absorptance requirement
Complying Products					Complying Products
Sportscoat	Yes	Yes	Yes	Yes	Light
EC 100 Dirtguard White	Yes	Yes	Yes	Yes	Light
Cool Pave White	Yes	Yes	Yes	Yes	Light
DG IR Elastic White	Yes	Yes	Yes	Yes	Light
ES Metal-Flex GLS/LS	Yes	Yes	Yes	Yes	Light
Tile Guard SM White	Yes	Yes	Yes	Yes	Light
Tile Guard White	Yes	Yes	Yes	Yes	Light
DG IR Gloss White	Yes	Yes	Yes	Yes	Light
GLS/LS White	Yes	Yes	Yes	Yes	Light
Ceram - 4000 White	Yes	Yes	Yes	Yes	Light
E100 T SM White	Yes	Yes	Yes	Yes	Light
Broken White	Yes	Yes	Yes	Yes	Light
C/B Smooth Cream	Yes	Yes	Yes	Yes	Light
Light Cream	Yes	Yes	Yes	Yes	Light
Neutral White	Yes	Yes	Yes	Yes	Light
Armatex White	Yes	Yes	Yes	Yes	Light
Sandalwood	Yes	Yes	Yes	Yes	Light
Pale Biscuit	Yes	Yes	Yes	Yes	Light
Off White	Yes	Yes	Yes	Yes	Light
Light Latte	Yes	Yes	Yes	Yes	Light
Mid Biscuit	Yes	Yes	Yes	Yes	Light
Stone	Yes	Yes	Yes	Yes	Light
C/B Merino	Yes	Yes	Yes	Yes	Light
Gull Grey	Yes	Yes	Yes	Yes	Light
Tuscany	Yes	Yes	Yes	Yes	Light
C/B Birch Grey	Yes		Yes	Yes	Light
Autumn	Yes		Yes	Yes	Light
Pewter	Yes		Yes	Yes	Light
Chino	Yes		Yes	Yes	Light
Quarry	Yes		Yes	Yes	Light
Warm Clay	Yes		Yes	Yes	Light
Mocca	Yes		Yes	Yes	Light
C/B Saltbush	Yes		Yes	Yes	Light
C/B Beige	Yes		Yes		Light
French Green	Yes		Yes		Light
Clay Tone	Yes		Yes		Medium
C/B Rivergum					Medium
Terracotta					Medium
C/B Mist Green					Medium
C/B Slate Grey					Medium
C/B Iron Bark					Medium
Olive Green					Medium
C/B Weathered Copper					Medium
Red Oxide					Medium
Regal Brown					Medium
C/B Heritage Red					Medium

Yallara Brown					Medium
Blue Grass					Medium
Nimbus					Medium
Cobalt					Medium
Charcoal					Medium
Pioneer					Dark
Botanic					Dark
Mid Brunswick Green					Dark
C/B Mountain Blue					Dark
Carriage green					Dark

1. Volume 1 JP1 when it's use is verified by methods JV1 or JV3
2. Volume 2 P2.6.1 when it's use is verified by methods V2.6.2.1 or V2.6.2.2

Solar Absorptance and Emissivity Values		
For use in verification by computer simulation to BCA Volume 1 JV1 or JV3, or BCA Volume 2 V2.6.2.1 or V2.6.2.2		
Product	Solar Absorptance	Emissivity
Sportscoat	0.09	0.92
EC 100 Dirtguard White	0.10	0.91
Cool Pave White	0.10	0.87
DG IR Elastic White	0.11	0.91
ES Metal-Flex GLS/LS	0.11	0.90
Tile Guard SM White	0.11	0.88
Tile Guard White	0.11	0.91
DG IR Gloss White	0.11	0.89
GLS/LS White	0.13	0.88
Ceram - 4000 White	0.16	0.90
E100 T SM White	0.17	0.91
Broken White	0.19	0.89
C/B Smooth Cream	0.22	0.88
Light Cream	0.22	0.86
Neutral White	0.22	0.83
Armatex White	0.23	0.94
Sandalwood	0.23	0.87
Pale Biscuit	0.25	0.90
Off White	0.25	0.93
Light Latte	0.29	0.90
Mid Biscuit	0.31	0.90
Stone	0.31	0.90
C/B Merino	0.32	0.90
Gull Grey	0.32	0.89
Tuscany	0.34	0.90
C/B Birch Grey	0.38	0.86
Autumn	0.39	0.90
Pewter	0.39	0.90
Chino	0.39	0.90
Quarry	0.40	0.90
Warm Clay	0.41	0.83
Mocca	0.42	0.90
C/B Saltbush	0.44	0.90
C/B Beige	0.46	0.85
French Green	0.46	0.90
Clay Tone	0.53	0.90
C/B Rivergum	0.57	0.83

Terracotta	0.58	0.90
C/B Mist Green	0.58	0.87
C/B Slate Grey	0.60	0.85
C/B Iron Bark	0.60	0.92
Olive Green	0.61	0.90
C/B Weathered Copper	0.61	0.90
Red Oxide	0.61	0.85
Regal Brown	0.61	0.91
C/B Heritage Red	0.63	0.82
Yallara Brown	0.63	0.90
Blue Grass	0.64	0.90
Nimbus	0.65	0.90
Cobalt	0.66	0.90
Charcoal	0.68	0.88
Pioneer	0.71	0.90
Botanic	0.72	0.90
Mid Brunswick Green	0.74	0.87
C/B Mountain Blue	0.75	0.92
Carriage green	0.75	0.90

3. Volume 1 State variations –

In New South Wales BCA Volume 1 Section J is replaced by NSW Section J.

- For Class 2 and Class 4 buildings, NSW BASIX applies in accordance with NSW Subsection JA.
- For Class 3, 5, 6, 7a, 7b, 9a, 9b and 9c buildings, BCA Volume 1 Section J applies in accordance with NSW Subsection JB.

In Northern Territory, BCA Volume 1 Section J does not apply.

In Victoria, there is a variation of the star requirements for JV1.

4. Volume 2 State variations –

In New South Wales Part 3.12 does not apply. New South Wales BASIX classifications are as tabulated.

In Northern Territory, Queensland and Tasmania, BCA 2005 Part 2.6 applies.

5. This opinion is subject to product installation being carried out by a competent Tradesman under the direction of a Builder, both of whom have ready access to all relevant technical information related to the required coating installation.

Basis of the Report

This report lists those parts of the Building Code of Australia with which the Certification Body may determine that the product complies. ^{See Note 1}

The purpose of this report is assist the certification process, and is offered for use by:

- PCAs
- The independent third-party JAS-ANZ accredited Certification Body
- The Australian Building Codes Board (ABCB); and
- Joint Accreditation System – Australia and New Zealand (JAS-ANZ). ^{See Note 2}

Whilst the responsibility for the accuracy and applicability of the tests and reports remain with their authors, I am of the opinion that such tests and reports appear consistent, and therefore likely to have been prepared, controlled and reviewed on sound basis. ^{See Note 3}

Document	Organisation responsible for preparing, controlling & reviewing the document	Checks carried out by Quasar Management Services Pty Ltd ^{See Note 4}
Test Reports - Emissivity & Reflectance File SV16101 Project 05CA51080 1/12/05	United Underwriters Laboratories Inc	O
Test Reports	Commercial laboratory commissioned by Astec Paints Australasia Pty Ltd ^{See Note 5}	O
Technical report 05MAAD10444 Part 1 M Luke 2/11/05	Amdel	O
D07092330-1 12/10/07 Consideration of reflectance, emissivity & absorptance data.	Quasar Management Services Pty Ltd	NA


Notes

1. This report deals only with the technical aspects of the product, and does not deal with the Quality Assurance aspects, which are to be covered as part of the CodeMark certification process.
2. Notwithstanding that the purpose of this report is to assist the certification process, it is not intended to replace independent third party assessment of the product and the supporting material (test reports and calculations), upon which the certification is to be based. The responsibility for that assessment rests with the independent third-party JAS-ANZ accredited Certification Body
3. This opinion is based on the checks listed in the fourth column of the schedule.
4. Key of checks carried out:
 - O = Subjectively overview the tests and/or reports to determine the relevance to the application and consistency with industry practice.
 - S = Spot check calculations in the tests or reports, to determine consistency with industry benchmarks or expectations.
 - T = Inspect evidence of third-party certification (e.g. NATA certification or ISO 9001 certification) of the quality system used to prepare, control and/or review the tests and/or reports.
 - Q = Overview of the quality system used to prepare, control and/or review the tests and/or reports.
5. The identity of the laboratory commissioned by Astec Paints Australasia Pty Ltd to carry out these tests is confidential for commercial reasons, and has not been revealed to Quasar Management Services Pty. Ltd.

Declaration

This report is contingent upon the accuracy and relevance of the test results that have been forwarded to me.

I have made all the inquiries that I believe are desirable and appropriate and no matters of significance, which I regard as relevant, have to my knowledge been withheld.

A handwritten signature in black ink on a light background. The signature is cursive and appears to read 'Rod Johnston'. There is a long horizontal line extending to the right from the end of the signature.

Rodney Kentwell Johnston