24 November, 2005

Astec Paints Pty Ltd 24 Pinn St ST MARYS SA 5042

Attention: Mr Mark Waters

REPORT 05MAAD11541 - Part 2

| CLIENT REFERENCE: | Request |
|---------------------------|---|
| TITLE: | Astec B.C.A Test |
| SAMPLE IDENTIFICATION: | Astec Energy Star Dirtguard IR Gloss |
| WORK REQUESTED: | Determine colour classification according to BCA 3.12.1.2 clause 5. |
| INVESTIGATING OFFICER(S): | Natalie Powell |

Monty Luke Laboratory Manager Materials Services

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1. INTRODUCTION

Mark Waters of Astec Paints Pty Ltd supplied reflectance and emittance data of Astec Energy Star Dirtguard IR Gloss samples of various colours to the Amdel Materials Services Laboratory. It was requested that Amdel should carry out calculations to determine the colour classification according to B.C.A 3.12.1.2 clause 5. The samples supplied for evaluation were identified as follows.

- Astec Energy Star Dirtguard IR Gloss
- Astec Energy Star colours

2. PROCEDURE

The sample data supplied was inserted into the American Cool Roof Rating Council ASTM E 1980-01 calculator. Standard solar conditions of Solar Flux = $1000W/m^2$ Ambient Air Temp = 310K ($37^{\circ}C$), Ambient Sky Temp = 300K ($27^{\circ}C$) and no conductive heat transfer were used for all calculations. Each sample used the Emittance value for Astec Energy Star Dirtguard IR Gloss white base of 0.89.

3. RESULTS

Colour Classifications

The results of the calculations of the Astec Energy Star Dirtguard IR Gloss sample were as follows.

| <u>Colour</u> | Solar Absorbance | BCA |
|---------------------------|------------------|------------|
| White Base | 0.108 | LIGHT |
| 8068 C/B Heritage Red | 0.625 | DARK |
| 8069 Red Iron Oxide | 0.61 | DARK |
| 8070 Terracotta | 0.576 | DARK |
| 8071 Clay Tone | 0.533 | LIGHT |
| 8072 Warm Clay | 0.405 | LIGHT |
| 8073 Tuscany | 0.34 | LIGHT |
| 8074 C/B Ironbark | 0.594 | DARK |
| 8075 Pioneer | 0.712 | DARK |
| 8076 Regal Brown | 0.614 | DARK |
| 8077Yallara Brown | 0.63 | DARK |
| 8078 C/B Weathered Copper | 0.609 | DARK |
| 8079 Charcoal | 0.672 | DARK |
| 8080 C/B Slate Grey | 0.597 | DARK |
| 8082 Nimbus | 0.645 | DARK |
| 8083 C/B Beige | 0.457 | LIGHT |
| 8084 Merino | 0.317 | LIGHT |
| 8085 Off White | 0.253 | LIGHT |

| Colour | Solar Absorbance | <u>BCA</u> |
|------------------------|------------------|------------|
| 8086 Sandalwood | 0.233 | LIGHT |
| 8087 C/B Smooth Cream | 0.215 | LIGHT |
| 8088 Mocca | 0.424 | LIGHT |
| 8089 Stone | 0.311 | LIGHT |
| 8098 Carraige Green | 0.754 | DARK |
| 8099 Bruns Green | 0.741 | DARK |
| 8100 Mist Green | 0.56 | DARK |
| 8101 C/B Rivergum | 0.555 | DARK |
| 8102 Olive Green | 0.606 | DARK |
| 8103 Blue Grass | 0.64 | DARK |
| 8104 Botanic | 0.721 | DARK |
| 8105 French Green | 0.461 | LIGHT |
| 8108 C/B Mountain Blue | 0.745 | DARK |
| 8081 C/B Birch Grey | 0.378 | LIGHT |
| 8094 Quarry | 0.402 | LIGHT |
| 8095 Mid Biscuit | 0.305 | LIGHT |
| 8097 Light Latte | 0.291 | LIGHT |
| 8106 C/B Saltbush | 0.442 | LIGHT |
| 8107 Cobalt | 0.662 | DARK |
| 8110 Pewter | 0.393 | LIGHT |
| 8111 Autumn | 0.391 | LIGHT |
| 8112 Chino | 0.394 | LIGHT |
| 8091 Broken White | 0.187 | LIGHT |
| 8092 Neutral White | 0.215 | LIGHT |
| 8093 Pale Buscuit | 0.246 | LIGHT |
| 8096 Light Cream | 0.213 | LIGHT |
| 8109 Gull Grey | 0.317 | LIGHT |