Compliance Testing Report for
Australian/New Zealand Standards
AS/NZS5110:2010 (Draft)
Recessed Luminaire Barriers
(Partial Testing Only)

Client: Efficiency Matrix
Address: 14 Ondine Drive, Wheelers Hill, Victoria 3150
Report Number: 1018EFFDOWMIT01_5110P
Replacement for report 1013EFFDOWMIT01_5110P
Date of Testing: 18th of October 2010
File Number: EFF100930

Equipment Name: Loft Mitt
Equipment Model Number: Dowmit01
Equipment Description: Testing Loft Mitt to Draft Standard AS/NZS5110:2010

Result: Refer to summary page
Tested by: James Emery
Electrical Safety Test Engineer
Approved by: Kenneth Fu
Electrical Safety Manager
Date of issue: 18th of October 2010

Results appearing herein relate only to the sample(s) tested.
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SUMMARY OF COMPLIANCE WITH AUSTRALIAN AND NEW ZEALAND STANDARDS (DRAFT) AS/NZS 5110:2010 (Partial Testing)

The EUT (Equipment Under Test) known as a Loft Mitt, model: Dowmit01 and was supplied for testing to Clause 5.7 of the draft standard AS/NZS5110:2010 by Efficiency Matrix of 14 Ondine Drive, Wheelers Hill, Victoria 3150.

At the client’s request the EUT was tested to Clause 5.7 of the above mentioned standard (Abnormal Operation) which requires a lamp to be energised to 264V. A fixed head halogen mounting fixture was used along with R 5.0 Insulation completely covering the EUT and ballast as a worst case test.

This report is the replacement report for test report number 1013EFFDOWMIT01_5110P due to the correction of the test point diagram to reflect the correct values.

The EUT COMPLIES with the tested clause 5.7 (Abnormal Operation) of Draft Standard AS/NZS5110:2010

Special Conditions for Compliance:

1) The EUT was tested as per Appendix 4, supplied by client.

2) The EUT was tested to a draft standard only.

Method
Testing was performed in accordance with the draft standard: 5110:2010 man

Possible Test Case Verdicts:
- test case does not apply to the test object .................................................................N(A)
- test object does meet the requirements .......................................................................P(ass)
- test object does not meet the requirements ...................................................................F(ail)
- test was not performed .................................................................................................NT(not tested)
- noted ..............................................................................................................................ND

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5.7 TABLE: temperature rise measurements for **abnormal operation**

Test Box completely filled with R5 rated insulation. Test was conducted for 8Hrs. Values shown are maximum temperatures achieved. Temperatures are adjusted to an ambient temperature of 25 degrees Celsius.

<table>
<thead>
<tr>
<th>Part</th>
<th>Max. Reached T (°C)</th>
<th>Max. Allowed T (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>338.8</td>
<td>Refer to Manufacturer Data</td>
</tr>
<tr>
<td>P2</td>
<td>266.4</td>
<td>Refer to Manufacturer Data</td>
</tr>
<tr>
<td>P3</td>
<td>226.0</td>
<td>Refer to Manufacturer Data</td>
</tr>
<tr>
<td>P4</td>
<td>198.0</td>
<td>Refer to Manufacturer Data</td>
</tr>
<tr>
<td>Lamp Holder</td>
<td>240.4</td>
<td>Refer to Manufacturer Data</td>
</tr>
<tr>
<td>Lamp Fitting</td>
<td>96.4</td>
<td>135</td>
</tr>
<tr>
<td>Plaster</td>
<td>50.6</td>
<td>135</td>
</tr>
<tr>
<td>Ballast power cable at lamp holder</td>
<td>169.0</td>
<td>200</td>
</tr>
<tr>
<td>Ballast power cable 40cm from lamp holder</td>
<td>128.6</td>
<td>200</td>
</tr>
<tr>
<td>Mitt inside Lower</td>
<td>106.5</td>
<td>Refer to Manufacturer Data</td>
</tr>
<tr>
<td>Mitt Inside at top</td>
<td>111.4</td>
<td>Refer to Manufacturer Data</td>
</tr>
<tr>
<td>Exterior of ballast</td>
<td>83.3</td>
<td>90</td>
</tr>
<tr>
<td>Outside Mitt left side</td>
<td>75.7</td>
<td>135</td>
</tr>
<tr>
<td>Outside Mitt right side</td>
<td>81.3</td>
<td>135</td>
</tr>
<tr>
<td>Outside Mitt at top</td>
<td>87.2</td>
<td>135</td>
</tr>
<tr>
<td>Top of Enclosure</td>
<td>31.8</td>
<td>135</td>
</tr>
<tr>
<td>Ambient</td>
<td>23.0 (Adj. to 25)</td>
<td>20-30</td>
</tr>
</tbody>
</table>
*** END OF REPORT BODY ***

Appendix 1 – Critical Component List
Appendix 2 – Photographic Record of Sample
Appendix 3 – Supplied Test Points
Appendix 4 – Supplied Draft Standard
## Appendix 1 - Critical Component List

<table>
<thead>
<tr>
<th>Object / part No.</th>
<th>Manufacturer/ trademark</th>
<th>Type / model</th>
<th>Technical data</th>
<th>Standard</th>
<th>Mark(s) of conformity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformer</td>
<td>TRIDONIC.ATCO</td>
<td>VIPER</td>
<td>Primary: 230-240V~ 50/60Hz  Secondary: 11.6V</td>
<td>-</td>
<td>V99</td>
</tr>
<tr>
<td>Dichroic Lamp</td>
<td>GE</td>
<td>FNV/CG</td>
<td>12V 50W</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ceiling Batt R5.0</td>
<td>Insulco</td>
<td>201504</td>
<td>Maximum Thickness</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

1) An asterisk indicates a mark which assures the agreed level of surveillance.
Appendix 2 – Photographic Record of Sample
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Appendix 3 – Supplied Test Points

50W Dichroic Lamp Temp Points

Test these points on the Lamp during both tests.

90° - 135° Abnormal Operation is tested with box completely filled with insulation using a fixed head fitting.

Side View
Appendix 4 – Supplied Draft Standard

5.7 THERMAL TEST—ABNORMAL OPERATION

5.7.1 Setup of procedure

In the case where the thermal test was not performed completely filled with insulation, the top is removed and segmented insulation shall be cut and added to abut the barrier and sides of the box. Additional thermocouples are added if necessary to record the highest temperature where the barrier touches insulation. Segmented insulation is then added to completely fill the rest of the box above the barrier.

The test box top shall be replaced and sealed.

The test box shall be positioned in a draught proof thermal room as described in Appendix A at a temperature of 25 ± 5°C.

5.7.2 Test procedure

The thermal test lamp is energized at 1.05 × rated wattage for a filament lamp or 264 V for other lamps. Lamps controlled by auxiliary control gear have this gear energized at 264 V or barriers classified as ‘generic’ barriers shall have the cartridge heater energized at 50% of the rated wattage. The test is run till 8 h has elapsed.

All temperatures measured shall be referred (mathematically adjusted) to an ambient temperature of 25°C.

5.7.3 Criteria

Thermocouples on the outside of the barrier shall not exceed 135°C. Thermocouples on the mounting surface shall not exceed 135°C. Thermocouples on the inside of the barrier shall not exceed the maximum temperature value specified by the barrier manufacturer. Unlike in AS/NZS 60598.1, no concession is given for variability of temperature measurement.

There shall be no damage to the barrier such as scoring, deforming or melting.

NOTES:

1. The reason behind the abnormal test is to reflect unusual conditions in ceilings where insulation may move, for instance, by wind or animals, and cover lighting equipment. Failure in a lamp, luminaire or transformer etc., should indicate to the occupant that something is wrong and corrective action is required to rectify correct the abnormal situation.

2. Temperature limitations have been set after considering information from insulation material manufacturers, plasterboard manufacturers and referring to AS/NZS 60598.1.