Interim Report
Order No. 2715004

Client: Cedar Decor Pvt. Ltd.
F-2, Shapath-1, Nr. Cargo Motors, S. G. Highway
Ahmedabad-380 015, Gujarat
India

Date of order: 10 February 2015

Order: Performance of selected tests on exterior-grade compact laminates

Contractor: EPH – Laboratory Surface Testing

Engineer in charge: Dipl.-Ing. S. Wenk

Dr.-Ing. Rico Emmier
Head of Laboratory Surface Testing

The interim report contains 4 pages. Any duplication, even in part, requires written permission of EPH. These test results are exclusively related to the tested material.
1 Task
The Development and Examination Laboratory for Wood Technology Ltd. (EPH) was ordered by Cedar Decor Pvt. Ltd. to carry out selected tests on exterior-grade compact laminates.

2 Test material
The client has sent 2 variants of laminated boards (receipt at the EPH-laboratory: 26 February 2015). The variants were identified as following:

<table>
<thead>
<tr>
<th>Variant</th>
<th>Name of samples by the client (sample ID)</th>
<th>Test pieces / dimension [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SF 2277</td>
<td>6 / 145 x 65</td>
</tr>
<tr>
<td>2</td>
<td>SF 2227-82227</td>
<td>6 / 145 x 65</td>
</tr>
</tbody>
</table>

3 Test performance
3.1 Light fastness
The light fastness test was carried out with a Xenon Weather Ometer Ci3000+ (KL55) according to EN 438-2, part 27:2005, using the following parameters according to EN ISO 4892-2:
- Irradiation conditions behind window glass (water cooled equipment)
- Black standard temperature (BST) of (65±3) °C
- Relative humidity (50±5) %
- Rate of irradiance (60±3) W/m² in the wavelength range 300 - 400 nm
- Exposure until blue wool scale grade 6 according to ISO 105-B02 is reached

Visual assessments of the samples concerning colour change were carried out at blue wool scale grade 4 and 6 of exposure using the grey scale according to EN ISO 105-A02. Light fastness values were determined according to EN 438-2.

3.2 Resistance to artificial weathering
The artificial weathering was carried out according to EN 438-2:2005 part 29, (EN ISO 4892-2) with Xenon tester Weather Ometer Ci 3000 (test device KL 31). The overall weathering time is 3000 hours (=650 MJ/m² radiant exposure).

The test was carried out with the following device parameters:
- Method A (full global radiation), Cycle 1
- 65 °C black standard temperature
- 65 % relative humidity
- Weathering cycle consisted of a spray cycle 18 min, 102 min drying phase
The following assessments were carried out to characterize the weathering resistance:

- Visual assessment of the colour change after exposure using the grey scale according to EN ISO 105-A02 after 500 h, 1000 h, 1500 h, 2000 h, 2500 h and 3000 h (contrast)
- Visual assessment according to in EN 438:2005, part 2, after 500 h, 1000 h, 1500 h, 2000 h, 2500 h and 3000 h (appearance)

**Requirements**

The requirements for weather resistance according to DIN EN 438-6:2005 are summarized in the following table for the tested properties.

<table>
<thead>
<tr>
<th>Property / Test method</th>
<th>Attribute</th>
<th>Test method</th>
<th>Attribute</th>
<th>Unit</th>
<th>Laminate grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance to artificial weathering / EN 438-2, part 29</td>
<td>Contrast</td>
<td>EN 438-2, part 29</td>
<td>Grey scale rating (not worse than)</td>
<td></td>
<td>EGS and EGF: 3* EDS and EDF: 3**</td>
</tr>
<tr>
<td></td>
<td>Appearance</td>
<td></td>
<td>Rating (min)</td>
<td></td>
<td>EGS and EGF: 4* EDS and EDF: 4**</td>
</tr>
</tbody>
</table>

* after 325 MJ/m² radiant exposure
** after 650 MJ/m² radiant exposure

**4 Results**

**4.1 Light fastness**

<table>
<thead>
<tr>
<th>Variant</th>
<th>Change of sample colour in grey scale N° due to colour change of blue wool scale</th>
<th>Light fastness as grades of the blue wool scale according to EN 438:2005</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>grade 4</td>
<td>grade 6</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Grey scale N° 5: no change of colour
Grey scale N° 4,5: very small change of colour
Grey scale N° 4: small change of colour
Grey scale N° 3,5: recognisable change of colour
Grey scale N° 3: clearly recognisable change of colour
Grey scale N° 2,5: very clearly recognisable change of colour
Grey scale N° 2: strong change of colour
Grey scale N° 1: very strong change of colour

**4.2 Resistance to artificial weathering**

The examination is still on going. Final results are available at 31 July 2015.
4.2.1 Contrast

Recording of the change in colour using grey scale according to DIN EN 20105-A02:

<table>
<thead>
<tr>
<th>Variant</th>
<th>(500) h</th>
<th>(1000) h</th>
<th>(1500) h</th>
<th>(2000) h</th>
<th>(2500) h</th>
<th>(3000) h</th>
<th>Requirements for weathering (contrast) according to EN 438-6 for type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EGS and EGF EDS and EDF</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rating scale for assessing change in colour using the grey scale:
- Grey scale No 5: no change of colour
- Grey scale No 4,5: very small change of colour
- Grey scale No 4: small change of colour
- Grey scale No 3,5: recognisable change of colour
- Grey scale No 3: clearly recognisable change of colour
- Grey scale No 2,5: very clearly recognisable change of colour
- Grey scale No 2: strong change of colour
- Grey scale No 1: very strong change of colour

4.2.2 Appearance

Visual assessment according to in EN 438, part 2:

<table>
<thead>
<tr>
<th>Variant</th>
<th>Visual assessment according to in EN 438 part 2 (rating 1 - 5) after 500 h 1000 h 1500 h 2000 h 2500 h 3000 h</th>
<th>Requirements for weathering (appearance) according to EN 438-6 for type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5 5 5</td>
<td>EGS and EGF EDS and EDF</td>
</tr>
<tr>
<td>2</td>
<td>5 5 5</td>
<td></td>
</tr>
</tbody>
</table>

Assessment criteria according to EN 438-2 (2005), in ratings:
- Rating 5: = no visible change
- Rating 4: = change of gloss only
- Rating 3: = Hairline surface cracks and/or erosion of surface
- Rating 2: = Surface cracks
- Rating 1: = Blistering and/or delamination

5 Evaluation

The light fastness of both variants is > 6 using the test parameters of EN 438-2, part 27:2005.

Dipl.-Ing. S. Wenk
Engineer in charge
Interim Report 2
Order No. 2715004

Client: Cedar Decor Pvt. Ltd.
F-2, Shapath-1, Nr. Cargo Motors, S. G. Highway
Ahmedabad-380 015, Gujarat
India

Date of order: 10 February 2015

Order: Performance of selected tests on exterior-grade compact laminates

Contractor: EPH – Laboratory Surface Testing

Engineer in charge: Dipl.-Ing. S. Wenk

Dr.-Ing. Rico Emmler
Head of Laboratory Surface Testing

The interim report contains 4 pages. Any duplication, even in part, requires written permission of EPH. These test results are exclusively related to the tested material.
1 Task
The Development and Examination Laboratory for Wood Technology Ltd. (EPH) was ordered by Cedar Decor Pvt. Ltd. to carry out selected tests on exterior-grade compact laminates.

2 Test material
The client has sent 2 variants of laminated boards (receipt at the EPH-laboratory: 26 February 2015). The variants were identified as following:

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<th>Variant</th>
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<tr>
<td>2</td>
<td>SF 2227-82227</td>
<td>6 / 145 x 65</td>
</tr>
</tbody>
</table>

3 Test performance
3.1 Lightfastness
The lightfastness test was carried out with a Xenon Weatherometer Ci3000+ (KL55) according to EN 438-2, part 27:2005, using the following parameters according to EN ISO 4892-2:
- Irradiation conditions behind window glass (water cooled equipment)
- Black standard temperature (BST) of (65±3) °C
- Relative humidity (50±5) %
- Rate of irradiance (60±3) W/m² in the wavelength range 300 - 400 nm
- Exposure until blue wool scale grade 6 according to ISO 105-B02 is reached

Visual assessments of the samples concerning colour change were carried out at blue wool scale grade 4 and 6 of exposure using the grey scale according to EN ISO 105-A02.
Light fastness values were determined according to EN 438-2.

3.2 Resistance to artificial weathering
The artificial weathering was carried out according to EN 438-2:2005 part 29, (EN ISO 4892-2) with Xenon tester Weatherometer Ci 3000 (test device KL 31). The overall weathering time is 3000 hours (=650 MJ/m² radiant exposure).

The test was carried out with the following device parameters:
- Method A (full global radiation), Cycle 1
- 65 ° C black standard temperature
- 65 % relative humidity
- Weathering cycle consisted of a spray cycle 18 min, 102 min drying phase
The following assessments were carried out to characterize the weathering resistance:

- Visual assessment of the colour change after exposure using the grey scale according to EN ISO 105-A02 after 500 h, 1000 h, 1500 h, 2000 h, 2500 h and 3000 h (contrast)
- Visual assessment according to in EN 438:2005, part 2, after 500 h, 1000 h, 1500 h, 2000 h, 2500 h and 3000 h (appearance)

Requirements
The requirements for weather resistance according to DIN EN 438-6:2005 are summarized in the following table for the tested properties.

<table>
<thead>
<tr>
<th>Property / Test method</th>
<th>Attribute</th>
<th>Unit</th>
<th>Laminate grade</th>
<th>Test method</th>
<th>EGS and EGF</th>
<th>EDS and EDF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance to artificial weathering / EN 438-2, part 29</td>
<td>Contrast</td>
<td>Grey scale rating (not worse than)</td>
<td>3 *</td>
<td>EN 438-2, part 29</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Appearance</td>
<td>Rating (min)</td>
<td>4 *</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* after 325 MJ/m² radiant exposure
** after 650 MJ/m² radiant exposure

4 Results

4.1 Light fastness

<table>
<thead>
<tr>
<th>Variant</th>
<th>Change of sample colour in grey scale N° due to colour change of blue wool scale grade 4</th>
<th>Change of sample colour in grey scale N° due to colour change of blue wool scale grade 6</th>
<th>Light fastness as grades of the blue wool scale according to EN 438:2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
<td>&gt; 6</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
<td>&gt; 6</td>
</tr>
</tbody>
</table>

Grey scale N° 5: no change of colour
Grey scale N° 4,5: very small change of colour
Grey scale N° 4: small change of colour
Grey scale N° 3,5: recognisable change of colour
Grey scale N° 3: clearly recognisable change of colour
Grey scale N° 2,5: very clearly recognisable change of colour
Grey scale N° 2: strong change of colour
Grey scale N° 1: very strong change of colour

4.2 Resistance to artificial weathering
The examination is still on going. Final results are available at 31 July 2015.
4.2.1 Contrast

Recording of the change in colour using grey scale according to DIN EN 20105-A02:

<table>
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<tr>
<th>Variant</th>
<th>Change of sample colour in grey scale due to colour change</th>
<th>Requirements for weathering (contrast) according to EN 438-6 for type</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>500 h</td>
<td>1000 h</td>
</tr>
<tr>
<td>1</td>
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Rating scale for assessing change in colour using the grey scale:
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- Grey scale No 1 = very strong change of colour

4.2.2 Appearance

Visual assessment according to in EN 438, part 2:

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<tr>
<th>Variant</th>
<th>Visual assessment according to in EN 438 part 2 (rating 1 - 5) after</th>
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Assessment criteria according to EN 438-2 (2005), in ratings:
- Rating 5: = no visible change
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- Rating 2: = Surface cracks
- Rating 1: = Blistering and/or delamination

5 Evaluation

The light fastness of both variants is > 6 using the test parameters of EN 438-2, part 27:2005. The requirements for weathering (contrast and appearance) after 1500 hours for the type EGS and EGF were fulfilled for both tested variants.

Dipl.-Ing. S. Wenk
Engineer in charge
Interim Report 3
Order No. 2715004

Client: Cedar Decor Pvt. Ltd.
F-2, Shapath-1, Nr. Cargo Motors, S. G. Highway
Ahmedabad-380 015, Gujarat
India

Date of order: 10 February 2015
Order: Performance of selected tests on exterior-grade compact laminates
Contractor: EPH – Laboratory Surface Testing
Engineer in charge: Dipl.-Ing. S. Wenk

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<td>2</td>
<td>SF 2227-82227</td>
<td>6 / 145 x 65</td>
</tr>
</tbody>
</table>

3 Test performance

3.1 Light fastness

The light fastness test was carried out with a Xenon Weather Ometer Cl3000+ (KL55) according to EN 438-2, part 27:2005, using the following parameters according to EN ISO 4892-2:

- Irradiation conditions behind window glass (water cooled equipment)
- Black standard temperature (BST) of (65±3) °C
- Relative humidity (50±5) %
- Rate of irradiance (60±3) W/m² in the wavelength range 300 - 400 nm
- Exposure until blue wool scale grade 6 according to ISO 105-B02 is reached

Visual assessments of the samples concerning colour change were carried out at blue wool scale grade 4 and 6 of exposure using the grey scale according to EN ISO 105-A02. Light fastness values were determined according to EN 438-2.

3.2 Resistance to artificial weathering

The artificial weathering was carried out according to EN 438-2:2005 part 29, (EN ISO 4892-2) with Xenon tester Weather Ometer Cl 3000 (test device KL 31). The overall weathering time is 3000 hours (=650 MJ/m² radiant exposure).

The test was carried out with the following device parameters:

- Method A (full global radiation), Cycle 1
- 65 °C black standard temperature
- 65 % relative humidity
- Weathering cycle consisted of a spray cycle 18 min, 102 min drying phase
The following assessments were carried out to characterize the weathering resistance:

- Visual assessment of the colour change after exposure using the grey scale according to EN ISO 105-A02 after 500 h, 1000 h, 1500 h, 2000 h, 2500 h and 3000 h (contrast)
- Visual assessment according to in EN 438:2005, part 2, after 500 h, 1000 h, 1500 h, 2000 h, 2500 h and 3000 h (appearance)

Requirements

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<th>Attribute</th>
<th>Unit</th>
<th>Laminate grade</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance to artificial weathering / EN 438-2, part 29</td>
<td>Contrast</td>
<td>Grey scale rating (not worse than)</td>
<td>3 *</td>
<td>3**</td>
</tr>
<tr>
<td></td>
<td>Appearance</td>
<td>Rating (min)</td>
<td>4 *</td>
<td>4**</td>
</tr>
</tbody>
</table>

* after 325 MJ/m² radiant exposure
** after 650 MJ/m² radiant exposure

4 Results

4.1 Light fastness

<table>
<thead>
<tr>
<th>Variant</th>
<th>Change of sample colour in grey scale N° due to colour change of blue wool scale</th>
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</tr>
<tr>
<td></td>
<td>grade 4</td>
<td>grade 6</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Grey scale N° 5  no change of colour
Grey scale N° 4,5 very small change of colour
Grey scale N° 4 small change of colour
Grey scale N° 3,5 recognisable change of colour
Grey scale N° 3 clearly recognisable change of colour
Grey scale N° 2,5 very clearly recognisable change of colour
Grey scale N° 2 strong change of colour
Grey scale N° 1 very strong change of colour

4.2 Resistance to artificial weathering

The examination is still on going. Final results are available at 31 July 2015.
4.2.1 Contrast

Recording of the change in colour using grey scale according to DIN EN 20105-A02:

<table>
<thead>
<tr>
<th>Variant</th>
<th>Change of sample colour in grey scale due to colour change</th>
<th>Requirements for weathering (contrast) according to EN 438-6 for type</th>
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<tr>
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<td>500 h</td>
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Rating scale for assessing change in colour using the grey scale:
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4.2.2 Appearance

Visual assessment according to in EN 438, part 2:

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<th>Variant</th>
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5 Evaluation

The light fastness of both variants is > 6 using the test parameters of EN 438-2, part 27:2005. The requirements for weathering (contrast and appearance) after 1500 hours for the type EGS and EGF were fulfilled for both tested variants.

Dipl.-Ing. S. Wenk
Engineer in charge
Interim Report 4  
Order No. 2715004

Client: Cedar Decor Pvt. Ltd.  
F-2, Shapath-1, Nr. Cargo Motors, S. G. Highway  
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The light fastness test was carried out with a Xenon Weather Ometer C13000+ (KL55) according to EN 438-2, part 27:2005, using the following parameters according to EN ISO 4892-2:
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Visual assessments of the samples concerning colour change were carried out at blue wool scale grade 4 and 6 of exposure using the grey scale according to EN ISO 105-A02. Light fastness values were determined according to EN 438-2.

3.2 Resistance to artificial weathering

The artificial weathering was carried out according to EN 438-2:2005 part 29, (EN ISO 4892-2) with Xenon tester Weather Ometer C1 3000 (test device KL 31). The overall weathering time was 3000 hours (=650 MJ/m² radiant exposure).

The test was carried out with the following device parameters:
- Method A (full global radiation), Cycle 1
- 65 ° C black standard temperature
- 65 % relative humidity
- Weathering cycle consisted of a spray cycle 18 min, 102 min drying phase
The following assessments were carried out to characterize the weathering resistance:

- Visual assessment of the colour change after exposure using the grey scale according to EN ISO 105-A02 after 500 h, 1000 h, 1500 h, 2000 h, 2500 h and 3000 h (contrast)
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<td></td>
<td></td>
<td>EGS and EGF</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EDS and EDF</td>
</tr>
<tr>
<td>Resistance to artificial weathering / EN 438-2, part 29</td>
<td>Contrast</td>
<td>Grey scale rating (not worse than)</td>
<td>3 *</td>
</tr>
<tr>
<td></td>
<td>Appearance</td>
<td>Rating (min)</td>
<td>4 *</td>
</tr>
</tbody>
</table>

* after 325 MJ/m² radiant exposure
** after 650 MJ/m² radiant exposure

4 Results
4.1 Light fastness

<table>
<thead>
<tr>
<th>Variant</th>
<th>Change of sample colour in grey scale N° due to colour change of blue wool scale</th>
<th>Light fastness as grades of the blue wool scale according to EN 438:2005</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>grade 4</td>
<td>grade 6</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Grey scale N° 5  no change of colour
Grey scale N° 4,5 very small change of colour
Grey scale N° 4 small change of colour
Grey scale N° 3,5 recognisable change of colour
Grey scale N° 3 clearly recognisable change of colour
Grey scale N° 2,5 very clearly recognisable change of colour
Grey scale N° 2 strong change of colour
Grey scale N° 1 very strong change of colour

4.2 Resistance to artificial weathering
The examination is still on going. Final results are available on 31 July 2015.
4.2.1 Contrast

Recording of the change in colour using grey scale according to DIN EN 20105-A02:

<table>
<thead>
<tr>
<th>Variant</th>
<th>Change of sample colour in grey scale due to colour change</th>
<th>Requirements for weathering (contrast) according to EN 438-6 for type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>500 h</td>
<td>1000 h</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Rating scale for assessing change in colour using the grey scale:
- Grey scale No 5: no change of colour
- Grey scale No 4,5: very small change of colour
- Grey scale No 4: small change of colour
- Grey scale No 3,5: recognisable change of colour
- Grey scale No 3: clearly recognisable change of colour
- Grey scale No 2,5: very clearly recognisable change of colour
- Grey scale No 2: strong change of colour
- Grey scale No 1: very strong change of colour

4.2.2 Appearance

Visual assessment according to EN 438, part 2:

<table>
<thead>
<tr>
<th>Variant</th>
<th>Visual assessment according to in EN 438 part 2 (rating 1 - 5) after</th>
<th>Requirements for weathering (appearance) according to EN 438-6 for type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>500 h</td>
<td>1000 h</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Assessment criteria according to EN 438-2 (2005), in ratings:
- Rating 5: = no visible change
- Rating 4: = change of gloss only
- Rating 3: = Hairline surface cracks and/or erosion of surface
- Rating 2: = Surface cracks
- Rating 1: = Blistering and/or delamination

5 Evaluation

The light fastness of both variants is > 6 using the test parameters of EN 438-2, part 27:2005.
The requirements for weathering (contrast and appearance) after 1500 hours for the type EGS and EGF were fulfilled for both tested variants.

Dipl.-Ing. S. Wenk
Engineer in charge
Cedar Decor Pvt. Ltd.
Ms. Nilpa Patel
F-2, Shapath-1, Nr. Cargo Motors, S. G. Highway
AHMEDABAD-380 015, GUJARAT
INDIEN

Client: Cedar Decor Pvt. Ltd.
F-2, Shapath-1, Nr. Cargo Motors, S. G. Highway
Ahmedabad-380 015, Gujarat
India

Date of order: 10 February 2015
Order: Performance of selected tests on exterior-grade compact laminates
Contractor: EPH – Laboratory Surface Testing
Engineer in charge: Dipl.-Ing. S. Wenk

Dr.-Ing. Rico Emmier
Head of Laboratory Surface Testing

The interim report contains 5 pages. Any duplication, even in part, requires written permission of EPH. These test results are exclusively related to the tested material.
1 Task
The Development and Examination Laboratory for Wood Technology Ltd. (EPH) was ordered by Cedar Decor Pvt. Ltd. to carry out selected tests on exterior-grade compact laminates.

2 Test material
The client has sent 2 variants of laminated boards (receipt at the EPH-laboratory: 26 February 2015). The variants were identified as following:

<table>
<thead>
<tr>
<th>Variant</th>
<th>Name of samples by the client (sample ID)</th>
<th>Test pieces / dimensions [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SF 2277</td>
<td>6 / 145 x 65</td>
</tr>
<tr>
<td>2</td>
<td>SF 2227-82227</td>
<td>6 / 145 x 65</td>
</tr>
</tbody>
</table>

3 Test performance
3.1 Light fastness
The light fastness test was carried out with a Xenon Weather Ometer CI3000+ (KL55) according to EN 438-2, part 27:2005, using the following parameters according to EN ISO 4892-2:
- Irradiation conditions behind window glass (water cooled equipment)
- Black standard temperature (BST) of (65±3) °C
- Relative humidity (50±5) %
- Rate of irradiance (60±3) W/m² in the wavelength range 300-400 nm
- Exposure until blue wool scale grade 6 according to ISO 105-B02 is reached
Visual assessments of the samples concerning colour change were carried out at blue wool scale grade 4 and 6 of exposure using the grey scale according to EN ISO 105-A02. Light fastness values were determined according to EN 438-2.

3.2 Resistance to artificial weathering
The artificial weathering was carried out according to EN 438-2:2005 part 29, (EN ISO 4892-2) with Xenon tester Weather Ometer CI 3000 (test device KL 31). The overall weathering time was 3000 h (=650 MJ/m² radiant exposure).
The test was carried out with the following device parameters:
- Method A (full global radiation), Cycle 1
- 65 °C black standard temperature
- 65 % relative humidity
- Weathering cycle consisted of a spray cycle 18 min, 102 min drying phase
The following assessments were carried out to characterize the weathering resistance:

- Visual assessment of the colour change after exposure using the grey scale according to EN ISO 105-A02 after 500 h, 1000 h, 1500 h, 2000 h, 2500 h and 3000 h (contrast)
- Visual assessment according to in EN 438:2005, part 2, after 500 h, 1000 h, 1500 h, 2000 h, 2500 h and 3000 h (appearance)

**Requirements**

The requirements for weather resistance according to DIN EN 438-6:2005 are summarized in the following table for the tested properties.

<table>
<thead>
<tr>
<th>Property / Test method</th>
<th>Attribute</th>
<th>Unit</th>
<th>Laminate grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance to artificial weathering / EN 438-2, part 29</td>
<td>Contrast</td>
<td>Grey scale rating (not worse than)</td>
<td>3 *</td>
</tr>
<tr>
<td></td>
<td>Appearance</td>
<td>Rating (min)</td>
<td>4 *</td>
</tr>
</tbody>
</table>

* after 325 MJ/m² radiant exposure
** after 650 MJ/m² radiant exposure

4  Results

4.1  Light fastness

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4.2 Resistance to artificial weathering

4.2.1 Contrast

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</tr>
<tr>
<td>1</td>
<td>5 5 5 5 5 5 5</td>
<td>fulfilled fulfilled</td>
</tr>
<tr>
<td>2</td>
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5 Evaluation

The light fastness of both variants is > 6 using the test parameters of EN 438-2, Part 27:2005.

The requirements for weathering (contrast and appearance) according to EN 438-2 Part 29 after exposure of 3000 h for the type EDS and EDF were fulfilled for both tested variants.

The samples will be sent to the client for visual assessment (after agreement).

Dipl.-Ing. S. Wenk
Engineer in charge