DIRECTIONS FOR USE

1. Before applying Born2Bond™ Light Lock 30x, make sure the surface is clean, dry and grease-free.
2. Apply adhesive to one surface. Do not use items like tissues or a brush to spread the adhesive.
3. Assemble the parts within a few seconds. The parts should be accurately positioned, as the short fixture time leaves little opportunity for adjustment.
4. Bonds should be fixed or clamped until the adhesive has reached fixture. The product should be allowed to develop to full strength before subjecting it to any service loads (typically 24 to 72 hours after assembly, depending on bond
5. Optionally, using light from 370-440 nm, preferably 400-430 nm it is possible to accelerate the fixture time to less than 5 seconds. Typical irradiance should be of at least 20 mW/cm² (400-430 nm)
PRODUCT CHARACTERISTICS

Base Technology
Methoxyethyl Cyanoacrylate / Polyfunctional acrylate

Components
1K

Appearance / Color
Transparent / greenish

Cure
Contact / UV Light

Temperature Use Range
-40 °C to 60 °C (50 °F to 104 °F)

UNCURED PHYSICAL PROPERTIES

Viscosity at 25 °C (77 °F)
Brookfield
150 - 350 cP

Density (ASTM D1875 23 °C)
1.11 g/mL

Refractive Index, ABBE
1.462

CURED PHYSICAL PROPERTIES

Shore Hardness D
60-65

Soft Point- HDT (ASTM E2092-18a)
48 °C (118.4 °F)

Tensile Strength (MPa - ISO 527)
38

Elongation at Break (% - ISO 527)
120

Glass Transition Temperature (ISO 6721)
68 °C (154.4 °F)

Coefficient of Linear Thermal Expansion (ISO 10545-8)
42 x 10^-6

Linear Shrinkage (% - ISO 10563)
10.7

Water Absorption after 24 h (ASTM D542)
2.0%

Electrical Properties of Resistivity IEC 60093
Surface resistivity DC 500 V (Ohm)
7.0 x 10^13

Volume resistivity DC 1kV (Ohm.m)
2.11 x 10^12

Corrected Dissipation Factor, Dielectric Constant IEC 60250
D @ 1 kHz
0.053
k’ @ 1 kHz
8.86
D @ 1 MHz
0.038
k’ @ 1 MHz
4.93

DC breakdown voltage according to IEC 60243-2
18.8 kV/mm

FIXTURE TIME

Contact Cure (0.1N/mm²) - Without light activation (0.02 mm gap)
Stainless Steel (A316) 80 - 120 seconds
Steel (Mild Steel) 10 - 90 seconds
Aluminum (A5754) 40 - 90 seconds
Neoprene 15 - 90 seconds
EPDM 10 - 90 seconds
Rubber, nitrile 15 - 90 seconds
ABS 15 - 90 seconds
PVC 30 - 90 seconds
Polycarbonate 35 - 120 seconds
Phenolic 30 - 90 seconds
Leather 30 - 90 seconds
Polycarbonate / ABS 30 - 90 seconds

Curing speed with UV * Light
PMMA < 5 seconds

* UV LED 405 nm UV Visible LED (28mW/cm²).

BONDING PERFORMANCE

Lap shear strength (ISO 4587) @ 23 °C (73.4 °F) (MPa)

After 10 s curing UV LED** (0.02 mm gap)

Polycarbonate 3 +/- 1
Polycarbonate / Aluminum (A5754) 3 +/- 1
Polycarbonate/ Steel (Grit blasted) 3 +/- 1

After 24 h curing at 23 °C (73.4 °F)

ABS 6 +/-1 SF **
PVC 2 +/- 1
Phenolic 8 +/- 1

After 60 s curing UV LED ** + 1 week at 23 °C (73.4 °F) (0.02mm gap)

Polycarbonate 3 +/- 1
Polycarbonate/ Steel (Grit blasted) 5 +/- 1

** Substrate failure

Always use glasses and gloves when applying adhesives.
**Lap shear strength (MPa) vs UV\* exposure time (s) @ 23 °C (73.4 °F)**

ISO 4587
Polycarbonate - Steel (grit blasted)
0.02 mm gap

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**HEAT AGING**

**Lap shear Strength after aging at the temperature**, ISO 4587
Cured with UV LED (405 nm UV Visible LED - 28 mW/cm²) for 60 s and left for 1 week @ 23 °C (73.4 °F)
Polycarbonate - Polycarbonate
0.02 mm gap

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**HOT STRENGTH**

**Lap shear Strength vs temperature (°C)**, ISO 4587 Cured with UV LED (405 nm UV Visible LED - 28 mW/cm²) for 60 s and left for 1 week @ 23 °C (73.4 °F)
Polycarbonate - Steel (grit blasted)
0.02 mm gap

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**CHEMICAL/SOLVENT RESISTANCE**

**Lap shear Strength after aging in solvents**, ISO 4587 Cured with UV LED (405 nm UV Visible LED - 28 mW/cm²) for 60 s and left for 1 week @ 23 °C (73.4 °F)
Polycarbonate - Polycarbonate
0.02 mm gap

<table>
<thead>
<tr>
<th>Testing on Polycarbonate</th>
<th>% of Initial Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100 H</td>
</tr>
<tr>
<td>Windex</td>
<td>85</td>
</tr>
<tr>
<td>Oleic Acid</td>
<td>100</td>
</tr>
<tr>
<td>Sunscreen</td>
<td>85</td>
</tr>
<tr>
<td>IPA</td>
<td>95</td>
</tr>
</tbody>
</table>

\* 405 nm UV Visible LED (28 mW/cm²)

Always use glasses and gloves when applying adhesives.
After curing over 1 week at 23 °C (73.4 °F)
Steel (grit Blasted) - Steel (grit Blasted)
0.02 mm gap

% of Initial Strength vs. Exposure Time (hours) and vs. Type of Contaminant

<table>
<thead>
<tr>
<th>Testing on GMBS ENVIRONMENT</th>
<th>% of Initial Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100 H</td>
</tr>
<tr>
<td>Motor oil</td>
<td>23°C (73.4°F)</td>
</tr>
<tr>
<td>Ethanol</td>
<td>23°C (73.4°F)</td>
</tr>
<tr>
<td>Gasoline</td>
<td>23°C (73.4°F)</td>
</tr>
<tr>
<td>IPA</td>
<td>23°C (73.4°F)</td>
</tr>
</tbody>
</table>

HEAT/HUMIDITY RESISTANCE

Lap shear Strength after aging under humid conditions
ISO 4587
After curing over 1 week at 23 °C (73.4 °F)
Steel (grit blasted) - Steel (grit blasted)
0.02 mm gap

% of Initial Strength vs humid aging conditions

<table>
<thead>
<tr>
<th>ENVIRONMENT</th>
<th>% of Initial Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100 H</td>
</tr>
<tr>
<td>95% RH &amp; 40°C (104°F)</td>
<td>40</td>
</tr>
</tbody>
</table>

Cured with UV LED * for 60 s and leave it for 1 week @ 23°C (73.4 °F)
0.02 mm gap

% of Initial Strength vs humid aging conditions

<table>
<thead>
<tr>
<th>ENVIRONMENT - 95% RH &amp; 40°C (104°F)</th>
<th>% of Initial Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100 H</td>
</tr>
<tr>
<td>Polycarbonate</td>
<td>90</td>
</tr>
<tr>
<td>GMBS-Polycarbonate</td>
<td>75</td>
</tr>
</tbody>
</table>

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* 405 nm UV Visible LED (28 mW/cm²)

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