# Cytec METLBOND® 1515-3 Film Adhesive

**Categories:** Polymer; Thermoset; Epoxy; Epoxy Adhesive

**Material Notes:** Description: Metlbond® 1515-3 and Metlbond 1515-3 MHT are 350°F (177°C) curing modified epoxy supported film adhesives. Metlbond 1515-3 can also be cured at 250°F (121°C). Its maximum continuous service temperature range is 275°F to 320°F (135°C to 160°C). Metlbond 1515-3 is available in medium- and high-tack (HT) versions which give the same mechanical and physical properties. Metlbond 1515-3 is commonly used for BMS 5-154 metal-to-metal and composite bonding and BMS 8-341 cosmetic surfacing.

Features & Benefits:

- Industry standard for composite bonding and surfacing applications
- Designed for co-curing, secondary bonding, co-bonding of composite materials
- Provides excellent surfacing characteristics
- Good resistance to pre-cure humidity
- Available in a variety of weights and carriers
- Bonds metal-to-metal, metal-to-core and composites
- Co-cures with most 350°F (177°C) curing prepregs
- Shelf life of 12 months at 0°F (-18°C) or 1 month at 40°F (4°C)
- Shop life of 15 days at 75°F (24°C)

Applications:

- Metal-to-metal bonding
- Composite bonding
- Cosmetic surfacing

Information provided by Cytec

**Vendors:** No vendors are listed for this material. Please click here if you are a supplier and would like information on how to add your listing to this material.

| Physical Properties | Metric | English | Comments |
|---|---|---|---|
| Volatiles | <= 1.0 % | <= 1.0 % | |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Tensile Strength | 1.59 MPa<br>@Temperature 177 °C | 230 psi<br>@Temperature 351 °F | Metal-to-Honeycomb Flatwise |
| | 2.96 MPa<br>@Temperature 149 °C | 430 psi<br>@Temperature 300 °F | Metal-to-Honeycomb Flatwise |
| | 3.34 MPa<br>@Temperature 71.0 °C | 484 psi<br>@Temperature 160 °F | Honeycomb Flatwise, Grade 03: 0.0325 lb/ft$^2$ |
| | 3.80 MPa<br>@Temperature 71.0 °C | 551 psi<br>@Temperature 160 °F | Honeycomb Flatwise, Exposure Prior to Testing: 14 days at 160°F (71°C) and 100% R.H., Grade 03: 0.0325 lb/ft$^2$ |
| | 4.05 MPa<br>@Temperature 71.0 °C | 588 psi<br>@Temperature 160 °F | Honeycomb Flatwise, Exposure Prior to Testing: 14 days at 160°F (71°C) and 100% R.H., Grade 08: 0.08 lb/ft$^2$ |
| | 4.62 MPa | 670 psi | Metal-to-Honeycomb Flatwise |

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| | @Temperature 121 °C | @Temperature 250 °F | |
| | 4.67 MPa<br>@Temperature 71.0 °C | 677 psi<br>@Temperature 160 °F | Honeycomb Flatwise, Exposure Prior to Testing: 14 days at 160°F (71°C) and 100% R.H., Grade 05: 0.05 lb/ft$^2$ |
| | 5.78 MPa<br>@Temperature 24.0 °C | 838 psi<br>@Temperature 75.2 °F | Honeycomb Flatwise, Grade 03: 0.0325 lb/ft$^2$ |
| | 6.02 MPa<br>@Temperature 71.0 °C | 873 psi<br>@Temperature 160 °F | Honeycomb Flatwise, Grade 08: 0.08 lb/ft$^2$ |
| | 6.05 MPa<br>@Temperature -54.0 °C | 877 psi<br>@Temperature -65.2 °F | Honeycomb Flatwise, Grade 08: 0.08 lb/ft$^2$ |
| | 6.09 MPa<br>@Temperature 24.0 °C | 883 psi<br>@Temperature 75.2 °F | Honeycomb Flatwise, Grade 05: 0.05 lb/ft$^2$ |
| | 6.12 MPa<br>@Temperature -54.0 °C | 887 psi<br>@Temperature -65.2 °F | Honeycomb Flatwise, Grade 05: 0.05 lb/ft$^2$ |
| | 6.23 MPa<br>@Temperature 24.0 °C | 904 psi<br>@Temperature 75.2 °F | Honeycomb Flatwise, Grade 08: 0.08 lb/ft$^2$ |
| | 6.25 MPa<br>@Temperature 71.0 °C | 907 psi<br>@Temperature 160 °F | Honeycomb Flatwise, Grade 05: 0.05 lb/ft$^2$ |
| | 6.55 MPa<br>@Temperature -54.0 °C | 950 psi<br>@Temperature -65.2 °F | Honeycomb Flatwise, Grade 03: 0.0325 lb/ft$^2$ |
| | 6.76 MPa<br>@Temperature -54.0 °C | 980 psi<br>@Temperature -65.2 °F | Composite-to-Honeycomb Flatwise |
| | 6.76 MPa<br>@Temperature 71.0 °C | 980 psi<br>@Temperature 160 °F | Composite-to-Honeycomb Flatwise |
| | 6.89 MPa<br>@Temperature 24.0 °C | 1000 psi<br>@Temperature 75.2 °F | Composite-to-Honeycomb Flatwise |
| | 7.58 MPa<br>@Temperature 24.0 °C | 1100 psi<br>@Temperature 75.2 °F | Metal-to-Honeycomb Flatwise |
| | 8.96 MPa<br>@Temperature -54.0 °C | 1300 psi<br>@Temperature -65.2 °F | Metal-to-Honeycomb Flatwise |
| Shear Strength | 4.11 MPa<br>@Temperature 24.0 °C | 596 psi<br>@Temperature 75.2 °F | Sandwich Beam, Grade 03: 0.0325 lb/ft$^2$ |
| | 4.11 MPa<br>@Temperature 71.0 °C | 596 psi<br>@Temperature 160 °F | Sandwich Beam, Grade 05: 0.05 lb/ft$^2$ |
| | 4.19 MPa<br>@Temperature 71.0 °C | 608 psi<br>@Temperature 160 °F | Sandwich Beam, Grade 08: 0.08 lb/ft$^2$ |
| | 4.23 MPa<br>@Temperature 24.0 °C | 613 psi<br>@Temperature 75.2 °F | Sandwich Beam, Grade 08: 0.08 lb/ft$^2$ |
| | 4.34 MPa<br>@Temperature 177 °C | 630 psi<br>@Temperature 351 °F | Composite-to-Composite Double Lap, Substrate: Carbon epoxy composite per BMS 8-212 |
| | 4.37 MPa<br>@Temperature 71.0 °C | 634 psi<br>@Temperature 160 °F | Sandwich Beam, Grade 03: 0.0325 lb/ft$^2$ |
| | 4.60 MPa<br>@Temperature 24.0 °C | 667 psi<br>@Temperature 75.2 °F | Sandwich Beam, Grade 05: 0.05 lb/ft$^2$ |
| | 4.66 MPa<br>@Temperature -54.0 °C | 676 psi<br>@Temperature -65.2 °F | Sandwich Beam, Grade 08: 0.08 lb/ft$^2$ |
| | 4.74 MPa<br>@Temperature -54.0 °C | 688 psi<br>@Temperature -65.2 °F | Sandwich Beam, Grade 05: 0.05 lb/ft$^2$ |
| | 4.79 MPa<br>@Temperature -54.0 °C | 695 psi<br>@Temperature -65.2 °F | Sandwich Beam, Grade 03: 0.0325 lb/ft$^2$ |

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| 12.4 MPa @Temperature 177 °C | 1800 psi @Temperature 351 °F | Metal-to-Metal Lap, Substrate: 2024 T3 aluminum, no primer Tested at 270°F (132°C) |
| 13.1 MPa @Temperature 149 °C | 1900 psi @Temperature 300 °F | Composite-to-Composite Double Lap, Substrate: Carbon epoxy composite per BMS 8-212 |
| 14.23 MPa @Temperature 132 °C | 2064 psi @Temperature 270 °F | Double Lap, Grade 03: 0.0325 lb/ft$^2$ |
| 16.11 MPa @Temperature 132 °C | 2336 psi @Temperature 270 °F | Double Lap, Grade 05: 0.05 lb/ft$^2$ |
| 17.2 MPa @Temperature 177 °C | 2500 psi @Temperature 351 °F | Metal-to-Metal Double Lap, Substrate: 2024 T3 aluminum, no primer |
| 17.39 MPa @Temperature 132 °C | 2522 psi @Temperature 270 °F | Double Lap, Grade 08: 0.08 lb/ft$^2$ |
| 17.9 MPa @Temperature 121 °C | 2600 psi @Temperature 250 °F | Composite-to-Composite Double Lap, Substrate: Carbon epoxy composite per BMS 8-212 |
| 20.7 MPa @Temperature 149 °C | 3000 psi @Temperature 300 °F | Metal-to-Metal Lap, Substrate: 2024 T3 aluminum, no primer Tested at 270°F (132°C) |
| 24.1 MPa @Temperature 149 °C | 3500 psi @Temperature 300 °F | Metal-to-Metal Double Lap, Substrate: 2024 T3 aluminum, no primer |
| 26.12 MPa @Temperature -54.0 °C | 3789 psi @Temperature -65.2 °F | Double Lap, Grade 08: 0.08 lb/ft$^2$ |
| 26.2 MPa @Temperature 121 °C | 3800 psi @Temperature 250 °F | Metal-to-Metal Lap, Substrate: 2024 T3 aluminum, no primer Tested at 270°F (132°C) |
| 27.39 MPa @Temperature 71.0 °C | 3972 psi @Temperature 160 °F | Double Lap, Grade 08: 0.08 lb/ft$^2$ |
| 27.63 MPa @Temperature -54.0 °C | 4007 psi @Temperature -65.2 °F | Double Lap, Grade 03: 0.0325 lb/ft$^2$ |
| 28.22 MPa @Temperature 24.0 °C | 4093 psi @Temperature 75.2 °F | Double Lap, Grade 03: 0.0325 lb/ft$^2$ |
| 28.34 MPa @Temperature -54.0 °C | 4111 psi @Temperature -65.2 °F | Double Lap, Grade 05: 0.05 lb/ft$^2$ |
| 28.69 MPa @Temperature 71.0 °C | 4161 psi @Temperature 160 °F | Double Lap, Grade 05: 0.05 lb/ft$^2$ |
| 28.92 MPa @Temperature 71.0 °C | 4195 psi @Temperature 160 °F | Double Lap, Grade 03: 0.0325 lb/ft$^2$ |
| 29.21 MPa @Temperature 71.0 °C | 4237 psi @Temperature 160 °F | Double Lap, Exposure Prior to Testing: 14 days at 160°F (71°C) and 100% R.H., Grade 03: 0.0325 lb/ft$^2$ |
| 29.28 MPa @Temperature 24.0 °C | 4246 psi @Temperature 75.2 °F | Double Lap, Grade 08: 0.08 lb/ft$^2$ |
| 29.45 MPa @Temperature 24.0 °C | 4272 psi @Temperature 75.2 °F | Double Lap, Exposure Prior to Testing: 14 days at 160°F (71°C) and 100% R.H., Grade 05: 0.05 lb/ft$^2$ |
| 30.12 MPa @Temperature 71.0 °C | 4369 psi @Temperature 160 °F | Double Lap, Exposure Prior to Testing: 14 days at 160°F (71°C) and 100% R.H., Grade 08: 0.08 lb/ft$^2$ |
| 30.56 MPa @Temperature 24.0 °C | 4433 psi @Temperature 75.2 °F | Double Lap, Exposure Prior to Testing: 1000 hours at 160°F (71°C) and 100% R.H., Grade 08: 0.08 lb/ft$^2$ |
| 30.58 MPa @Temperature 24.0 °C | 4435 psi @Temperature 75.2 °F | Double Lap, Exposure Prior to Testing: 1000 hours at 160°F (71°C) and 100% R.H., Grade 03: 0.0325 lb/ft$^2$ |

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| | 31.11 MPa<br>@Temperature 24.0 °C | 4512 psi<br>@Temperature 75.2 °F | Double Lap, Grade 05: 0.05 lb/ft$^2$ |
| | 31.7 MPa<br>@Temperature -54.0 °C | 4600 psi<br>@Temperature -65.2 °F | Metal-to-Metal Lap, Substrate: 2024 T3 aluminum, no primer Tested at 270°F (132°C) |
| | 32.4 MPa<br>@Temperature 121 °C | 4700 psi<br>@Temperature 250 °F | Metal-to-Metal Double Lap, Substrate: 2024 T3 aluminum, no primer |
| | 32.4 MPa<br>@Temperature 24.0 °C | 4700 psi<br>@Temperature 75.2 °F | Metal-to-Metal Lap, Substrate: 2024 T3 aluminum, no primer Tested at 270°F (132°C) |
| | 33.25 MPa<br>@Temperature 71.0 °C | 4823 psi<br>@Temperature 160 °F | Double Lap, Exposure Prior to Testing: 1000 hours at 160°F (71°C) and 100% R.H., Grade 05: 0.05 lb/ft$^2$ |
| | 33.8 MPa<br>@Temperature -54.0 °C | 4900 psi<br>@Temperature -65.2 °F | Composite-to-Composite Double Lap, Substrate: Carbon epoxy composite per BMS 8-212 |
| | 37.2 MPa<br>@Temperature 24.0 °C | 5400 psi<br>@Temperature 75.2 °F | Composite-to-Composite Double Lap, Substrate: Carbon epoxy composite per BMS 8-212 |
| | 40.7 MPa<br>@Temperature 24.0 °C | 5900 psi<br>@Temperature 75.2 °F | Metal-to-Metal Double Lap, Substrate: 2024 T3 aluminum, no primer |
| | 40.7 MPa<br>@Temperature -54.0 °C | 5900 psi<br>@Temperature -65.2 °F | Metal-to-Metal Double Lap, Substrate: 2024 T3 aluminum, no primer |
| Peel Strength | 0.701 kN/m<br>@Temperature 177 °C | 4.00 pli<br>@Temperature 351 °F | Metal-to-Metal Bell |
| | 1.05 kN/m<br>@Temperature -54.0 °C | 6.00 pli<br>@Temperature -65.2 °F | Metal-to-Metal Bell |
| | 1.40 kN/m<br>@Temperature 149 °C | 8.00 pli<br>@Temperature 300 °F | Metal-to-Metal Bell |
| | 2.45 kN/m<br>@Temperature 121 °C | 14.0 pli<br>@Temperature 250 °F | Metal-to-Metal Bell |
| | 2.80 kN/m<br>@Temperature 24.0 °C | 16.0 pli<br>@Temperature 75.2 °F | Metal-to-Metal Bell |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| Maximum Service Temperature, Air | 160 °C | 320 °F | |
| Minimum Service Temperature, Air | -55.0 °C | -67.0 °F | |
| Glass Transition Temp, Tg | 170 °C | 338 °F | G' knee by dynamic mechanical analysis |

| Descriptive Properties | | |
|---|---|---|
| Color | Blue | |
| Honeycomb Sandwich Peel | 15.6 Nm/m | Metal-to-Honeycomb Sandwich, 177°C |
| | 19.1 Nm/m | Metal-to-Honeycomb Sandwich, 149°C |
| | 28 Nm/m | Metal-to-Honeycomb Sandwich, 121°C |
| | 34.7 Nm/m | Metal-to-Honeycomb Sandwich, -54°C |
| | 36.5 Nm/m | Metal-to-Honeycomb Sandwich, 24°C |