

# ES2

## TECHNICAL DATA BULLETIN

GRADE: ES2

NEMA: ES-2

U.L. LISTED: N

DESCRIPTION: Composed of black phenolic paper core, sub surfaces of white melamine, and various pigmented cover plies.

### TYPICAL PROPERTIES

|  |                              | UNITS              | VALUE                              |                                   |                                |
|--|------------------------------|--------------------|------------------------------------|-----------------------------------|--------------------------------|
|  |                              |                    | Thickness Tested                   |                                   |                                |
|  |                              |                    | 0.0625"                            | 0.125"                            | 0.500"                         |
| <b>PHYSICAL PROPERTIES</b>                 |                              |                    |                                    |                                   |                                |
| <b>Specific Gravity</b><br>(ASTM D792)     |                              | -                  |                                    |                                   | 1.40                           |
| <b>Rockwell Hardness</b><br>(ASTM D785)    | 0.250" Build-up              | M Scale            | 100                                |                                   |                                |
| <b>Moisture Absorption</b><br>(ASTM D570)  | Condition A                  | %                  | 2.50                               |                                   |                                |
| <b>Flexural Strength</b><br>(ASTM D790)    | Condition A<br>LW / CW       | psi<br>(Mpa)       | 13,500 / 13,500<br>(93.1) / (93.1) |                                   |                                |
| <b>Flexural Modulus</b><br>(ASTM D790)     | Condition A<br>LW / CW       | kpsi<br>(Gpa)      | 1,500 / 1,500<br>(10.3) / (10.3)   |                                   |                                |
| <b>Tensile Strength</b><br>(ASTM D638)     | Condition A<br>LW / CW       | psi<br>(Mpa)       |                                    | 10,500 / 9,200<br>(72.4) / (63.4) |                                |
| <b>Izod Impact Strength</b><br>(ASTM D256) | Condition A<br>LW / CW       | ft-lb/in<br>(J/cm) |                                    |                                   |                                |
|  | Condition E-48/50<br>LW / CW | ft-lb/in<br>(J/cm) |                                    |                                   | 0.60 / 0.55<br>(0.32) / (0.29) |
| <b>Compressive Strength</b><br>(ASTM D695) | Condition A<br>Flatwise      | psi<br>(Mpa)       |                                    |                                   | 25,000<br>(172.4)              |
| <b>Bonding Strength</b><br>(ASTM D229)     | Condition A                  | lb<br>(kg)         |                                    |                                   | 1,000<br>(453.6)               |

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## TYPICAL PROPERTIES (continued)

|   | UNITS                   | VALUE            |           |        |
|---|-------------------------|------------------|-----------|--------|
|   |                         | Thickness Tested |           |        |
|   |                         | 0.0625"          | 0.125"    | 0.500" |
| <b>THERMAL PROPERTIES</b>                                   |                         |                  |           |        |
| <b>Temperature Index</b> <sup>1</sup><br>(UL Bulletin 746b) | Electrical / Mechanical | °C               | 120 / 120 |        |
| <b>Flammability Vertical</b><br>(UL Bulletin 94)            | Condition A             | Class            | V-0       |        |
| <b>ELECTRICAL PROPERTIES</b>                                |                         |                  |           |        |
| <b>Breakdown Voltage</b><br>(ASTM D149)                     | Condition A             | kVolts           | 50        |        |
|   | Condition D-48/50       | kVolts           | 5         |        |
| <b>Arc Resistance</b><br>(ASTM D495)                        | Condition A             | sec              |           | 120    |

<sup>1</sup> This temperature is a recommendation only, and based upon experience in various applications. The maximum operating temperature is dependent upon the application and should be investigated prior to use.

This data, while believed to be accurate and based on reliable analytical methods, is for informational purposes only. The terms and conditions of the agreement under which it is sold will govern any sales of this product. Data supplied above are "typical values"; not to be considered "specification values".

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Specification writers: Contact Norplex-Micarta for specification values before submission.