



# THE GUND COMPANY

MANUFACTURERS & FABRICATORS OF ENGINEERED MATERIAL SOLUTIONS



|                      |  |
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| <b>Item:</b>         | <b>G-Flex APA Flex Laminate</b>  |
| <b>Description:</b>  | G-Flex APA are laminates with G-Flex aramid paper and polyester film. The material is available with our G-Flex aramid papers and electrical grade polyester film bonded a proprietary high temperature adhesive system. These laminates will not delaminate or blister at high temperatures. The polyester film contributes high dielectric strength, tear, and tensile and burst strength. |
| <b>Applications:</b> | G-Flex APA laminates are suitable for use as slot, phase and end turn insulation as well as ground and wrapper insulation in dry type transformers and a variety of punched and fabricated parts.  |
| <b>Benefits:</b>     | Laminates of aramid paper and polyester film provide the user with the benefits of both materials. The aramid paper provides already excellent electrical insulation properties, while the addition of the polyester film dramatically increases the dielectric strengths while increasing the overall durability and puncture resistance of the materials.                                  |

| G-Flex APA Flexible Laminate Data |                     |        |        |        |        |        |        |        |         |
|-----------------------------------|---------------------|--------|--------|--------|--------|--------|--------|--------|---------|
| Construction                      | Units               | 2/2/2  | 2/5/2  | 3/3/3  | 3/5/3  | 5/5/5  | 2/10/2 | 5/10/5 | 3/7.5/3 |
| Standard Thickness                | mil                 | 7      | 10     | 10     | 12     | 16     | 15     | 21     | 14.5    |
|                                   | mm                  | 0.17   | 0.25   | 0.25   | 0.3    | 0.4    | 0.37   | 0.53   | 0.36    |
|                                   | in                  | 0.007  | 0.010  | 0.010  | 0.012  | 0.016  | 0.015  | 0.021  | 0.014   |
| Yield                             | yd <sup>2</sup> /lb | 3.02   | 1.90   | 2.05   | 1.62   | 1.22   | 1.19   | 0.87   | 1.27    |
|                                   | lb/yd <sup>2</sup>  | 0.33   | 0.53   | 0.49   | 0.62   | 0.82   | 0.84   | 1.14   | 0.78    |
| Tensile Strength<br>lb/in<br>D882 | MD                  | 86     | 126    | 140    | 171    | 210    | 200    | 246    | 206     |
|                                   | CD                  | 57     | 114    | 100    | 137    | 160    | 188    | 240    | 183     |
| Tear Strength<br>ASTM D1004       | MD                  | 8.5    | 17     | 16     | 26     | 27     | 20     | 35     | 30      |
|                                   | CD                  | 7      | 12     | 11     | 18     | 18.5   | 14     | 31     | 22      |
| BVD                               | kV                  | 9      | 16     | 12     | 16     | 18     | 20     | 25     | 18      |
| Dielectric Strength<br>ASTM 149   | V                   | 11,000 | 16,000 | 13,000 | 17,000 | 19,000 | 20,000 | 22,000 | 19,500  |

All of the information, suggestions and recommendations pertaining to the properties and uses of the products herein are based upon tests and data believed to be accurate; however, the final determination regarding suitability of any material described herein for the contemplated, the manner of such use, and whether the use infringes any patents is the sole responsibility of the user. There is no warranty, expressed or implied, including, without limitation warranty of merchantability or fitness for a particular purpose. Under no circumstances shall we be liable for incidental or consequential loss or damage.