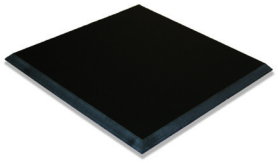
NORPLEX MICARTA

Global Thermoset Composite Solutions

# High Performance Thermoset Composites For the Electronics Industry

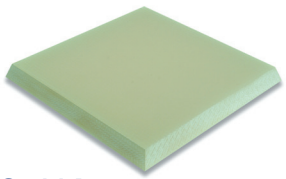


## SP527 — WaveMax® 8000

Provides excellent mechanical strength at continuous operating temperatures of up to 180°C, and designed for short-term exposure to temperatures approaching 300°C.

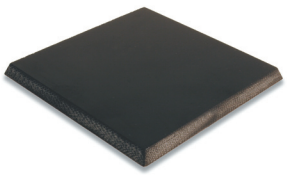
## NP510A

Offers consistent quality and electrical properties in dry or humid conditions; often used in low cycle soldering runs.



## MC511A

Withstands operating temperatures of 155°C for decades while maintaining excellent physical, mechanical and electrical properties.



## MC511SN — StatNot™

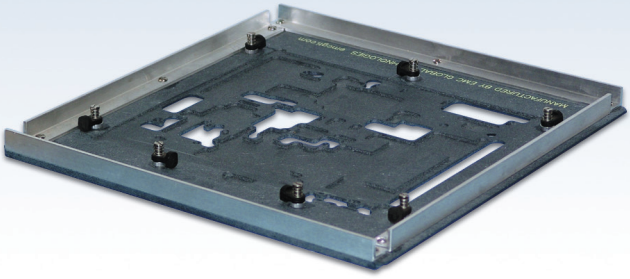
Ideal for structural applications in the military electronics market when surface-to-surface static dissipation is required in X, Y and Z directions.

As electronic assemblies become smaller and denser, consistent material performance has become even more critical to maintaining product quality. Dimensional stability, high mechanical strength, machineability and static dissipation are primary requirements. From solder pallets to test fixtures, Norplex-Micarta is the preferred supplier of high performance thermoset composites for OEMs, contract manufacturers and fabricators worldwide.

Dimensional stability is a critical aspect of stable electronics assemblies. Carriers and fixtures are routinely exposed to excessively high temperatures and must undergo such as those produced during wave soldering and IR reflow. Materials are also required to function in continuous temperatures of 210°C, while exhibiting very little creep, warp or flex. In addition, materials must resist moisture absorption and be capable of withstanding dramatic environmental fluctuations.

Denser through-hole assemblies mean a higher number of perforations per substrate. Materials must now provide rigidity despite a higher concentration of vias and wave solder pallets with walls as narrow as 1/32″. Norplex-Micarta manufactures thermoset composites out of woven and non-woven fiberglass that maintain their strength even when subjected to perforations and extreme heat.

OEMs and contract manufacturers involved in prototyping or other high-mix, low-cycle runs appreciate the ease with which Norplex-Micarta materials can be prepared for quick-turn requirements. To further enhance electronics manufacturing, products such as Norplex-Micarta's StatNot™ combine a woven glass fabric with a static-dissipative epoxy resin system to disperse static electricity before a damaging charge can build on the substrate.



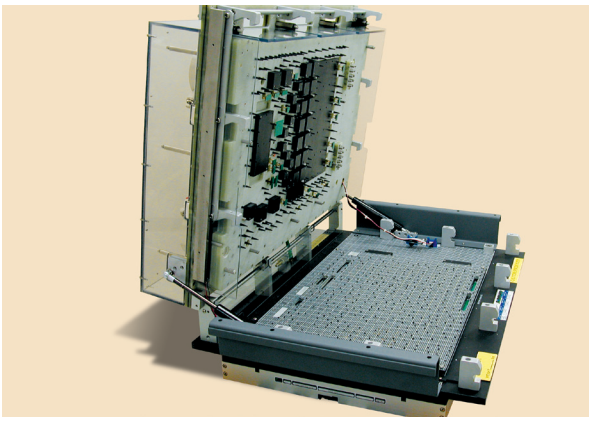
**Solder Pallets** must sustain extreme thermal exposure several thousand times over the life of the product.

## Solder Pallets

Norplex-Micarta composites are frequently used for solder pallets. The composite must first withstand a short-term temperature exposure of nearly 300°C, then rapid cooling. Sometimes, the boards must sustain this extreme thermal exposure several thousand times over the life of the product. Consistent performance in high temperatures, mechanical strength, machineability and dimensional stability are all critical properties in wave soldering applications.

## Test Equipment Fixtures

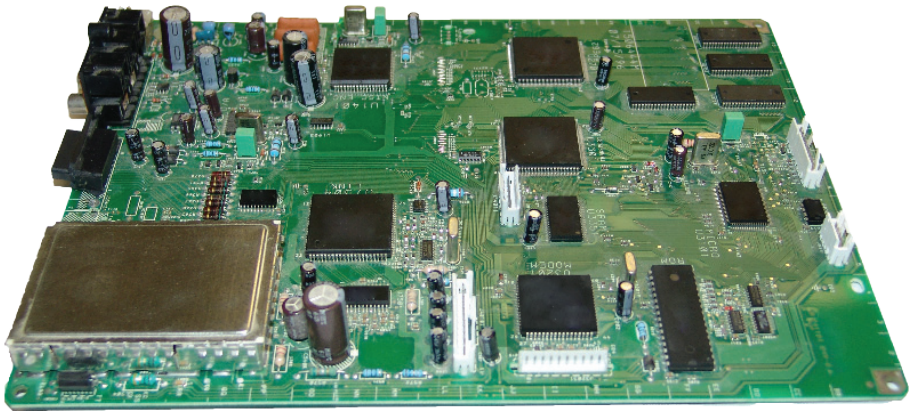
Test equipment requires fixtures to hold test probes in place during the test process. Dimensional stability is critical to ensure that the sensor pins obtain an accurate reading. Should the board warp or twist as the temperature or humidity fluctuates, the test could be compromised. Initial board flatness of +/- 0.003″ allows for proper routing and drilling set ups, as well as very complex drill patterns. High mechanical strength is necessary for boards with complex patterns that require thin walls between geometries. Mechanical strength can be enhanced by increasing the glass content of the board substrate. This often results in a thinner and lighter board material being used, lowering the overall weight of a finished fixture.



**Finished Board Test Fixtures** require dimensional stability and high mechanical strength to ensure accurate readings.

## Specialty Components

Norplex-Micarta materials are used for various specialized applications, such as laser housings and chemical vapor deposition (CVD) chambers. In the case of CVD chambers, Norplex-Micarta materials stand up to abrasive chemicals, and are leak-proof under high vacuum and pressure. Contact our engineering department to discuss the requirements of your particular application.



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