

# StaticSmart™

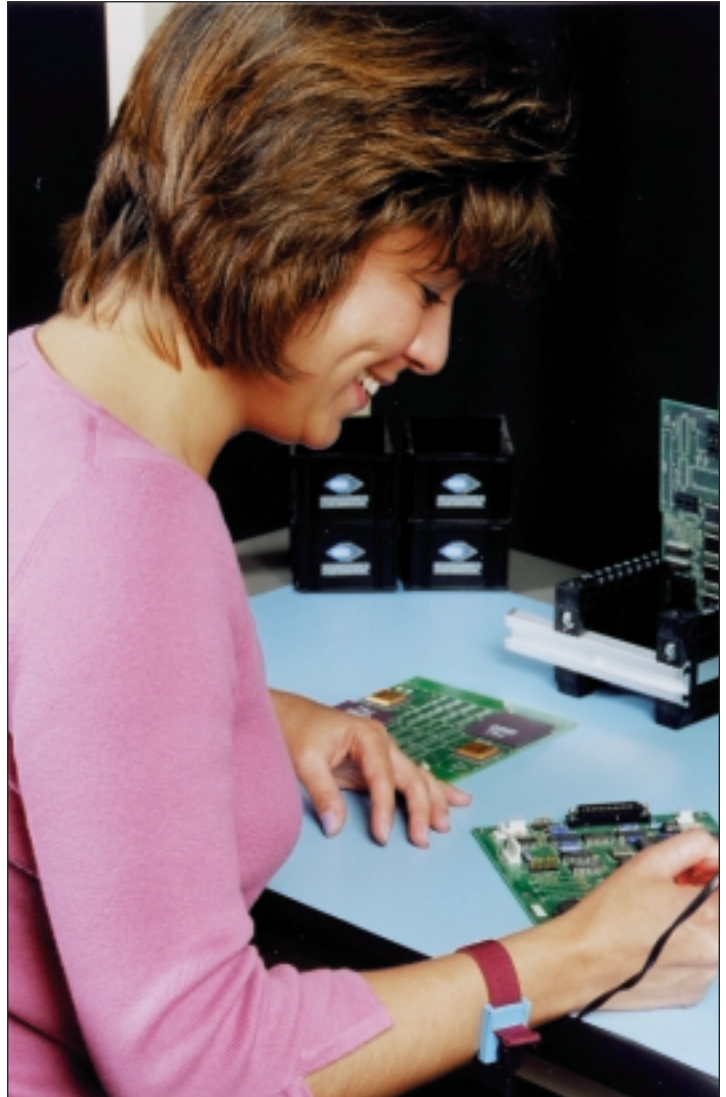
## Norastat

### Static Dissipative Work Surface Material

Norastat is a dual-layer synthetic rubber surface covering with volume functional static dissipative properties. It may be used as a grounded table mat, as a non-grounded work mat when placed on a grounded surface, or it may be laminated directly to a work bench in place of rigid laminates.

Norastat is a new generation of work surface material that uses volume electrical properties instead of surface effects to protect your static sensitive products. This approach reflects the latest thinking among leading researchers in the study of static electricity.

Norastat is composed of two layers of static dissipative synthetic rubber that are co-extruded, not glued together, to form a rugged, volume functional work surface that combines the durability and electrical performance of rigid laminates with the convenience of soft table mats. Because the bottom layer of Norastat is more conductive than the top layer, static electricity applied to a point on the top surface will not energize other objects resting on the surface. Instead, the charge will travel downwards through the top layer to the more conductive layer below, where it will drain safely to Ground. This innovative construction accounts for Norastat's outstanding charge decay, charge dissipation and voltage gradient performance.



#### Available by the roll

48 inches wide, Length: 32 feet (10 meters)

#### Available as ready-made mats

16"x24"; 24"x48"; 30"x60"; 30"x72"

#### Standard colors

light blue and platinum (gray)

**Julie Industries**  
*StaticSmart™ Solutions*  
[www.julieindustries.com](http://www.julieindustries.com)

355 Middlesex Avenue  
Wilmington, MA 01887  
Tel: 978-988-8802  
Fax: 978-988-8803

# Norastat

## Static Dissipative Work Surface Material

### Electrical Characteristics

#### Point to Point Resistance

Measured using 10 volts @ 12% RH:  $6.8 \times 10^7$  ohms

Measured using 100 volts @ 50% RH:  $1.6 \times 10^7$  ohms

*Full compliance with EOS/ESD Standard S-4: Work Surfaces*

#### Point to Ground Resistance

Measured using 10 volts @ 12% RH:  $3.2 \times 10^7$  ohms

Measured using 100 volts @ 50% RH:  $8.5 \times 10^6$  ohms

*Full compliance with EOS/ESD Standard S-4: Work Surfaces*

#### Volume Resistivity

Measured after 48 hours @ 12% RH:  $7.3 \times 10^9$  ohm/cm

*Measurements made in accordance with ASTM D 257-78*

#### Voltage Gradient

Voltage apparent on the mat surface 5 inches from a discharge point

(during electrification to volts): Less than 25 volts

*Measurements made in accordance with proposed guidelines.*

#### Charge Decay

5000 volts to less than 50 volts in .01 seconds

*Measurements made in accordance with Federal Test Method 101C, Method 4046.1: EIA 541 Appendix F.*

#### Charge Retention

Residual voltage: 0 volts

The initial voltage for this test is 5000 volts. The proposed methods allow a charged object to contact the surface 30 times before measurement. The value above was measured after a single contact.

*Measurements made in accordance with proposed guidelines.*

### Physical Characteristics

#### Appearance

Low reflecting satin finish to reduce glare and improve operator comfort and efficiency.

#### Adhesion

Lightly textured finish prevents components and assemblies from sliding across the work surface.

#### Resilience

Elasticity midway between that of traditional hard laminates and that of soft mats. The resilient surface won't abrade delicate coatings, decals and membranes.

#### Abrasion Resistance

Resists scrapes, scratches and discoloration caused by sharp edges or device leads.

#### Heat Tolerance

Withstands frequent contact with hot soldering irons.

#### Chemical Resistance

Withstands prolonged exposure to aggressive solvents and chemicals.

#### Marking Resistance

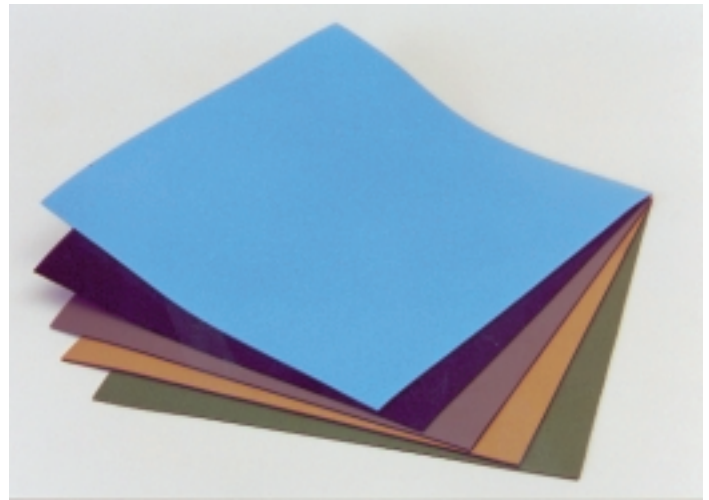
Soil and marks may be removed readily with mild cleaning solutions, yet this material resists aggressive chemicals.

#### Profile

2 mm thick. Lies flat. Will not curl. Will not chip.

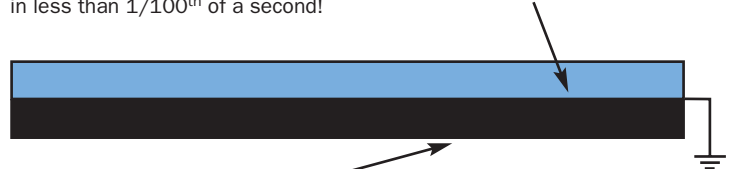
#### Installation

May be trimmed with a razor blade. Can be laminated conventionally and trimmed with a sharp edge or router.



### The Dissipation Layer

This layer protects sensitive devices by controlling the rate of electrostatic discharge from a charged object, like a printer circuit board or conductive tote box. It prevents the rapid electrostatic discharge (described by the "charged device" ESD model) that can damage or degrade electronic devices, yet it will safely remove a 5000 volt charge from a sensitive device in less than  $1/100^{\text{th}}$  of a second!



### The Conducting Layer

This layer pulls static electricity away from the top layer and then drains it quickly and safely to Ground, before the charge can spread to other sensitive devices resting on the surface! Unlike other materials, Norastat never exposes the user to a path to Ground of less than one megohm. Thanks to its unique construction, Norastat enables the user to make quick and reliable Ground connections anywhere along the bottom of the mat, and even eliminate ground cords when placing the mat on a grounded conductive surface.