FORMASPACE

ESD

CATALOG

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ESD System Description

The ESD (Electrostatic Dissipative Laminate) HPL and grounding lug system creates a static safe workspace that allows users to securely work on sensitive electronic equipment.

The ESD HPL and grounding lug system offer low electrical resistance, absolute charge drainage, and zero voltage suppression. It dissipates a 5,000 volt static charge to zero in less than 0.01 second per FTM-101C at 5-95% relative humidity. It is resistant to most common solvents, hot solder, and fluxes.

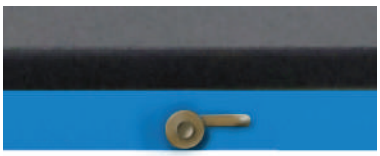
Available Countertop Color:

It has a low gloss, textured finish with a 60-degree gloss meter reading of 12 ± 3 gloss units and matching edgebanding.

ESD Workbench Components

- ESD Laminate – Carbon integrated throughout the laminate provides 106-109 ohms resistance with outstanding tolerance to wear and tear.
- Common Grounding Point – designed to maximize the interface between the grounding system and the ESD laminate.
- Rotating Grounding Hub – Prevents damage to wrist straps and allows freedom of movement for technicians.
- Resistive Wrist Strap – Provides 106 ohms of resistance.

ESD Grounding Lug Components



Rotating Grounding Hub
(Prevents wrist strap damage)

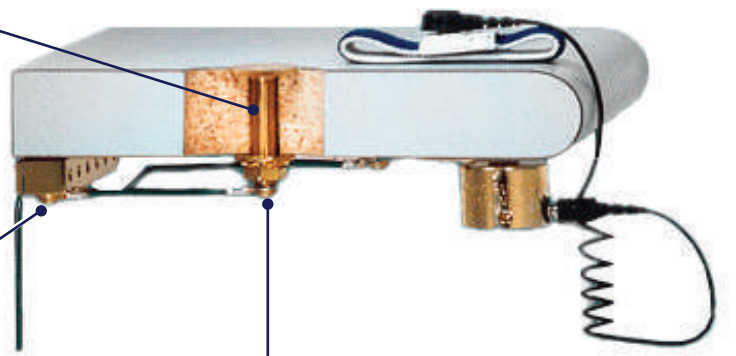
Common Ground Point

Wrist Strap
with 106 ohm Resistor

ESD Connection Guide

Full ESD Kit contains the ground lug and wire, a user hub, ground wire with 1 mega ohm resistor, and two user wrist straps. On longer benches it is recommended to consider multiple hubs to not overstretch the wrist strap cords.

ESD Lug - Required to drain static away from surface. ESD Auxiliary Kit contains just the lug and a single ground wire.



ESD Lug - Required to drain static away from surface. ESD Auxiliary Kit contains just the lug and a single ground wire.

Using provided screw and washer, attach grounding wire to end of grounding post (typically located near the back edge of the workbench).

Electrical Properties

Test	Relative Humidity	Electrical Results
Point to Point Resistance *	60% - 40% 40% - 20% 20% - 10%	106 to 1 x 107 ohms 107 to 1 x 108 ohms 108 to x 109 ohms
Point to Ground Resistance *	60% - 40% 40% - 20% 20% - 10%	106 to 1 x 107 ohms 107 to 1 x 108 ohms 108 to x 109 ohms
Volume Resistance **	60% - 30% 30% - 10%	107 to 1 x 108 ohms 108 to x 109 ohms
Static Decay ***	50% 10%	0.01 sec 0.02 sec

* Per EOS/ESD - S 4.1

** Measured Face to Back at 72°F, 100 V with a LCD Megohmmeter, Item No. 19770, NFPA Electrodes (2.5 inch diameter, 5 pounds)

*** FTMS 101C, Method 4046

Physical Properties

Test Method	Units	NEMA LD3 - 2005	Typical ESD Values NA28	NEMA STD* VGP	Typical ESD Values NA38	NEMA STD* HGP
Thickness	in. mm.		0.028 ± 0.003 0.7 ± 0.08	0.028 + 0.004 0.07 ± 0.1	0.036 ± 0.003 0.9 ± 0.08	0.039 ± 0.005 1.0 ± 0.12
Appearance		3.1	Complies		Complies	
Light Resistance		3.3	Slight effect	Slight effect	Slight effect	Slight effect
Cleanability	Stain 1 - 10 Stain 11 - 15	3.4	5 No effect No effect	20 (max) No effect Moderate effect	5 No effect No effect	20 (max) No effect Moderate effect
Boiling Water Resistance		3.5	Moderate effect	Slight effect	Moderate effect	Slight effect
High Temperature Resistance		3.6	Slight effect	Slight effect	Slight effect	Slight effect
Ball Impact Resistance	in. mm.	3.8	25 635	20(min.) 500(min.)	35 889	30 (min.) 750(min.)
Dimensional Change		3.11				
Machine Direction	%		0.4	1.10 (max.)	0.4	1.10 (max.)
Cross Direction	%		0.8	1.40 (max.)	0.8	1.40 (max.)
Wear Resistance	cycles	3.13	1000	400 (min)	1000	40 (min.)
Formability		3.14				
Outside Radius	in. mm.		1/2 13	1/2 (min.) 13 (min.)	5/8 16	5/8 (min.) 16 (min.)
Inside Radius (Cove)	in. mm.		3/16 5	Not Applicable Not Applicable	3/16 5	Not Applicable Not Applicable
Blister Resistance	sec.	3.15	50	40 (min.)	60	55 (min.)

*Formaspace ESD is not covered by ANSI/NEMA LD3 specifications; however, the physical properties are similar to VGP and HGP grades.

Formaspace ESD Testing Procedure

The purpose of this test is to validate that the ESD HPL and grounding lug system has been installed correctly and to verify that it is within the proper dissipative range. Formaspace uses the 3M 701 megaohmmeter for surface resistivity testing.
Refer to the owners manual for proper usage of testing equipment.
Components used in testing:
(1) megaohmmeter, (2) weights

01

Hook the meter and weights up as shown. Weights should be about 20” apart. Meter should be on the 10V setting (not the 100V as shown).

02

Press the red test button. The reading should be between 10^E6 to 10^E9. The reading below would be about 6x10^E8.

03

Next, remove the lead from one of the weights and attach the alligator clip as shown.

04

Attach the alligator clip to the ground stud under the top. You should still get the same reading as between the two weights on the surface. This verifies that the ground stud is conducting the electricity away from the top.

05

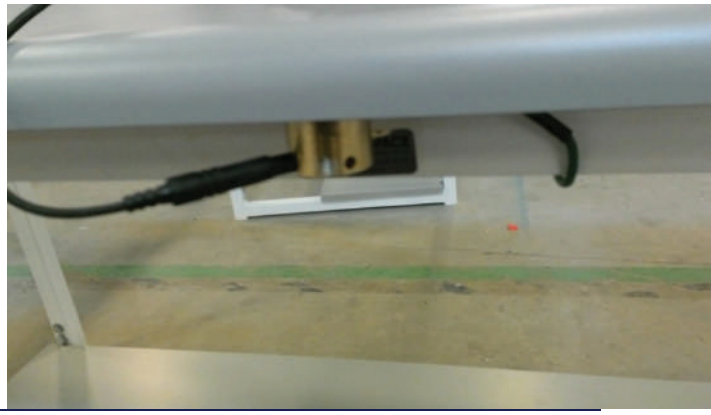
You should still get the same reading as between the two weights on the surface. This verifies that the ground stud is conducting the electricity away from the top.

06

Next, remove the other lead from the weight on the table and plug it in to the ground hub on the front of the bench.

07

If you have used the correct ground wire from the kit you will see 1 mega ohm between the hub and lug. This ensures that the user connected through his wrist strap does not have a direct short to ground for safety purposes.

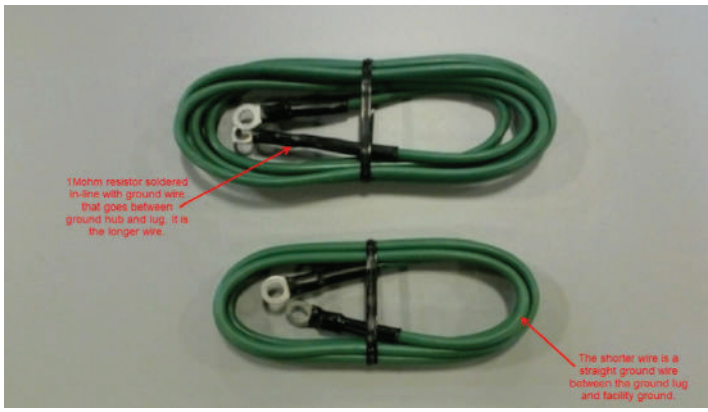


08

There are two ground wires included in an ESD grounding system.
The longer wire is ALWAYS used between the ground hub and ground lug. It contains a 1 mega ohm resistor inline for safety purposes.

09

The short ground wire must be routed between the ground lug and a facilities ground. Once connected you should be able to test for a dead short between the ground lug and facilities ground.
You should also be able to test from the surface to ground and get the 10^E6-10^E9 range.
If the table fails any of these three test you should troubleshoot before using the workbench.



Product Gallery

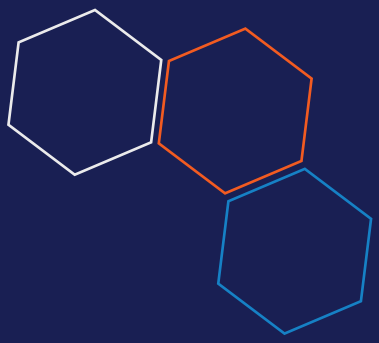
Tech Lab Workstation With Server Racks

White Custom ESD Workbench

ESD Monitoring Bench

Laptop Charging Station

9 Ft Heavy Duty Mobile Basix™ Workbench



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