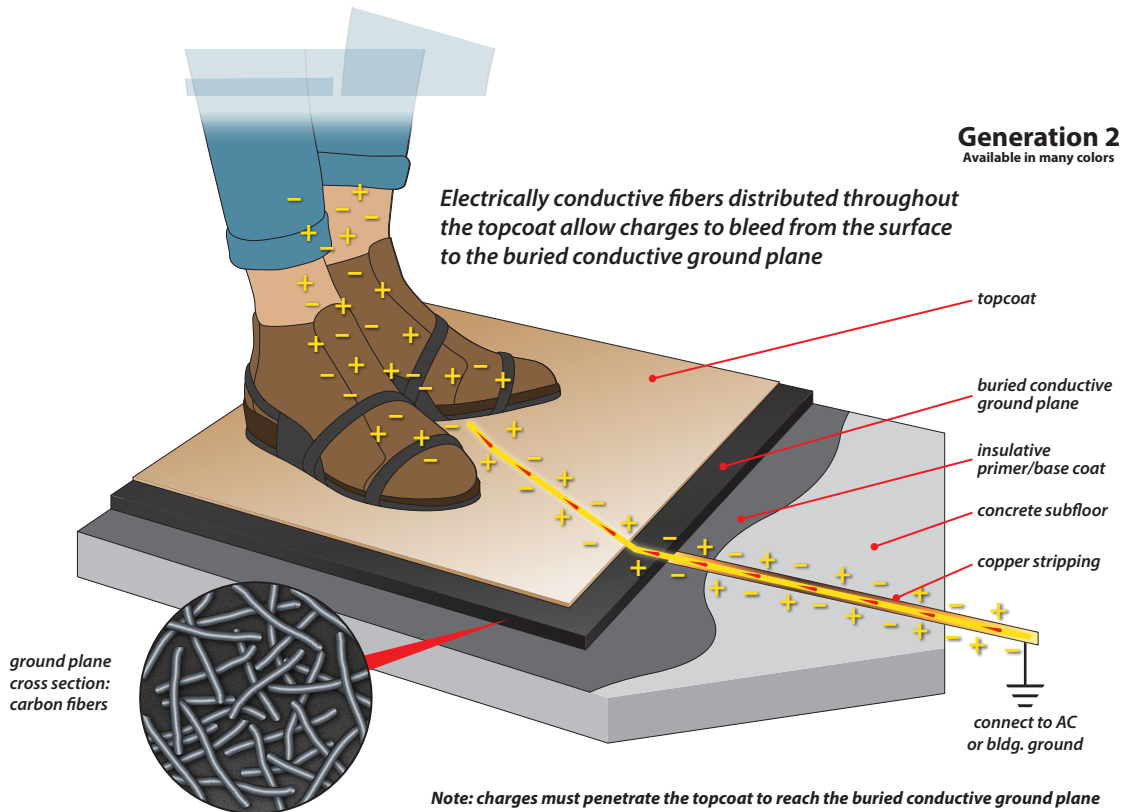
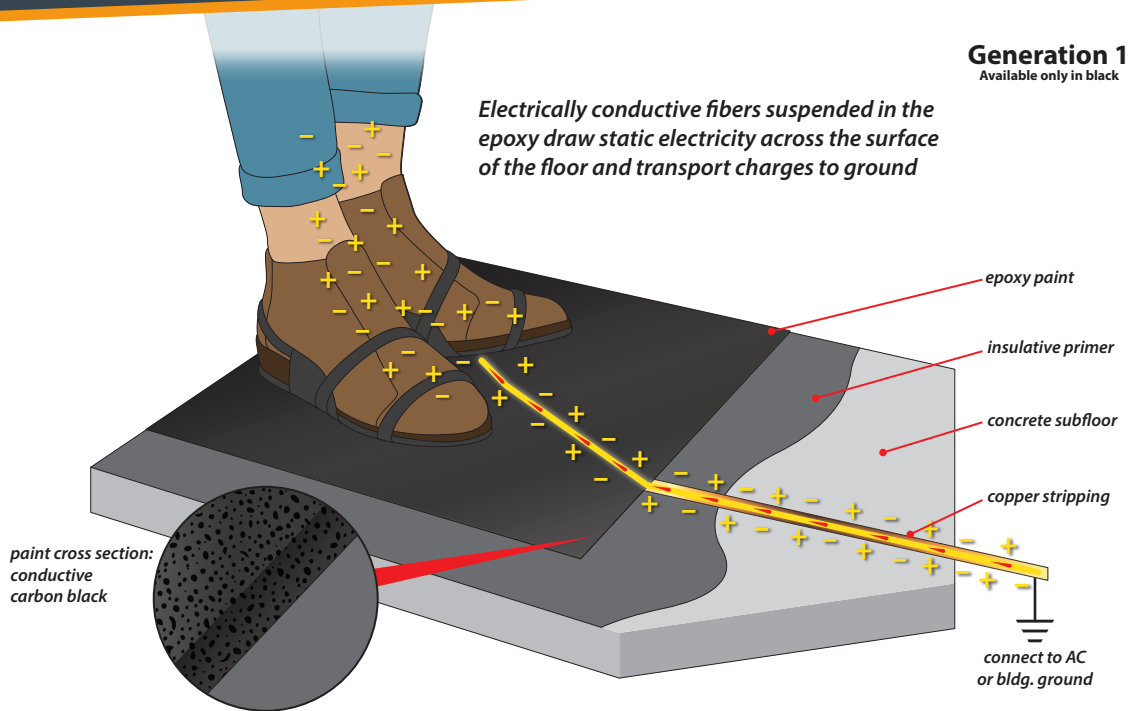


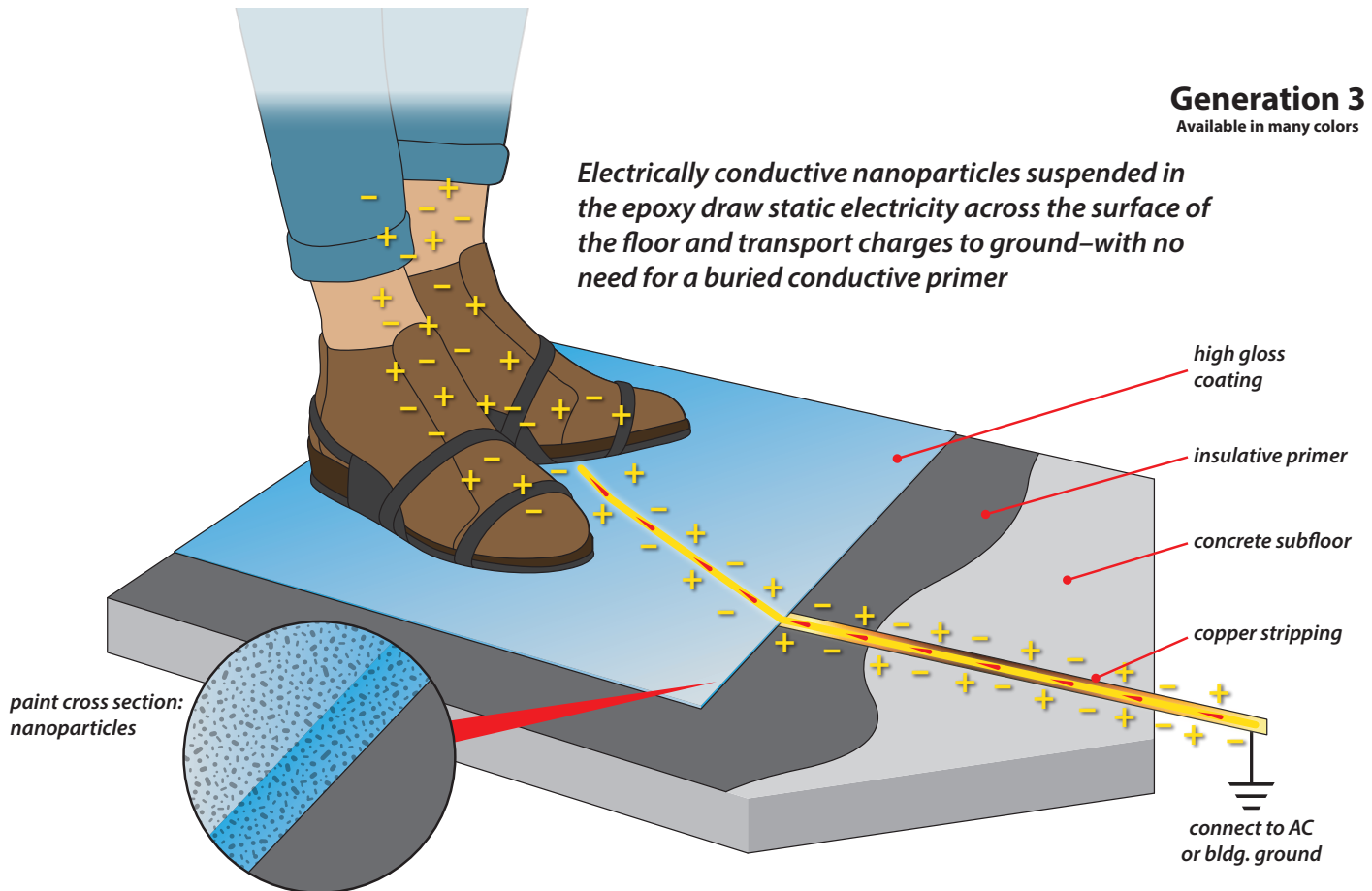
| ESD COATING | Carbon Black | Multi-layer Epoxy w/Conductive Groundplane | ESD Urethane | Epoxy Acrylate |
|---|--------------|--|--------------|----------------|
| | Generation 1 | Generation 2 | Generation 3 | Generation 3 |
| Electrical Specification/ANSI S20.20 | | | | |
| Always meets ANSI/ESD S20.20 | Yes | No ¹ | Yes | Yes |
| Available in dissipative (>1.0 10E6) | No | Yes | Yes | Yes |
| Available in conductive (<1.0 10E6) | Yes | No | Yes | Yes |
| Measures below 100V w/heel straps per STM 97.2 | Yes | No | Yes | Yes |
| Measures below 100V w/ESD shoes | Yes | Yes | Yes | Yes |
| Material | | | | |
| Requires carbon black ground plane | No | Yes | No | No |
| Available in light colors | No | Yes | Yes | No |
| Scratch resistant | No | No | Yes | No |
| Installation | | | | |
| Can be applied over sub- or old floors in one coat | Yes | No | Yes | Yes |
| Can be repaired with a single coat | Yes | No | Yes | Yes |
| Gloss finish without use of sealer or wax | No | Yes | Yes | No |

In qualification testing, multi-layer epoxies that rely on a groundplane fail 97.2 walking body tests with heel straps.

Generation Comparison



Note: charges must penetrate the topcoat to reach the buried conductive ground plane



*Nano technologies produce fully conductive colored topcoats (colored and clear).
This translates into a floor that requires a standard concrete primer and conductive topcoat.*

Information in the table below is based on tests performed by an independent lab and show body voltage generation for different types of ESD flooring materials. Tests showed that surface conductivity greatly impacts the performance of ESD epoxy coatings.

| MATERIAL | Regular Footwear | ESD Heel Straps | Conductive Shoes |
|--|------------------|-----------------|------------------|
| | Generation 1 | Generation 2 | Generation 3 |
| Conductive vinyl interlocking floor Tile A PU surface coating | >4000 volts | 827 volts peak | 62 volts peak |
| Conductive vinyl interlocking floor Tile B with no PU coating | >2500 volts | 33 volts peak | 15 volts peak |
| Conductive vinyl tile (12" x 12" 3 mm thickness) | >3500 volt | 10 volts peak | 12 volts peak |
| Static-dissipative carpet tile squares 500 mm x 500 mm) | < 400 volts | <25 volts | < 25 V peak |
| Conductive rubber tile (24" x 24" 2 mm thickness) | < 400 volts | <10 volts | < 10 V peak |
| Static-dissipative epoxy, Generation 2 Buried conductive layer | > 3000 volts | 350 volts peak | 18 volts peak |
| Conductive epoxy coating, Generation 2 Buried conductive layer | > 3500 volts | 329 volts peak | 35 volt peak |
| Conductive epoxy coating, Generation 3 No buried layer, surface fully conductive | > 3500 volts | 23 volts peak | >25V peak |

Please note: Flooring should always be evaluated based on charge generation testing performed on flooring in combination with footwear. ANSI/ESD S20.20 specifies maximum charge generation of 100V.

Tests performed by Fowler Associates, Inc.