

In-Plant Handlers by Protektive Pak® for ESD Material Handling Solutions

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Protektive Pak offers [Protektive Pak® Dissipative Corrugated In-Plant Handlers](#) for physical and ESD protection of circuit boards and other electronic assemblies during material handling and transportation. Made from static dissipative impregnated corrugated material with a buried shielding layer, Protektive Pak® In-Plant Handlers with lid in place provide static shielding to protect ESD sensitive items from ElectroStatic charges, and ElectroStatic Discharges [ESD]. The ESD Association defines an electrostatic discharge shield as “a barrier or enclosure that limits the passage of current and attenuates an electromagnetic field resulting from an electrostatic discharge.” [Glossary ESD ADV1.0]

Products and assemblies that are ESD sensitive should receive continuous ESD protection from electronic component suppliers through all manufacturing steps including inspection, test, storage, shipment, installation, use, maintenance, and repair functions. Per ANSI/ESD S20.20 section 8.4 “ESD protective packaging shall be in accordance with the contract, purchase order, drawing or other documentation. When not specified by the above documentation, the organization shall define ESD protective packaging requirements, both inside and outside the EPA [ESD protected area] per ANSI/ESD S541.” Per ESD Association Packaging standard ANSI/ESD S541 section 6.2 Outside an EPA “Transportation of sensitive products outside of an EPA shall require packaging that provides: 1) Low charge generation, 2) Dissipative or conductive materials for intimate contact, and 3) A structure that provides electrostatic discharge shielding.”

Many leading companies rely on Protektive Pak’s wide range of material handling and packaging solutions to provide protection from ESD, and from physical and shock damage. Protektive Pak’s® ESD In-Plant Handlers have static dissipative partitions to keep products from bumping together, and optional static dissipative foam pads to protect products from shock and vibration. All surfaces are static dissipative (1×10^4 to $< 1 \times 10^{11}$ ohms) following the advice of ANSI/ESD S541 section A.3 “Dissipative Material for Intimate Contact, To avoid rapid discharge to sensitive items, dissipative materials should be used as the layer of packaging that contacts the item.”

Regarding ESD control, significant savings can be achieved by reducing catastrophic failures, but the greatest savings come from reducing latent defects which cannot be detected by normal factory inspections. Using Protektive Pak® products correctly can provide a significant financial return improving quality, productivity, and customer satisfaction. In-Plant handlers are “Returnable and Reusable Packaging, In some situations, packaging may be designed for reuse [and] may be reused numerous times... The initial cost of these packages may be relatively expensive. However, if the appropriate collection and recycling system is used, the container may be the least expensive choice over time.” [ESD Handbook TR 20.20 section 5.4.3.3.1]

Protektive Pak In-Plant Handlers meet the marking and traceability requirements of ANSI/ESD S541. Per section 8.2.1 Material Identification, “ESD protective packaging shall be marked with the ESD Protective Symbol.” And section 8.2.3 Traceability “Packaging should be marked with information that allows traceability to the packaging manufacturer and to the manufacturer’s date/lot code information. The date/lot code should allow traceability to quality control information pertaining to the manufacture of the specific lot of packaging.”

Protektive Pak In-Plant Handler surfaces have a static dissipative surface resistance of 1×10^6 to $< 1 \times 10^9$ ohms per ANSI/ESD STM11.11. Over 250 standard sizes are available from stock. Custom sizes are also available. In-Plant Handlers are easily assembled without the need for tape, glue, or staples. Made from 100% recycled material and is 100% recyclable. Protektive Pak® products are made in America.

With the three dimensions of a populated board or other product, one can go online at ProtektivePak.com, "Technical" tab and "[Tek Search](#)" to determine the stock items that provide the best cell utilization. A sample In-Plant Handler or other Protektive Pak® product can be requested by clicking "[Request a Sample](#)". Protektive Pak can be contacted at 909-627-2578 or send us an email at Service@ProtektivePak.com.