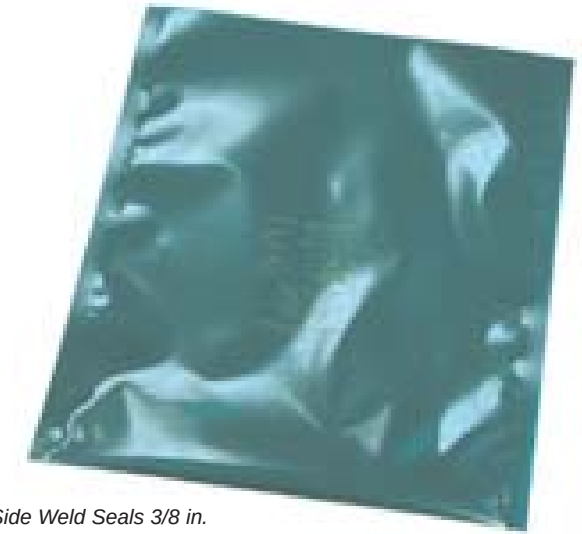
STATSHIELD® METAL-IN SERIES
LEAD-FREE AREA ESD SHIELDING BAG



Side Weld Seals 3/8 in.

Proprietary film - available only from Desco Industries Inc.

See reverse side for available sizes.

The bag's material meets the performance specification requirements of Mil-PRF-81705D, Type III.
Bag is free of amines, N-octanoic acid, and heavy metals.

A fundamental ESD control principle (see ANSI/ESD S20.20 Foreword):
ESD susceptible items should be transported and stored outside an Electrostatic protected Area enclosed in low charging, static shielding protective packaging.

Made in America

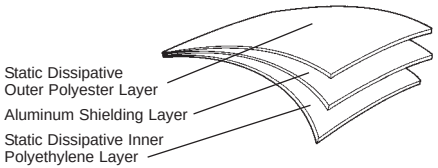
Specifications:

Electrical Properties	Typical Values	Test Procedures/Method
Surface Resistance:		
Outer Surface	<10E11 ohms	EOS/ESD S11.11
Aluminum Layer	<10E2 ohms	EOS/ESD S11.11
Inner Surface	<10E11 ohms	EOS/ESD S11.11
Static Shielding	<25 nJ	EOS/ESD S11.31
Charge Generation	PTFE: 0.09 nC/sq. in.	Modified Incline Plane
	Quartz: 0.01 nC/sq. in.	Modified Incline Plane
Capacitance Probe (to dissipate 1 KV)	<30V	MIL-PRF-81705D, EIA 541
Physical Properties		
Bag Thickness:		
Polyester Layer	0.5 Mils Static Dissipative PET film	ASTM D-2103
Aluminum Layer	10-25 Angstroms	
Polyethylene Layer	2.5 Mils Static Dissipative PE film	ASTM D-2103
Total Thickness	2.8 to 3.0 Mils	ASTM D-2103
Light Transmission (%)	>40% (Tobias)	ASTM D-1003
Heat Seal (lbs/in)	>10	375°F, 1/2 sec 60 psi
Seam Strength	Pass	MIL-PRF-81705D
Tear Strength (lbs)	>25	ASTM D-1004
Puncture Resistance (lbs)	>10	ASTM D-2065
MVTR (gms / 100 in^2 / 24 hrs, 100°F)	<0.40	FTMS 101C/2065
OTR (cc / 100 in^2 / 24 hrs)	<6.1	ASTM D-1434
Abrasion Resistance	>100 cycles	Sutherland Abr. (.0000 Steel Wool)
Outgassing	Pass	ASTM E595
Non-corrosive	Pass	MIL-STD-3010, M3005
Chemical Properties		
Corrosion	No effect on aluminum, copper, silver, Sn-Pb coated foil, stainless steel, low carbon steel	
Polycarbonate Capability,	Yes	
No Amines or N-Octanoic Acid	Not present	

Mixed Unsortable Plastic Scrap

Mixed unsortable plastic scrap shall contain assorted plastics of multiple grades that are co-extruded, bonded or laminated together which are unsortable into individual grades.

Charleswater Europe's bags are recyclable



CHARLESWATER

Statshield® Bag, Shielding, Metal In Construction, Green

CHARLESWATER LTD.
UNIT 17. MILLBROOK BUSINESS PARK, SYBRON WAY
CROWBOROUGH, EAST SUSSEX TN6 3JZ UNITED KINGDOM
PHONE: 00 44 (0) 1892-665313, FAX: 00 44 (0) 1892-668838
INTERNET: Charleswater.co.uk

Drawing Number
90450.E

DATE:
08/06

Metal In Bag Sizes W x L (mm)

Item #	Size	Item #	Size	Item #	Size
90450	100 x 150	90454	200 x 305	90458	305 x 455
90451	125 x 200	90455	255 x 305	90459	380 x 455
90452	150 x 225	90456	255 x 355	90460	455 x 455
90453	200 x 255	90457	255 x 610	90461	455 x 610
Packaged 100 per package					

Special sizes and printing available upon request

Charleswater Europe ESD Bags Are Generally Reusable

The user must determine the suitability of ESD bags for particular applications and after one year from purchase date.

All ESD Shielding Bags that are ripped, torn, or scratched should be discarded. The Bag's protection is lost if there is an electrical path from the charge on the outside of the Bag to the inside layer and ESDS parts within. Scratching may compromise the Faraday Cage shielding protection of shielding bags so they will not perform their function of protecting stored or transported ESD susceptible devices from electrostatic charges and discharges.

From ANSI/ESD S20.20 paragraph 6.2.4.2. Packaging Guidance: "The objective of ESD protective packaging is to prevent a direct electrostatic discharge to the ESDS item contained within and allow for dissipation of charge from the exterior surface. In addition, the packaging should minimize charging of the ESDS item in response to an external electrostatic field and triboelectrification. They may also lose static shielding properties by crumpling, puncturing and folding."

Some end users reuse a Statshield® Transparent Metal In ESD Shielding Bag up to six times and then discard.

Ideally, the user should test, auditing some percentage of the re-used ESD Bags using test procedures outlined in ANSI EOS/ESD-DS11.11 - 1993 Surface Resistivity Standard, ESD-DS11.12 - 1996 Volume Resistance Measurements of Static Dissipative Planar Materials, and Shielding Materials EOS/ESD DS11.31 -1994.

The Organization shall define ESD protective packaging for all ESD susceptible item material movement within Protected Areas, between job sites and field service operations. See ANSI/ESD S20.20 paragraph 6.2.4.1. Packaging Requirements.

ESD susceptible items shall be packaged in ESD protective packaging while not in a Protected Area. See ANSI/ESD S20.20 paragraph 6.2.3.1.

Use Charleswater Europe ESD Bags to meet IEC 61340 5-1 paragraph 6 Protective Packaging states, "The primary functions of protective packaging outside the ESD Protected Area are to:

- **limit tribo-electric charging;**
- **provide shielding against electrostatic fields and discharges.**
- **The packaging shall be capable of providing charge drainage to EPA ground when brought into an EPA."**

Statshield® bags are packaged 100 per package in an oversized shielding bag rather than a cardboard box. Therefore, our bags are not exposed to water vapors that will degrade the metallized shielding layer. Our bags have an additional layer of barrier protection because of our packaging.

Ideally, ESD bags should be stored in a dry, well ventilated room with a reasonably consistent temperature of 68°F (20°C) and be protected from exposure to direct sunlight. Ideally, ESD bags should not be stored in ultraviolet sunlight, moisture, or heat.

The user shall determine the suitability of the product for their intended use. Charleswater Europe's only obligation shall be to replace such quantity of the product proved to be defective. See full Limited Warranty information at www.charleswater.co.uk/warranty.htm.

RoHS Compliance Statement
None of the following materials are intentionally added in manufacturing this product: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenyl ethers (PBDE) as outlined in the Directive 2002/95/EC Article 4.1. See Desco Industries Inc. letter on-line at Charleswater.co.uk