Static Control Solutions

TBA Electro Conductive Products

TBA ECP

www.tbaecp.co.uk

Specialist materials for EMI shielding and static control

TBA-ECP's product range is primarily aimed at supplying both materials and finshed products for electrostatic protection and EMI/RFI shielding within the electronics industry. Our product range falls largely into four family groups: static control, EMI/RFI gaskets and seals, conductive polymers, and conductive coatings and metallising.

With a constant programme of research, development, product improvement, and due to our continuing expansion programme, we are very happy to discuss other product requirements and applications.

TBA ECP

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Certificate No: FM 21940

TBA904

TBA ELECTRO CONDUCTIVE PRODUCTS
STATIC CONTROL PRODUCTS

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LABELS SIGNS & MARKING
ECP 1560 SERIES

ECP range of labels and signs are designed to be used in conjunction with a complete static control programme, acting as a constant reminder to all personnel of the need for ESP awareness.

For use on all packaging and surroundings containing Electro Static Discharge Sensitive Devices (ESDS). Additionally EPA'S must be clearly marked as should all Earth Bonding Points (EBP), Earth Grounding Points (EGP) and ESD earth facilities.

All products within the range comply with the specifications laid out in section 4 of the standard BS IEC 61340-5-1 : 1998.

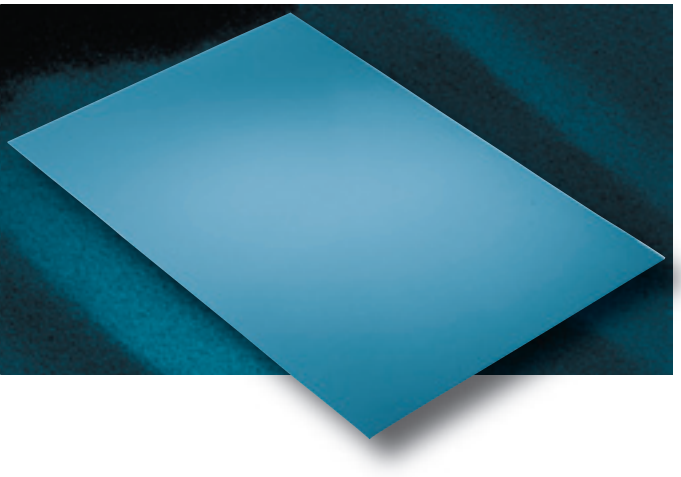
WARNING LABELS

Self Adhesive Vinyl Rolls of 1000	Standard Sizes	ECP Ref.
	5mm 12mm 25mm	1562 1562/1212 1562/2525
Bonding Point	45 x 25mm	1562/4525

SIGNS

Self Adhesive Vinyl	300 x 150mm	8121
Flexible Warning	600 x 300mm	8121A
Rigid PVC	300 x 150mm	8120
Rigid PVC	600 x 300mm	8120A
Rigid Enter	300 x 150mm	8120-EPA Enter
Rigid Leave	300 x 150mm	8120-EPA Leave

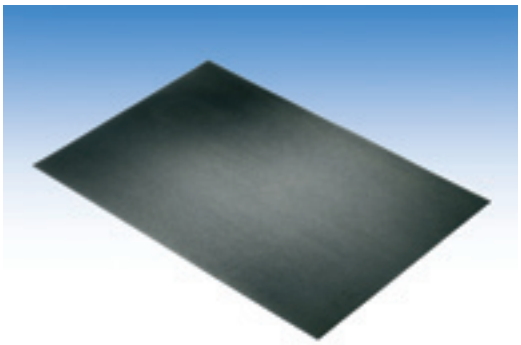
WORK SURFACES
ECP 1500 SERIES



MATTING

These materials are designed to comply with electrical requirements of Section 5.2.3 BS IEC 61340-5-1 : 1998 .
The benefits of all ECP Matting:

- Excellent heat/chemical resistance - all solder temperatures
- Durable/flexible with good lay flat properties
- Available in 1.3mm and 2.3mm thickness for bench and floor
- Mats and rolls cut to any size
- Easy to wipe clean



CONDUCTIVE NEOPRENE MATTING
ECP 1500/1502/1504

Permanent conductivity irrespective of relative humidity is achieved utilising high quality carbon blacks homogeneously compounded within the neoprene polymer. Supplied in a Plain finish. For bench 1.3mm thick , floor 2.30mm thick.
Surface Resistivity ASTM D-257 $<10^6$ ohms/sq.
Volume Resistivity ASTM D-257 $<10^4$ ohms/sq.
Density 1.3 g/cm^3

Description	ECP Ref.
Roll Form 1.3mm thick - Max 50m	1500
Roll Form Plain 2.3mm thick - Max 25m	1502
1.2 x 0.6m 1.3mm thick	1506
1.2 x 0.6m Plain 2.3mm thick	1509

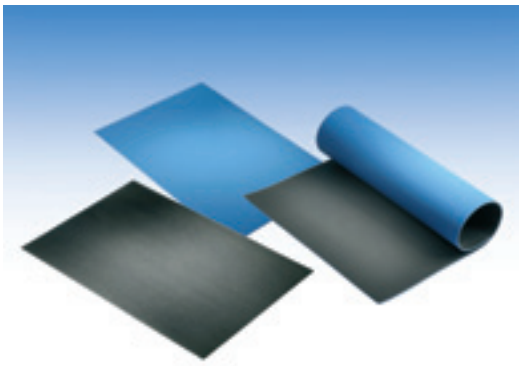
WORK SURFACES
ECP 1500 SERIES

COLOURED STATIC DISSIPATIVE PVC NITRILE MATTING ECP 1520

The coloured static dissipative matting is manufactured utilising a PVC nitrile polymer.

Surface Resistivity	ASTM D-257	$<10^9$ ohm/sq.
Charge Decay	JCI 155	<2 seconds from 5kV to 50V

Description	Type	ECP Ref.	Colour
1.3mm Thick 50m Max Length	Bench	1520	Blue
1.20m x 0.60m	Bench	1522	Blue



TRIPLE-PLY STATIC DISSIPATIVE MATTING ECP 1524

Mats and rolls cut to any size

Three layer matting -Top static dissipative layer - PVC Nitrile
Conductive layer - Carbon coated polyester
Bottom static dissipative layer - PVC Nitrile

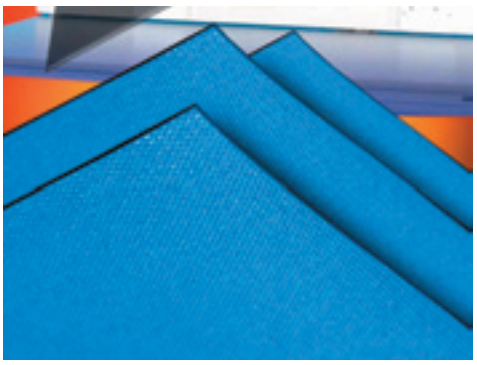
Dissipative PVC Nitrile	ASTM D-257	10^8 ohms/sq
Conductive Scrim	ASTM D-257	10^4 ohms/sq
Dissipative PVC Nitrile	ASTM D-257	10^8 ohms/sq

Charge decay JCI 155 <2 seconds from 5kv to 50v

Description	Type	ECP Ref.	Colour
1.3mm Thick 50m Max Length	Bench	1524	Blue
1.20m x 0.60m	Bench	1526	Blue

WORK SURFACES
ECP 1500 SERIES

TWO PLY STATIC DISSIPATIVE MATTING
ECP 1525



Two layer static dissipative matting is manufactured from PVC Nitrile. The matting comprises of coloured static dissipative top layer and conductive bottom layer

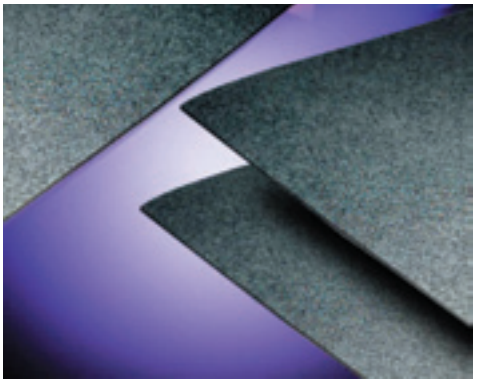
Surface Resistivity ASTM D257 Top $<10^9$ Ω/sq
Bottom $<10^6$ Ω/sq

Volume Resistivity ASTM D257 $<10^5$ Ω.c.m.

Textured Finish

Description	ECP Ref.	Colour
Roll Form 1.3mm thick - Max 50m	1525	Blue/Black
1.20 x 0.60m 1.3mm thick	1527	Blue/Black

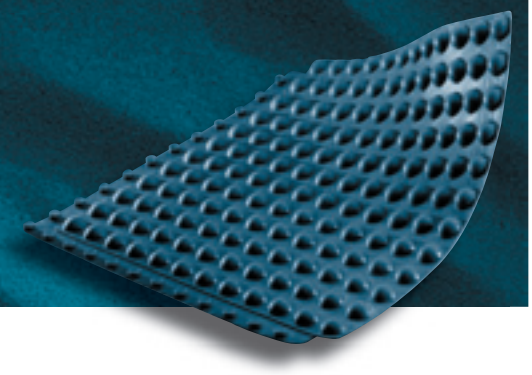
STATIC DISSIPATIVE NON-SLIP WORK SURFACE
ECP 1534



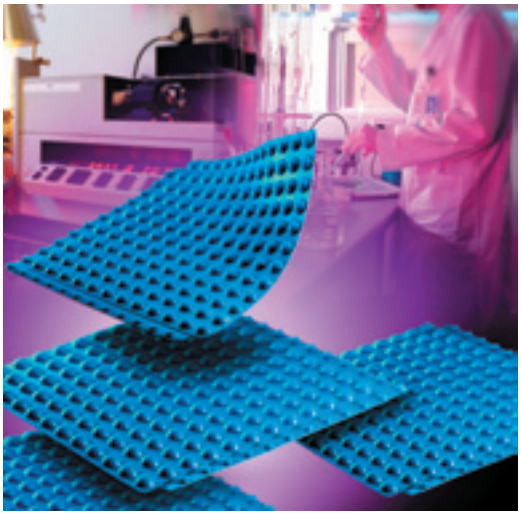
Polyurethane fibre non-slip mat, cushioning helps prevent scratching. Ideal when handling heavy product (e.g. computer monitors) to help protect from physical shock.
Other applications would include cut mats for conveyor pallets, conveyor belting and flooring.

Thickness	2.50mm	4.00mm	5.5mm
Weight	1.4 kg/m^2	2.2 kg/m^2	3.0 kg/m^2
Elongation pull	For 1% 8 N/mm	For 1% 8 N/mm	For 1% 8 N/mm
Max width	1.20 m	1.20m	1.20m
Temperature resistance	Min -10°C	Min -10°C	Min -10°C
	Max - 120°C	Max - 120°C	Max - 120°C

WORK SURFACES
ECP 1500 SERIES



ECP 1535 ANTI-FATIGUE STATIC DISSIPATIVE FLOOR TILES



The static dissipative orthopaedic floor tiles provide an ESD safe solution to the problem of operator stress. The cushioned surface acts to reduce strain and stiffness in the back and neck, circulation is also stimulated and frequent changes in posture encouraged, easing stiffness in joints and muscles.

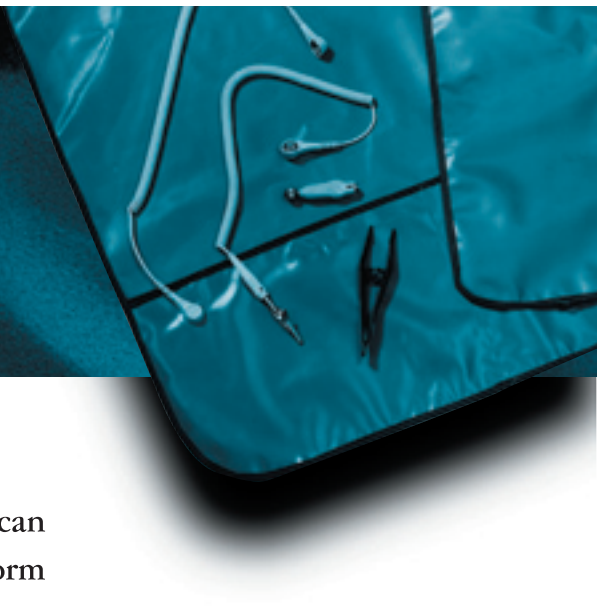
CHARACTERISTICS

- Surface resistivity 10^8 ohms
- Resistance to Ground 10^7ohms
- Tiles are designed to pop together
- Easy fastening system
- Ensures good fit, easy installation
- Anti-slip
- Insulates feet from cold and vibration
- Easy to clean

Available

Size	305 x 305mm
Pack size	12
Colour	Blue

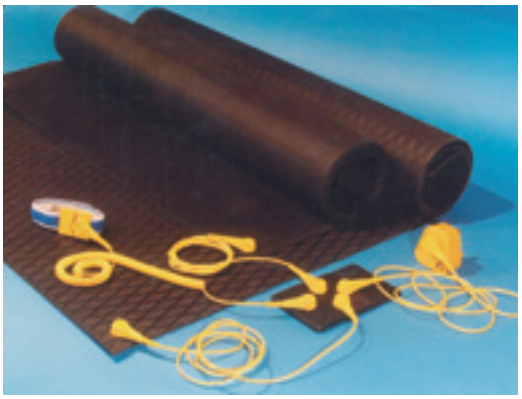
WORK SURFACES
ECP 1500 SERIES



WORK STATION KITS

ECP provide a range of flexible ESP working surfaces, these can be combined with ECP 1400 grounding products in the form of ready to use kits.

ECP Ref.	Material	Construction
1550	Black Bench	Conductive neoprene matting permanent conductivity is achieved utilising high quality carbon blacks homogeneously compounded within neoprene polymer
1551 Clean Room Compatible	Static Dissipative PVC Nitrile	Coloured static dissipative matting manufactured utilising a PVC nitrile polymer
1552 BT Approved	Triple-Ply	Three layers of matting consisting of top static dissipative layer carbon coated polyester buried layer bottom layer S.D. PVC nitrile
1553	Two-Ply Static Dissipative	Two layers of matting consisting of top static dissipative layer and a conductive bottom layer



FIELD SERVICE KIT ECP 1555

This is a portable anti-static work station for use primarily by field service, computer hardware and telecom engineers who require a compact, lightweight work surface which can safely be used when servicing static-sensitive components. The mat has two stitched pockets which enable small tools, components and boards to be stored within the kit. Except when carrying a board, the kit can be folded and placed in the pouch made from the same material.

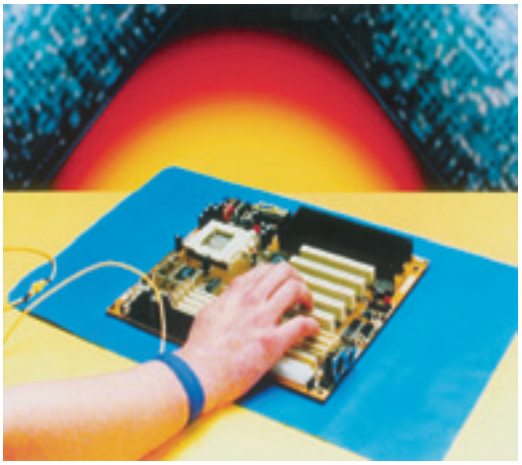
MATERIAL SPECIFICATIONS

- Surface Resistivity (ASTM D-257) $<10^9$ ohms/sq
- Charge Decay (IEC TC 15) <2 seconds 5000V -37V

WORK SURFACES
ECP 1500 SERIES

LOW COST STATIC CONTROL FIELD SERVICE MINI KIT

ECP 1555/MINI KIT



This product is designed for optimum saftey and provides a simple, low cost effective solution for engineers installing printed circuit boards and Eurocards.

The mini kit comes ready assembled and is designed to be shipped with individual items i.e. PCBs, Sound Cards, Network Card, CPU, Memory and RAM Chips.

Ideal for electronics, computer and telecommunication manufacturers.

Comprises the following ready to use items:

- 12 x 14in Static Dissipative Matting
- Wristband
- Grounding Cords

SEATING
ECP 1470 SERIES

CLEAN ROOM / ANTI-STATIC CHAIRS

Section 5.2.4 BS IEC 61340-5-1 : 1998 states that the seats shall be made of antistatic material. ECP have designed chairs which are constructed from steel or conductive materials to provide continuous dissipation to earth. All cosmetic plastic components are removed to minimise static generation and facilitate cleaning.

SPECIFICATIONS

Suitable for severe contract use	BS4875 Part 1. Level 5
Standard fabric - Operator range	Cambome Mainline
Antistatic fabric	Cambome Hi-Tech

Clean room chairs can be supplied with a filter fitted to the seat pan to control particle migration.

Chairs fitted with an air filter or constructed from solid polyurethane are designed to suit Class 100. Chairs without a filter are designed for Class 10,000.

COLOURS

Blue or Slate Grey

The chairs are Gas Lift they also have adjustable backrest

Vertical and horizontal

Spare Parts Available

GROUNDING
ECP 1400 SERIES

ECP's grounding products are manufactured to meet the technical requirements of BS IEC 61340-5-1 : 1998 and as a result are extremely effective in safely grounding all personnel. Additionally, consideration has been given in their design to comfort and practicality.

ADJUSTABLE WRIST BAND
ECP 1400

- Adjustable and elasticated
- Non-allergenic i.e. no stainless steel fibres
- No exposed conductive surfaces
- Range of connectors 10, 7, 4mm
- F.R UL 94 VO
- BT Approved

ADJUSTABLE METAL WRIST BAND
ECP 1400/MWB

- Fully adjustable
- Long lasting
- Scratch and flake resistant
- Range of connectors

CONNECTOR KITS

A range of connector kits are available which are designed to facilitate connection between different connection systems eg, 4mm-10mm. These allow connection in awkward areas or to surfaces with no grounding.

GROUNDING
ECP 1400 SERIES

GROUNDING CORDS
COILY CORD ECP 1410 SERIES

- Extended length up to 3.5m
- Relaxed length 0.5m
- Available in blue or yellow as standard
- BT Approved
- Contains a discrete resistance
- Can be provided with a variety of connectors at either end
- Strain relief incorporated in both ends
- 500 000 reciprocations possible
- 7 end tinsel conductors with terylene packing
- Other styles available on request

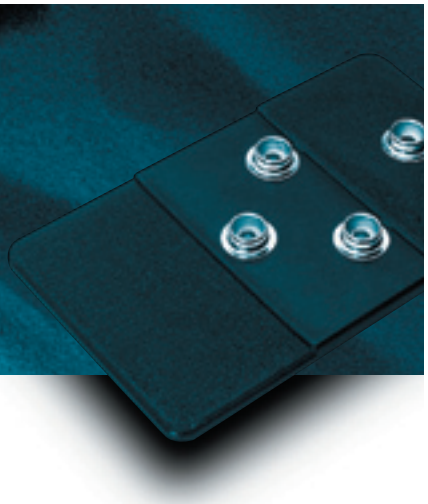
Type	ECP Ref.
10 - 10 mm Stud	1410 BT APPROVED
10 - 4 mm Plug	1411
10 mm Stud to Croc	1412
7mm - 7mm Stud	1413
4mm - 4mm Stud	1415

GROUNDING CORDS
STRAIGHT LEAD CORDS ECP 1440 SERIES

- Available in blue or yellow as standard
- Contain a discrete resistance
- Can be provided with a variety of connectors at either end
- 7 end tinsel conductors with terylene packing
- Strain relief incorporated at both ends
- Other styles available on request

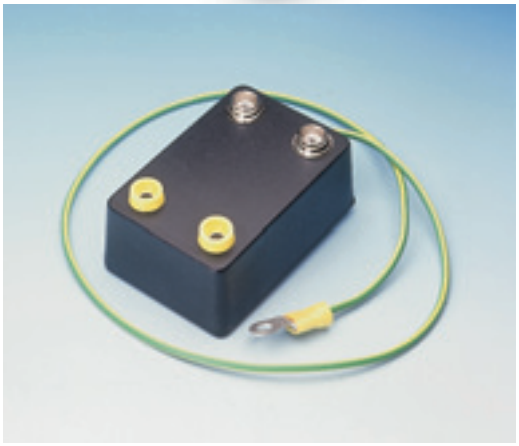
Type	ECP Ref.
1.2 Metre Cord	1440
2.0 Metre Cord	1441

GROUNDING
ECP 1400 SERIES



GROUNDING BOX ECP 1409

- Moulded from ABS
- Incorporates 4mm banana sockets male studs
- Should be used in conjuction with ESP bonding plug with wrist bands



ESP BONDING PLUG ECP 1420

- Manufactured from Flame Retardant ABS/PC blend
- Excellent physical and aesthetic properties
- An integral 1.1 meg ohm resistor between the earth pin
- 10mm contact stud (4mm, 7mm also available)
- Contact stud is raised from the surface of the plug enabling easier detachment of cord
- BT Approved product

EARTH REFERENCE PLATE ECP 1425

- Moulded from ECP 104 conductive polypropylene
- Incorporates four connector studs
- Provides equipotential bonding point
- Should be used in conjuction with ESP Bonding Plug ECP 1420

GROUNDING
ECP 1400 SERIES

TOE & HEEL STRAPS

The tough, hard wearing and permanently conductive heel strap is available with or without an added 1 meg ohm safety resistor. The heel cup is made from conductive neoprene and is adjustable with Velcro fastener, and can be manufactured with blue or yellow velcro.

The toe strap incorporates the same features and complements the heel strap in providing complete operator grounding. The straps are ideal for mobile staff and visitors, with one size fitting all.

Triple-Ply matting provides non marking interior and exterior.

Type	ECP Ref.	Colour
Conductive Heel Strap	1450	Black
Conductive Disposable Heel Strap	1450/Dis	Black
Non Marking 2ply Heel Strap	1450/2Ply	Blue
Conductive Toe Strap	1451	Black
Triple-Ply Toe	1452	Blue
Triple-Ply Heel Strap	1453	Blue

ECP 1601 Test Kit

ECP's dedicated heel strap test station, complies with the requirements of BS IEC 61340-5-1 : 1998.

Comprises;

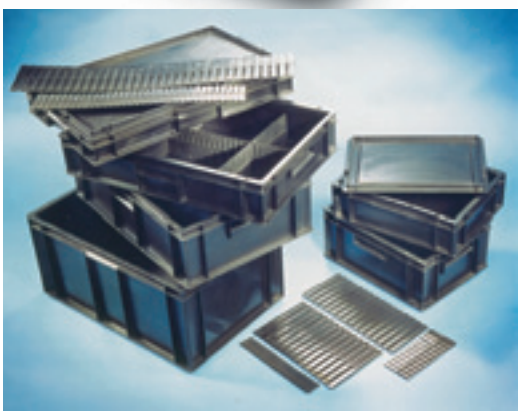
- Foot plate
- Wall mounted bracket and ECP 1601/EUR.

Full tester specification on page 30 of this catalogue.

PACKAGING
ECP 1000 SERIES

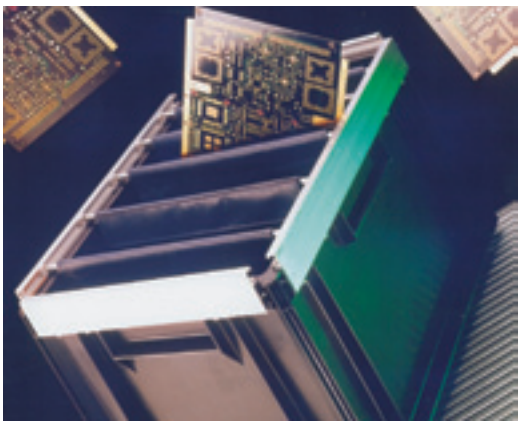
CONDUCTIVE TOTE BOXES

External (mm)	Internal (mm)	ECP Ref.
300 x 200 x 118	257 x 159 x 108	1055
400 x 300 x 74	355 x 255 x 64	1056
400 x 300 x 118	355 x 255 x 105	1057
400 x 300 x 175	355 x 255 x 164	1058
400 x 300 x 235	355 x 255 x 220	1059
400 x 300 x 319	355 x 255 x 300	1060
600 x 400 x 73	555 x 355 x 62	1061
600 x 400 x 118	555 x 355 x 105	1062
600 x 400 x 175	555 x 355 x 164	1063
600 x 400 x 235	555 x 355 x 174	1064
600 x 400 x 316	555 x 355 x 300	1066



The Tote Boxes can be partitioned by use of interlocking conductive divider strips.
Lids are available for the 400 x 300 and 600 x 400 boxes.

FLEXIBLE POCKET SYSTEM FOR TOTE BOXES



- Aluminium frame slots firmly onto the box
- Size 400 x 300 or 600 x 400mm
- Soft S.D. Fabric suspended on moveable rods provides Anti Static storage pockets for PCB'S
- Maximises storage space in box
- Reduces risk of physical damage compared to conventional divider systems
- Easier and quicker insertion of PCB'S

PACKAGING
ECP 1000 SERIES

CONDUCTIVE PLASTIC BOXES

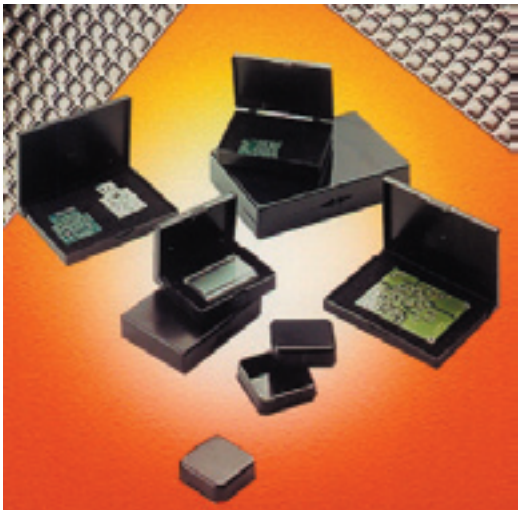
ECP offer a wide range of conductive and static dissipative packaging products suitable for the protection of electrostatic discharge sensitive devices (ESDS).

The products are moulded from conductive plastic specially developed by ECP for this application. This not only gives excellent physical protection one would associate with normal plastic containers, but also complies with the electrical conductivity requirements as described in Section 7.3, 7.4 BS IEC 61340-5-1 : 1998 making them suitable for intimate and close proximity packaging.

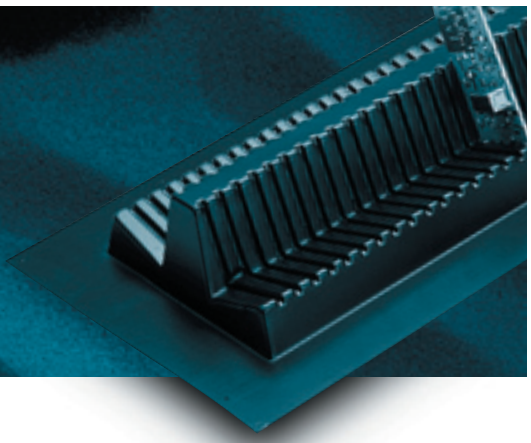
Two types of conductive foam can be inserted into the boxes, high density, suitable for the retention of ESD'S and low density which offers additional physical cushioning.

ECP boxes are durable. In addition they can be supplied with custom cut conductive foam or vac formed inserts. Surface Resistivity of the boxes $<10^5$ ohms/sq.

External (mm)	ECP Ref.	With HD foam only	With HD & LD foam
38 x 38 x 12	1000	1001	1002
74 x 52 x 20	1006	1007	1008
90 x 64 x 19	1012	1013	1014
108 x 82 x 17	1018	1019	1020
155 x 100 x 30	1024	1025	1026
230 x 130 x 22	1030	1031	1032
230 x 130 x 31	1036	1037	1038
230 x 130 x 40	1042	1043	1044
253 x 152 x 38	1051	1051/F	1051/2F
304 x 228 x 38	1052	1052/F	1052/2F



PACKAGING
ECP 1100 SERIES



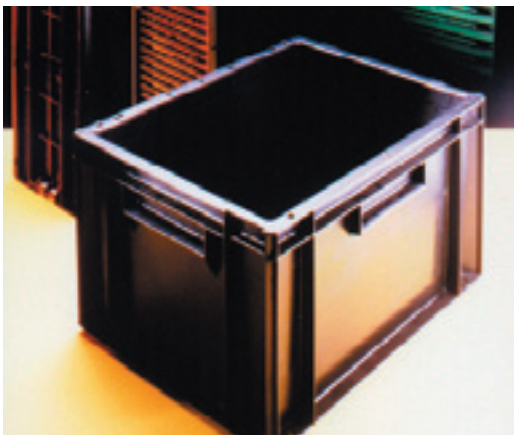
STORAGE TRAYS

ECP's conductive storage are ideal for board or component storage and can be incorporated into a number of tailor made racking systems.

External (mm)	ECP Ref.
400 x 300 x 70	1107
325 x 175 x 25	1110
350 x 240 x 55	1111

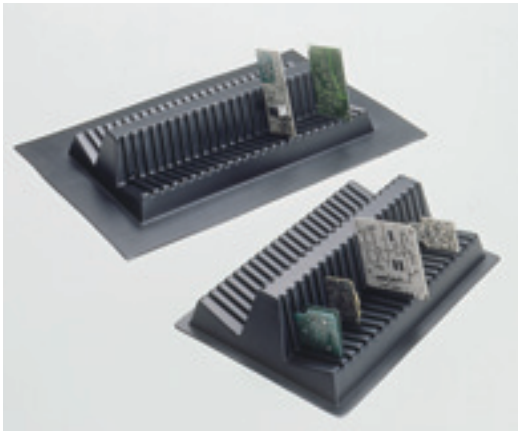
ADJUSTABLE PCB RACK - ECP 1150

- Dimension of sidewalls 350 x 165 x 28mm deep
- Modular in nature - snap to fit
- Aluminum rails up to 2.208 metres long provide adjustability
- Free standing or can be used with ECP's tote boxes



SMALL DOUBLE L - SHAPED RACK ECP 1151

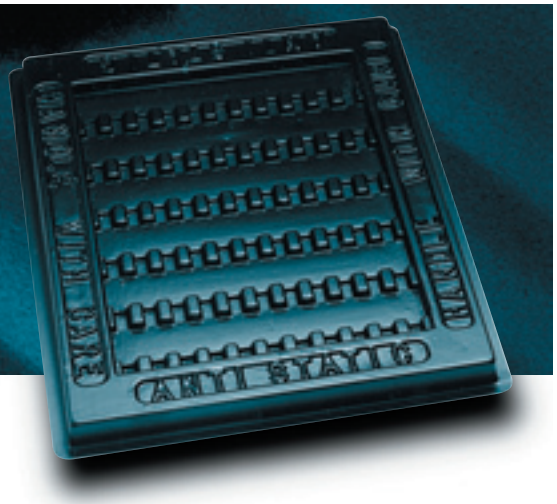
- 250 x 170 x 55mm deep
- Ideal for surface mount and small through hole boards
- Holds up to 40 boards 20 each side
- Stackable and can be used with a customised box, ECP 1047



DOUBLE L - SHAPED RACK ECP 1152

- 280 x 170 x 55mm
- Same as ECP 1151 but capacity is 50 boards

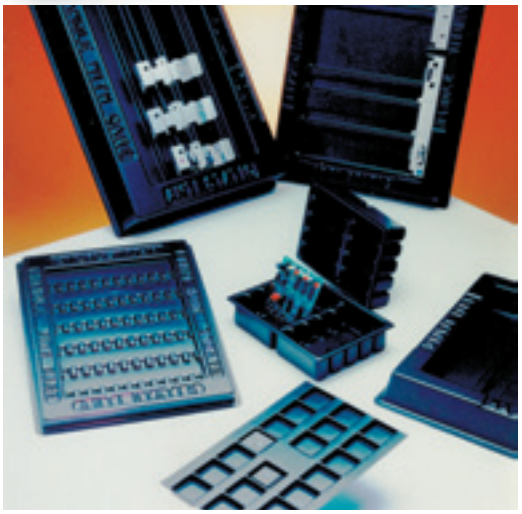
PACKAGING
ECP 1100 SERIES



CUSTOM SERVICES

ECP provides a custom moulding and fabrication service to provide specialist packaging which complement ECP's range of storage and packaging products

This service provides the opportunity to enhance the standard range of storage products by means of tailor-made inserts and dividers with an option to produce boxes of specific dimensional requirements.



SERVICES AVAILABLE INCLUDE:

- Vacuum forming
- Tool design and manufacturing
- Thermoplastic injection moulding of static control materials
- Extrusion capability
- Custom cut foam

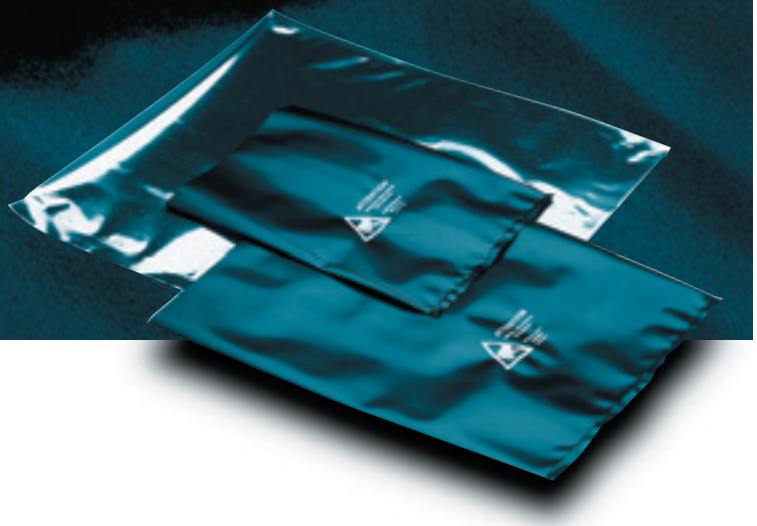
VACUUM FORMING FOR SPECIALIST PACKAGING, STORAGE, HANDLING:

- Sheet Sizes up to 660mm square
- Volumes up to 10,000 off
- All commonly vacuum formable materials including conductive polystyrene and HDPE

MOULDING CAPABILITIES:

- Injection moulding machine sizes form 35 to 190 tonne
- Materials: PP/HDPE/PA6/HDPE/PS incorporating carbon blacks

PACKAGING
ECP 1200 SERIES



TRANSPARENT SHIELDING BAGS

ECP have a range of shielding bags which meets the BS IEC 61340-5-1 : 1998. The Static Shielding Bags are made up from an aluminium metallised polyester layer sandwiched between two static dissipative polyethylene layers.

The components inside the bag are protected against ESD damaged by the "Faraday Cage" provided by the metallic layer. Any external charge will be dissipated without generating a spark.

Sizes (mm)	ECP Ref.	Sizes (mm)	ECP Ref.
70 x 150	1200	380 x 450	1223
125 x 75	1200A	450 x 450	1225
200 x 250	1212	450 x 600	1226
250 x 300	1214	375 x 150	1210
250 x 350	1215	375 x 325	1220A
250 x 600	1216	425 x 600	1224
300 x 400	1220	200 x 400	1213A

Other sizes available on request

CONDUCTIVE BAGS

Made from conductive carbon filled low density polyethlene (ECP 125). Resistant to most chemicals, the effectiveness of these bags is unaffected by age or humidity.
Surface Resistivity less than 10^5 ohms/sq

Sizes (mm)	ECP Ref.	Sizes (mm)	ECP Ref.
70 x 150	1300	150 x 250	1309
250 x 760	1318	100 x 100	1301
170 x 380	1310	270 x 380	1319
100 x 150	1302	200 x 200	1311
300 x 400	1320	100 x 600	1303
200 x 250	1312	300 x 450	1321
100 x 660	1304	200 x 300	1313
350 x 450	1322	120 x 200	1306
250 x 300	1314	380 x 450	1323
120 x 250	1307	250 x 350	1315
400 x 600	1324	150 x 200	1308
250 x 600	1316	450 x 450	1325
250 x 660	1317	450 x 600	1326

PACKAGING & STORAGE SYSTEMS

ECP 1100 SERIES

CONDUCTIVE PLASTIC BINS

ECP bins moulded from conductive polypropylene (ECP 104) will fit on zinc-plated louvered panels, stack or free stand on shelving. The zinc plated louvered panels can be wall mounted to provide an efficient storage system. A range of handling options are available.

External (mm)	ECP Ref.
103 x 130 x 75	1100/HC
155 x 100 x 75	1101/HC
230 x 145 x 130	1102/HC
365 x 200 x 130	1103/HC
395 x 200 x 175	1104*
300 x 410 x 170	1105*
187 x 250 x 75	1116

The High Capacity (HC) bins are flat based and suitable for conveyor belts.

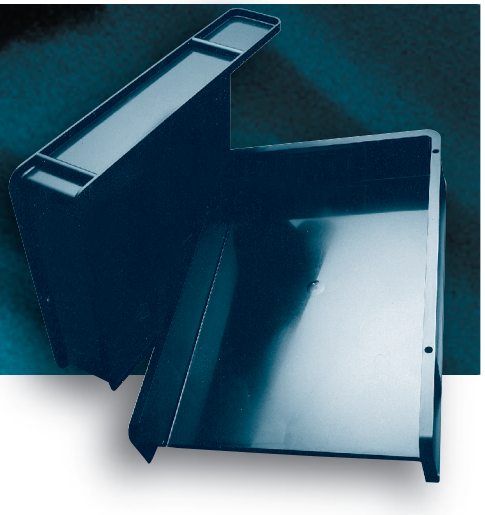
- May be subject to minimum quantity requirements.

CLEAN ROOM STORAGE

ECP's ranges of bins and boxes are also available in our specially developed range of non-black S.D. Polymer:

- Permanently static dissipative
- Non humidity dependent
- Colourable
- Cleanroom compatible - low offgassing, low particulate contamination

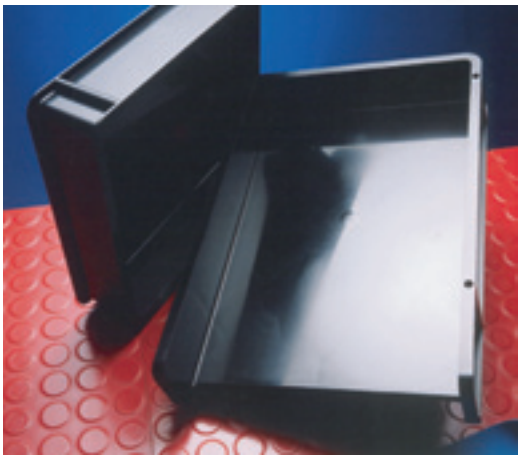
PACKAGING & STORAGE SYSTEMS
ECP 1100 SERIES



CONDUCTIVE LETTER TRAY

Manufactured from ECP 172 conductive polystyrene, the letter tray provides organised and conductive storage for documentation with a potential ESD hazard.

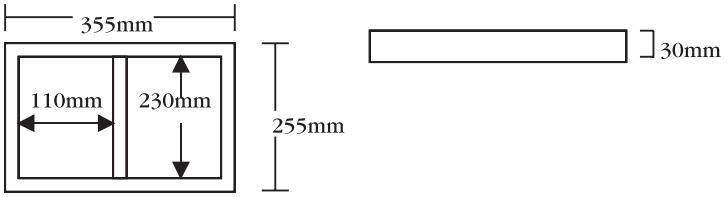
External (mm)	ECP Ref.
390 x 263 x 60	1112



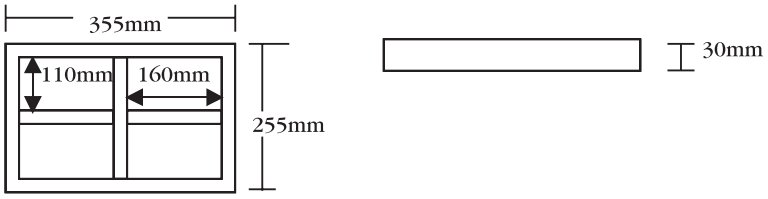
ECP 1050 COMPARTMENTED TRAYS

Manufactured from conductive High Impact Polystyrene this series of trays provides an ideal handling and storage media. They can either be used individually or with 400 x 300mm conductive tote boxes.

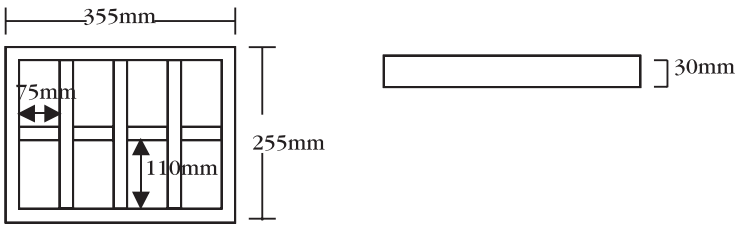
ECP 1050/2C



ECP 1050/4C

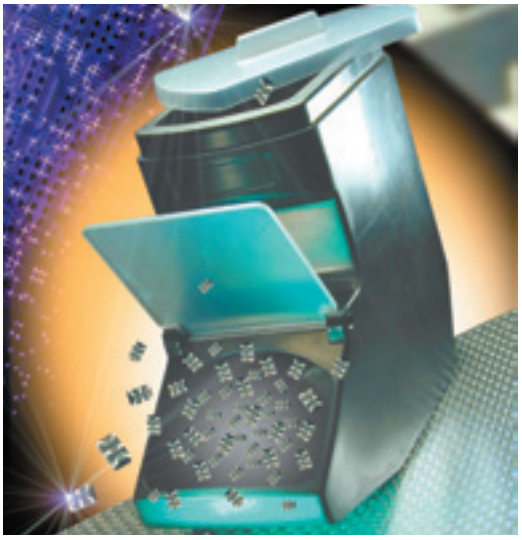


ECP 1050/8C



PACKAGING & STORAGE SYSTEMS

CONDUCTIVE COMPONENT DISPENSER ECP ID21



Rotationally moulded from ECP 128 conductive HDPE, the ECP ID21 provides an excellent storage solution where space is at a premium. Ideal for everything from small ESDs to switch covers and enclosures.

- High volume storage
- Occupies a small area on benches or shelves
- Complies with BS IEC 61340-5-5: 1998
- Transparent SD lids
- Dimensions 474 (L) x 205 (W) x 424mm (H)

CONDUCTIVE WHEELIE BIN ECP DWB90

The bin is rotationally moulded from ECP 128 HDPE providing extremely tough and robust product. Ideal for disposal of electronic waste or purely the normal waste generated in a production area.

SPECIFICATIONS

- Height 915mm
- Width 410mm
- Maximum load 90 litres
- Hinged lid

IONISERS

TBA's range of ionisation products provide an excellent non contact means of static elimination. The range comprises a selection of portable bench top units, ion bars, air curtains, air guns and ionising nozzles.

They are suitable for use in a variety of applications within the electronics, printing, plastic processing, textile and paper industries.

The range is summarised in the table below

Product	product code	operating voltage	dims (mm)	weight (kg)	power supply	charge decay time(secs.) v. distance (mm) from 5kV-500V						
						20	80	150	300	600	900	1200
ion bar	ECP SL-006B	5.6kV	200-2000		ECP SL-008	0.1	0.2	0.5				
ion bar	ECP SL-011	5.6kV	200-2000		ECP SL-009		1.1	1.4				
Air Curtain	ECP SL-040	7.0kV	200-1300		ECP SL-009	0.1	0.3		1.5	2.5		
Air Curtain	ECP SL-041	7.0kV	200-1300		ECP SL-009				1.1	2.4	5.5	
2 Fan Overhead Air Blower	ECP SL-002	110V/60Hz or 220V/50Hz	600x170x90	7.5	fitted				2.8	1.7	3.2	3.5
3 Fan Overhead Air Blower	ECP SL-003	110V/60Hz or 220V/50Hz	1100x 110x184	11.7	fitted				1.3	2.2	4.3	7.5
air gun	ECP SL-004AA	4.0kV		0.5	ECP SL-008	0.1	0.2	0.9				
Clean Room gun	ECP SL-280	115 or 230V			fitted			1.3				
nozzle	ECP SL-005	4.6kV		0.5	ECP SL-007	0.3	0.8	1.0				
nozzle	ECP SL005A	7.0kV		0.5	ECP SL-009	0.4	0.7	0.9				
hands free nozzle	ECP SL-080A	4.6kV		0.7	ECP SL-007			1.5				
bench top blower	ECP SL-001	110V/60Hz or 220V/50Hz	90x260x170	3.0	fitted				1.2	2.4	3.9	
bench top blower	ECP SL-020	110V/60Hz or 220V/50Hz	450x205x175	7.6	fitted				1.1	2.2	3.6	5.5

TOOLS

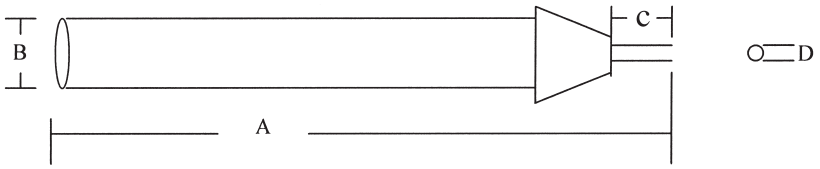
ECP 1850 SERIES

DESOLDERING TOOLS

TBA offer a complete range of professional quality desoldering tools for solder removal.

The standard range features high temperature PTFE nozzles, in addition a range of ESD safe guns is also available which meet the requirements of BS IEC 61340 Pt.1 – 1998.

The DSG extraction springs are located outside the vacuum chamber to prevent solder sticking, maintaining a consistent plunger action and promoting long life.



PRODUCT	ALUMINIUM BODY	PLASTIC BODY	ANTI-STATIC	A (MM)	B (MM)	C (MM)	D (MM)	WEIGHT (GMS)
ECP 1850/1	*			190	20	20	1.5	56
ECP 1850/2	*			180	20	13	3.5	56
ECP 1850/3	*			154	14	15.5	1.5	33
ECP 1850/4	*		*	190	20	20	1.5	60
ECP 1850/5	*		*	154	14	15.5	1.5	35
ECP 1850/6		*		184	26	20	1.5	39
ECP 1850/7		*	*	184	26	20	1.5	39
ECP 1850/8		*		200	26	30	2	42
ECP 1850/9		*	*	206	26	30	2	42
ECP 1850/10	*			206	26	30	2	61
ECP 1850/11	*		*	198	26	30	2	60

ECP 1800 SERIES CUTTERS AND PLIERS

ECP 1800 series of cutters and pliers is a comprehensive range of small hand tools designed for a variety of assembly applications in an electronics EPA.

Standard features for all tools are spring action, dissipative handles (compliant with BS IEC 61340-5-1:1998) and carbon steel manufacture.

Cutters

ECP 1800/180 4.5" Flush Cutter 30° angle, Blade 7 x 7mm
ECP 1800/181 4.5" Flush Cutter 45° angle, Blade 7 x 7mm
ECP 1800/182 4.5" Flush Cutter 45° Reverse angle, Blade 7 x 7mm
ECP 1800/250 5" Flush Cutters 30° angle. Blade 10 x 7mm
ECP 1800/256 5" Flush Cutters 30° angle. Blade 9 x 7mm
ECP 1800/257 5" Flush Cutters 30° angle. Blade 8 x 7mm
ECP 1800/258 5" Side Cutter 30° angle. Blade 11 x 9mm
ECP 1800/280 5" Heavy Duty Flush Cutter 30° angle. Blade 10mm x 10mm
ECP 1800/280A 5" Heavy Duty Flush Cutter 30° angle. Blade 10 x 8mm
ECP 1800/281 5" Flush Cutter 30° angle. Blade 9 x 10mm

Pliers

ECP 1800/251 6" Long Nose, Serrated Jaw Pliers
ECP 1800/252 6" Long Nose Flat Jaw Pliers
ECP 1800/253 Bent Nose Serrated Jaw Pliers
ECP 1800/254 5.5" Round Nose Pliers

Wire Strippers

ECP 1800/259 5.5" Wire Strippers Wire diameter 0.2 – 0.8mm
ECP 1800/260 6" Wire Strippers Serrated Jaw Wire diameter 0.8 – 2.6mm 10-20AWG
ECP 1800/261 6" Wire strippers Serrated Jaw Wire diameter 0.2-0.8mm 20-30AWG

WORKSTATIONS

ECP 1580 SERIES

WORK SURFACES

ECP 1580 SERIES

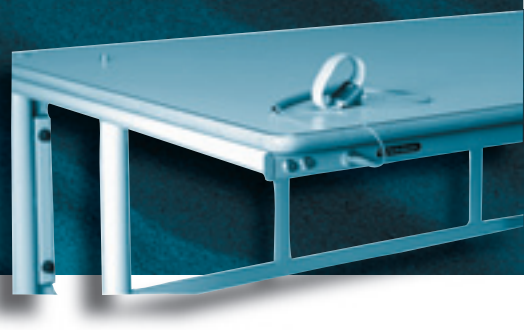
The ECP 1580 workstations are modular in design giving total flexibility to the user. In addition the comprehensive range of upper or lower workstation accessories allows a basic cantilever or front leg design bench to be transformed into a complete ergonomic workstation meeting the most demanding criteria of the modern industrial environment.

Options available as:
Cantilever design for maximum operator manouverability
Front leg design for high load application (as picture)
Height adjustable
Variety of tops
High Pressure Laminate
Electrostatic dissipative has excellent scratch and chemical resistant properties as well as being easy to clean
SD PVC Nitrile
Static dissipative nitrile matting which is bonded on top of MDF

Type	Description	Dimensions
CL	Fixed Height Cantilever	760mm
		840mm
		920mm
CL	Adjustable Height Cantilever	760mm
		800mm
		840mm
FL	Adjustable Height of Front Leg	760mm
		840mm
		880mm
		960mm

WORKSTATIONS

ECP 1580 SERIES



WORK SURFACES
Availability on benches and accessories

Work top description

LENGTH	SIZE	ECP REF NO.
1000 mm	450	1580/ESDL1045
	600	1580/ESDL1060
	750	1580/ESDL1075
	900	1580/ESDL1090
1200 mm	450	1580/ESDL1245
	600	1580/ESDL1260
	750	1580/ESDL1275
	900	1580/ESDL1290
1500 mm	450	1580/ESDL1545
	600	1580/ESDL1560
	750	1580/ESDL1575
	900	1580/ESDL1590
1800 mm	450	1580/ESDL1845
	600	1580/ESDL1860
	750	1580/ESDL1875
	900	1580/ESDL1890
2000 mm	450	1580/ESDL2045
	600	1580/ESDL2060
	750	1580/ESDL2075
	900	1580/ESDL2090

SHELVES

SIZE	ECP REF NO.	
1000 x 300	1580/SEDSL1030	*
1000 x 450	1580/SEDSL1045	*
1200 x 300	1580/SEDSL1230	*
1200 x 450	1580/SEDSL1245	*
1500 x 300	1580/SEDSL1530	*
1500 x 450	1580/SEDSL1545	*
1800 x 300	1580/SEDSL1830	*
1800 x 450	1580/SEDSL1845	*
2000 x 300	1580/SEDSL2030	*
2000 x 450	1580/SEDSL2045	*

**REAR SUPPORT POSTS NEEDED*

Availability on benches accessories

SIZE	ECP REF NO.	
Rear Support Post	1580/RSP1	
Overhead Light Tool Rail		
1000	1580/OLTR10	*
1200	1580/OLTR12	*
1500	1580/OLTR15	*
1800	1580/OLTR18	*
2000	1580/OLTR20	*
Overhead Tool Track		
1000	1580/R/SP10	*
1200	1580/R/SP12	*
1500	1580/R/SP15	*
1800	1580/R/SP18	*
2000	1580/R/SP20	*
Fluorescent Light Unit		
1200	1580/FLU12	*
Service Panel		
1000	1580/SP10	
1200	1580/SP12	
1500	1580/SP15	
1800	1580/SP18	
2000	1580/SP20	
Extra Socket	1580/ETSS1	
Rear Accessory Rail	1580/R/ARI	*
Rear Panel Module 470mm unit		
Louvre Panel	1580/LPP1	*
Pin Board	1580/PB1	*
Tool Panel	1580/TP1	*
Cable Reel Panel	1580/CRH1	*
Drawers		
Single	1580/DS1	
Double	1580/DD1	
Triple	1580/DT1	
Cupboard	1580/CUP1	
Footrests		
Standard	1580/SDSTDFR	
Adjustable with Tilt	1580/SDADJTFR	
Articulated Arms		
Louvre	1580/AALP1	
Pin Board	1580/AAPB1	*
Cable	1580/AACRH1	*
Monitor	1580/AAM1	*

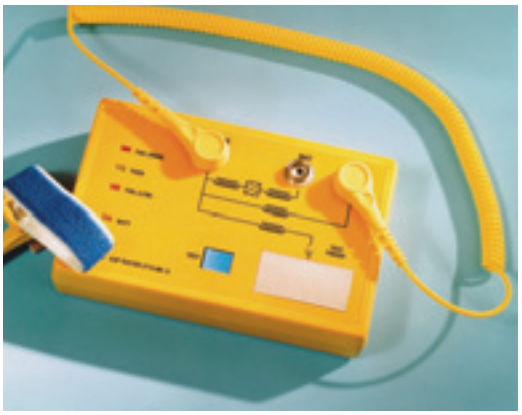
**REAR SUPPORT POSTS NEEDED*

AUDIT & TEST
ECP 1600 SERIES

It is important that the individual components of an EPA are tested regularly to ensure that the requirements of BS IEC 61340-5-1 : 1998 are being met. ECP manufacture a range of audit equipment which allows this to be carried out as efficiently and accurately as possible.

ECP 1600 WRISTBAND CHECKER

The checker can be wall mounted and features:
Self activating test wrist band / cord and operative LCD display. This reading can obviously be recorded if required by your ISO 9000 quality system. Two colour low current LEDs have also been included so that personnel can see at a glance whether the wrist band system passes or fails the pre-set limits.
In addition the instrument also tests operator plus wrist band system to ensure personnel have correctly fitted their wrist band.
Power: 9V PP3 battery.



ESP SYSTEM CHECKER ECP 1601/1601EUR

ECP's system Checker is designed to test three features of a work station e.g. operator, cord and matting. Two versions are available ECP 1601 and ECP 1601/EUR. The basic features and resistance limits are given below.

ECP 1601
BT Approved
Ideal for BT sub contractors
Wall mountable
Lightweight
Dimensions 145 x 90 x 32mm
Power: 9V PP3 battery

ECP 1601/EUR
Nato stock no.
Audible alarm
Can be provided as a heel strap
Test station
Wall mountable
Power: 9V PP3 battery

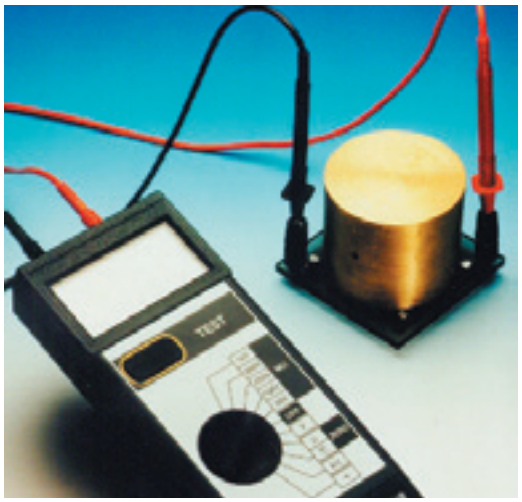
	ECP 1601		ECP 1601/EUR	
TEST	MIN. RES. Limit Ω	MAX. RES.	MIN. RES.	MAX. RES.
Wrist Band Test	3 M 7 ± 5%	50 M ± 10%	0.9 M ± 5%	35 M ± 10%
Cord Test	4 M 0 ± 2%	4 M 8 ± 2%	0.9 M ± 2%	5 M ± 10%
Cord/Mat/Cord Test	7 M 4 ± 5%	11 M 4 ± 5%	1.9 M ± 5%	11 M 4 ± 5%

AUDIT & TEST
ECP 1600 SERIES

SURFACE RESISTIVITY METER ECP1602

Measures surface resistivity and resistance to ground. Supplied with test lead kit plus static dissipative carrying pouch, ideal for quick checks on working surface etc. Range 10^3 Ω/sq - insulative. Power: 9V PP3 battery.

SURFACE RESISTIVITY AND RESISTANCE TO GROUND TEST KIT ECP 1608



Designed to carry out the above test precisely as defined in Appendix A of BS IEC 61340-5-1 : 1998.

Kit is provided with the following:-

- Megger BM80 Insulation tester
- Range 0 - 200 GΩ
- Test Voltages 50, 100, 250, 500 + 1000V
- Test Lead Kit
- Test Probes + 2.5kg weight as per standard

(Also Available Separately)

CONTINUOUS WORK STATION MONITOR ECP 1603

- Continually monitors operator and workstation
- Visual and audio alarm to indicate failure
- Ranges as specified in BS IEC 61340-5-1 : 1998
- Caters for open and short circuits
- Relies on resistance measurement to detect failure
- Mains power supply

AUDIT & TEST
ECP 1600 SERIES

STATIC MONITOR ECP 1606

TBA offers the general purpose ECP 1606 static monitor for measuring surface voltage up to 100kV. Performance characteristics are as summarised below.

Specification	ECP1606
Reading	Surface voltage in kV at 100mm
Range/Sensitivity	100kV @ 100V resolution
Zero stability	Within 100V
Drift	Less than 1% FSD in 10s
Accuracy	Better than +/- 5%
Display	3½ digit LCD with polarity and "LO BATT" indication
Controls	Push button switches on power, zeros initial reading and maintains instrument operation for duration of observations. Zero adjustment through wall of case.
Power Supply	PP3 replaceable battery – supplied. Power for 500 hours continuous use.
Earth Bonding	10mm earth stud on bottom plate for connection to coiled earth lead.
Dimensions/weight	142 x 66 x 32mm 330g net
Construction	Metal case with recessed sensing plate for maximum integrity and accuracy of reading. Hardened polycarbonate window.

USER GUIDE EPA MATERIAL SPECIFICATION
Appendix I

RESISTANCE, RESISTIVITY AND CHARGE DECAY IN ESD PROTECTED AREAS

Item requirements	Surface resistance R_s or end-to-end resistance R_e or point-to-point resistance R_p Ω	Resistance to EPA ground or groundable point R_g Ω	Charge decay (see note 5)
Working surfaces storage Racks, trolleys and carts	$1 \times 10^4 \leq R_p \leq 1 \times 10^{10}$ see note 6	$7.5 \times 10^5 \leq R_g \leq 1 \times 10^7$ see note 6	
Floors		$\leq R_g \leq 1 \times 10^9$ For minimum value See note 1 See note 2	
Seating		$Rg \leq 1 \times 10^{10}$	
Garments	$\leq R_p \leq 1 \times 10^{12}$ For minimum value, see note 1		To 10% of initial value (maximum 1 000 V) in less than 2 s
Gloves and finger cots			To 10% of initial value (maximum 1 000 V) in less than 2 s
Wrist bands not worn		$R_p \leq 1 \times 10^5$	
Cords for wrist bands	$7.5 \times 10^5 \leq R_e \leq 5 \times 10^8$ See note 3		
Tools	See note 4	$Rg \leq 1 \times 10^{12}$ See notes 1 and 4	To 10% of initial value (maximum 1 000 V) in less than 2 s
Ionizer			To decay from 1 000 V to 100 V in 20 s maximum
System Requirements			
Wrist strap as worn		$7.5 \times 10^5 \leq Rg \leq 3.5 \times 10^7$	
Gloves and finger cots as worn		$7.5 \times 10^5 \leq R_g \leq 1 \times 10^{12}$	
Footwear as worn on metal plate		5×10^4 (1×10^5 per shoe) $\leq R_g \leq 1 \times 10^8$ See note 2	

Note 1 – There is no minimum value of resistance for the protection of ESDS. However, a minimum resistance value may be required for the protection for safety.
Note 2 – When the footwear/floor systems are used as the primary means of grounding personnel, the resistance of the combination shall be determined by the ESD co-ordinator, and is recommend to be between 7.5×10^5 Ω and 3.5×10^7 Ω
Note 3 – Maximum resistance to EPA ground values may be increased to ensure compliance with a resistance of 7.5×10^5 Ω minimum per 250 a.c. or 500 V d.c. (1×10^8 Ω nominal). The resistance shall have a minimum power rating of 1/4 W per 250 V a.c. or 500 Vd.c.
Note 4 – See IEC 61340-5-2.
Note 5 – Only mandatory where surface resistance, point-to-point resistance or resistance-to-groundable point > 10^{10} Ω or where material is of non-homogeneous woven or other construction containing insulating areas.
Note 6 – It is allowed, when approved by the ESD co-ordinator, to use surfaces which are “hard ground” i.e. less than 1×10^4 Ω to EPA ground.

USER GUIDE EPA MATERIAL SPECIFICATION
Appendix II

THE PACKAGING ESD

	INSIDE EPA		OUTSIDE EPA	
	INTIMATE	PROXIMITY	INTIMATE	PROXIMITY
ESDS	Either low-charging and electrostatic conductive or Low-charging and electrostatic dissipative (for powered ESDS only low charging and electrostatic dissipative above 1×10^8 Ω shall be used)	Low-charging and electrostatic discharge shielding or low-charging and electrostatic conductive or electronic dissipative	As for inside EPA	Electrostatic discharge shielding
Non-ESDS	Packaging suitable for ESDS or low charging		No requirements	

Note

Where surface resistance > 10^9 Ω is used the material shall be procured with charge decay characteristic of 10% of the initial value (maximum 1 000V) in less than 2s. It is allowed when approved by ESD co-ordinator, to use outer surfaces which are "hard ground" i.e. less than 1×10^4 Ω surface resistance.

Glossary of Terms

Intimate Packaging	Material which makes direct contact with ESD'S
Proximity Packaging	Material not making contact with ESD'S but which is used to enclose one or more devices
Electric Static Discharge Shielding	Barrier or enclosure that limits the passage of current and attenuates the energy resulting from an electrostatic discharge such that the maximum energy from 1000V human body model discharge is less than or equal to 50 nJ.
Electrostatic Conductive	Packaging with a surface resistance ≥1×10^2 Ω and < 1×10^5 Ω
Electrostatic Dissipative	Packaging with a surface resistance ≥ 1×10^5 Ω and < 1×10^{11} Ω

ECP SUGGESTED FORMAT FOR AUDIT REPORT

APPENDIX III

Report on audit of electrostatic protection facilities
Date.....Report No..... Previous Report No.....
Location .....
Operation .....
Date of Audit ..... Next Audit No.....

General
Protective procedures and practices for ESDS and equipment as required by IEC 61340-5-1 part were audited by.....Authority .....

Summary of Audit

Status Codes

SatisfactoryUnsatisfactoryNot Applicable

S1. Critical
2. Major N/A
3. Minor

Electrostatic Precautions audit check list	Status code	Rec Number
Notices, signs and labels		
Working surfaces and storage racks		
Floors		
Seating		
Garments		
Gloves and finger cots		
Wrist strap		
Footwear		
Ionizers		
Tools, machinery, dispensers and test equipment		
Trolleys and carts		
Grounding		
Electrostatic fields		
Field Work		
Working practices		
Packaging: availability		
Packaging: application		
Purchase: requirements		
Training: content		
Training: records		
Product: selection		
Checks: procedures		
Checks: record		

Electro Conductive Products

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