

# ELECTRIC SAFETY & EMERGENCY EQUIPMENT



Tab 12C

# ELECTRIC ARC-FLASH PROTECTION

## ELECTRIC ARC-FLASH PROTECTION

### ARC SUIT

Item Code
DSSB-SSE-ARC-S (M)

**Material Specification:**

- NFPA 70E - Standard for electrical safety requirements for employee workplaces.

**Washing Guide**

- Do not overload washer
- Use high water level
- Wash at temperature necessary to clean the garment. Maximum 165 deg.F, or 74 deg.C
- Use recommended amount of quality detergent (phosphate can be used).
- Do not use chlorine bleach or hydrogen peroxide either separately or in detergents.
- Do not use softeners or starch
- Do not use tallow soap, i.e., one containing animal fats.
- For optimum results when industrial laundering, use an acid sour.
- Softened water provides best results.



Arc Suit

**Our Protection ARC Suit + Flame Retardant Ratings**

Item	Voltages	ATPV Rating min. 8 cal/cm.sq HRC Level 2	ATPV Rating min. 45 cal/cm.sq HRC Level 4
1	LV	Yes	Yes
2	11 kV	-	Yes
3	33 kV	-	Yes

Note 1) I Hazard Risk Category Level (PPE Level)  
 2) I Arc Thermal Performance Value ( Cal/cm.sq. )

### ARC HOOD

Item Code
DSSB-SSE-ARC-HOOD



**ELECTRIC ARC FLASH PROTECTION**

## ELECTRIC ARC PROTECTION

### LOW VOLTAGE - SAFETY SHIRT

Item Code
DSSB-SSE-EAP-SHIRT

Type : Style 301  
 Weight : 7oz/sq yd ( 237 g/m2 )  
 Fabric blend : 88% Cotton / 12% High Tenacity Nylon  
 Color : Navy Blue , Royal Blue , Yellow , Green ,  
 Red , Orange  
 ATPV Rating : 8.7cal/cm<sup>2</sup>  
 PPE Level ( HRC ) : 2 ( Single Layer )



### Shirt Size Chart

Size	Shirt Length	Chest	Collar	Sleeve	Collar
2XS	26.0	38.0	14.5	22.0	17.0
XS	27.0	40.0	15.0	22.5	17.5
S	27.5	42.0	15.5	22.5	18.0
M	28.0	44.0	16.0	23.5	19.0
L	28.5	46.0	16.5	24.0	19.5
XL	29.0	48.0	17.0	24.5	20.0
2XL	29.5	50.0	17.5	25.0	20.5
3XL	29.5	52.0	18.0	25.5	21.5
4XL	30.0	54.0	18.0	26.0	21.5
5XL	30.0	56.0	18.5	26.0	22.0
6XL	31.0	58.0	19.0	27.0	23.0
7XL	31.0	60.0	19.0	27.0	23.0

Note :

- \* All measurement are in inches
- \* Tolerance level +/- 0.5 inches.



**ELECTRIC ARC FLASH PROTECTION**

## ELECTRIC ARC PROTECTION

### LOW VOLTAGE - SAFETY PANTS

Item Code
DSSB-SSE-EAP-PANTS

Size	Waist	Buttocks	Thigh	Crotch	Pant Length	Pant Bell
2XS	28.0	34.0	24.0	24.0	38.0	15.0
XS	30.0	36.0	24.0	24.0	38.0	15.0
S	32.0	37.0	25.0	25.0	39.0	16.0
M	34.0	39.0	26.0	26.0	39.0	16.0
L	36.0	41.0	27.0	27.0	40.0	16.0
XL	38.0	43.0	28.0	28.0	41.0	17.0
2XL	40.0	45.0	29.0	29.0	42.0	17.0
3XL	42.0	47.0	31.0	31.0	42.0	17.0
4XL	44.0	49.0	31.0	31.0	43.0	18.0
5XL	46.0	51.0	32.0	32.0	43.0	18.0
6XL	48.0	54.0	33.0	33.0	44.0	18.0
7XL	50.0	57.0	34.0	34.0	45.0	18.0



Note :

\* All measurement are in inches

\* Tolerance level +/- 0.5 inches.

### LOW VOLTAGE - SAFETY JACKET

Item Code
DSSB-SSE-EAP-JACKET

Size	Shirt Length	Chest	Collar	Sleeve	Shoulder
XS	25.0	40.0	15.0	22.5	17.5
S	25.5	42.0	15.5	22.5	18.0
M	26.0	44.0	16.0	23.5	19.0
L	26.5	46.0	16.5	24.0	19.5
XL	27.0	48.0	17.0	24.5	20.0
2XL	27.5	50.0	17.5	25.0	20.5
3XL	28.0	52.0	18.0	25.5	21.5
4XL	28.5	54.0	18.0	26.0	21.5
5XL	29.0	56.0	18.5	26.0	22.0
6XL	29.5	58.0	19.0	27.0	23.0
7XL	30.0	60.0	19.0	27.0	23.5



Note :

\* All measurement are in inches

\* Tolerance level +/- 0.5 inches.

## ELECTRIC ARC PROTECTION

Item Code
DSSB-SSE-EAPS-COVER

### Feature & Benefit:

- Triple stitches with FR thread
- 6 x 2" FR reflective
- FR properties will never wash
- Comfortable to wear
- Excellent after wash appearance

Material : 48% Modacrylic, 37% Lyocell, 15% P-Aramid  
 Grams : 197gsm, 238gsm  
 Comply : NFPA 2112, NFPA 70E HRC 2,  
 EN ISO 11612:2008, EN ISO 11611:2007  
 Size : S - 6XL



PHYSICAL PROPERTIES	TECASAFE PLUS 580	TECASAFE PLUS 580-A	TECASAFE PLUS 700	TECASAFE PLUS 700-A	TECASAFE PLUS 850-A	NFPA 70E Requirement		NFPA 2112 Requirement
						HRC1	HRC2	
FABRIC WEIGHT (±5%)	g/m <sup>2</sup>	197	197	238	238	288		
	oz/yd <sup>2</sup>	5.8	5.8	7.0	7.0	8.5		
FIBER BLEND	<i>fr-modacrylic, lyocell, aramid</i>							
ARC THERMAL PERFORMANCE VALUE (cal/cm <sup>2</sup> ) (ATPV) <small>ASTM F 1959</small>	6.5	5.7	9.0	10.1	10.2	5.0 min.	8.0 min.	
FLAME RESISTANCE <small>ASTM D 6413</small>								
Char Length (inches [warp x fill])	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	6.0 max	6.0 max	4.0 max
After Flame (seconds [warp x fill])	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0			2.0 max
THERMAL PROTECTIVE PROTECTION (cal/cm <sup>2</sup> )								
With Spacer	9.6	9.8	12.3	10.0	10.0			6.0 min
Without Spacer	6.6	6.5	10.9	7.5	8.0			3.0 min
FLASH FIRE EXPOSURE (Manikin Test) <small>ASTM F 1930</small> (% body burn [2 cal/cm <sup>2</sup> /sec] @ 3 sec)	23	32	15	23.5	19			50.0 max
TENSILE STRENGTH (lbs [warp x fill]) <small>ASTM D 5034</small>	114 x 85	105 x 80	135 x 85	135 x 85	145 x 90			
ELMENDORF TEAR STRENGTH (lbs [warp x fill]) <small>ASTM D 1424</small>	11 x 10	11 x 10	10 x 8	12 x 10	12 x 10			
DIMENSIONAL STABILITY (%[5x]) 120°F <small>AATCC 135</small>	≤ 3.0	≤ 3.0	≤ 3.0	≤ 3.0	≤ 3.0			
WICKING	0.5 inches	3.5	3.5	3.5	3.5			
1" strip, tap water (seconds)	1.0 inches	13.0	11.5	13.0	13.0	11.0		
	1.5 inches	29.0	28.0	29.0	29.0	29.0		
	2.0 inches	61.0	53.0	61.0	61.0	51.0		
PILLING RESISTANCE(%) 30 - 120 minute <small>ASTM D 3512</small>	*5	*5	*5	*4-5	*4-5			
THERMAL SHRINKAGE RESISTANCE (%[500°F, 5 minutes])	≤ 3.0	3.0	≤ 3.0	< 4.0	< 3.0			10.0 max

Ratings: \*5-Best, \*3-Acceptable, \*1-Poor

ELECTRIC ARC FLASH PROTECTION

**SUPERIOR COVERALL ELECTRICAL ARC & FLASH FIRE PROTECTION**

Sizes	S	M	L	XL	2XL	3XL	4XL	5XL	6XL
Collar	41	41	42	43	43	45	45	48	48
Shoulder	48	50	52	54	56	58	60	64	66
Chest	112	118	124	130	136	142	148	158	164
Waist	96	100	104	108	112	116	120	126	132
Back Length	43	47	51	55	59	61	63	64	65
Hip	108	114	120	126	132	138	144	150	156
Thigh	58	61	63	66	68	70	73	76	77
Pant Length	98	100	103	106	109	111	113	117	117
Sleeve Length	53.0	54.0	55.5	57.0	58.5	60.0	62.0	64.0	65.0
Cuff	26	26	27	27	28	28	28	30	32
Leg Opening	41	43	46	49	51	53	55	56	56



Colour Available:



**ELECTRIC ARC FLASH PROTECTION**

## FLAME RESISTANT BIB COVERALL

Item Code
DSSB-SSE-EAP-EIH

Level 4~ (11kV & 33kV) ARC Flash Protection Kit Set

- Outer Layer : Style 851 Sateen
- Inner Layer 1 : Style 851 Sateen
- Weight : 18.0 oz/sq yd (610g/m<sup>2</sup>)
- Fabric Blend : 87% Cotton, 12% High Tenacity Nylon and 1% Antistatic
- Colour : Navy Blue / Grey / Orange / Royal Blue
- Fabric : Westex Ultrasoft by Milliken
- ATPV Rating : 45.0 cal/cm<sup>2</sup>
- HRC's Level : 4 ( Double Layer)



Size	Body Lth		Bip Top Width		Waist	Buttocks	Thigh	Crotch	Pant Lth	Pant Bell
	Front	Back	Front	Back						
<b>XS</b>	13	11	11	11	30	36	24	24	37	16
<b>S</b>	14	12	11.5	11.5	32	37	25	25	38	17
<b>M</b>	14	12	12	12	34	39	26	26	38	17
<b>L</b>	15	13	12.5	12.5	36	41	27	27	39	18
<b>XL</b>	15	13	13	13	38	43	28	28	40	18
<b>2XL</b>	16	14	13.5	13.5	40	45	29	29	41	19
<b>3XL</b>	16	14	14	14	42	47	31	31	41	19
<b>4XL</b>	17	15	14.5	14.5	44	49	31	31	42	20
<b>5XL</b>	17	15	15	15	46	51	32	32	42	20

Note: All measurement are in inches  
Tolerance level ± 5 inches

**ELECTRIC ARC FLASH PROTECTION**

## RUBBER INSULATING GLOVES

Item Code	EN Special Properties	Description	Sizes
DSSB-SSE-GLOVE-C00	AZC	CLASS 00 2,500 Volt Tested 500 Volt Working	7 · 8 · 9 · 10 · 11 · 12
DSSB-SSE-GLOVE-C0	RC	CLASS 0 5,000 Volt Tested 1,000 Volt Working	7 · 8 · 9 · 10 · 11 · 12
DSSB-SSE-GLOVE-C1	RC	CLASS 1	7 · 8 · 9 · 10 · 11 · 12
	RC	10,000 Volt Tested	9 · 10 · 11 · 12
	RC	7,500 Volt Working	9 · 10 · 11 · 12
DSSB-SSE-GLOVE-C2	RC	CLASS 2	7 · 8 · 9 · 10 · 11 · 12
	RC	20,000 Volt Tested	9 · 10 · 11 · 12
	RC	17,000 Volt Working	9 · 10 · 11 · 12
DSSB-SSE-GLOVE-C3	RC	CLASS 3	9 · 10 · 11 · 12
	RC	30,000 Volt Tested	9 · 10 · 11 · 12
	RC	26,500 Volt Working	9 · 10 · 11 · 12
DSSB-SSE-GLOVE-C4	RC	CLASS 4	9 · 10 · 11 · 12
	RC	40,000 Volt Tested	9 · 10 · 11 · 12
	RC	36,000 Volt Working	9 · 10 · 11 · 12

Complies to : EN 60903 & ASTM D120

### EN Special Properties Category

Category	Resisting In
A	Acid
Z	Ozone
R	Acid, Oil & Ozone
C	Very Low Temperature



**ELECTRIC ARC FLASH PROTECTION**

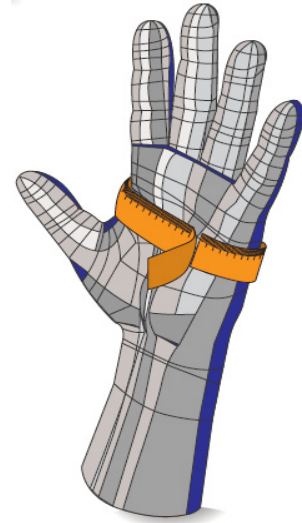
Please go to the next page for Glove size measurement info.



## GLOVE SIZE - MEASURING YOUR HAND

We recommend the Palm Measurement where you measure the circumference around the palm to determine the size of the glove. This would equate to the probable size of glove to select. Personal preference for tightness and finger length will ultimately determine the glove size that is deemed most comfortable. Allow for additional room if glove liners are to be worn.

EU Sizes	
152 - 178mm	EU - 6
171 mm	EU - 7
182 mm	EU - 8
192 mm	EU - 9
204 mm	EU - 10
215 mm	EU - 11
226 + mm	EU - 12



## LEATHER WORK GLOVES / OVERGLOVES

Item Code	Material	Used With	EN 388 Rating	Length	Size
DSSB-SSE-LPG-10	Goat Skin	<ul style="list-style-type: none"> <li>Class 00 - 0 Glove</li> <li>Zig-zag Elastic Wrist</li> </ul>	2121X	10"	7 - 12
DSSB-SSE-LPG-12	Goat Skin, Cowhide Gauntlet	<ul style="list-style-type: none"> <li>Class 1 - 2 Glove</li> <li>Nylon Strap with Buckle</li> </ul>		12"	7 - 12
DSSB-SSE-LPG-13	Goat Skin, Cowhide Gauntlet	<ul style="list-style-type: none"> <li>Class 3 - 4 Glove</li> <li>Nylon Strap with Buckle</li> </ul>		13"	9 - 12

Our leather protectors provide an extra layer of safety for rubber insulating gloves. They are used only for mechanical protection against abrasions, cuts, tears and punctures for rubber insulating gloves. It should always be worn over rubber insulating gloves when live working. Our leather protectors meet ASTM F696, EN 388 & EN 420 standards.

Our leather protectors are manufactured from top grade cowhide or goat skin. The uniqueness of our leather protectors is that it fits comfortably with the rubber insulating glove. A rubber insulating glove Size 9 will fit a leather protector Size 9.

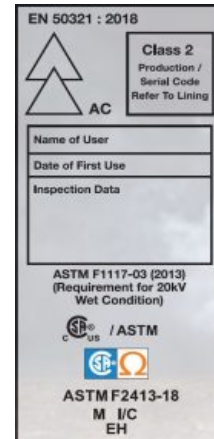


## CLASS 2 DIELECTRIC SAFETY BOOT

Item Code
DSSB-SSE-EAP-ESRS

Class 2 Dielectric Safety Boot are a new product which eliminates the need to wear a dielectric shoe along with an overshoe by combining both products into one shoe.

Our Class 2 Dielectric Safety Boot is tested up to 20kV and is also a certified Safety Shoe.



Colour	• Orange / Green
Size range	• Euro : 36-50
Type of Construction	• Vulcanized Rubber Upper and Sole
Last / Sole Patter	• VSV / SNV
Test / Application	• 20,000 VAC
Recommendation	<ul style="list-style-type: none"> <li>• For working environment with high voltage hazards</li> <li>• Power Station operations</li> <li>• Substation (Step-up / Step-Down / Distribution) Operations</li> <li>• Electrical Hazards with wet condition / water exposure)</li> <li>• Current Leakage Hazards</li> <li>• Ellectrical Installation</li> </ul>
Upper Construction	• Waterproof (Electrically Verified), Easy For Cleaning
Sole / Heel	• Good abrasion resistant for extra durability
Steel Toe Cap	• Epoxy coated toe cap for anti corrosion
Steel Shank	• Double ribbed ladder shank to improved midfoot stability and support
Chemical Resistance	• Sole & Upper - Resistant towards strong acids and alkalis
Lining Materials	• Comes with extra comfort and durability
Finishing	• Lacquer coating for weather protection
Product Certification	<ul style="list-style-type: none"> <li>• EN 20345 – Standards For Safety Footwear For Professional Use</li> <li>• EN 50321 – Live Working – Footwear for Electrical Protection – Insulating footwear and overboots</li> <li>• CSA Z195 – Protective Footwear</li> <li>• ASTM F-1117 – Standard Specification for Dielectric Footwear</li> <li>• ASTM F-2413- Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear</li> </ul>

**ELECTRIC ARC FLASH PROTECTION**

### ELECTRICAL INSULATED HELMET

<b>Item Code</b>
DSSB-SSE-EAP-EIH

Standard Compliance : ANSI Z89.1-2003 Type 1 certified  
 Helmet Colour : White ( Top )  
 Electrical : Class E  
 Voltage : 20,000 volts



### ELECTRICAL INSULATED HELMET

<b>Item Code</b>
DSSB-SSE-EAP-ASV

Color : Light Green  
 Material : Anti-Fog Molded Polycarbonate  
 UV Protection : 99.9%



### FLAME RESISTANT BALACLAVA

<b>Item Code</b>
DSSB-SSE-EAP-FRBL

Style : Style 131  
 Type : Rib Knit  
 Weight : 6.5 oz/sq yd  
 Fabric Blend : 87% Cotton, 12% High Tenacity Nylon and 1% Antistatic  
 Colour : Navy Blue  
 Fabric : Westex Ultrasoft by Milliken  
 ATPV Rating : 12.1 cal/cm2  
 HRC's Level : 2 (Single Layer)



### HARVIK 18kV ELECTRICAL SHOCK RESISTANT SHOE c/w STEEL TOE CAP

<b>Item Code</b>
DSSB-SSE-EAP-ESRS

- \*\* Withstand 18kV of life current at dry condition
- \*\* Fuel oil resistant sole suitable for inimical environment
- \*\* Slip resistant vulcanized rubber outsole
- \*\* Excellent abrasion resistant for extra durability
- \*\* Waterproof / Reinforced rubber

EURO SIZE	38	40	41	42	43
UK SIZE	5	6.5	7.5	8	9



**ELECTRIC ARC FLASH PROTECTION**

# Delta Sama Jaya Sdn.Bhd.



**DELTA SAMA JAYA**  
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We are constantly reviewing and updating our products,  
for the latest information please call us on (+603) 9281 3778  
or visit our website at: [www.substation.com.my](http://www.substation.com.my)