

**Adarga FR COA260 99% Algodón FR 1% antiestático
7.7 oz/yd2 - 260 gr/m2**

NFPA 2112 2023 Flame-resistant Clothing for
Protection of Industrial Personnel Against Short-
duration Thermal (Component) QGWB2.MH66100

Este resumen de pruebas de laboratorio ha sido estructurado para facilitar su comprensión. A continuación, se presenta una relación que describe los numerales de la norma NFPA 2112 abordados en el documento:

- Ficha técnica.
- Certificado de cumplimiento (Certificate of Compliance).
- Condiciones de aceptabilidad.
- Sección 8.5 Prueba de maniquí instrumentado.
- Sección 8.3 Prueba de resistencia a la flama ASTM D6413.
- Sección 8.4 Prueba de resistencia al calor y al encogimiento térmico.
- Sección 8.2 Prueba de transferencia de calor (HTP or TPP).
- Listado de los productos marca Escudeo como aparecen en la pagina oficial de UL Product iQ <https://productiq.ulprospector.com/en/search?term=Escudeo>

Los informes de pruebas que verá a continuación han sido elaborados siguiendo los métodos y protocolos establecidos por la norma NFPA 2112. Cada resultado de prueba se presenta de manera clara y precisa, proporcionando una evaluación completa del desempeño de la tela ignífuga marca Adarga FR.

Esperamos que este informe de pruebas brinde la información necesaria para respaldar su confianza en la calidad y el cumplimiento de nuestras telas con la norma NFPA 2112. Si requiere información técnica adicional enviar un correo electronico a techsupport@escudeo.com

Adarga FR COA260

Tela dril ignífuga (Cotton FR Fabric)

SKU: FBFRCOA260150
SKU: FBFRCOA260W160

Especificaciones técnicas

Composición: 99% algodón FR / 1% antiestático
Peso: 260 g/m² (+/-5) / 7,7 oz/y²
Ancho útil: COA260 149 cm mínimo
 COA260 W 157 cm mínimo
Tejido: 3/1 sarga / twill
No. de hilos: 20 * 16
Garantía: Desempeño térmico durante la vida útil de la prenda.

Recomendaciones de uso



Overol liviano



Camisa



Pantalón liviano

Certificaciones y métodos de prueba



2112



MH66100



F1959

Desempeño térmico

Características	Resultados prueba	Métodos de prueba
Desempeño térmico por arco eléctrico (ATPV)	11 cal/cm ²	ASTM F1959
Porcentaje quemaduras de 2° y 3° grado (maniquí)	11%	ASTM F1930
Resistencia al calor (500°F, 5min)	Cumple	NFPA 2112
Longitud de carbonización después de 100 ciclos de lavado y secado, ≤ 100mm.	Urdimbre: 88mm / trama: 89mm	ASTM D 6413 / NFPA 2112 Sección 8.1
Autoextinción de la llama	2 segundos máximo	ASTM D 6413
Resistencia al encogimiento térmico	No ignición, no goteo, no separación. Contracción máxima 10%.	NFPA 2112 Sección 8.4

Propiedades físicas

Características	Urdimbre	Trama	Métodos de prueba
Resistencia al rasgo	22,5N	21,7N	ASTM - 1424
Resistencia a la tensión	924N	573N	191 A 5104
Cambio dimensional (después del quinto lavado)	-1,8%	-1,9%	191 A 5041

Recomendaciones de lavado



Lavado a máquina o manual a 60°C (140°F) máximo



No usar cloro o lejía



Secar a baja temperatura



Planchado a temperatura media 2 puntos 150°C (300°F) máximo



No se puede limpiar en seco

Adarga FR COA260

Tela dril ignífuga (Cotton FR Fabric)

SKU: FBFRCOA260150

SKU: FBFRCOA260W160

Colores de alta rotación



Azul oscuro



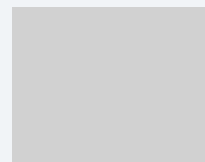
Azul rey



Azul medio



Gris medio



Gris claro



Naranja



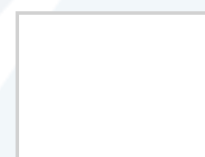
Rojo



Verde oscuro



Caqui



Blanco

Los datos especificados corresponden a materiales que fueron probados por laboratorios independientes certificados que Escudeo considera confiables. Sin embargo, Escudeo no puede garantizar que no haya variaciones con respecto a los valores reales de cada lote de producción. Pueden existir ligeras variaciones entre los resultados de las pruebas realizadas bajo los métodos de prueba americanos, británicos e ISO.

Escudeo garantiza el desempeño térmico de la tela durante toda la vida útil de la prenda, cuando se siguen las instrucciones de cuidado, uso y mantenimiento.

Esta tela fue diseñada para ser resistente a la llama y para la fabricación de prendas de protección ignífugas que complementan los equipos de protección personal. Se pueden usar en una o múltiples capas, pero no deben ser utilizados para la fabricación de prendas de protección primaria, como por ejemplo, la extinción de incendios u otros productos sometidos a una exposición repetida o prolongada al calor o llama.

CERTIFICATE OF COMPLIANCE

Certificate Number MH66100
Report Reference MH66100-20230123
Issue Date 2023-JUNE-30

Issued to: ESCUDEO LLC
325 OCEAN DR APT 405
MIAMI BEACH, FL 33139-6960
UNITED STATES

**This certificate confirms that
representative samples of**

Component – Flame-Resistant Clothing for Protection of
Industrial Personnel Against Short-Duration Thermal
Exposures from Fire

Refer to Page 2 of this Certificate for UL Recognized
Products

Have been evaluated by UL in accordance with the
component requirements in the Standard(s) indicated on
this Certificate. UL Recognized components are incomplete
in certain constructional features or restricted in
performance capabilities and are intended for installation in
complete equipment submitted for investigation to UL LLC.

Standard(s) for Safety:

NFPA 2112, Standard on Flame-Resistant Clothing for
Protection of Industrial Personnel Against Short-Duration
Thermal Exposures from Fire, Edition 2023

Additional Information:

See UL Product iQ® at <https://iq.ulprospector.com> for
additional information.

This Certificate of Compliance indicates that representative samples of the product described in the certification
report have met the requirements for UL certification. It does not provide authorization to apply the UL Recognized
Component Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing
surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified
and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product. |

Deborah Jennings-Conner

Deborah Jennings-Conner, VP Regulatory Services

UL LLC

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contact UL Customer Service at <http://ul.com/aboutul/locations/>



CERTIFICATE OF COMPLIANCE

Certificate Number MH66100
Report Reference MH66100-20230123
Issue Date 2023-JUNE-30

This is to certify that representative samples of the product as specified on this Certificate were tested according to the requirements of standard(s) listed on this Certificate.

Certified Outer Shell Fabrics:

Style Designation	Nominal Weight (oz/yd ²)	Material Composition	Weave/Knit	Finish
CO240	7.0	100% Cotton	Twill	FR
CO305	9.0	100% Cotton	Satin	FR
CO440D	13.0	100% Cotton Denim	Twill	FR
CO510D	15.0	100% Cotton Denim	Twill	FR
CN240	7.0	88% Cotton/ 12% Nylon	Twill	FR
CN240R	7.0	88% Cotton/ 12% Nylon	Ripstop	FR
CN305	9.0	88% Cotton/ 12% Nylon	Twill	FR
COA260	7.7	99% Cotton/ 1% Antistatic	Twill	FR
CO205I	6.0	100% Cotton	Interlock	FR
CO405F	12.0	100% Cotton	Single Side Fleece	FR
CO240I	7.0	100% Cotton	Interlock	FR

Certified Other Textile Materials:

Style Designation	Nominal Weight (oz/yd ²)	Material Composition	Weave/Knit	Finish
CO170P	5.0	100% Cotton	Plain	FR
CS405R	12.0	95% Cotton/5% Elastane	Rib Knit	FR

Deborah Jennings-Conner

Deborah Jennings-Conner, VP Regulatory Services

UL LLC

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Certificate Number: 0509141-1

Date: 2023-06-26

UL CONDITIONS OF ACCEPTABILITY

Company Name: ESCUDEO LLC

File-CCN: MH66100 – QGWB2

Product Description: Textile fabrics for use in flame-resistant clothing for protection of industrial personnel against short-duration thermal exposures from fire

Models: CO240, CO305, COA260, CN240, CN305, CN240R, CO440D, CO510D, CO170P, CO205I, CO405F, CS405R, CO240I.

Conditions Of Acceptability:

- For use only in flame-resistant clothing for protection of industrial personnel against short-duration thermal exposures from fire, and workwear for protection against hydrocarbon flash fire certified for Canada. The acceptability of these textiles for use in any other type of clothing has not been investigated.

Ratings:

*NFPA 2112-2023 Edition

*Fabric Style Designation	Average HTP Rating (cal/cm ²)				Average Predicted Body Burn Rating (%)
	As Received Contact	After Laundering Contact	As Received Spaced	After Laundering Spaced	
* CN240	9.3	9.8	9.3	10.4	11
* CN305	10.3	11.1	10.4	11.9	7
* CO240	9.2	9.4	9.4	9.6	12
*CO305	10.9	12.2	11.5	12.9	7
* CO205I	9.6	9.7	10.1	10.3	11
* CO405F	16.4	17.5	17.7	18.5	7
* CO510D	15.8	16.5	13.5	17.5	7
* COA260	9.8	10.5	10.7	10.7	11

* CO240I	10.1	10.4	10.9	11.3	15
* CN240R	9.2	10.0	9.5	10.2	14
* CO440D	15.1	15.2	15.9	15.8	7

Nomenclature:

N/A

MANIKIN TEST (CONT'D)	NFPA 2112-2023, SECTION 8.5
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ID	Item Type	Garment and Barrier Face Covering Fabric - Standard Coveralls	
H1-H3	Description	Cotton FR Fabric, 7.7 osy, 99% Cotton/ 1% Antistatic, Twill, FR Treatment	
	Report ID	230321Q, 230321R, 230321S	
FABRIC UTILIZED IN MANIKIN COVERALL SAMPLES IS FROM THE SAME LOT AS FABRIC SUBJECTED TO FLAME RESISTANCE TESTING [YES/NO]			YES
DO SPECIMENS COMPLY WITH THE REQUIREMENTS OF THE STANDARD [YES/NO]			YES

Conditioning	Specimen	Predicted Percent Total Body Burn
After 1 Laundering	1	9.84
	2	11.48
	3	11.48
	Average	11
Requirement		<u><</u> 50
All individual results not greater than 55 percent Total Body Burn		Y
Requirement		Y

Coverall Specimen	Maximum Breakopen Measurement (mm)	Total # of Breakopens
1	NA	0
2	NA	0
3	NA	0
Requirement	≤25 mm	N/A

FLAME RESISTANCE TEST (CONT'D)	NFPA 2112-2023, SECTION 8.3
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ID	Item Type	Garment, Hood, and Barrier Face Covering Outer Shell Materials
H	Description	Cotton FR Fabric, 7.7 osy, 99% Cotton/ 1% Antistatic, Twill, FR Treatment
	Color	Royal Blue
DO SPECIMENS COMPLY WITH THE REQUIREMENTS OF THE STANDARD [YES/NO]		YES

Nominal Weight (oz/yd ²)		7.70	Measured Weight +20/-10% of Nominal Weight [Y/N]			Y	
Measured Weight (oz/yd ²)		8.74	Tearing Force Applied (g)			200	
Conditioning	Specimen	Warp (Wales)			Fill (Courses)		
		Afterflame (s)	Char Length (mm)	Melt and Drip [Y/N]	Afterflame (s)	Char Length (mm)	Melt and Drip [Y/N]
As Received	1	0.33	54	N	0.34	56	N
	2	0.36	52	N	0.36	64	N
	3	0.35	59	N	0.31	75	N
	4	0.31	64	N	0.34	77	N
	5	0.35	72	N	0.41	76	N
	Average	0	60	N/A	0	70	N/A
Requirement		≤ 2	≤ 100	N	≤ 2	≤ 100	N
After 100 Launderings	1	0.30	64	N	0.33	70	N
	2	0.25	74	N	0.27	66	N
	3	0.18	77	N	0.31	74	N
	4	0.33	68	N	0.28	72	N
	5	0.30	70	N	0.34	77	N
	Average	0	71	N/A	0	72	N/A
Requirement		≤ 2	≤ 100	N	≤ 2	≤ 100	N
Significance and Use of Measured Weight:							
The results are considered to be applicable to the sample only and not necessarily to the lot from which the sample was taken. This measurement is not recommended for acceptance testing of commercial shipments.							

HEAT AND THERMAL SHRINKAGE RESISTANCE TEST
(CONT'D)

NFPA 2112-2023, SECTION 8.4

ID	Item Type	Garment, Hood, and Barrier Face Covering Fabrics
H	Description	Cotton FR Fabric, 7.7 osy, 99% Cotton/ 1% Antistatic, Twill, FR Treatment
	Color	Royal Blue
DO SPECIMENS COMPLY WITH THE REQUIREMENTS OF THE STANDARD [YES/NO]		YES

Conditioning	Specimen	Warp Percent Shrinkage			Average Percent Shrinkage	Fill Percent Shrinkage			Average Percent Shrinkage
		1	2	3		1	2	3	
As Received	1	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
	2	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
	3	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Average					-1	Average			-1
Requirement					≥ -10	Requirement			≥ -10
After 3 Launderings	1	-1.0	-1.0	-1.0	-1.0	0.0	0.0	0.0	0.0
	2	-1.0	-1.0	-1.0	-1.0	0.0	0.0	0.0	0.0
	3	-1.0	-1.0	-1.0	-1.0	0.0	0.0	0.0	0.0
Average					-1	Average			0
Requirement					≥ -10	Requirement			≥ -10
Conditioning	As Received				After 3 Launderings				
Observation [Y/N]	Specimen	1	2	3	Specimen	1	2	3	
	Melt and Drip	N	N	N	Melt and Drip	N	N	N	
	Separate	N	N	N	Separate	N	N	N	
	Ignite	N	N	N	Ignite	N	N	N	
Requirement		N	N	N		N	N	N	

Positive values indicate increase in dimensions. Negative values indicate shrinkage.

HEAT TRANSFER PERFORMANCE TEST (HTP) (CONT'D)

NFPA 2112-2023, SECTION 8.2

ID	Item Type	Garment, Hood, and Barrier Face Covering Fabrics/Composites	
G	Description	C10015, 15.0 osy, 100% Cotton Denim, Twill, FR Treatment	
	Color	Denim	
DO SPECIMENS COMPLY WITH THE REQUIREMENTS OF THE STANDARD [YES/NO]			YES

Specimen	Contact Test HTP Rating				Spaced Test HTP Rating			
	As Received		After 3 Launderings		As Received		After 3 Launderings	
	cal/cm ²	J/cm ²	cal/cm ²	J/cm ²	cal/cm ²	J/cm ²	cal/cm ²	J/cm ²
1	15.4	64.4	16.6	69.5	12.4	52.0	17.6	74.0
2	16.5	69.0	16.6	69.5	13.4	56.0	17.2	72.0
3	15.6	65.3	16.4	68.6	14.6	61.0	17.6	74.0
Average	15.8	66.1	16.5	69.0	13.5	56.0	17.5	73.0
Requirement	NA	≥ 12.6	NA	≥ 12.6	NA	≥ 25	NA	≥ 25
Individuals within 10% of Average [Y/N]	Y		Y		Y		Y	
Requirement	Y		Y		Y		Y	

ID	Item Type	Garment, Hood, and Barrier Face Covering Fabrics/Composites	
H	Description	Cotton FR Fabric, 7.7 osy, 99% Cotton/ 1% Antistatic, Twill, FR Treatment	
	Color	Royal Blue	
DO SPECIMENS COMPLY WITH THE REQUIREMENTS OF THE STANDARD [YES/NO]			YES

Specimen	Contact Test HTP Rating				Spaced Test HTP Rating			
	As Received		After 3 Launderings		As Received		After 3 Launderings	
	cal/cm ²	J/cm ²	cal/cm ²	J/cm ²	cal/cm ²	J/cm ²	cal/cm ²	J/cm ²
1	9.7	40.6	10.4	43.5	10.6	44.0	11.1	46.0
2	9.7	40.6	10.7	44.8	10.8	45.0	10.3	43.0
3	10.0	41.8	10.5	43.9	10.7	45.0	10.8	45.0
Average	9.8	41.0	10.5	43.9	10.7	45.0	10.7	45.0
Requirement	NA	≥ 12.6	NA	≥ 12.6	NA	≥ 25	NA	≥ 25
Individuals within 10% of Average [Y/N]	Y		Y		Y		Y	
Requirement	Y		Y		Y		Y	

Flame-resistant Clothing for Protection of Industrial Personnel Against Short-duration Thermal Exposures from Fire - Component

COMPANY

Escudeo LLC
325 Ocean Dr Apt 405
Miami Beach, FL 33139-6960 United States

MH66100

Components used in flame resistant clothing for protection of industrial personnel against short duration thermal exposures from fire certified to ANSI/NFPA 2112 (2023)

Model Dsg	Description
Cold Weather Insulation Materials	
ALA-MTI325	9.6 osy, Facecloth BlazeArmor 150, 4.5 osy, Aramid/Lenzing FR/Anti-static, Plain Weave, Quilted to 100% Modacrylic Batting
Hardware	
Buttesc FR 20L	FR Plastic
Buttesc FR 24L	FR Plastic
Buttesc FR 28L	FR Plastic
Buttesc FR 32L	FR Plastic
MAML10	Size 10. Open/Closed type(quick release or not). Brass chain, Stops/Box and Pin, Slider(nonlock/autolock). 1 or 2-way. Nomex/Aramid tape
MAML3	Size 3. Open/Closed type(quick release or not). Brass chain, Stops/Box and Pin, Slider(nonlock/autolock). 1 or 2-way. Nomex/Aramid tape
MAML4	Size 4. Open/Closed type(quick release or not). Brass chain, Stops/Box and Pin, Slider(nonlock/autolock). 1 or 2-way. Nomex/Aramid tape
MAML8	Size 8. Open/Closed type(quick release or not). Brass chain, Stops/Box and Pin, Slider(nonlock/autolock). 1 or 2-way. Nomex/Aramid tape
MAPO10	Size 10.Open/Closed type(quick release or not). FR Plastic chain, Stops/Box and Pin. FR Plastic/Brass/Zinc Alloy Slider. 1 or 2-way. Nomex/Aramid tape
MAPO3	Size 3. Open/Closed type(quick release or not). FR Plastic chain, Stops/Box and Pin. FR Plastic/Brass/Zinc Alloy Slider.1 or 2-way. Nomex/Aramid tape
MAPO4	Size 4. Open/Closed type(quick release or not). FR Plastic chain, Stops/Box and Pin. FR Plastic/Brass/Zinc Alloy Slider.1 or 2-way. Nomex/Aramid tape
MAPO5	Size 5. Open/Closed type(quick release or not). FR Plastic chain, Stops/Box and Pin. FR Plastic/Brass/Zinc Alloy Slider.1 or 2-way. Nomex/Aramid tape
MAPO8	Size 8. Open/Closed type(quick release or not). FR Plastic chain, Stops/Box and Pin. FR Plastic/Brass/Zinc Alloy Slider. 1 or 2-way. Nomex/Aramid tape
Other Textiles	
CO170P	5.0 osy, 100% Cotton, Plain Weave with FR Treatment
CS405R	12.0 osy, 95% Cotton/ 5% Elastane, Rib Knit with FR Treatment
Reflective Striping	

Feedback

FR-SGRHTT-HW	Continuous Retroreflective Silver Heat Transfer, Any Width
FR-SGRHTT-HW Segmented	Segmented Retroreflective Silver Heat Transfer, Any Width
FR-SGRSOT-HW	Continuous Retroreflective Silver, Any Width
FR-YSRsOT-HW Aramid	Fluorescent Yellow-Green Trim with a Silver Retroreflective Stripe in the Center, Any Width
FR-YSRsOT-HW Cotton	Fluorescent Yellow-Green Trim with a Silver Retroreflective Stripe in the Center, Any Width
Shell Textiles	
ALA150	4.5 osy, Aramid/Lenzing FR/Anti-static, Plain Weave
ALA185	5.5 osy, Lenzing FR/Aramid/Anti-static, Twill Weave
ALA213	6.3 osy, Lenzing FR/Aramid/Anti-static, Twill Weave
CN240	7.0 oz/yd2, 88% Cotton/ 12% Nylon, Twill Weave with FR Treatment
CN240R	7.0 oz/yd2, 88% Cotton/ 12% Nylon, Ripstop Weave with FR Treatment
CN305	9.0 oz/yd2, 88% Cotton/ 12% Nylon, Twill Weave with FR Treatment
CO205I	6.0 oz/yd2, 100% Cotton, Interlock with FR Treatment
CO240	7.0 oz/yd2, 100% Cotton, Twill Weave with FR Treatment
CO240I	7.0 oz/yd2, 100% Cotton, Interlock with FR Treatment
CO305	9.0 oz/yd2, 100% Cotton, Satin Weave with FR Treatment
CO405F	12.0 oz/yd2, 100% Cotton, Single Sided Fleece with FR Treatment
CO440D	13.0 oz/yd2, 100% Cotton Denim, Twill Weave with FR Treatment
CO510D	15.0 oz/yd2, 100% Cotton Denim, Twill Weave with FR Treatment
COA260	7.7 oz/yd2, 99% Cotton/ 1% Antistatic, Twill Weave with FR Treatment
MPA150	4.5 osy, Meta-Aramid/Para-Aramid/Anti-static, Twill Weave
MPA205	6.0 osy, Meta-Aramid/P-Aramid/Anti-static, Plain Weave
MX230	6.8 osy, Modacrylic (Protex)/Lenzing Cellulosic Fiber/Aramid/Anti-Static, Knit
Thread	
FR-MAZ	100% Meta-Aramid, Any Size
FR-PAZ	100% Para-Aramid, Any Size

Marking: Company name, model designation and the Recognized Component Mark,  on the tag or ticket attached to each roll of material.

Last Updated on 2023-06-29

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