TEST REPORT

2022EP0471

DATE OF RECEPTION
24/03/2022

DATE TESTS
Starting: 24/03/2022
Ending: 27/04/2022

IDENTIFICATION AND DESCRIPTION OF SAMPLES

REFERENCES
FABRIC INTERLOCK IFR

According to information supplied by the customer:

Sample reference: Interlock IFR
Internal Product code: 900288/0000
Composition and percentages: Modacrylic 60%, Cotton 38% and Anti-static 2%
Weight: 250 gsm
Color: Navy Blue

Testing on behalf of:

TEXAMERI S.A.
ALDO A MAIDANA
AV. ANGEL TORCUATO DE ALVER 1787
1611 DON TORCUATO BUENOS AIRES
ARGENTINA

TESTS CARRIED OUT

- SAMPLE IDENTIFICATION.
- PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING.
- HEAT TRANSFER EVALUATION OF FLAME RESISTANT MATERIALS.
- FLAME RESISTANCE OF TEXTILES (VERTICAL TEST).
- HEAT RESISTANCE.

Tests marked with * are not included within the scope of the ENAC accreditation.

ENSAYO ISO 17025 Nº12 / LE025

RESULTS

SAMPLE IDENTIFICATION

Reference
Fabric Interlock IFR

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RESULTS

PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING

Standard
AATCC 135:2018

Standard deviation

Reference
Sample 1 Fabric Interlock IFR

Washing machine
13373I12

Washing cycles
25

Washing procedure
IV

Dryer machine
Whirlpool 13098I12

Drying procedure
Aiii

Washing powder
AATCC 1993 WOB

Start and finish date
30/03/2022 - 04/04/2022

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RESULTS

PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING

Standard
NFPA 2112:2018 point 8.1.3

Standard deviation

Reference
Sample 1 Fabric Interlock IFR

Equipment
Pilllerin Milnor Washing Machine 13197I12

Washing procedure
Normal

Washing cycles
100

Drying procedure
Tumble dryer

Washing powder
Tergitol 15-S-9 13157N12 + Sodium Metasilicate 13158N12 + Sodium Tripolyphosphate 13206N12 + Sodium Silicofluoride 13245N12

Dry mass of the samples	Counterweight mass	Equipment
0,23 Kg	6,70 Kg	Lavadora Pellerin Milnor 13197I12

Start and finish date test
28/03/2022 - 12/04/2022

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RESULTS

PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING

Standard
NFPA 2112:2018 point 8.1.3

Standard deviation

Reference
Sample 1 Fabric Interlock IFR

Equipment
Pilllerin Milnor Washing Machine 13197I12

Washing procedure
Normal

Washing cycles
3

Drying procedure
Tumble dryer

Washing powder
Tergitol 15-S-9 13157N12 + Sodium Metasilicate 13158N12 + Sodium Tripolyphosphate 13206N12 + Sodium Silicofluoride 13245N12

Dry mass of the samples	Counterweight mass	Equipment
0,400 Kg	8,600 Kg	Lavadora Pellerin Milnor 13197I12

Start and finish date test
28/03/2022 - 28/03/2022

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RESULTS

HEAT TRANSFER EVALUATION OF FLAME RESISTANT MATERIALS

Standard
ASTM F2700-08(2013) modified by NFPA 2112:2018 sec.8.2

Apparatus
Thermal Protective Performance Tester 403-05

Testing date
30/03/2022

Conditioned
24h in indoor ambient conditions at (21 ± 2) ºC and (65 ± 5) % RH

Sample layers
1

Sample description
Navy blue knitted fabric

Pre-Treatment
As received

Radiant incident heat flux
10,64 kW/m^2

Total incident heat flux
82,6 kW/m^2

Specimen mounting
Relaxed

Weight of material as tested
264 g/m^2

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RESULTS

Reference
Fabric Interlock IFR

Position of the sensor to the specimen
Contact

Specimen	HTP (J/cm^2)	TPP (cal/cm^2)
1	32,77	7,83
2	34,02	8,13
3	33,29	7,95
Average	**33,36**	**7,97**

Visual examination and evaluation

Property	1	2	3
Melting	No.	No.	No.
Dripping	No.	No.	No.
Break open	No.	No.	No.
Charring	Slight, evident charring.	Slight, evident charring.	Slight, evident charring.
Embrittlement	Moderate, small hardened areas.	Moderate, small hardened areas.	Moderate, small hardened areas.
Ignition	Moderate, dark smoke.	Moderate, dark smoke.	Moderate, dark smoke.
Shrinkage	No.	No.	No.
Sticking	No.	No.	No.

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RESULTS

Reference

Fabric Interlock IFR

Position of the sensor to the specimen

Spaced

Specimen	HTP (J/cm^2)	TPP (cal/cm^2)
1	53,85	12,86
2	55,25	13,19
3	53,69	12,82
Average	**54,26**	**12,96**

Visual examination and evaluation

Property	1	2	3
Melting	No.	No.	No.
Dripping	No.	No.	No.
Break open	No.	No.	No.
Charring	Significant char and embrittlement.	Significant char and embrittlement.	Significant char and embrittlement.
Embrittlement	Significant, specimen completely embrittles.	Significant, specimen completely embrittles.	Significant, specimen completely embrittles.
Ignition	Significant, thick blackish smoke.	Significant, thick blackish smoke.	Significant, thick blackish smoke.
Shrinkage	No.	No.	No.
Sticking	No.	No.	No.

Remark

The uncertainty of the assay of Thermal Protective Performance is ±8,3% of the value measured, for a coverage factor of K=2 [95%].

PERFORMANCE LEVEL ACCORDING TO NFPA 2112:2018 PASS

Requirements to be met according to NFPA 2112:2018 sec.7.1.1

The spaced HTP rating shall be not less than 25 J/cm^2 (6,0 cal/cm^2) and a contact HTP rating shall not be less than 12.6 J/cm^2 (3,0 cal/cm^2)

Remark

These results have been obtained by means of a test method intended solely to classify the set of materials and materials not necessarily applicable to the actual conditions of fire or inflammation.

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RESULTS

HEAT TRANSFER EVALUATION OF FLAME RESISTANT MATERIALS

Standard
ASTM F2700-08(2013) modified by NFPA 2112:2018 sec.8.2

Apparatus
Thermal Protective Performance Tester 403-05

Testing date
30/03/2022

Conditioned
24h in indoor ambient conditions at (21 ± 2) ºC and (65 ± 5) % RH

Sample layers
1

Sample description
Navy blue knitted fabric

Pre-Treatment
3 washing cycles at 66ºC, according to NFPA 2112:2018 point 8.1.3, and tumble drying at 68ºC.

Radiant incident heat flux
10,64 kW/m^2

Total incident heat flux
82,61 kW/m^2

Specimen mounting
Relaxed

Weight of material as tested
275 g/m^2

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RESULTS

Reference
Fabric Interlock IFR

Position of the sensor to the specimen
Contact

Specimen	HTP (J/cm^2)	TPP (cal/cm^2)
1	38,29	9,15
2	40,10	9,58
3	37,09	8,86
Average	**38,49**	**9,20**

Visual examination and evaluation

Property	1	2	3
Melting	No.	No.	No.
Dripping	No.	No.	No.
Break open	No.	No.	No.
Charring	Slight, evident charring.	Slight, evident charring.	Slight, evident charring.
Embrittlement	Moderate, small hardened areas.	Moderate, small hardened areas.	Moderate, small hardened areas.
Ignition	Moderate, dark smoke.	Moderate, dark smoke.	Moderate, dark smoke.
Shrinkage	No.	No.	No.
Sticking	No.	No.	No.

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RESULTS

Reference

Fabric Interlock IFR

Position of the sensor to the specimen

Spaced

Specimen	HTP (J/cm^2)	TPP (cal/cm^2)
1	57,70	13,78
2	58,61	14,00
3	63,71	15,22
Average	**60,01**	**14,33**

Visual examination and evaluation

Property	1	2	3
Melting	No.	No.	No.
Dripping	No.	No.	No.
Break open	No.	No.	No.
Charring	Significant char and embrittlement.	Significant char and embrittlement.	Significant char and embrittlement.
Embrittlement	Significant, specimen completely embrittles.	Significant, specimen completely embrittles.	Significant, specimen completely embrittles.
Ignition	Significant, thick blackish smoke.	Significant, thick blackish smoke.	Significant, thick blackish smoke.
Shrinkage	No.	No.	No.
Sticking	No.	No.	No.

Remark

The uncertainty of the assay of Thermal Protective Performance is ±8,3% of the value measured, for a coverage factor of K=2 [95%].

PERFORMANCE LEVEL ACCORDING TO NFPA 2112:2018 PASS

Requirements to be met according to NFPA 2112:2018 sec.7.1.1

The spaced HTP rating shall be not less than 25 J/cm^2 (6,0 cal/cm^2) and a contact HTP rating shall not be less than 12.6 J/cm^2 (3,0 cal/cm^2)

Remark

These results have been obtained by means of a test method intended solely to classify the set of materials and materials not necessarily applicable to the actual conditions of fire or inflammation.

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RESULTS

FLAME RESISTANCE OF TEXTILES (VERTICAL TEST)

Standard
ASTM D6413 / D6413M:15 modified by NFPA 2112:2018 sec.8.3

Apparatus
Test cabinet for vertical flammability

Original and after pre-treatment test date
29/03/2022 - 19/04/2022

Conditioned
24h in indoor ambient conditions at (21 ± 3) ºC and (65 ± 5) % RH

Original and after pre-treatment ambient conditions test
20,6ºC and 50,0% RH - 23,8ºC and 46,5% RH

Face exposed to the flame
Edge: Outer

Tested material

Sample size
75 mm x 305 mm

Flame contact time
12 s

Deviation from the standard

Reference
Fabric Interlock IFR

>>>

RESULTS

Pre-Treatment As received

Orientation of the specimen
Lengthwise

Specimen	After flame time (s)	Afterglow time (s)	Melting and Dripping	Char Length (mm)
1	0	12,4	No	96,0
2	0	8,6	No	89,6
3	0	10,0	No	92,8
4	0	10,0	No	89,6
5	0	8,0	No	92,8
Average	**0**	**9,8**	**No**	**92,8**

Orientation of the specimen
Crosswise

Specimen	After flame time (s)	Afterglow time (s)	Melting and Dripping	Char Length (mm)
1	0	10,4	No	92,8
2	0	10,8	No	92,8
3	0	9,6	No	83,2
4	0	11,0	No	92,8
5	0	10,0	No	86,4
Average	**0**	**10,4**	**No**	**89,6**

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RESULTS

Pre-Treatment 100 washing cycles at 66ºC, according to NFPA 2112:2018 point 8.1.3, and tumble drying at 68ºC.

Orientation of the specimen

Lengthwise

Specimen	After flame time (s)	Afterglow time (s)	Melting and Dripping	Char Length (mm)
1	0	10,8	No	102,4
2	0	11,4	No	89,6
3	0	12,8	No	99,2
4	0	10,4	No	89,6
5	0	13,4	No	102,4
Average	**0**	**11,8**	**No**	**96,0**

Orientation of the specimen

Crosswise

Specimen	After flame time (s)	Afterglow time (s)	Melting and Dripping	Char Length (mm)
1	0,0	11,6	No	99,2
2	0	11,4	No	96,0
3	0	13,6	No	89,6
4	0	12,2	No	102,4
5	0	14,2	No	99,2
Average	**0**	**12,6**	**No**	**96,0**

Remark

The uncertainty of the assay of flame resistance of textiles (vertical test) is ±2% of the value measured, for a coverage factor of K=2 (95%).

REMARK

Time values of each sample, are recorded to the nearest 0,2 s. Char length values are calculated to the nearest 3,2 mm

PERFORMANCE LEVEL ACCORDING TO NFPA 2112:2018	**PASS**

Requirements to be met according to NFPA 2112:2018

a) No specimen shall give flaming or molten debris
b) The mean value of after flame time shall be ≤ 2 s
c) The mean value of char length shall be ≤ 100 mm

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RESULTS

HEAT RESISTANCE

Standard
ASTM_F2894:2014 modified according to NFPA 2112:2018 sec.8.4

Apparatus
Air stove

Temperature
(260 +6/-0) ºC

Length of the test
5 min (+0,15/-0) min

Deviation from the Standard

Pre-Treatment
As received.

Tested material
Navy blue knitted fabric.

Reference
Fabric Interlock IFR

_____>>>

RESULTS

Fabric					
Flame	**Melting**	**Dripping**	**Separation**	**Direction**	**Shrink (-)** **Elongation (+)**
No	No	No	No	Lengthwise Crosswise	---% ---%
No	No	No	No	Lengthwise Crosswise	---% ---%
No	No	No	No	Lengthwise Crosswise	---% ---%
			Average	**Lengthwise %** **Crosswise %**	**#---# %** **#---# %**

Remark

The uncertainty of the assay of Heat Resistance is ±8% of the value measured, for a coverage factor of K=2 (95%).

PERFORMANCE LEVEL ACCORDING TO NFPA 2112:2018	**NO PASS**

Remark

After exposure to Heat Resistance the fabric becomes very brittle and cannot be measured.

Requirements to meet according to NFPA 2112:2018

a) No layer can ignite.
b) No layer can melt or drip.
c) No layer can separate.
d) Any layer shrink more than 10%.

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RESULTS

HEAT RESISTANCE

Standard
ASTM_F2894:2014 modified according to NFPA 2112:2018 sec.8.4

Apparatus
Air stove

Temperature
(260 +6/-0) ºC

Length of the test
5 min (+0,15/-0) min

Deviation from the Standard

Pre-Treatment
3 washing cycles at 66ºC, according to NFPA 2112:2018 point 8.1.3, and tumble drying at 68ºC.

Tested material
Navy blue knitted fabric.

Reference
Fabric Interlock IFR

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RESULTS

Fabric					
Flame	**Melting**	**Dripping**	**Separation**	**Direction**	**Shrink (-)** **Elongation (+)**
No	No	No	No	Lengthwise Crosswise	---% ---%
No	No	No	No	Lengthwise Crosswise	---% ---%
No	No	No	No	Lengthwise Crosswise	---% ---%
			Average	**Lengthwise %** **Crosswise %**	**#---# %** **#---# %**

Remark

The uncertainty of the assay of Heat Resistance is ±8% of the value measured, for a coverage factor of K=2 (95%).

PERFORMANCE LEVEL ACCORDING TO NFPA 2112:2018	**NO PASS**

Remark

After exposure to Heat Resistance the fabric becomes very brittle and cannot be measured.

Requirements to meet according to NFPA 2112:2018

a) No layer can ignite.
b) No layer can melt or drip.
c) No layer can separate.
d) Any layer shrink more than 10%.

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RESULTS

HEAT RESISTANCE

Standard
ASTM_F2894:2014 modified according to NFPA 2112:2018 sec.8.4

Apparatus
Air stove

Temperature
(260 +6/-0) ºC

Length of the test
5 min (+0,15/-0) min

Deviation from the Standard

Pre-Treatment
25 washing cycles at 66ºC, according to NFPA 2112:2018 point 8.1.3, and tumble drying at 68ºC.

Tested material
Navy blue knitted fabric.

Reference
Fabric Interlock IFR

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RESULTS

Fabric					
Flame	**Melting**	**Dripping**	**Separation**	**Direction**	**Shrink (-)** **Elongation (+)**
No	No	No	No	Lengthwise Crosswise	---% ---%
No	No	No	No	Lengthwise Crosswise	---% ---%
No	No	No	No	Lengthwise Crosswise	---% ---%
			Average	**Lengthwise %** **Crosswise %**	**#---# %** **#---# %**

Remark

The uncertainty of the assay of Heat Resistance is ±8% of the value measured, for a coverage factor of K=2 (95%).

PERFORMANCE LEVEL ACCORDING TO NFPA 2112:2018	**NO PASS**

Remark

After exposure to Heat Resistance the fabric becomes very brittle and cannot be measured.

Requirements to meet according to NFPA 2112:2018

a) No layer can ignite.
b) No layer can melt or drip.
c) No layer can separate.
d) Any layer shrink more than 10%.

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Lucia Martinez
Head of PPE and Ballistics department

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TEST REPORT

2022EP0469

DATE OF RECEPTION
24/03/2022

DATE TESTS
Starting: 24/03/2022
Ending: 07/04/2022

IDENTIFICATION AND DESCRIPTION OF SAMPLES

REFERENCES
FABRIC INTERLOCK IFR

According to information supplied by the customer:

Sample reference: Interlock IFR
Internal Product code: 900288/0000
Composition and percentages: Modacrylic 60%, Cotton 38% and Anti-static 2%
Weight: 250 gsm
Color: Navy Blue

Testing on behalf:

TEXAMERI S.A.
ALDO A MAIDANA
AV. ANGEL TORCUATO DE ALVER 1787
1611 DON TORCUATO BUENOS AIRES
ARGENTINA

TESTS CARRIED OUT

- SAMPLE IDENTIFICATION.
- PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING.
- LIMITED FLAME SPREAD.
- BURSTING RESISTANCE.
- DETERMINING OF HEAT TRANSMISSION ON EXPOSURE TO FLAME.
- RADIANT HEAT.
- CHARGE DECAY.
- ELECTRIC ARC TEST.

Rev.1 *This revision cancels and replaces the previous*
Omission of information

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*Tests marked with * are not included within the scope of the ENAC accreditation*

RESULTS

SAMPLE IDENTIFICATION

Reference
Fabric Interlock IFR

_____///

Rev.1 This revision cancels and replaces the previous

RESULTS

PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING

Standard
ISO 6330:2012

Standard deviation

Reference
Sample1 Fabric Interlock IFR

Units 1

Equipment Wascator 13096E12

Washing procedure 4N **Washing cycles** 5

Drying procedure
A (vertical drying)

Washing powder
ECE detergent 98 + sodium perborate + TAED

Units	Dry mass of the samples	Counterweight mass	Equipment
1	1,770 Kg	0,200 Kg of Polyester	Wascator 13096E12

Start and finish date
28/03/2022 - 31/03/2022

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Rev.1 This revision cancels and replaces the previous

RESULTS

LIMITED FLAME SPREAD

Standard
EN ISO 15025:2016 (Method A)

Apparatus
Equipment for determination of limited flame spread 13008IE12

Original and after pre-treatment test date
06/04/2022 - 31/03/2022

Conditioned
24h in indoor ambient conditions at (20 ± 2) ºC and (65 ± 5) % RH

Original and after pre-treatment ambient conditions test
16,8ºC and 46,7% RH - 17,1ºC and 46,2% RH

Gas used
Propane gas

Deviation from the standard

Face exposed to the flame
Surface: Outer

Tested material
Grey knitted fabric.

Reference
Fabric Interlock IFR

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Rev.1 This revision cancels and replaces the previous

RESULTS

Pre-Treatment As received

Specimen	1	2	3	4	5	6
Direction		Warp			Weft	
Flaming to top or either side edge	No	No	No	No	No	No
After flame time (s)	0	0	0	0	0	0
Afterglow time (s)	0	0	0	0	0	0
Loose waste	No	No	No	No	No	No
Inflammation of the filter paper detached from waste	No	No	No	No	No	No
Hole formation	No	No	No	No	No	No

Pre-Treatment 5 washing cycles at 40ºC, according to standard EN ISO 6330:2012, method 4N and type A drying (line dry)

Specimen	1	2	3	4	5	6
Direction		Warp			Weft	
Flaming to top or either side edge	No	No	No	No	No	No
Post- After flame (s)	0	0	0	0	0	0
Afterglow time (s)	0	0	0	0	0	0
Loose waste	No	No	No	No	No	No
Inflammation of the filter paper detached from waste	No	No	No	No	No	No
Hole formation	No	No	No	No	No	No

Remark

The uncertainty of the assay of limited flame spread is ±2% of the value measured, for a coverage factor of K=2 (95%).

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Rev.1 This revision cancels and replaces the previous

RESULTS

PERFORMANCE LEVEL ACCORDING TO EN ISO 11612:2015	A1

PERFORMANCE LEVEL ACCORDING TO IEC 61482-2:2018	PASS

Requirements to be met according to standard EN ISO 11612:2015

a) No specimen must ignite toward the top or toward the edges
b) No specimen shall give hole formation of 5 mm or greater in any direction
c) No specimen shall give flaming or molten debris
d) Afterflame time shall be ≤ 2 s
e) Afterglow time shall be ≤ 2 s

Requirements to be met according to IEC 61482-2:2018, point 4.3.3.2. Table 1 – Single-layer material:

a) No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge
b) No specimen shall give flaming or molten debris
c) No specimen shall give hole formation of 5 mm or greater in any direction
d) Afterglow time shall be ≤ 2 s
e) Afterflame time shall be ≤ 2 s

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Rev.1 This revision cancels and replaces the previous

RESULTS

LIMITED FLAME SPREAD

Standard
EN ISO 15025:2016 (Method B)

Apparatus
Equipment for determination of limited flame spread 13008IE12

Original and after pre-treatment test date
06/04/2022 - 06/04/2022

Conditioned
24h in indoor ambient conditions at (20 ± 2) ºC and (65 ± 5) % RH

Original and after pre-treatment ambient conditions test
21,4ºC and 40,5% RH - 21,8ºC and 39,6% RH

Gas used
Propane gas

Deviation from the standard

Face exposed to the flame
Edge: Hemmed fabric specimen

Tested material
Grey knitted fabric.

Reference
Fabric Interlock IFR

_____>>>

Rev.1 This revision cancels and replaces the previous

RESULTS

Pre-Treatment As received

Specimen	1	2	3	4	5	6
Direction		Lengthwise			Crosswise	
Flaming to top or either side edge	No	No	No	No	No	No
After flame time (s)	0	0	0	0	0	0
Afterglow time (s)	0	0	0	0	0	0
Melting	No	No	No	No	No	No
Loose waste	No	No	No	No	No	No
Inflammation of the filter paper detached from waste	No	No	No	No	No	No
Hole formation	No	No	No	No	No	No

Pre-Treatment 5 washing cycles at 40ºC, according to standard EN ISO 6330:2012, method 4N and type A drying (line dry)

Specimen	1	2	3	4	5	6
Direction		Lengthwise			Crosswise	
Flaming to top or either side edge	No	No	No	No	No	No
After-flame time (s)	0	0	0	0	0	0
Afterglow time (s)	0	0	0	0	0	0
Melting	No	No	No	No	No	No
Loose waste	No	No	No	No	No	No
Inflammation of the filter paper detached from waste	No	No	No	No	No	No
Hole formation	No	No	No	No	No	No

Remark

The uncertainty of the assay of limited flame spread is ±2% of the value measured, for a coverage factor of K=2 (95%).

PERFORMANCE LEVEL ACCORDING TO EN ISO 11612:2015	A2

Requirements to be met according to standard EN ISO 11612:2015

a) No specimen must ignite toward the top or toward the edges
b) No specimen shall give flaming or molten debris
c) The afterflame time is ≤ 2 s
d) The afterglow time is ≤ 2 s

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Rev.1 This revision cancels and replaces the previous

RESULTS

BURSTING RESISTANCE

Standard
EN ISO 13938-1:2019 EN ISO 13938-2:2019

Apparatus
Eclatómetro JAMES HEAL

Conditioning date	31/03/2022	**Test date**	04/04/2022

Atmosphere for conditioning testing

Temperature	(20±2) ºC	**Relative humidity**	(65±4) %

Test surface
50 cm²

Test conditions
Dry specimens

Test duration
(20±5) s.

Number of specimens

Tested	5	**Rejected**	0

Bursting in the proximity of the clamps
0

Observations
Breakage in one direction

Previous treatment
5 washing cycles at 40ºC, according to standard EN ISO 6330:2012, method 4N and type A drying (line dry)

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Rev.1 This revision cancels and replaces the previous

RESULTS

Reference

Fabric Interlock IFR

Bursting distension (mm)	Bursting strength (kPa)	
33,3	242,2 240 227,6 244,2 255,4	242

Remark

The relative expanded uncertainty of Bursting resistance according to standard EN ISO 13938-1:2019 is ±8% assay value of the measured, for a probability of coverage of 95%.

The test standard EN ISO 13938-1:2019 hydraulic equipment used and the EN ISO 13938-2: 2019 pneumatic equipment usually reach 800kPa. Both standards specify that there is no significant difference between the two teams to 800kPa.

REQUISITE ACCORDING TO STANDARD EN ISO 11612:2015

The minimum bursting resistance has to be ≥ 100 KPa.

PASS

REQUISITE ACCORDING TO STANDARD IEC 61482-2:2018

The minimum bursting resistance has to be ≥ 100 KPa.

PASS

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Rev.1 This revision cancels and replaces the previous

RESULTS

DETERMINING OF HEAT TRANSMISSION ON EXPOSURE TO FLAME

Standard
ISO 9151:2016

Apparatus
Convective heat

Heat flux density
80,01 kW/m^2

Pre-Treatment
5 washing cycles at 40ºC, according to standard EN ISO 6330:2012, method 4N and type A (line dry)

Conditioned
24h in indoor ambient conditions at (20 ± 2) ºC and (65 ± 5) % RH

Ambient conditions test
20,2 ºC and 41,6 % RH

Deviation from the Standard

Test date
04/04/2022

Tested material
Grey knitted fabric.

_____>>>

Rev.1 This revision cancels and replaces the previous

RESULTS

Reference	Specimen	Range HTI[a] 12 values(s)	Range HTI[a] 24 values(s)
Fabric Interlock IFR	1	3,9	5,6
	2	3,9	5,8
	3	3,9	5,7
	Classification value	**3,9**	**5,6**
	Average	**3,9**	**5,7**

Remark

The uncertainty of the assay of Convective heat is ±4% of the value measured, for a coverage factor of K=2 (95%).

PERFORMANCE LEVEL ACCORDING TO EN ISO 11612:2015	B1

Results in according with standard EN ISO 11612:2015

Performance level	Range of HTI[a] 24 values (s) Minimum Maximum
B1	4,00 < 10,0
B2	10,0 < 20,0
B3	20,0
[a]: Heat transfer index, as defined in ISO 9151:1995	

These results have been obtained according by a test method intended solely to rank the material and are not necessarily applicable to actual fire conditions.

_____///

Rev.1 This revision cancels and replaces the previous

RESULTS

RADIANT HEAT

Standard
EN ISO 6942:2002, method B

Apparatus
Equipment for the determination of radiant heat

Heat flux density
19,96 kW/m^2

Pre-Treatment
5 washing cycles at 40ºC, according to standard EN ISO 6330:2012, method 4N and type A drying (line dry)

Conditioned
24h in indoor ambient conditions at (20 ± 2) ºC and (65 ± 5) % RH

Ambient conditions test
20,2 ºC and 41,6 % RH

Deviation from the Standard

Test date
04/04/2022

Tested material
Gre knitted fabric.

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Rev.1 This revision cancels and replaces the previous

RESULTS

Reference	Fabric Interlock IFR		
Specimen	Heat transfer index RHTI 12(s)	Heat transfer index RHTI 24(s)	TF(%)
1	8,1	14,3	54,3
2	8,1	14,2	54,3
3	8,2	14,5	52,6
Classification value	**8,1**	**14,2**	**54,3**
Average	**8,1**	**14,3**	**53,7**

Remark

The uncertainty of the assay of Radiant heat is ±3% of the value measured, for a coverage factor of K=2 (95%).

PERFORMANCE LEVEL ACCORDANCE WITH STANDARD EN ISO 11612:2015 C1

Results in accordance with Standard EN ISO 11612:2015

Performance level	Range of RHTI[a] 24 values
C1	Minimum Maximum 7,0 < 20,0
C2	20,0 < 50,0
C3	50,0 < 95,0
C4	95,0

Heat transfer index, as defined in EN ISO 6942:2002

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Rev.1 This revision cancels and replaces the previous

RESULTS

CHARGE DECAY

Standard
EN 1149-3:2004 (Method 2, induction charging)

Conditioned
24h environmental conditions to (23 ± 1) ºC and (25 ± 5) % RH

Ambient conditions test
23,0 ºC and 26,5 % RH

Test method used
Induction charge (Test method 2)

Potential applied
(1200 ± 50) V in 30 µs

Time measurement
30 s

Deviation from the Standard

Tested material
Grey knitted fabric.

Measurement uncertainty
Shielding factor: ± 0,02
t_{50}: ± 0,01 s

_____>>>

RESULTS

Pre-Treatment

5 washing cycles at 40ºC, according to standard EN ISO 6330:2012, method 4N and type A drying (line dry)

Reference	Fabric Interlock IFR	
Specimen	**Decay half time (s)** t_{50}	**Shielding factor (units)** **S**
1	< 0,01	0,55
2	< 0,01	0,56
3	< 0,01	0,57
Average	**< 0,01**	**0,56**

ACCORDING TO STANDARD EN 1149-5:2018	**PASS**

ACCEPTANCE CRITERION ACCORDING TO EN 1149-3:2004 AND EN 1149-5:2018, METHOD INDUCTION CHARGING

t_{50}< 4s or S > 0,2

Where, t_{50}= decay half time
S = shielding factor

Start and finish test date

01/04/2022 - 04/04/2022

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Rev.1 This revision cancels and replaces the previous

RESULTS

ELECTRIC ARC TEST

Standard	EN 61482-1-2: 2014 Pt 4.1 equivalent to IEC 61482-1-2: 2014 Pt 4.1
Principle of the Box test method for materials	Determine the behaviour of materials against to thermal risk when exposed to heat energy from electric arc with specific characteristics Materials performance for this procedure is determined from the amount of the heat transmitted through the specimen and other thermal parameters
Sample type	Knitted fabric, navy blue colour with a weight according to the customer of 250 g/m²

Test conditions	
Class	Class 1
Testing atmosphere	23,10 ºC 32,30 % RH
Test current I_{class} for class 1	4 kA ± 5%
Calibration test current	3981,38 A
Average direct exposure incident energy E_{io}	171,28 kJ/m^2
Arc duration	500 ms ± 5%
Average real arc duration	507,35 ms
Test voltage	400 V ± 5%
Average real test voltage	392,08 V
Average real Arc Energy W_{arc}	182,27 kJ

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Rev.1 This revision cancels and replaces the previous

RESULTS

ELECTRIC ARC TEST

Test conditions	
Gap between electrodes	(30 ± 1) mm
Distance between the electrodes and sample	(300 ± 5) mm

Electrodes type
Electrodes Cu/Al

Measurement uncertainty

Temperature	17% of the measured value in ºC
Equivalent energy	17% of the measured value in kJ/m^2
Time	± 0,390 s

Technician performing the test
David Lazaro

Person verifying the test report
Lucía Martinez

Pre-treatment
5 washing cycles at 40ºC, according to standard EN ISO 6330:2012, method 4N; and vertical drying (A)

Pre-conditioning of the test specimens
24h. in indoor ambient conditions between (18-28)ºC and between (45-75)% RH

Starting and ending pre-conditioning date
04/04/2022 - 06/04/2022

Observation or deviation of the standard

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Rev.1 This revision cancels and replaces the previous

RESULTS

ELECTRIC ARC TEST

Testing date 06/04/2022
Reference Fabric Interlock IFR

VISUALLY OBTEINED DATA

Property	Measurement	Specimen 1	Specimen 2	Specimen 3	Specimen 4
	Class	1	1	1	1
Burning time	Video	0,00 s	0,00 s	0,00 s	0,00 s
Hole formation >5mm	Visual	No	No	No	No
Melting through to the inner side	Visual	No	No	No	No
Embrittlement	Visual	No	No	No	No
Damage on the outside	Visual	No	No	No	No
Charring on the outside	Visual	Yes	Yes	Yes	Yes
Dripping	Visual	No	No	No	No
Shrinkage	Calculated	No	No	No	No

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Rev.1 This revision cancels and replaces the previous

RESULTS

ELECTRIC ARC TEST

Reference
Fabric Interlock IFR

COMPUTER OBTEINED DATA

Class 1				
Property	**Specimen 1**	**Specimen 2**	**Specimen 3**	**Specimen 4**
Transmitted incident energy E_{it}	57,84 kJ/m^2	61,26 kJ/m^2	65,19 kJ/m^2	58,71 kJ/m^2
Time to delta peak temperature t_{max}	29,79 s	29,87 s	29,67 s	29,96 s
Delta peak temperature ΔT_p	10,48 ºC	11,10 ºC	11,81 ºC	10,64 ºC
Differences ΔEi of the transmitted energy values to the Stoll limit value at t_{max}	-76,55 kJ/m^2	-73,23 kJ/m^2	-69,04 kJ/m^2	-75,90 kJ/m^2
Maximum difference between the transmitted energy E_{it} to the Stoll energy E_{iSTOLL} in t_i (1)	-36,55 kJ/m^2	-38,28 kJ/m^2	-34,01 kJ/m^2	-34,09 kJ/m^2
Excess of the Stoll curve by the heat curve of the transmitted incident energy E_{it} (t)	No	No	No	No

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Rev.1 This revision cancels and replaces the previous

RESULTS

ELECTRIC ARC TEST

Remark

t_i is the time where the difference between the transmitted incident energy E_{it} and the Stoll Energy E_{iSTOLL} is maximum.

(1) Interpretation: In negative value, a higher difference implies a better behavior. In positive value, a less difference implies a better behavior, considering that the material fails the test.

IN ACCORDANCE WITH THE ACEPTANCE CRITERIA ACCORDING TO EN 61482-1-2:2014 PT 4.1, FOR CLASS 1 **PASS**

CATEGORY OF ARC THERMAL PROTECTION ACCORDING TO IEC 61482-2:2018	**(2)APC 1**

Remark

(2)Arc Protection Class
The arc protection class is characterized by the test energy level of arc exposure (arc energy and incident energy)

Requirement for the standard compliance EN 61482-1-2:2014

a) Burning time ≤ 5 s.
b) No melting through to the inner side.
c) No hole bigger than max. 5 mm. in any direction in the innermost layer.
d) All four pairs of values (E_{it} - t_{max}) are below corresponding Stoll values, and all four heat curves E_{it} (t) of transmitted energy are at any moment of time "t" of the exposure period below Stoll curve.

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RESULTS

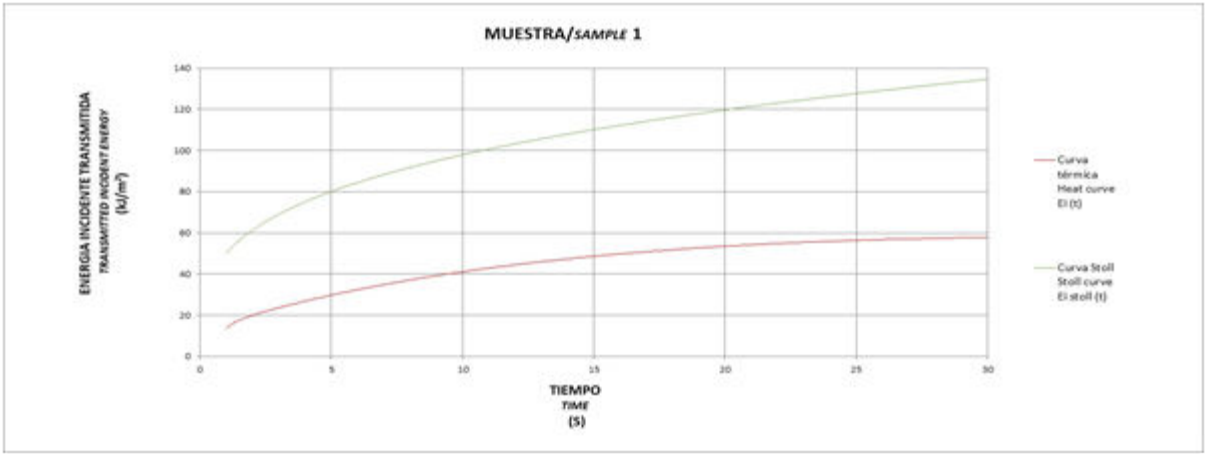
ELECTRIC ARC TEST

STOLL CURVES

Specimen 1

Reference

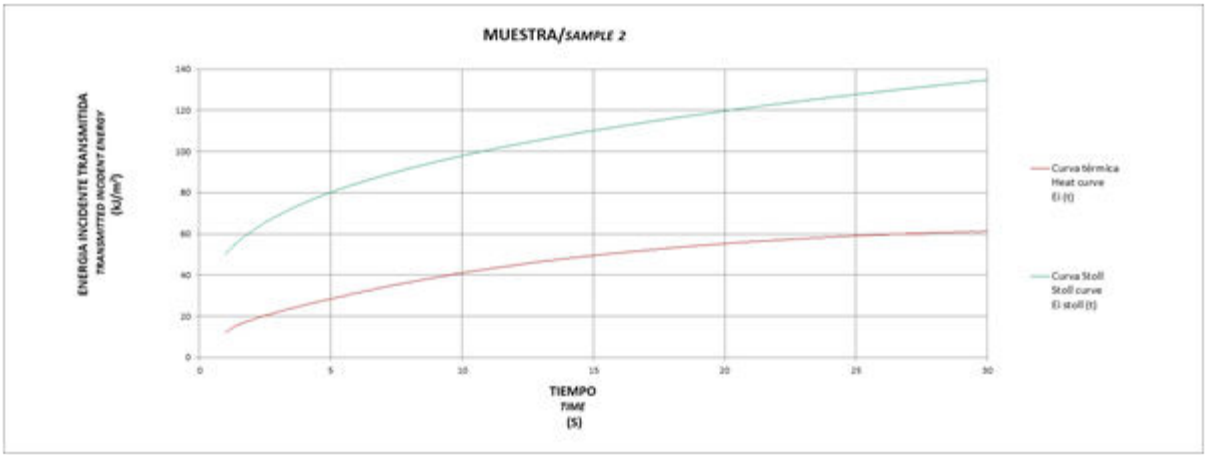
1- Fabric Interlock IFR



Specimen 2

Reference

2- Fabric Interlock IFR



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Rev.1 This revision cancels and replaces the previous

RESULTS

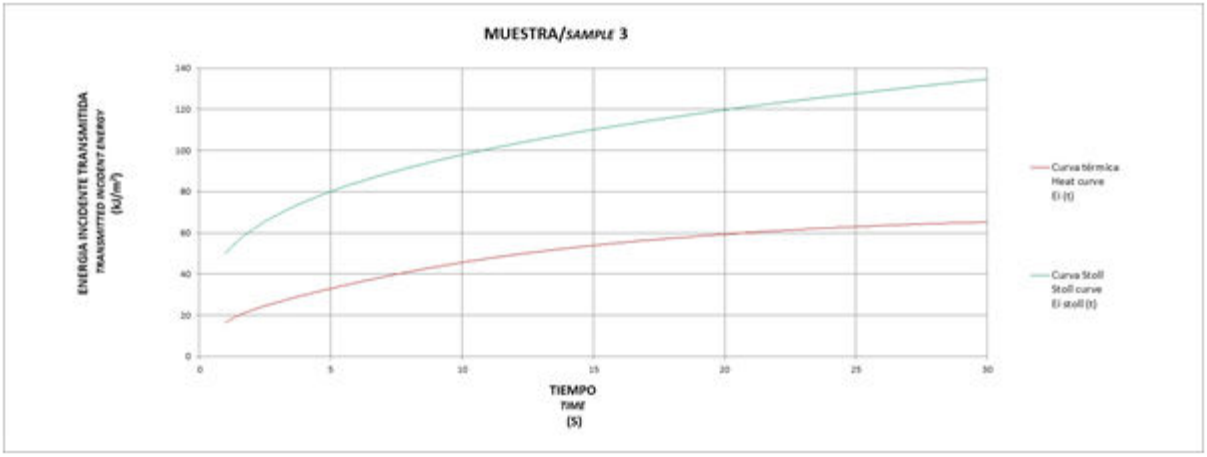
ELECTRIC ARC TEST

STOLL CURVES

Specimen 3

Reference

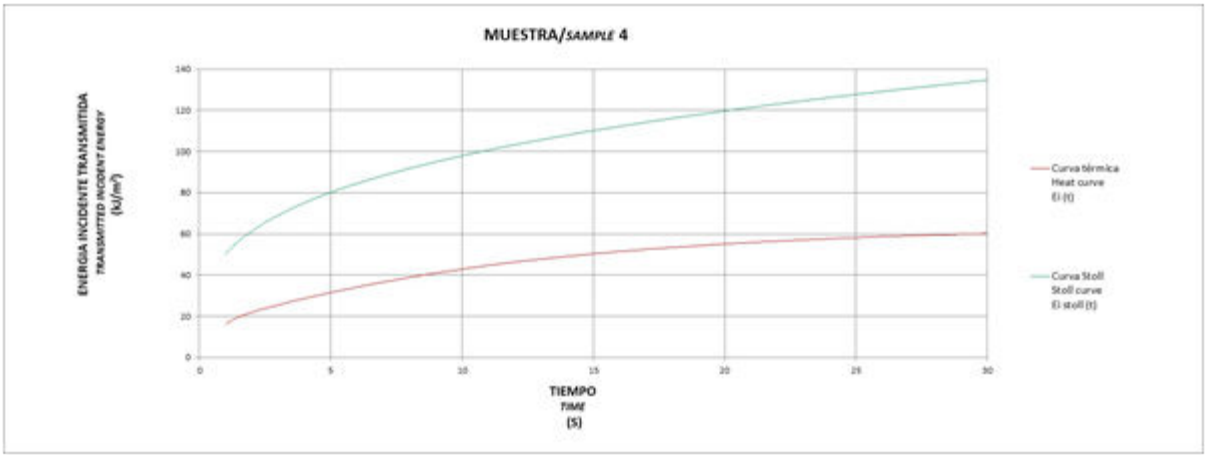
3- Fabric Interlock IFR



Specimen 4

Reference

4- Fabric Interlock IFR



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RESULTS

ELECTRIC ARC TEST

Reference

Fabric Interlock IFR

Original material

Tested material

Remark

The electric arc test is performed in: Cr. Villaviciosa de Odón a Móstoles (M-856) Km. 1,5 Móstoles 28935.

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Rev.1 This revision cancels and replaces the previous

Lucia Martinez
Head of PPE and Ballistics department

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TEST REPORT

2022EP0470

DATE OF RECEPTION
24/03/2022

DATE TESTS
Starting: 24/03/2022
Ending: 13/04/2022

IDENTIFICATION AND DESCRIPTION OF SAMPLES

REFERENCES
Fabric Interlock IFR

According to information supplied by the customer:

Sample reference: Interlock IFR
Internal Product code: 900288/0000
Composition and percentages: Modacrylic 60% Cotton 38% Anti-static 2%
Weight: 250gsm
Color: Navy Blue

Testing on behalf:

TEXAMERI S.A.
ALDO A MAIDANA
AV. ANGEL TORCUATO DE ALVER 1787
1611 DON TORCUATO BUENOS AIRES
ARGENTINA

TESTS CARRIED OUT

- PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING.
- MASS PER UNIT AREA.
- DETERMINATION OF THE ARC RATING (ELIM, ATPV AND / *OR EBT) OF CLOTHING MATERIALS AND OF PROTECTIVE CLOTHING USING AN OPEN ARC.*

The test was carried out at Polígono Industrial Fuente del Jarro. C/ Ciudad de Gibraltar, 5; 46988 – Paterna (Valencia); which property is shared at 50% between research institutes AITEX and ITE.

Rev.1 *This revision cancels and replaces the previous*
Omission of information

AITEX - Plaza Emilio Sala, 1 - E-03801 ALCOY (Alicante) SPAIN Tel.:+34 96 554 22 00 www.aitex.es info@aitex.es

*Tests marked with * are not included within the scope of the ENAC accreditation*

RESULTS

SAMPLE IDENTIFICATION

Reference
Fabric Interlock IFR

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RESULTS

PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING

Standard
ISO 6330:2012

Standard deviation

Reference
Sample1 Fabric Interlock IFR

Units	1	2
Equipment	Wascator 13470E05	Wascator 13471E05

Washing procedure 4N **Washing cycles** 5

Drying procedure
A (vertical drying)

Washing powder
ECE detergent 98 + sodium perborate + TAED

Units	Dry mass of the samples	Counterweight mass	Equipment
1	1,915 Kg		Wascator 13470E05
2	1,200 Kg	0,800 Polyester	Wascator 13471E05

Start and finish date
28/03/2022 - 30/03/2022

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RESULTS

MASS PER UNIT AREA

Standard
EN 12127:1997; pto. 8.3

Conditioning date 30/03/2022 **Test date** 31/03/2022

Atmosphere for conditioning testing
Temperature (20±2) ºC **Relative humidity** (65±2) %

Fabric type
Knnited fabric

State of the specimens
Washed

Previous treatment

5 washing cycles at 40ºC, according to standard EN ISO 6330:2012, method 4N and type A drying (line dry)

Reference	Mass per unit area (g/m^2)	CV (%)
Fabric Interlock IFR	276	1,44

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RESULTS

DETERMINATION OF THE ARC RATING (ELIM, ATPV AND/OR EBT) OF CLOTHING MATERIALS AND OF PROTECTIVE CLOTHING USING AN OPEN ARC

Standard

IEC 61482-1-1: 2019 Material test (Procedure A)

Test results

The test program includes minimum of twenty individual panel arc trials.

The following test data was recorded for each trial:

Arc exposure electrical conditions: arc trial number, RMS arc current, peak arc current, arc voltage, arc duration, energy dissipated in arc, plots of arc current and arc voltage.
Temperature rise response from two monitor sensors for each panel in each trial, plot of average responses from two monitor sensors.
Pictures after arc exposure.
Video

Essential test data and test results are presented in the following pages as follows:

Arc rating: ATPV or E_{BT50} or ELIM or both and plots of the burn injury probability (ATPV) or break open probability (E_{BT50}) or both versus Ei.
Test specimen description and order of layer.
Distance from an arc center line to the panel surface.
Subjective evaluation.
Pictures after arc exposure.
Ignition probability value (if determined during testing).

_____>>>

RESULTS

Test conditions	
Date test	12/04/2022
Arc current	(8 ± 0,5) kA
Stainless steel electrodes, gap of the electrodes	(300 ± 5) mm
Distance between the electrodes and sample	(300 ± 5) mm
Distance between the electrodes and monitor sensors	(340 ± 5) mm
Fuse wire	0.5 mm
Number of samples tested	21
Starting and ending conditioning date	11/04/2022-12/04/2022
Conditioning	24 h; 21 ± 2ºC, 65 ± 5% HR.

_____>>>

RESULTS

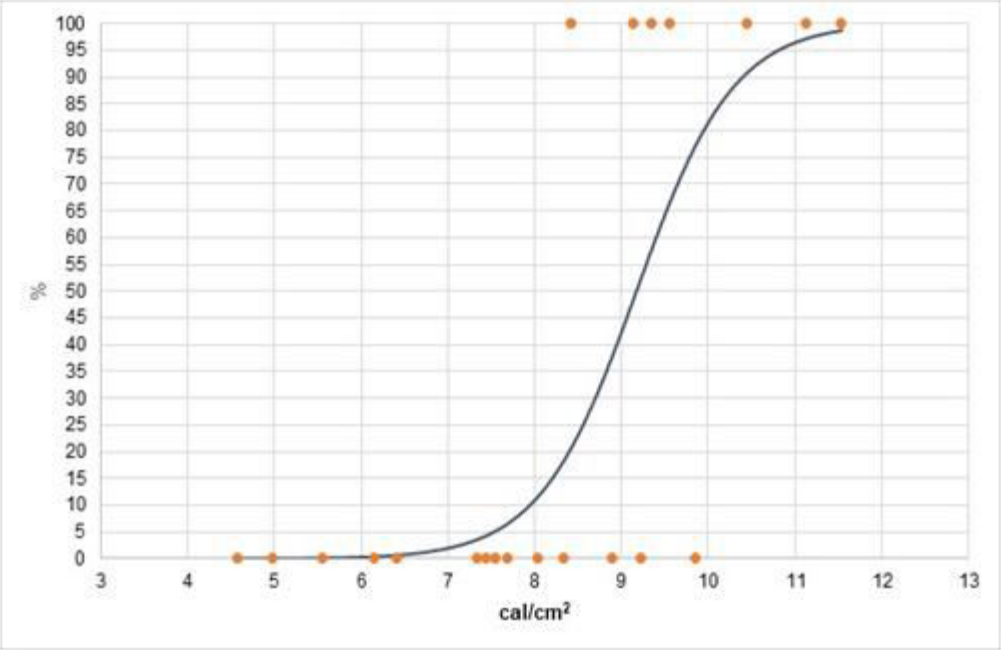
Reference Fabric Interlock IFR

Sample description according to the information supplied by the customer

Black knitted fabric style Interlock IFR, 60% Modacrylic, 38% Cotton, 2% Antistatic,fabric structure Interlock, 250 g/m², manufacturer Texameri S.A.

Determination of E_{BT50}, 50% of Probability breakopen

E_{BT50}	9,2 cal/cm^2



E_{BT50} points above	3
E_{BT50} points 20%	13
E_{BT50} points below	11
Points mix zone	7

>>>

RESULTS

Summary of measured energy and subjective evaluation:

Test	Time (ms)	Cycles 50Hz	Ei cal/cm^2	SCD cal/cm^2	Burn	Break Open
1-A	124	6,2	8,0	-0,68	N	N
1-B	124	6,2	7,6	-0,48	N	N
1-C	124	6,2	7,7	-0,79	N	N
2-A	183,6	9,18	9,6	-0,35	N	Y
2-B	183,6	9,18	11,5	-0,37	N	Y
2-C	183,6	9,18	10,4	-0,3	N	Y
3-A	163,6	8,18	11,1	-0,47	N	Y
3-B	163,6	8,18	9,1	-0,74	N	Y
3-C	163,6	8,18	9,8	-0,58	N	N
4-A	154	7,7	8,4	-0,47	N	Y
4-B	154	7,7	9,2	-0,5	N	N
4-C	154	7,7	9,3	-0,44	N	Y
5-A	133,8	6,69	8,9	-0,62	N	N
5-B	133,8	6,69	8,3	-0,49	N	N
5-C	133,8	6,69	7,4	-0,31	N	N
6-A	103,8	5,19	6,2	-0,47	N	N
6-B	103,8	5,19	6,4	-0,31	N	N
6-C	103,8	5,19	5,0	-0,59	N	N
7-A	104	5,2	7,3	-0,34	N	N
7-B	104	5,2	5,6	-0,38	N	N
7-C	104	5,2	4,6	-0,84	N	N

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RESULTS

Summary of measured energy and subjective evaluation:

Test	After flame (s)	Ablation	Melting	Dripping	Charring	Embrittlement
1-A	0	N	N	N	Y	Y
1-B	0	N	N	N	Y	Y
1-C	0	N	N	N	Y	Y
2-A	0	Y	N	N	Y	Y
2-B	0	Y	N	N	Y	Y
2-C	0	Y	N	N	Y	Y
3-A	0	Y	N	N	Y	Y
3-B	0	Y	N	N	Y	Y
3-C	0	N	N	N	Y	Y
4-A	0	Y	N	N	Y	Y
4-B	0	N	N	N	Y	Y
4-C	0	Y	N	N	Y	Y
5-A	0	N	N	N	Y	Y
5-B	0	N	N	N	Y	Y
5-C	0	N	N	N	Y	Y
6-A	0	N	N	N	Y	Y
6-B	0	N	N	N	Y	Y
6-C	0	N	N	N	Y	Y
7-A	0	N	N	N	Y	Y
7-B	0	N	N	N	Y	Y
7-C	0	N	N	N	Y	Y

Y Yes N No

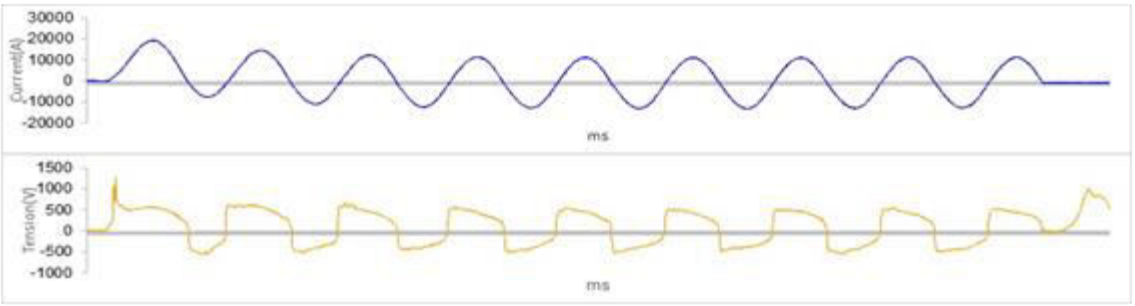
_____>>>

RESULTS

Electrical current and response sensor response:

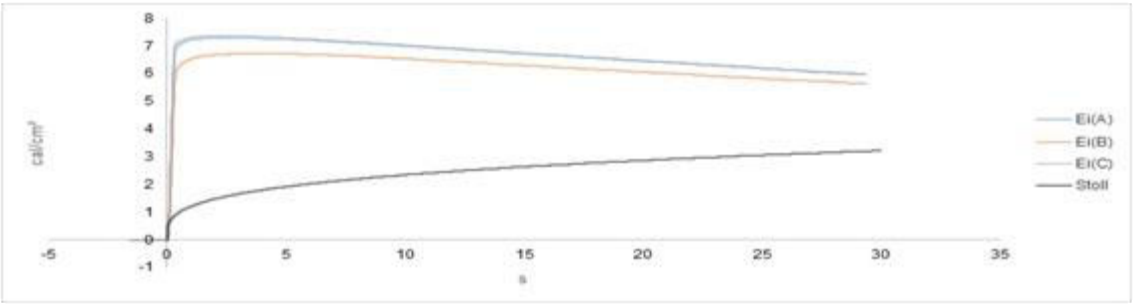
Calibration shot

INITIAL CALIBRATION

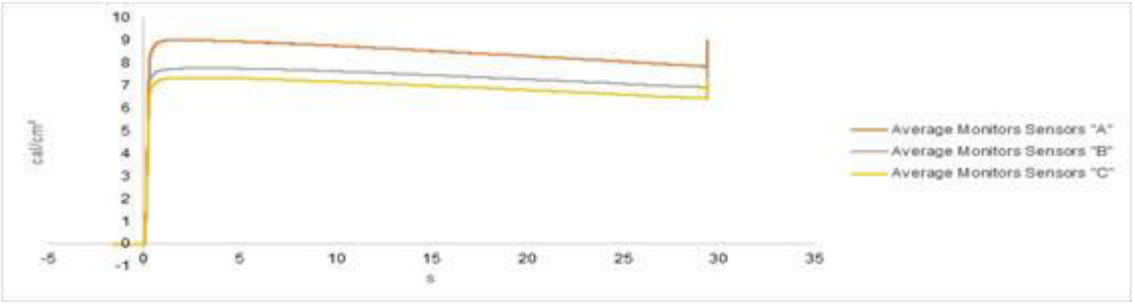


Ei Panel A	9,0 cal/cm^2	**Ei Panel B**	7,8 cal/cm^2	**Ei Panel C**	7,3 cal/cm^2

Average panel sensors response Vs. Stoll plot



Average monitor sensors plot



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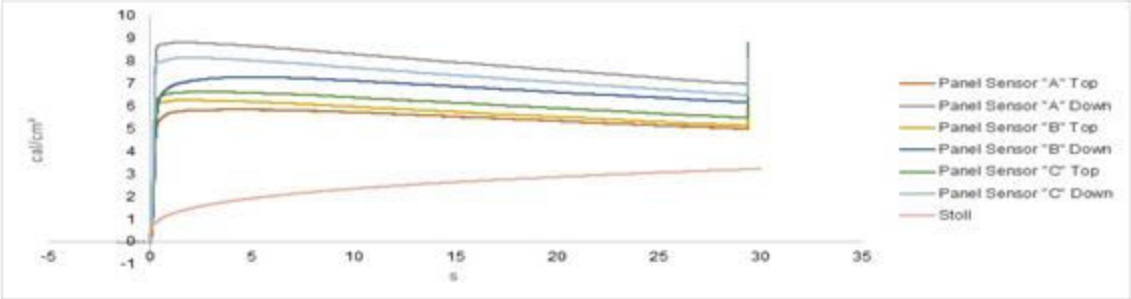
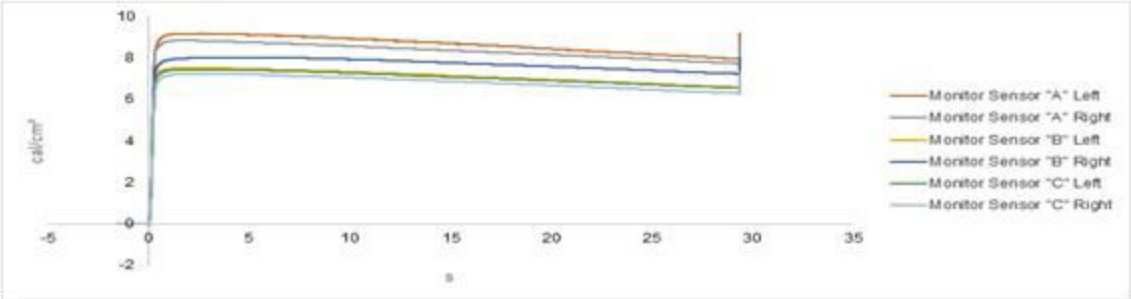
RESULTS

Electrical current and response sensor response:

Panel sensors Vs. Stoll plot



Monitor sensors plot



Current Total RMS (kA)	8,0	Current Peak (kA)	19,3	Arc Voltage (V)	1530,0
Duration (cycles nº)	8,7	Duration (ms)	173,6	Arc Energy (kJ)	586,6
Arc Voltage (kJ)	427,1				

Average incident energy at same level: 8,0
Highest incident energy: 9,2
Lowest incident energy: 7,3

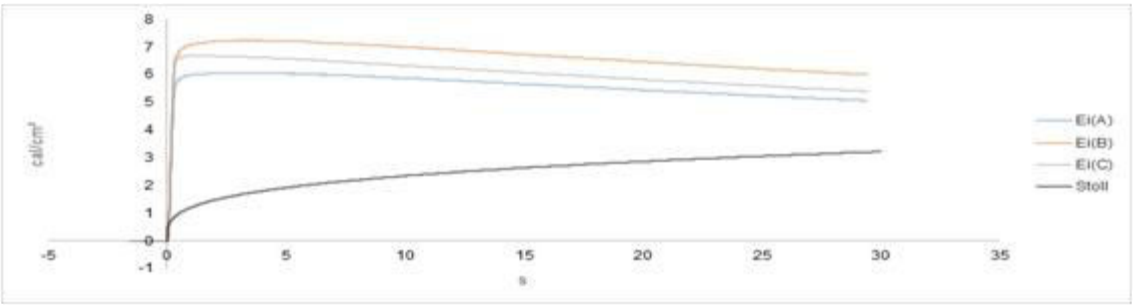
_____>>>

RESULTS

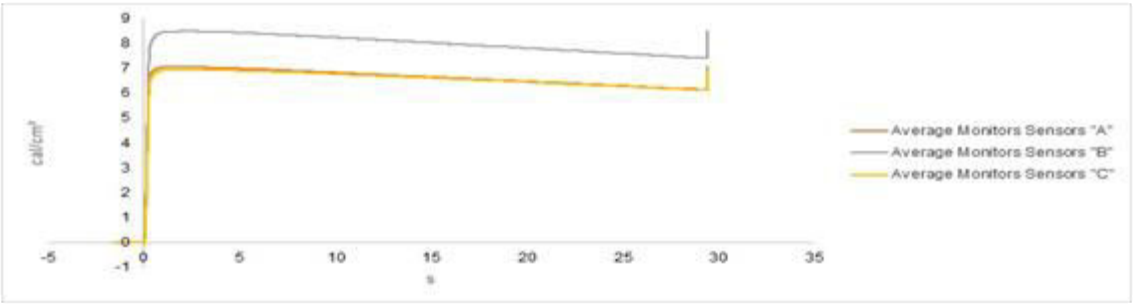
FINAL CALIBRATION

Ei Panel A	7,0 cal/cm^2	Ei Panel B	8,5 cal/cm^2	Ei Panel C	6,9 cal/cm^2

Average panel sensors response Vs. Stoll plot



Average monitor sensors plot

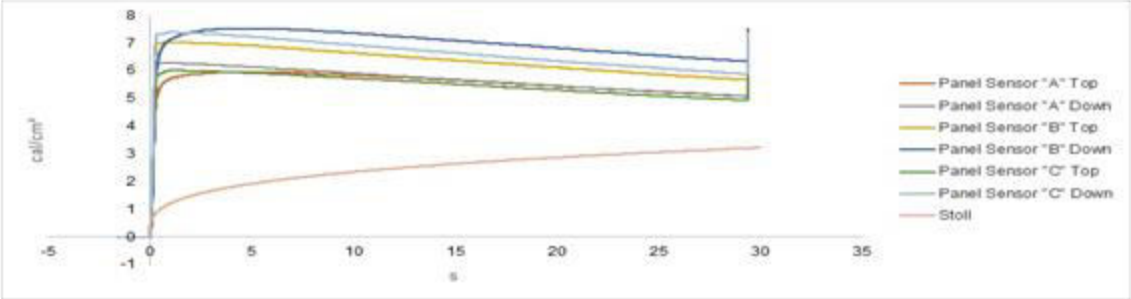


_____>>>

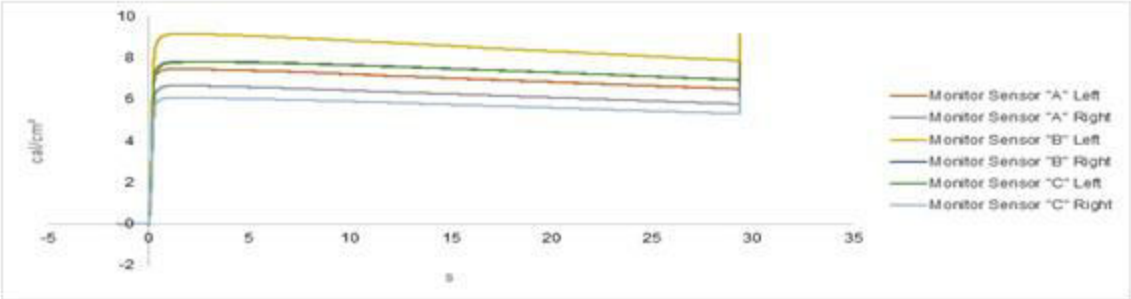
RESULTS

Electrical current and response sensor response:

Panel sensors Vs. Stoll plot



Monitor sensors plot



Current Total RMS (kA)	7,6	Current Peak (kA)	18,4	Arc Voltage (V)	1524,0
Duration (cycles nº)	8,7	Duration (ms)	174,0	Arc Energy (kJ)	588,6
Arc Voltage (kJ)	448,8				

Average incident energy at same level: 7,3
Highest incident energy: 9,2
Lowest incident energy: 6,1

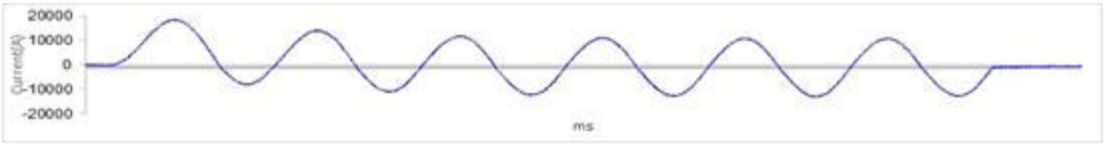
_____>>>

RESULTS

Electrical current and response sensor response:

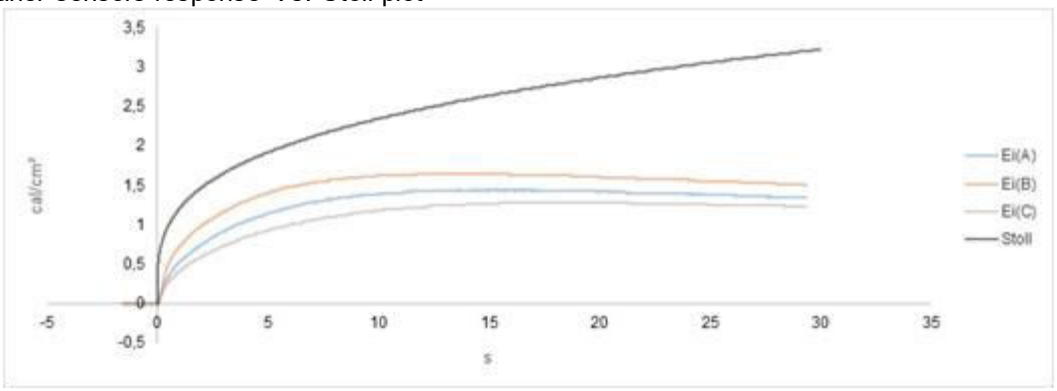
Shot 1

Current Plot

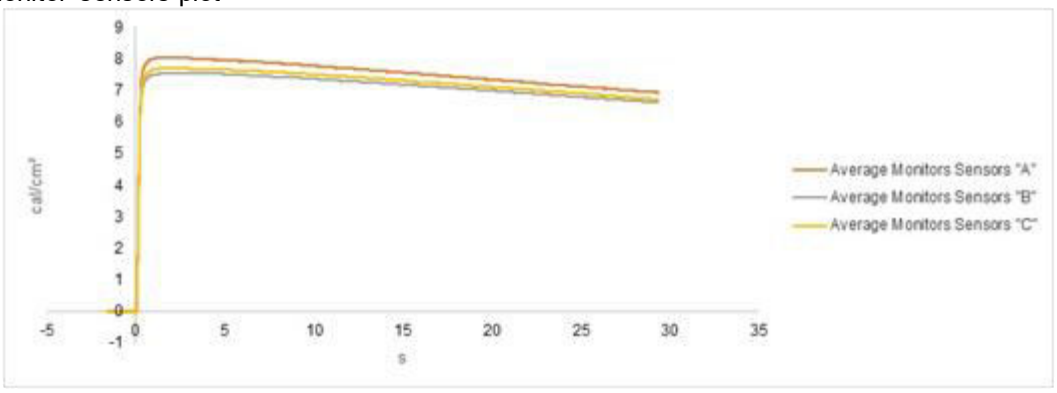


Voltage Plot

Average panel sensors response Vs. Stoll plot



Average monitor sensors plot



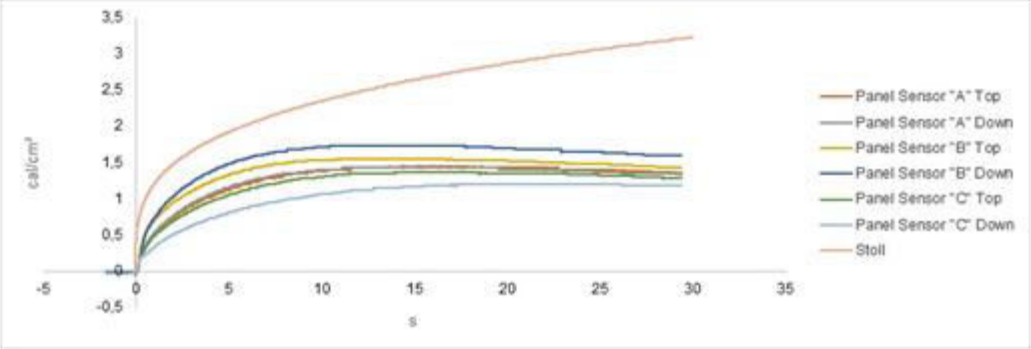
_____>>>

RESULTS

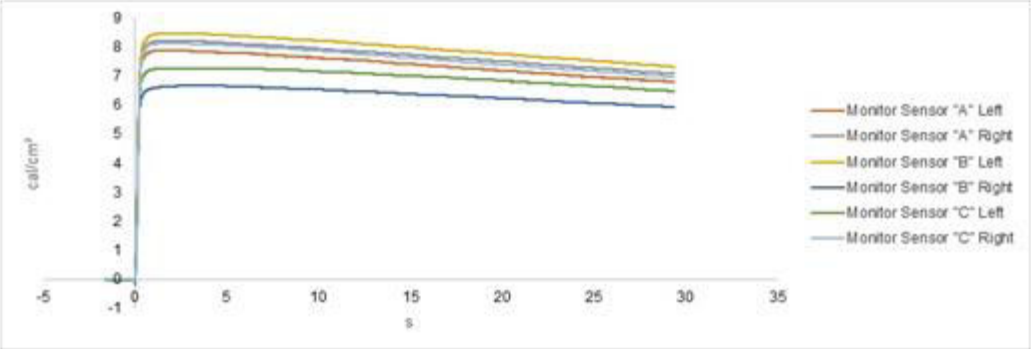
Electrical current and response sensor response:

Shot 1

Panel sensors Vs. Stoll plot



Monitor sensors plot



Current Total RMS (kA)	8,1	**Current Peak (kA)**	18,4	**Arc Voltage (V)**	1524,0
Duration (cycles nº)	6,2	**Duration (ms)**	123,9	**Arc Energy (kJ)**	470,8
Arc Voltage (kJ)	486,1				

sensor response	PANEL A	PANEL B	PANEL C
Ei	8,03 cal/cm^2	7,55 cal/cm^2	7,69 cal/cm^2
SCD	-0,68 cal/cm^2	-0,48 cal/cm^2	-0,79 cal/cm^2

>>>

RESULTS

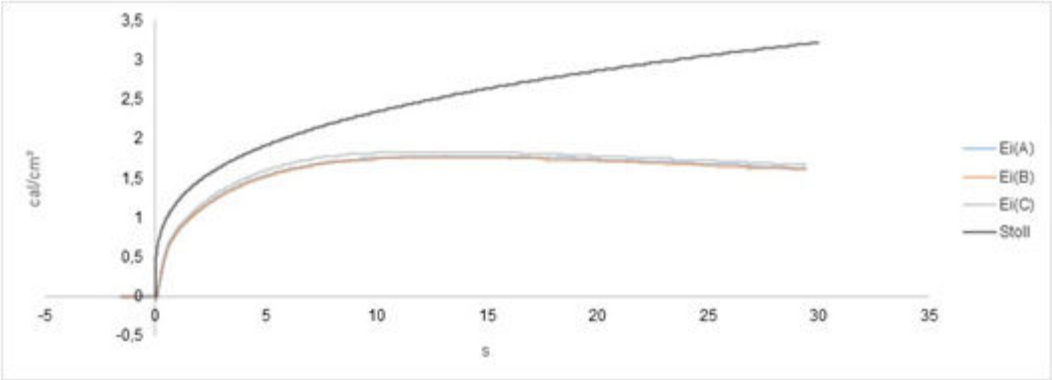
Electrical current and response sensor response:

Shot 2

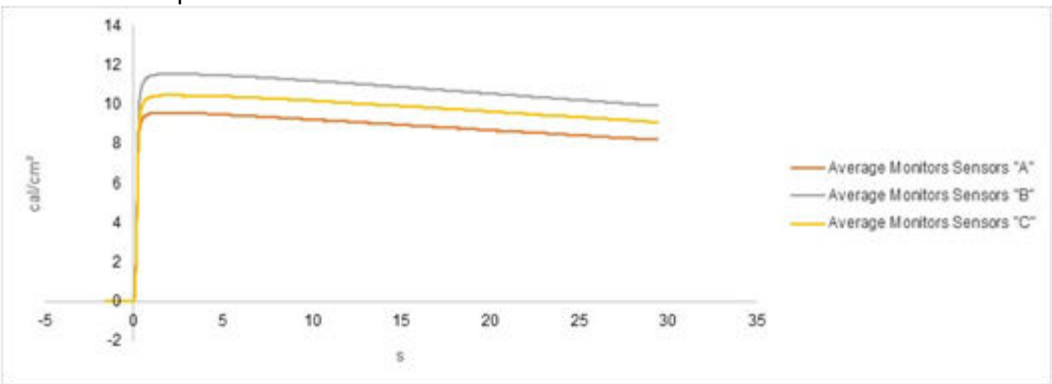
Current Plot

Voltage Plot

Average panel sensors response Vs. Stoll plot



Average monitor sensors plot



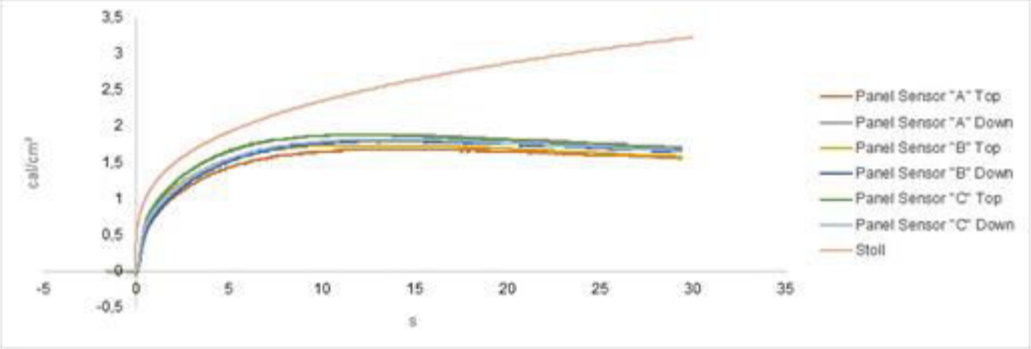
_____>>>

RESULTS

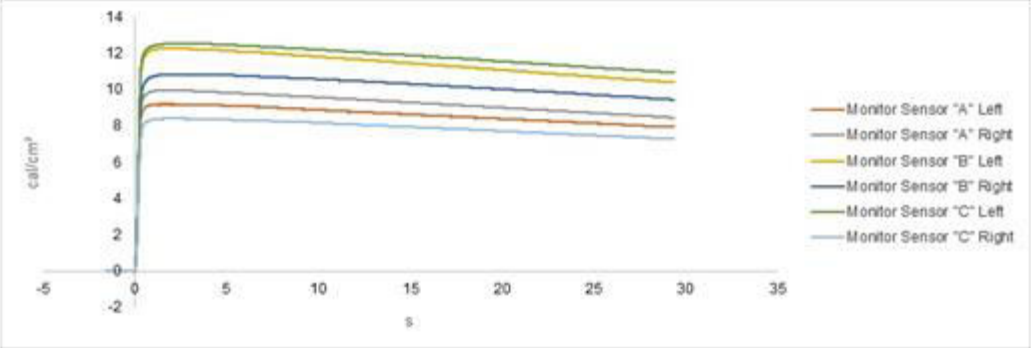
Electrical current and response sensor response:

Shot 2

Panel sensors response Vs. Stoll plot



Monitor sensors plot



Current Total RMS (kA)	8,2	**Current Peak (kA)**	18,4	**Arc Voltage (V)**	1524,0
Duration (cycles nº)	9,2	**Duration (ms)**	183,6	**Arc Energy (kJ)**	600,6
Arc Voltage (kJ)	422,6				

sensor response	**PANEL A**	**PANEL B**	**PANEL C**
Ei	9,56 cal/cm^2	11,53 cal/cm^2	10,44 cal/cm^2
SCD	-0,35 cal/cm^2	-0,37 cal/cm^2	-0,30 cal/cm^2

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RESULTS

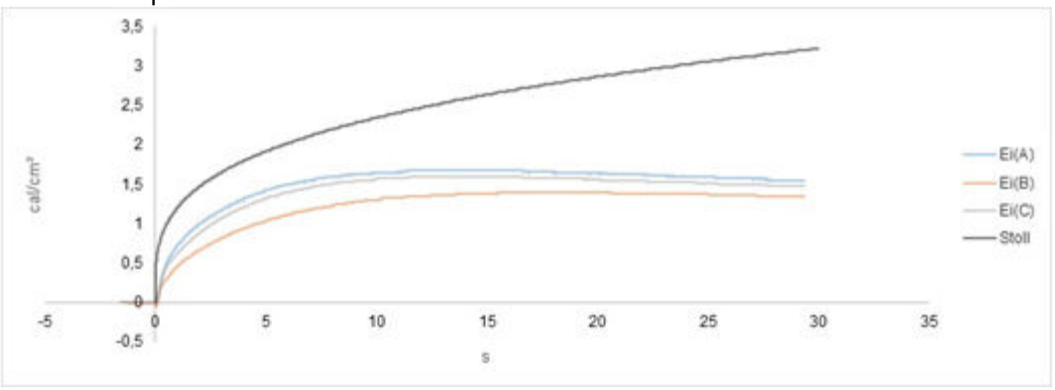
Electrical current and response sensor response:

Shot 3

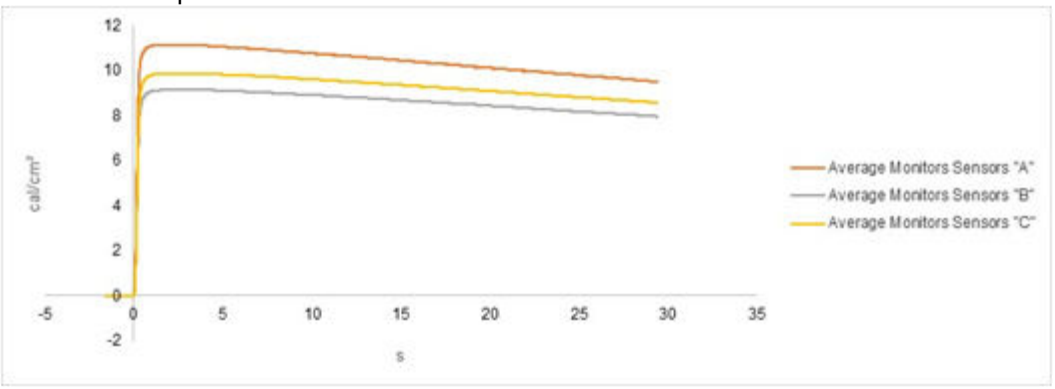
Current Plot

Voltage Plot

Panel sensors vs. Stoll plot



Average monitor sensors plot



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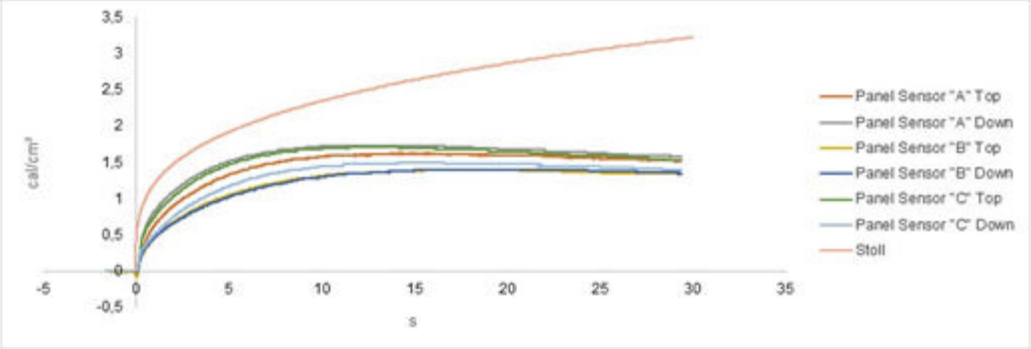
RESULTS

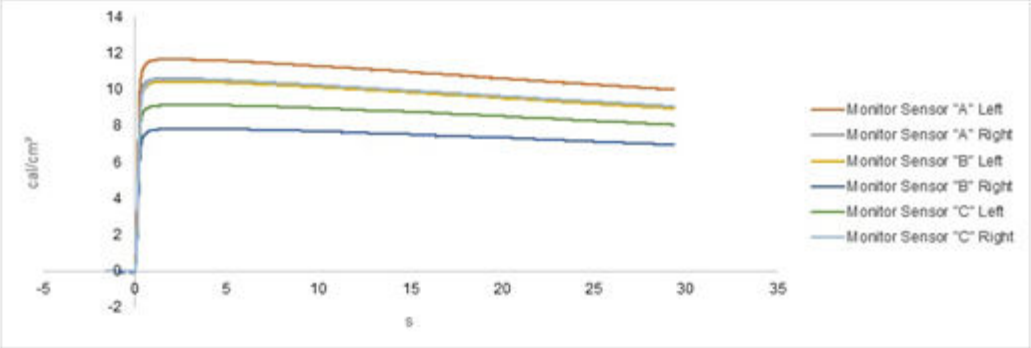
Electrical current and response sensor response:

Shot 3

Panel sensors response Vs. Stoll plot



Monitor sensors plot



Current Total RMS (kA)	8,2	**Current Peak (kA)**	18,6	**Arc Voltage (V)**	1524,0
Duration (cycles nº)	8,2	**Duration (ms)**	163,6	**Arc Energy (kJ)**	524,3
Arc Voltage (kJ)	419,3				

sensor response	**PANEL A**	**PANEL B**	**PANEL C**
Ei	11,13 cal/cm^2	9,14 cal/cm^2	9,85 cal/cm^2
SCD	-0,47 cal/cm^2	-0,74 cal/cm^2	-0,58 cal/cm^2

>>>

RESULTS

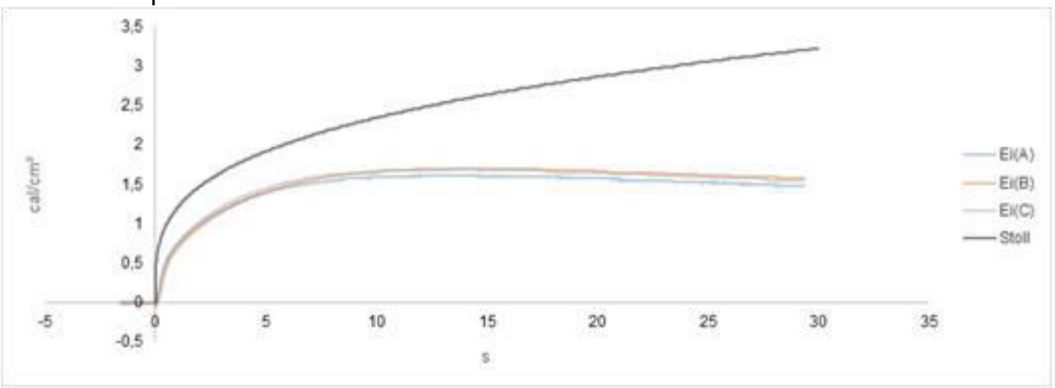
Electrical current and response sensor response:

Shot 4

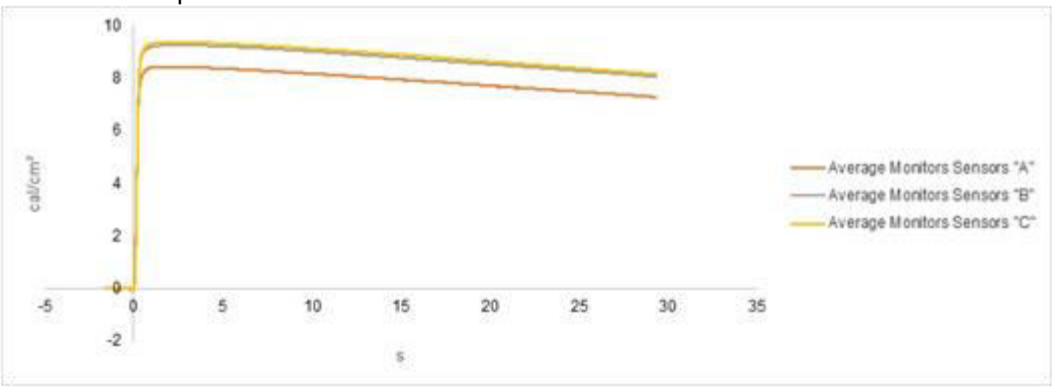
Current Plot

Voltage Plot

Panel sensors vs. Stoll plot



Average monitor sensors plot



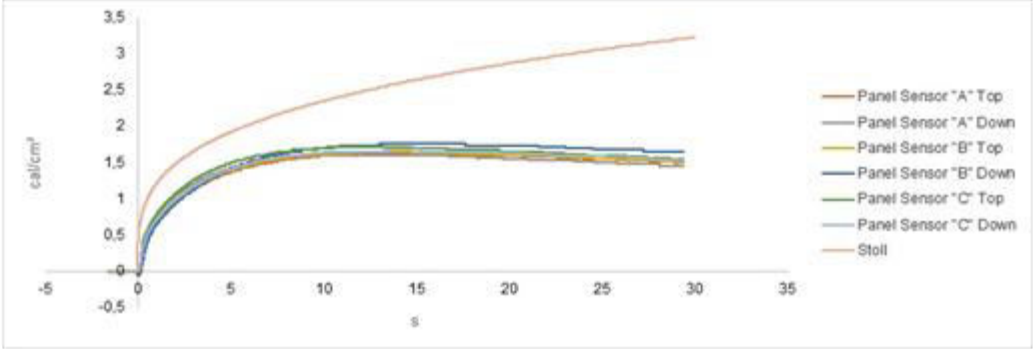
_____>>>

RESULTS

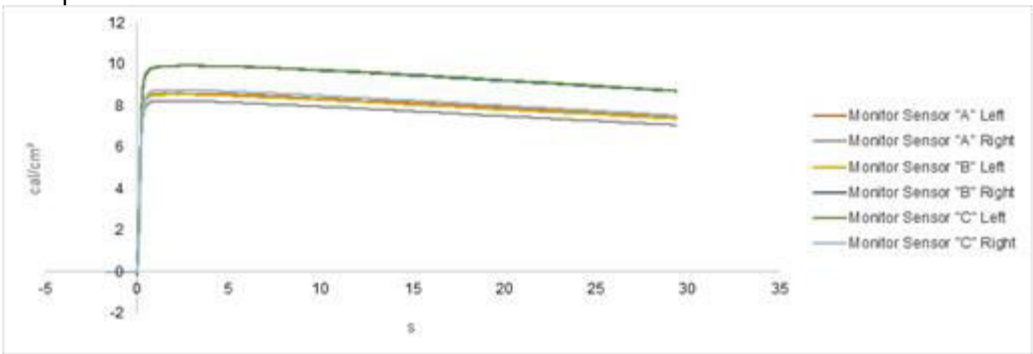
Electrical current and response sensor response:

Shot 4

Panel sensors response Vs. Stoll plot



Monitor sensors plot



Current Total RMS (kA)	7,7	**Current Peak (kA)**	18,6	**Arc Voltage (V)**	1524,0
Duration (cycles nº)	7,7	**Duration (ms)**	154,0	**Arc Energy (kJ)**	491,4
Arc Voltage (kJ)	424,3				

sensor response	**PANEL A**	**PANEL B**	**PANEL C**
Ei	8,42 cal/cm^2	9,23 cal/cm^2	9,34 cal/cm^2
SCD	-0,47 cal/cm^2	-0,50 cal/cm^2	-0,44 cal/cm^2

>>>

RESULTS

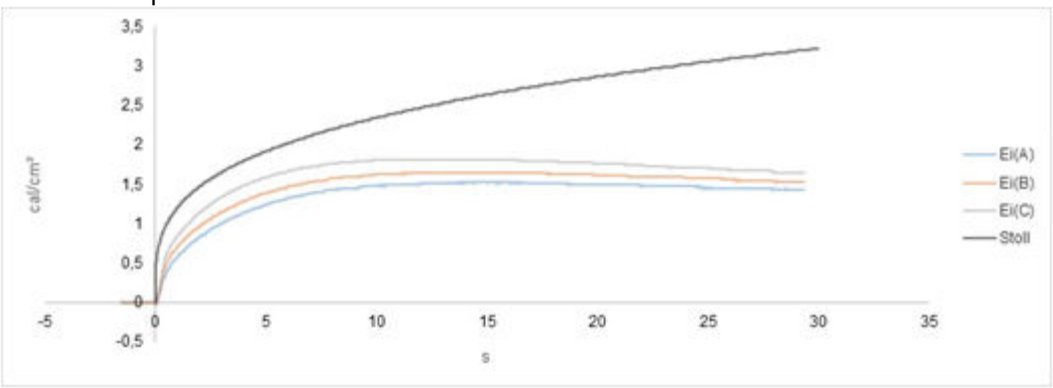
Electrical current and response sensor response:

Shot 5

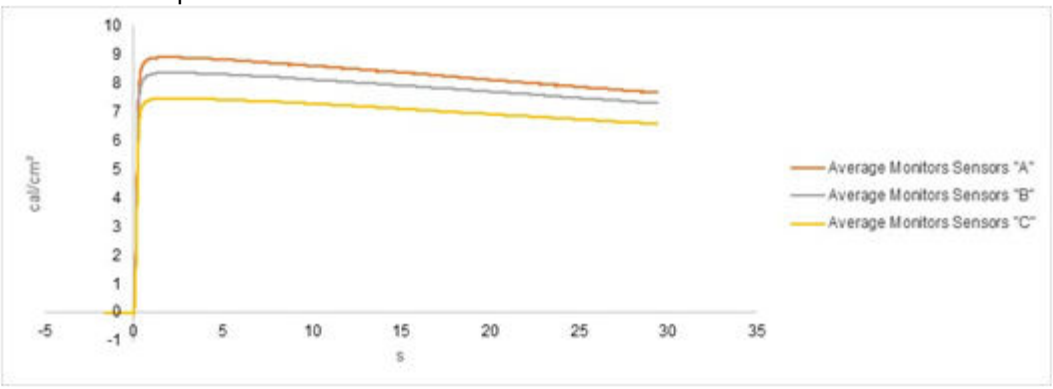
Current Plot

Voltage Plot

Panel sensors vs. Stoll plot



Average monitor sensors plot



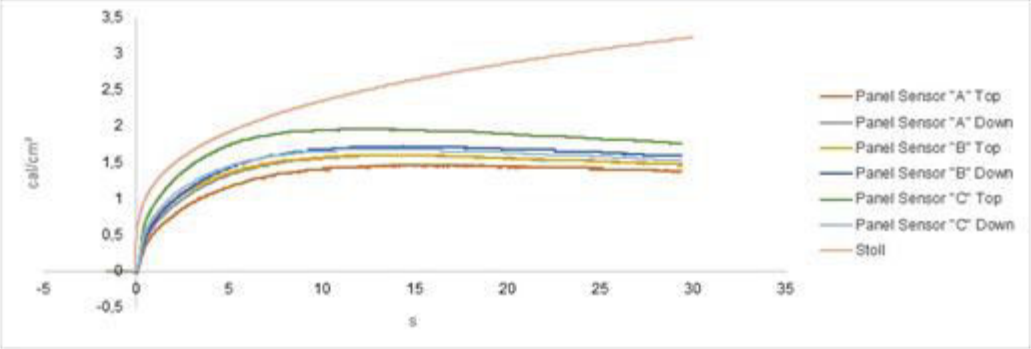
>>>

RESULTS

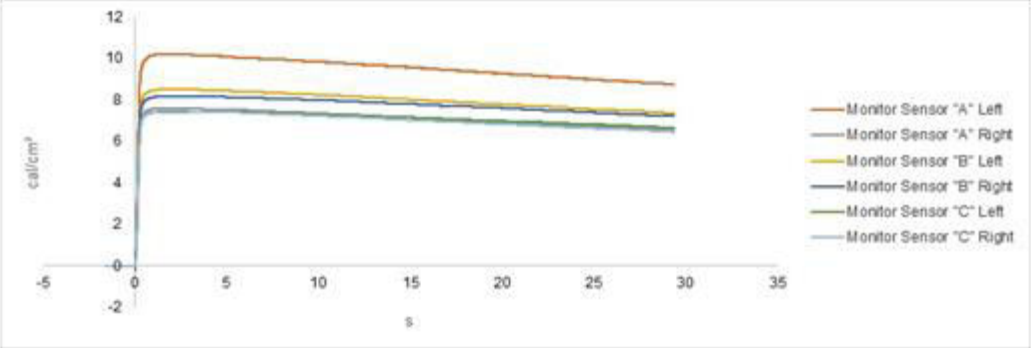
Electrical current and response sensor response:

Shot 5

Panel sensors response Vs. Stoll plot



Monitor sensors plot



Current Total RMS (kA)	7,5	**Current Peak (kA)**	18,6	**Arc Voltage (V)**	1524,0
Duration (cycles nº)	6,7	**Duration (ms)**	133,8	**Arc Energy (kJ)**	485,4
Arc Voltage (kJ)	472,0				

sensor response	PANEL A	PANEL B	PANEL C
Ei	8,89 cal/cm^2	8,34 cal/cm^2	7,44 cal/cm^2
SCD	-0,62 cal/cm^2	-0,49 cal/cm^2	-0,31 cal/cm^2

_____>>>

RESULTS

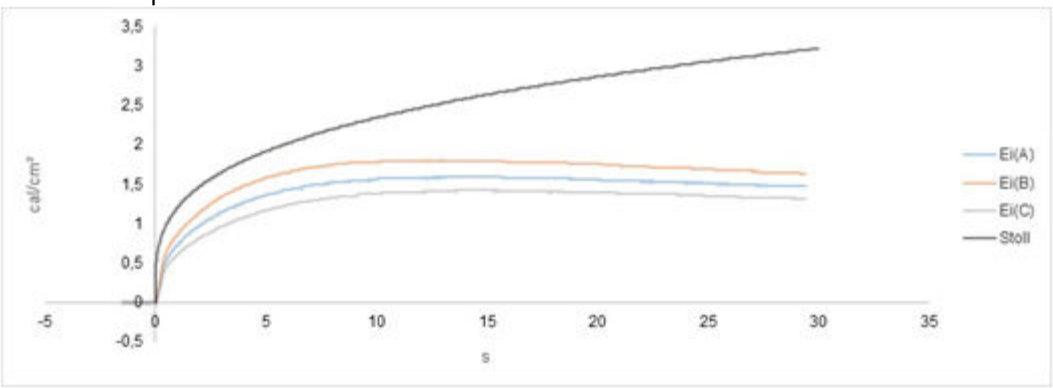
Electrical current and response sensor response:

Shot 6

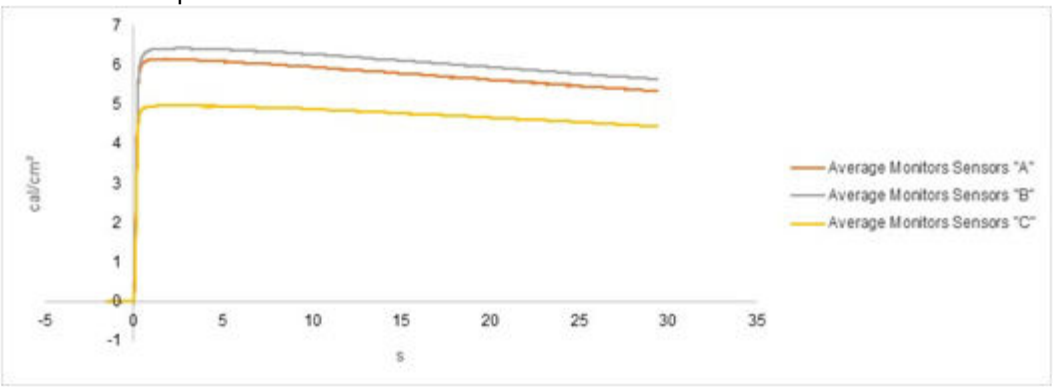
Current Plot

Voltage Plot

Panel sensors vs. Stoll plot



Average monitor sensors plot



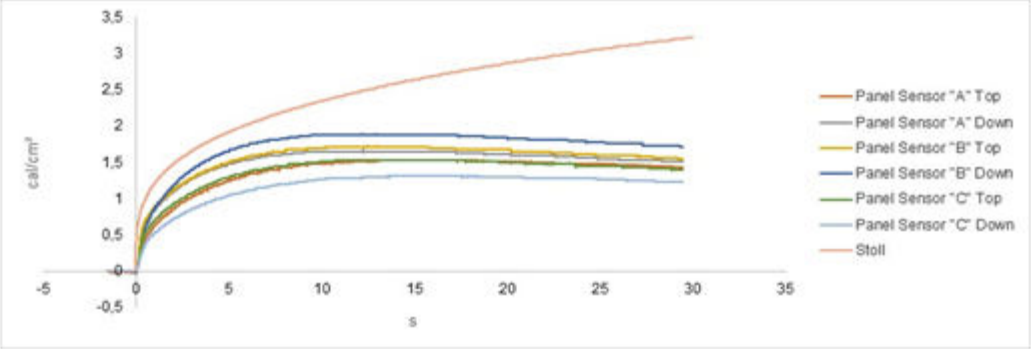
_____>>>

RESULTS

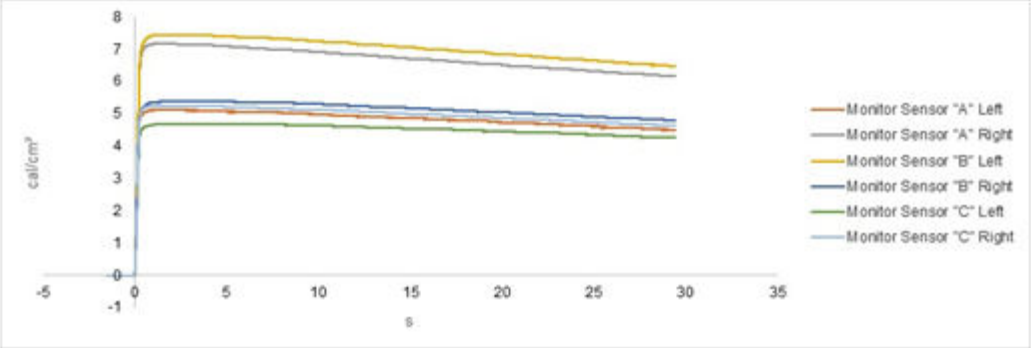
Electrical current and response sensor response:

Shot 6

Panel sensors response Vs. Stoll plot



Monitor sensors plot



Current Total RMS (kA)	8,0	**Current Peak (kA)**	18,5	**Arc Voltage (V)**	1524,0
Duration (cycles nº)	5,2	**Duration (ms)**	103,8	**Arc Energy (kJ)**	367,8
Arc Voltage (kJ)	449,4				

Sensor response	**PANEL A**	**PANEL B**	**PANEL C**
Ei	6,15 cal/cm^2	6,41 cal/cm^2	4,97 cal/cm^2
SCD	-0,47 cal/cm^2	-0,31 cal/cm^2	-0,59 cal/cm^2

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RESULTS

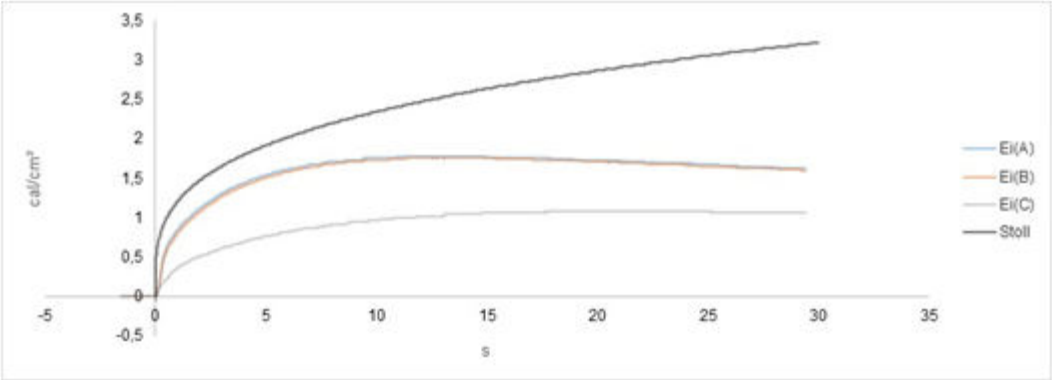
Electrical current and response sensor response:

Shot 7

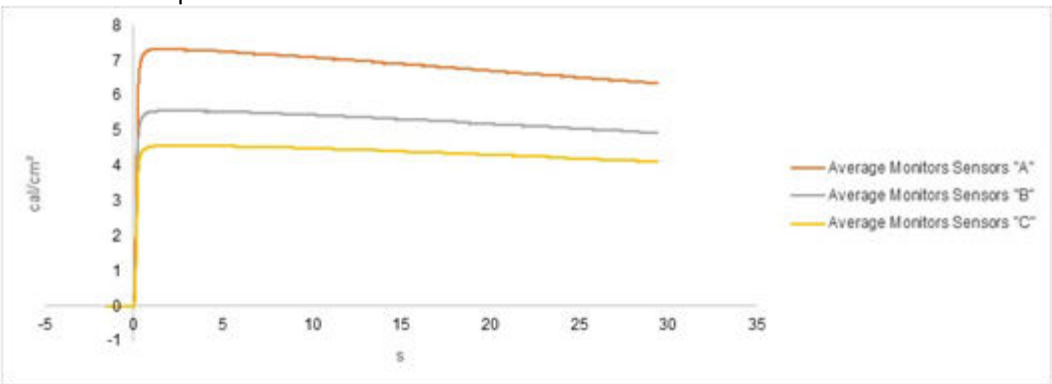
Current Plot

Voltage Plot

Average panel sensors vs. Stoll plot



Average monitor sensors plot



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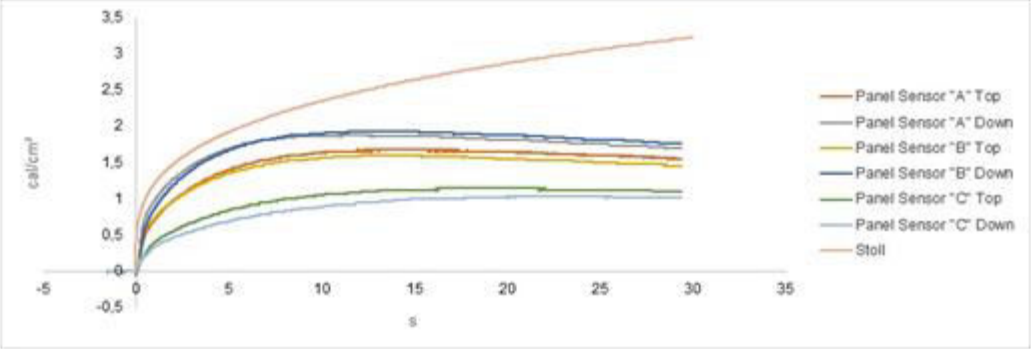
RESULTS

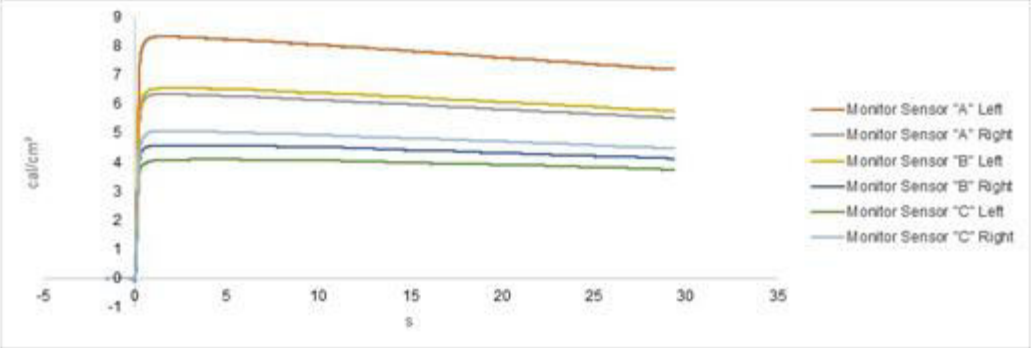
Electrical current and response sensor response:

Shot 7

Panel sensors response Vs. Stoll plot



Monitor sensors plot



Current Total RMS (kA)	8,1	**Current Peak (kA)**	18,7	**Arc Voltage (V)**	1524,0
Duration (cycles nº)	5,2	**Duration (ms)**	104,0	**Arc Energy (kJ)**	358,0
Arc Voltage (kJ)	430,7				

sensor response	**PANEL A**	**PANEL B**	**PANEL C**
Ei	7,33 cal/cm^2	5,56 cal/cm^2	4,57 cal/cm^2
SCD	-0,34 cal/cm^2	-0,38 cal/cm^2	-0,84 cal/cm^2

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RESULTS

Tested material pictures:

Original

Shot 1

Shot 2

Shot 3

Shot 4

Shot 5

Shot 6

Shot 7

_____>>>

RESULTS

Summary of results:

EBT	9,2 cal/cm^2
ELIM	8,0 cal/cm^2

FABRIC TESTED ACCORDING TO THE STANDARD IEC 61482-1-1: 2019 Material test (Procedure A)

ARC RATING (EBT)

9,2 cal/cm^2

Note 1

The values of ATPV, EBT and/or ELIM, reported in clause 13.2 or 13.3 as resulting from testing according to either Procedure A or B, when given in units of cal/cm^2, shall be rounded down to the first digit after the decimal point, in case of the value being less than 10 cal/cm^{2}and shall be rounded down to the last digit before the decimal point, in case of the value being greater than 10 cal/cm^2.

Note 2

1 kJ/m^2= 1 kW.s/m^2= 0,1 J/cm^2= 0,023 9006 cal/cm2

1 cal/cm^2= 41,840 kJ/m^2= 41,840 kW.s/m^2

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Lucia Martinez
Head of PPE and Ballistics department

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15.- According to Resolution EA (33) 31, the test reports must include the unique identification of the sample, and any brand or label of the manufacturer may be added. It is not allowed to re-issue test reports of untested sample names (references), they can only be re-issued for error correction or inclusion of omitted data that were already available at the time of the test. The laboratory can not assume responsibility for declaring that the product with the new trade name / trademark is strictly identical to the one originally tested; This responsibility belongs to the client.
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