

TEST REPORT

N° **2014US0229**

DATE OF RECEPTION	31/10/2014	APPLICANT NEWTEX INDUSTRIES, INC 8050 Victor Mendon Rd, NY-14564 Victor New York Att. LAURA PRITCHARD
DATE TEST	Starting: 19/11/2014 Ending: 10/12/2014	
DESCRIPTION AND IDENTIFICATION OF SAMPLES	SAMPLES REFERENCED: -"FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE". Aluminized fabric (1st and 2nd layers), padding (3rd layer), aluminized fabric (4th layer), beige neoprene (5th and 6th layers)	
TESTS CARRIED OUT	- HEAT RESISTANCE - LIMITED FLAME SPREAD - DETERMINATION OF BREAKING STRENGTH AND ELONGATION - DETERMINATION OF TEAR RESISTANCE - METHOD OF DETERMINING HEAT TRANSMISSION ON EXPOSURE TO FLAME - RADIANT HEAT - ASSESSMENT OF RESISTANCE OF MATERIALS TO MOLTEN METAL SPLASH - CONTACT HEAT	

ATTACHED

SAMPLE(S)

SEALED

PAGE

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OF

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RESULTS

HEAT RESISTANCE

Standard

ISO 17493:2000

Apparatus

Air stove

Temperature

(180 ± 5) °C

Deviation from the Standard

Test uncertainty

± 0,6 %

Pre-treatment

Tested material

Assembly: Aluminized fabric aluminized fabric, padding, aluminized fabric, beige neoprene and beige neoprene

Measured surface

Inner surface

Reference		FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE	
Flame	Melting	Shrink	
No	No	Warp	-2,1 %
		Weft	-0,7 %
No	No	Warp	-0,7 %
		Weft	-0,2 %
No	No	Warp	-2,0 %
		Weft	-0,8 %

PERFORMANCE LEVEL ACCORDING TO UNE-EN ISO 11612:2010

PASS

Requisites to meet according to UNE-EN ISO 11612:2010

a) No layer can ignite
b) No layer can melt
c) No layer shrinks more than 5%



RESULTS

HEAT RESISTANCE

Standard

ISO 17493:2000

Apparatus

Air stove

Temperature

(180 ± 5) °C

Deviation from the Standard

Test uncertainty

± 0,6 %

Pre-treatment

Tested material

Assembly: Aluminized fabric aluminized fabric, padding, aluminized fabric, beige neoprene and beige neoprene

Measured surface

Outer surface

Reference		FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE			
Flame	Melting	Shrink			
No	No		Warp	-0,1 %	
			Weft	-0,1 %	
No	No		Warp	-0,1 %	
			Weft	-0,1 %	
No	No		Warp	-0,1 %	
			Weft	0,0 %	

PERFORMANCE LEVEL ACCORDING TO UNE-EN ISO 11612:2010

PASS

Requisites to meet according to UNE-EN ISO 11612:2010

a) No layer can ignite
b) No layer can melt
c) No layer shrinks more than 5%



RESULTS

LIMITED FLAME SPREAD

Standard

UNE-EN ISO 15025:2003 (Method A)

Apparatus

Equipment for determination of limited flame spread 13008IE12

Original test date

28/11/2014

Conditioned

24h in indoor ambient conditions at 20 ± 2 °C and 65 ± 5 % HR

Original ambient conditions test

23,0°C and 43,0% HR

Gas used

Propane

Deviation from the standard

Face exposed to the flame

Outer surface

Tested material

Assembly: aluminized fabric, aluminized fabric, padding, aluminized fabric, beige neoprene

Test uncertainty

$\pm 0,29$ s

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RESULTS

Reference FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE

Pre-Treatment Original fabric

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)	0,00	0,00	0,00	0,00	0,00	0,00
Afterglow time (s)	0,00	0,00	0,00	0,00	0,00	0,00
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

PERFORMANCE LEVEL ACCORDING UNE-EN ISO 11612:2010 A1

Requisites to be met according to UNE-EN ISO 11612:2010

a) No specimen shall give flaming to top or either side edge
b) No specimen shall give hole formation in any layer
c) No specimen shall give flaming or molten debris
d) The mean value of after flame time shall be ≤ 2 s
e) The mean value of afterglow time shall be ≤ 2 s

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RESULTS

LIMITED FLAME SPREAD

Standard

UNE-EN ISO 15025:2003 (Method A)

Apparatus

Equipment for determination of limited flame spread 13008IE12

Original test date

28/11/2014

Conditioned

24h in indoor ambient conditions at 20 ± 2 °C and 65 ± 5 % HR

Original ambient conditions test

23,0°C and 43,0% HR

Gas used

Propane

Deviation from the standard

Face exposed to the flame

Inner surface

Tested material

Assembly: aluminized fabric, aluminized fabric, padding, aluminized fabric, beige neoprene

Test uncertainty

$\pm 0,29$ s

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RESULTS

Reference FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE

Pre-Treatment Original fabric

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)	0,00	0,00	0,00	0,00	0,00	0,00
Afterglow time (s)	0,00	0,00	0,00	0,00	0,00	0,00
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

PERFORMANCE LEVEL ACCORDING UNE-EN ISO 11612:2010 A1

Requisites to be met according to UNE-EN ISO 11612:2010

a) No specimen shall give flaming to top or either side edge
b) No specimen shall give hole formation in any layer
c) No specimen shall give flaming or molten debris
d) The mean value of after flame time shall be ≤ 2 s
e) The mean value of afterglow time shall be ≤ 2 s

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RESULTS

DETERMINATION OF BREAKING STRENGTH AND ELONGATION

Standard

UNE-EN ISO 13934-1:2013

Apparatus

INSTRON Dynamometer

Gauge length

200 mm

Rate of extension of Warp

100 mm/min

Rate of extension of Weft

20 mm/min

Pretension

Warp

10 N

Weft

10 N

Atmosphere for conditioning and testing

Temperature

(20±2) °C

Relative humidity

(65±4) %

N° of specimens

Tested

5 for each direction

Rejected

0

Reference		FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE		
Direction	Average load (N)	CV (%)	Elongation to the maximum load (%)	CV (%)
Warp	3400	10,0	9,0	4,8
Weft	3100	4,0	6,6	3,8

REQUISITE ACCORDING TO STANDARD UNE-EN ISO 11612:2010

The material must resist a breaking load in both directions ≥ 300 N.

PASS



RESULTS

DETERMINATION OF TEAR RESISTANCE

Standard

UNE-EN ISO 13937-2:2001

Apparatus

INSTRON Dynamometer

Atmosphere for conditioning and testing**Temperature** (20±2) °C**Relative humidity** (65±4) %**N° of specimens****Tested** 5 for each direction**Rejected** 0**The calculation of averages has been made**

For electronic device

Reference	Tear	Average load (N)	CV (%)
FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE	Warp	160	5.9
	Weft	150	6.2

Remarks

The test was conducted with specimens of great width (200x200mm).

REQUISITE ACCORDING TO STANDARD UNE-EN ISO 11612:2010The external material must resist a determination of tear resistance in both directions ≥ 15 N.

PASS

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RESULTS

METHOD OF DETERMINING HEAT TRANSMISSION ON EXPOSURE TO FLAME

Standard

ISO 9151:1995

Apparatus

Convective heat

Heat flux density

79,21 kW/m²

Pre-Treatment

Conditioned

24h in indoor ambient conditions at 20 ± 2 °C and 65 ± 5 % HR

Ambient conditions test

22,3 °C and 50,5 % HR

Deviation from the Standard

Test date

01/12/2014

Tested material

Aluminized fabric, aluminized fabric, padding, aluminized fabric, beige neoprene and beige neoprene

Test uncertainty

$\pm 0,36$ s



RESULTS

Reference	Specimen	Range of HTI ^a 12 values (s)	Range of HTI ^a 24 values (s)
FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE	1	57,4	> 60,0(*)
	2	53,8	> 60,0(*)
	3	49,2	> 60,0(*)
	Result	49,2	> 60,0(*)

Remark

(*)The equipment was unable to measure a temperature increase of 24 degrees in less than 60 seconds

PERFORMANCE LEVEL ACCORDING TO STANDARD UNE-EN ISO 11612:2010 **B3**

Results in according with standard UNE-EN ISO 11612:2010

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

Results have been obtained according a test method with pretenders only the classification of the materials, and are not necessary the application of the conditions



RESULTS

RADIANT HEAT

Standard

UNE-EN ISO 6942:2002

Apparatus

Equipment for the determination of radiant heat

Heat flux density

20,03 kW/m²

Pre-Treatment

Flexed

Conditioned

24h in indoor ambient conditions at 20 ± 2 °C and 65 ± 2 % HR

Ambient conditions test

19,5 °C and 28,0 % HR

Deviation from the Standard

Test date

10/12/2014

Tested material

Aluminized fabric, aluminized fabric, padding, aluminized fabric, beige neoprene and beige neoprene

Test uncertainty

± 0,34 s

Reference	FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE	
	RHTI ^a 12 (s)	RHTI ^a 24 (s)
Specimen		
1	> 600(*)	> 600(*)
2	> 600(*)	> 600(*)
3	> 600(*)	> 600(*)
Result	> 600(*)	> 600(*)

Remark

(*)The equipment was unable to measure a temperature increase of 12 and 24 degrees in less than 600 seconds



RESULTS

PERFORMANCE LEVEL ACCORDANCE WITH STANDARD UNE-EN ISO 11612:2010 C4

Results in accordance with Standard UNE-EN ISO 11612:2010

Performance level	Range of RHTI ^a 24 values	
	Minimum	Maximum
C1	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

Results have been obtained according a test method with pretenders only the classification of the materials, and are not necessary the application of the conditions

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RESULTS

ASSESSMENT OF RESISTANCE OF MATERIALS TO MOLTEN METAL SPLASH

Standard

UNE-EN ISO 9185:2008

Apparatus

Equipment for molten metal splashes test

Metal

Aluminium

Pouring temperature

780 °C ± 20 °C

Pouring angle

60 ° ± 1°

Pouring height

225 mm ± 5 mm

Pre-treatment

Deviation from the Standard

Reference	FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE		
Mass of metal used (g)	Mass of metal pouring (g)	Metal adhered to fabric	Assessment of PVC film
363	351	Yes	Not damaged
361	351	Yes	Not damaged
361	352	Yes	Not damaged
364	351	Yes	Not damaged

PERFORMANCE LEVEL ACCORDING WITH UNE-EN ISO 11612:2010

D3

Results interpretation according to UNE-EN ISO 11612:2010

Performance levels	Molten Aluminium (g)	
	Min.	Max.
D1	100	< 200
D2	200	< 350
D3	350	



RESULTS

ASSESSMENT OF RESISTANCE OF MATERIALS TO MOLTEN METAL SPLASH

Standard

UNE-EN ISO 9185:2008

Apparatus

Equipment for molten metal splashes test

Metal

Iron

Pouring temperature

1400 °C ± 20 °C

Pouring angle

75 ° ± 1°

Pouring height

225 mm ± 5 mm

Pre-treatment

Deviation from the Standard

Reference	FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE			
Metal pouring mass (g)	Ignition	Puncture	Metal adhered to fabric	Assessment of PVC film
215	No	No	No	Not damaged
212	No	No	No	Not damaged
212	No	No	No	Not damaged
213	No	No	No	Not damaged

PERFORMANCE LEVEL ACCORDING WITH UNE-EN ISO 11612:2010

E3

Results interpretation according to UNE-EN ISO 11612:2010

Performance levels	Molten iron (g)	
	Min.	Max.
E1	60	< 120
E2	120	< 200
E3	200	

Remark

Test covered by accreditation number No. 056-TEST, emitted by BELAC.

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RESULTS

CONTACT HEAT

Standard

ISO 12127-1:2007

Apparatus

ÖTI CONTACT HEAT PROTECTION TESTER

Conditioned

24h in indoor ambient conditions at 20 ± 2 °C and 65 ± 5 % HR

Ambient conditions test

23,1 °C and 43,0 % HR

Pre-treatment

Deviation from the Standard

Test date

28/11/2014

Tested material

Assembly: aluminized fabric, aluminized fabric, padding, aluminized fabric, beige neoprene

Test uncertainty

$\pm 0,13$ s

Reference	FABRIC LAY-UPS: X-50: Z-FLEX A-601/F-628 FOIL/1" INSULATION/F-628 FOIL/1" INSULATION/ NEOPRENE	
Specimen	Contact temperature Tc (°C)	Threshold time T (s)
1	250	42,94
2	250	34,75
3	250	47,50
Result	250	34,8



RESULTS

PERFORMANCE LEVEL ACCORDING TO STANDARD UNE-EN ISO 11612:2010	F3
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Requisites according to standard UNE-EN ISO 11612:2010

Performance levels	Threshold time (s)	
	Minimum	Maximum
F1	5,0	< 10,0
F2	10,0	< 15,0
F3	15,0	



Lucia Martinez
Head of PPE's department

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