



MINIT Ignifugos

minitargentina@gmail.com www.minitfireretardant.com

COPIA FIEL DE CERTIFICADOS

Presentación válida únicamente con el Certificado / Factura de Compra **MINIT TOTAL**



validacion

INTI-CIT-IRAM G7577 (INFLAMABILIDAD VERTICAL DE TEXTILES NIVEL 1 – CLASE A)

INTI  Construcciones

INFORME DE ENSAYO

Solicitante: MINOTTI PABLO DAVID

O.T.: 101/20631

Pág.: 1 de 2

Fecha: 03/05/2011

Informe: Único.

Dirección: Cochrane 2322

(1419) – Cdad. Autónoma de Buenos Aires

1. OBJETIVO

Determinación de la Inflamabilidad Vertical de Textiles

2. MATERIAL

Una (1) muestra de tela color blanca, de composición no declarada, identificada por el solicitante como: "Tela con tratamiento retardante marca MINIT de Pablo Minotti"

Nota: La tela presenta una textura acartonada como resultado del tratamiento aplicado, no habiendo sido informado el proceso de aplicación del mismo.



3. MÉTODO EMPLEADO

El ensayo de Inflamabilidad Vertical de Textiles se realizó de acuerdo a las indicaciones de la Norma IRAM-INTI-CIT G 7577, "MATERIALES TEXTILES – Método de ensayo de comportamiento a la llama con la probeta vertical".

La muestra fue recibida el día 26/04/2011 y se ensayó el día 02/05/2011

4. RESULTADOS OBTENIDOS

La clasificación se hace teniendo en cuenta las referencias consignadas a continuación:

Análisis cualitativo:

- Entra en ignición y la llama se propaga.
- Entra en ignición, pero es autoextinguible.
- No entra en ignición.
- Funde
- Se contrae y se aleja de la llama.
- Gotea y caen trozos encendidos.

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Instituto Nacional de Tecnología Industrial
Centro de Investigación y Desarrollo
en Construcciones

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Dirección: Cochrane 2322
(1419) – Cdad. Autónoma de Buenos Aires

O.T.: 101/20631
Pág.: 2 de 2
Fecha: 03/05/2011
Informe: Único.

Análisis cuantitativo:

TIEMPO DE LLAMA:

- NIVEL 1: Menor o igual a 1 segundo.
- NIVEL 2: Mayor a 1 segundo, pero menor o igual a 5 segundos.
- NIVEL 3: Mayor a 5 segundos.

TIEMPO DE INCANDESCENCIA:

- NIVEL 1: Menor o igual a 3 segundos.
- NIVEL 2: Mayor a 3 segundos, pero menor o igual a 15 segundos.
- NIVEL 3: Mayor que 15 segundos.

LONGITUD DAÑADA:

- NIVEL 1: Menor o igual a 100 milímetros.
- NIVEL 2: Mayor a 100 milímetros, pero menor o igual a 150 milímetros.
- NIVEL 3: Mayor a 150 milímetros.

GOTEO:

- NIVEL 1: Ausencia de goteo.
- NIVEL 2: Gotas y/o partes desprendidas que se apagan en el momento de contacto con el piso de la cabina.
- NIVEL 3: Gotas y/o partes desprendidas que siguen encendidas en el piso de la cabina menos de 3 segundos.

Se clasifica en 3 niveles, siendo 1 el mejor y 3 el peor.

“Tela con tratamiento retardante”

- Análisis cualitativo:

No entra en ignición.

- Análisis cuantitativo:

Sentido de la muestra	Tiempo de duración de la llama (s)	Tiempo de incandescencia (s)	Longitud carbonizada (mm)
Longitudinal	0	1	36
Transversal	0	1	27

De acuerdo a los resultados obtenidos, el material: muestra de tela color blanca identificada por el solicitante como “Tela con tratamiento retardante” clasifica como **NIVEL 1.**

Arq. BASILIO MASAPON
COORDINADOR
U.T. TECNOLOGÍA EN INGENIEROS
INTI-CONSTRUCCIONES

Ing. VICENTE L. OLARTINO
DIRECCIÓN
INTI-CONSTRUCCIONES

Nota:

De acuerdo a reglamentaciones internacionales, estos ensayos deben considerarse para medir y describir el comportamiento del material bajo condiciones controladas pero no se puede estimar cuál será el comportamiento del mismo si se modifican total o parcialmente las condiciones de ensayo.

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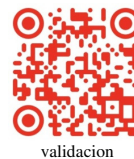
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NFPA 701 (INFLAMABILIDAD VERTICAL DE TEXTILES NIVEL 1 – CLASE A)

INTI Incendios y Explosiones



Presidencia
de la Nación

Ministerio de
Producción

Informe de Ensayo

OT N° 131- 161
Informe: Único
Página 1 de 3

Fecha de Informe: 30/08/2016

Solicitante	Minotti Pablo David Echeverría 2073 – Piso 4 – Dto. B
Elemento	Textil negro
Determinaciones requeridas	Evaluación de la Inflamabilidad Vertical de Textiles
Fecha de Recepción	13 de julio de 2016
Fecha de ensayo	24 de julio de 2016

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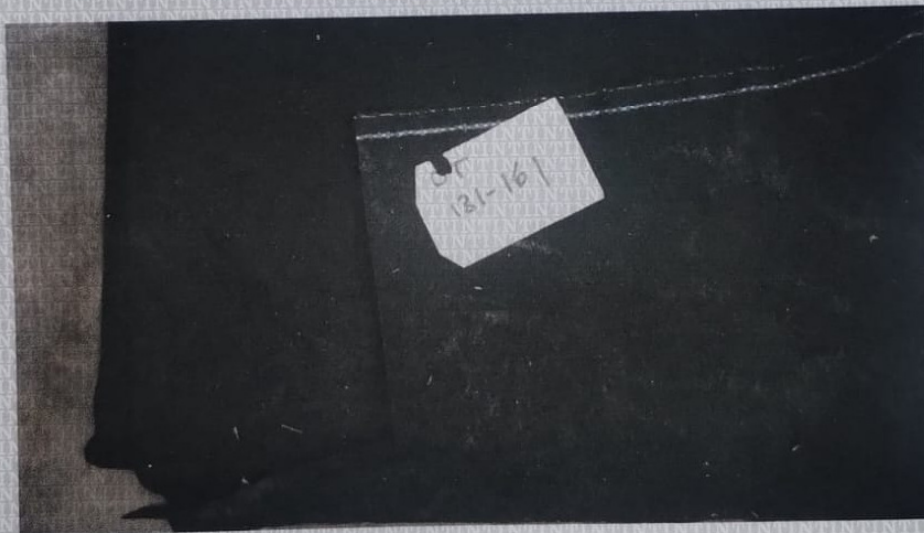
OT N° 131-161
Informe: Único
Página 2 de 3

1. METODOLOGÍA EMPLEADA

El ensayo se realizó de acuerdo a las indicaciones de la Norma NFPA 701, "Standard Methods of Fire Tests of Flame Propagation of Textiles and Films: Test Method 1".

2. IDENTIFICACIÓN DE LA MUESTRA

Textil negro identificado por el solicitante como "TEXTIL NEGRO SINTÉTICO CON TRATAMIENTO RETARDANTE IGNIFUGO MINIT"



Nota: La muestra presentaba partículas salinas sobre la superficie que se desprendían durante su manipulación.



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INTI Incendios y Explosiones

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OT N° 131-161
Informe: Único
Página 3 de 3

3. RESULTADOS OBTENIDOS

- Análisis cuantitativo:

Probeta	Peso inicial (g)	Peso final (g)	Tiempo de llama (seg)	Tiempo de llama material desprendido (seg)	Porcentaje de masa perdida (%)
1	35,21	34,07	0	0	3,24
2	33,3	31,29	0	0	6,04
3	41,68	39,73	0	0	4,68
4	34,28	32,06	0	0	6,48
5	38,09	36,5	0	0	4,17
6	35,5	33	0	0	7,04
7	40,36	38,5	0	0	4,61
8	39,21	37,01	0	0	5,61
9	39,24	37,5	0	0	4,43
10	39,1	34,9	0	0	10,74
Promedio	37,597	35,456	0	0	5,70
Desvío Standard					2,00

De acuerdo a los resultados obtenidos, el material identificado por el solicitante como: "TEXTIL NEGRO SINTÉTICO CON TRATAMIENTO RETARDANTE IGNIFUGO MINIT" **CUMPLE** con los requerimientos de la norma NFPA 701:1999 Standard Methods of Fire Test for Flame Propagation of Textiles and Films -Test method 1: "Curtains, draperies, or other windows treatments".

Observaciones:

De acuerdo a reglamentaciones internacionales, estos ensayos deben considerarse para medir y describir el comportamiento del material bajo condiciones controladas, pero no se puede estimar cuál será el comportamiento del mismo si se modifican total o parcialmente las condiciones de ensayo.

Esp. Arq. M. Paula Cheheid
INTI - Incendios y Explosiones

Ing. Geraldine Charreaur
Directora Técnica
INTI - Incendios y Explosiones

Fin del Informe

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NFPA NFPA 705 (INFLAMABILIDAD VERTICAL DE TEXTILES NIVEL 1 – CLASE A)



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Farmingdale, New York 11735-5626 USA
Tel. +1 (631) 293-8944 Fax +1 (631) 293-8956
e-mail: testing@govmark.com

Page 2

Received: 04/20/2016	Completed: 04/20/2016	Letter: M	MM	P.O.#:	Test Report #: 3-12898-0-
Client's Identification	Style: Fabric. Content: 100% Cotton. Additional Information: 100% Cotton Fabric Treated by Spray with Minit Flame Retardante for Fabrics.				
Tested For: Pablo Minotti Flame Retardant Technologies LLC 1330 NW 78th Ave Miami, FL 33126	Key Test: NFPA 705				225
Tel: 1-(305)-400-8389 Ext: Fax: 1-()- -					
TEST LOCATION: ☒ On-site ☐ Govmark Laboratory **					
FLOOR-TO-BOTTOM-OF-SPECIMEN HEIGHT: ☒ 8 inches ☐ Other _____ inches					
RESULTS:					
Direction	Specimen #	Ignition Observed (yes/no)	Afterflame (seconds)	Drip Burn (seconds)	Flaming (inches)
MD	1	Yes	0	0	0.2
CMD	2	Yes	0	0	0.3
Note 1: The "Ignition Observed" column information is an observation only and does not enter into the acceptance criteria.					
Note 2: NFPA 705 does not specify the number of specimens to be tested.					
ABBREVIATIONS: MD = Machine (Warp) ; CMD = Cross Machine (Fill/Weft) ; CL = Complete length burn					
ACCEPTANCE CRITERIA***:					
Afterflame: There should be no more than 2.0 seconds of afterflame for any individual specimen.					
Drip Burn: Materials that break or drip flaming particles should be rejected if the materials continue to burn after they reach the floor****					
Flaming: During the exposure, flaming should not spread over the complete length of the sample or, in the case of larger samples, in excess of 4 inches from the bottom of the sample.					
REMARKS: None.					
CONCLUSION: Based on the above Results and Acceptance Criteria, the item tested:					
☒ Complies; ☐ Does not comply					
CERTIFICATION: I certify that the above results were obtained after testing specimens in accordance with the procedures and equipment specified by NFPA 705.					
APR 26 2016					
Robert I. Brown					
AUTHORIZED SIGNATURE					
GOVMARK					
/pm					
(Page 2 of 3)					

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CAL 117 – CALIFORNIA STATE FIRE MARSHAL (INFLAMABILIDAD HORIZONTAL DE TEXTILES NATURALES = APROBADO)

Vartest

Quality Assurance & Compliance Testing
Utilizing Textile & Related Technologies

19 West 36th Street, 10th Floor
New York, NY 10018
Tel: 212 947 8391 Fax: 212 947 8719

www.vartest.com

ISO/IEC 17025 Certified Third Party Test Report

FILE: FLAMER_A0329168
SAMPLE IDENTIFIED BY CLIENT AS:
Fabric Submitted
100% Cotton
Color White

CALIFORNIA TECHNICAL BULLETIN 117-2013
SECTION 1 COVER FABRIC TEST

	<u>CHAR LENGTH (mm)</u>
Specimen #1:	12
Specimen #2:	12
Specimen #3:	10

- a) The mock-up test specimen continues to smolder after the 45-minute test duration: **NO**
- b) A char develops more than 1.8 inches (45 mm) in any direction from the cigarette on the cover fabric measured from its nearest point: **NO**
- c) The mock-up test specimen transitions to open flaming: **NO**

RESULTS: Pass

A material is considered to pass or fail based on the following criteria:

1. A single mock-up test specimen fails to meet the requirements of this test procedure if any of the following criteria occurs:
 - a) The mock-up test specimen continues to smolder after the 45-minute test duration.
 - b) A char develops more than 1.8 inches (45 mm) in any direction from the cigarette on the cover fabric measured from its nearest point.
 - c) The mock-up test specimen transitions to open flaming.
2. The cover fabric passes the test if three initial mock-up specimens pass the test, i.e., the cigarettes burn their full length and the mock-ups are no longer smoldering.
3. If more than one initial specimen fails, the cover fabric fails the test.
4. If any one of the three initial specimens fails, repeat the test on an additional three specimens.
5. If all three additional specimens pass the test, the cover fabric passes the test. If any one of the three additional specimens fails, the cover fabric fails the test.

Signed For The Company By

Adam R. Varley
Technical Director

JG/03/649



Stacy Sadowy
Stacy Sadowy
Quality Assurance Supervisor

Page 3 of 3

The findings and results in this test report apply only to the specific sample(s) submitted to us by the client for testing.



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Vartest

Quality Assurance & Compliance Testing
Utilizing Textile & Related Technologies
19 West 36th Street, 10th Floor
New York, NY 10018
Tel: 212 947 8391 Fax: 212 947 8719
www.vartest.com

ISO/IEC 17025 Certified Third Party Test Report

FILE: FLAMER.A032916A
SAMPLE IDENTIFIED BY CLIENT AS:
Fabric Submitted
100% Polyester
Color Green

CALIFORNIA TECHNICAL BULLETIN 117-2013
SECTION 1 COVER FABRIC TEST

	<u>CHAR LENGTH (mm)</u>
Specimen #1:	18
Specimen #2:	15
Specimen #3:	20

- a) The mock-up test specimen continues to smolder after the 45-minute test duration: NO
- b) A char develops more than 1.8 inches (45 mm) in any direction from the cigarette on the cover fabric measured from its nearest point: NO
- c) The mock-up test specimen transitions to open flaming: NO

RESULTS: Pass

A material is considered to pass or fail based on the following criteria:

- 1. A single mock-up test specimen fails to meet the requirements of this test procedure if any of the following criteria occurs:
 - a) The mock-up test specimen continues to smolder after the 45-minute test duration.
 - b) A char develops more than 1.8 inches (45 mm) in any direction from the cigarette on the cover fabric measured from its nearest point.
 - c) The mock-up test specimen transitions to open flaming.
- 2. The cover fabric passes the test if three initial mock-up specimens pass the test, i.e., the cigarettes burn their full length and the mock-ups are no longer smoldering.
- 3. If more than one initial specimen fails, the cover fabric fails the test.
- 4. If any one of the three initial specimens fails, repeat the test on an additional three specimens.
- 5. If all three additional specimens pass the test, the cover fabric passes the test. If any one of the three additional specimens fails, the cover fabric fails the test.

Signed For The Company By

Adam R. Varley
Adam R. Varley
Technical Director

JG/03/648

Stacy Sadov
Stacy Sadov
Quality Assurance Supervisor

Page 3 of 3

The findings and results in this test report apply only to the specific sample(s) submitted to us by the client for testing.



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BS 5852 : 2006, & CAL TB 117 : 2013 (INFLAMABILIDAD HORIZONTAL EN ALFOMBRAS SINTETICAS) RESULTADO PASS

IGS Industrial Global Standards LLC	Industrial Global Standards LLC 1209 MOUNTAIN ROAD PL NE STE N ALBUQUERQUE, NM 87110 EIN 37-218160 www.inglobalstandards.com industrialglobalstandards@gmail.com	TEST REPORT Nº 1143-72-144
	LAB SERVICE	

Applicant/ Manufacturer	MINIT Fire Retardant (MINIT Ignifugos) Pablo David Minotti ID: 20224196270 Argentina
Product	Synthetic Carpet treated with MINIT Ignifugos Fire Retardant
Reference Standard/ Method Tests	BS 5852 : 2006, & CAL TB 117 : 2013
Description of Test Specimen	Synthetic carpet (provided by Applicant/ Manufacturer) - 1 piece treated with MINIT Ignifugos fire retardant Size of Specimen : 1500mm×1500mm Nominal Thickness : 3mm
Date Received	May 15, 2025
Issued Date	May 22, 2025
Pages	2

1



Authorized Signature
Industrial Global Standards LLC
1209 MOUNTAIN ROAD PL NE STE N
ALBUQUERQUE, NM 87110



Validation Code

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Industrial Global Standards LLC

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ALBUQUERQUE, NM 87110
EIN 37-218160
www.inglobalstandards.com
industrialglobalstandards@gmail.com

LAB SERVICE

TEST REPORT

Nº 1143-72-144

Following the treatment described above, the material was conditioned and tested according to **BS 5852 : 2006, & CAL TB 117 : 2013 Methods of Test for the Assessment of the Ignitability of Upholstered Seating by Smouldering and Flaming Ignition Sources, Clause 11, using Ignition Source 5.**

The results relate only to the ignitability of the combinations of upholstery composites (Clause 11) under the particular condition of test stated; they are not intended as a means of assessing the full potential fire hazard of the item in use.

RESULTS	
Specimen number	1
Duration of flaming of ignition source (min)	3'24"
Duration of flames (min)	3'47"
Duration of smolder (min)	4'19"
Extent of damage of horizontal component	
- width (mm)	123
- length (mm)	121
- depth (mm)	23
Extent of damage of vertical component	
- width (mm)	157
- depth (mm)	27
Progressive smouldering >100mm from ignition source	No
Result	Pass

CONCLUSION

The specimen showed non-ignition, BS 5852: 2006, Rating M¹ & CAL TB 117: 2013, This Rating represents a Pass for Crib 5.

END OF REPORT



AMERICAN SOCIETY OF
SAFETY PROFESSIONALS

Authorized Signatory
Industrial Global Standards LLC
1209 MOUNTAIN ROAD PL, NE STE N
ALBUQUERQUE, NM 87110



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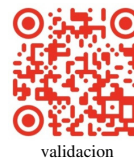
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IRAM 11910-3 NBR 9442/86 ASTM 162 (METODO PANEL RADIANTE EN MADERA, RE3 CLASE B, BAJA PROPAGACION DEL FUEGO)

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Informe de Ensayo

OT N°101 - 26333 Único
Página 1 de 2

Fecha de Informe: 15/03/2016

Solicitante
Minotti Pablo David
Echeverría 2073 - Piso 4 Dpto. B - (1419) – Ciudad Autónoma de Buenos Aires.

Elemento
Una (1) muestra de madera con tratamiento, identificada por el solicitante como: **"Tablas de madera tratadas con Aditivo Primer Intumescente MINIT para lacas y pinturas al agua y lacas"**.



Determinaciones requeridas
Clasificación de acuerdo al Índice de Propagación de Llama.

Fecha de Recepción
03/02/2016

Fecha de ensayo
10/03/2016

Metodología empleada
El ensayo de Propagación Superficial de Llama se realizó de acuerdo a la **Norma IRAM 11910-3:1994 "Materiales de Construcción, Reacción al fuego, Determinación del índice de propagación de llama – método del panel radiante"** (coincide con los métodos de ensayo de la Norma NBR 9442:1986 y ASTM E162:1994).

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Parque Tecnológico Miguelete





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Página 2 de 2

Resultados

F(promedio):	3,09
Q(promedio):	9,57
I(promedio):	30,23

Teniendo en cuenta la Tabla de Clasificación de la Norma IRAM 11910-1 del año 1994, el **Índice de Propagación de Llamas (I)** hallado del material denominado: **"Tablas de madera tratadas con Aditivo Primer Intumescente MINIT para lacas y pinturas al agua y lacas"** se clasifica como:

"Clase RE 3: Material de Baja propagación de llama"

(A esta clase pertenecen los materiales con un índice entre 26 y 75)

Coincide con la Clase B de la Norma brasileña NBR 9442/1986

Referencias para el ensayo de determinación de la propagación superficial de llama

Clase	Clase ABNT	Denominación	Norma IRAM	Criterio de clasificación
RE 1	-	Incombustible	11910-2	Anexo A de la norma
RE 2	A	Muy baja propagación de llama	11910-1	Índice: 0 a 25
RE 3	B	Baja propagación de llama	11910-1	Índice: 26 a 75
RE 4	C	Mediana propagación de llama	11910-1	Índice: 76 a 150
RE 5	D	Elevada propagación de llama	11910-1	Índice: 151 a 400
RE 6	E	Muy elevada propagación de llama	11910-1	Índice mayor a 400

Definiciones:

Un factor derivado de la rapidez de propagación del frente de llama (F) y otro relativo al calor liberado por el material ensayado (Q) son combinados para proveer el Índice de propagación superficial de llama (I).

I: Índice de propagación superficial de llama.

F: Factor de propagación de llama.

Q: Factor de evolución de calor

Los resultados contenidos en el presente informe corresponden a las condiciones en las que se realizaron las mediciones y/o ensayos.

Fin del Informe

Arq. BASILIO HASAPOV
COORDINADOR
U.T. TECNOLOGÍA EN INCENDIOS
INTI-CONSTRUCCIONES

Arq. INÉS DOLMANN
DIRECTORA TÉCNICA
INTI - Construcciones

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MINIT Ignifugos

minitargentina@gmail.com www.minitfireretardant.com

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Presentación válida únicamente con el Certificado / Factura de Compra MINIT TOTAL



validacion

ASTM 162 (METODO PANEL RADIANTE EN MADERA, CARTÓN Y PAPEL. RESULTADO: DNI (DID NOT IGNITE / NO ENTRO EN IGNICIÓN)

Equivalente con los estándares europeos: CSE RF 3/77; y BS 476 part 6 and part 7

Govmark

96-D Allen Boulevard
Farmingdale, New York 11735-5626 USA
Tel. +1 (631) 293-8944 Fax +1 (631) 293-8
e-mail: testing@govmark.com

Page 1

Received: 04/07/2016	Completed: 04/07/2016	Letter: P	JB	P.O.#:	Test Report #:	3-12594-0-
Client's Identification	Style: Wood Treated by Spray wit Flame Retardant. Date of Mfg.: 03/31/2016. Composition: Pine Wood. Thickness: 1". (see continuation)					
Tested For: Pablo Minotti	Key Test: ASTM E 162					725
Flame Retardant Technologies LLC 1330 NW 78th Ave Miami, FL 33126						
Tel: 1-(305)-400-8889 Ext:						
Fax: 1-() -						

CLIENT'S IDENTIFICATION (continuation):
Product End Use: MINIT Flame Retardant, for Wood cardboard and Paper Treatment.
Additional Information: Pine Wood Treated by Spray with the Product MINIT Flame Retardant for Wood Cardboard and Paper.

Category: Radiant Panel LE 2015a; V 09/15 NTR 2/16 PC: 24H+ME /dl SM/mg

APPROXIMATE [x] THICKNESS [] DIAMETER OF MATERIAL (as measured by Govmark): 1.514"

TEST PERFORMED: ASTM E 162 - Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source

SPECIMEN: [x] Rigid Material: 6" x 18"
[] Cellular Sheet Foam Materials: 6" x 18"
[] Fabric/Flexible Materials: 10" x 22"
[] Cable: 18" lengths were grouped to form 6" x 18" test specimens

BRIEF DESCRIPTION OF TEST: The test specimen faces a radiant heat source. At the beginning of the test period an igniting flame impinges at the top of the specimen. Visual observation is made of the downward progression of the flame front. The test is completed when the flame front has progressed to the 15" mark, or after an exposure time of 15 minutes, whichever occurs first. The heat given off by the burning specimen is automatically recorded. The combination of the two factors, flame front progression and heat, result in a Flame Spread Index.

NOTES: * While the Standard calls out "Radiant Panel Index", Govmark reports "Flame Spread Index", since this is the terminology used in most Code specifications. "Flame Spread Index" and "Radiant Panel Index" are identical for the purposes of this report.

** Flashing is defined as a flame front of 3 seconds or less in duration. Where ANY flashing has occurred, an individual specimen's Flame Spread Index is understood to be qualified as "(Flashing)".

REMARKS:

Specimen #	Non Sustained (Flashing**) Flame Front Off Gas Ignition (yes/no)	Sustained Flame Front Ignition at (mm:ss)	All Flaming Out (mm:ss)	Test End (mm:ss)	Drips Flame on Test Floor (yes/no)
1	Yes	01:30	SB	15:00	No
2	Yes	01:09	SB	15:00	No
3	Yes	00:49	SB	15:00	No
4	Yes	00:54	11:33	15:00	No

ABBREVIATIONS WHICH MAY BE USED IN "REMARKS":
DNI = Did not ignite

CERTIFICATION: I certify that the above results were obtained after testing specimens in accordance with the procedures and equipment specified above.

Robert I. Brown

AUTHORIZED SIGNATURE
GOVMARK



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validacion

IRAM 11910-3 NBR 9442/86 ASTM 162 (METODO PANEL RADIANTE EN GOMA ESPUMA, RE2 CLASE A, BAJA PROPAGACION DEL FUEGO)

INTI  **Construcciones**

INFORME DE ENSAYO

Solicitante: MINOTTI PABLO DAVID

O.T.: 101/22353

Dirección: Cochrane 2322

Pág.: 1/ 2

(1419) – Ciudad Autónoma de Buenos Aires

Fecha: 06/11/2012

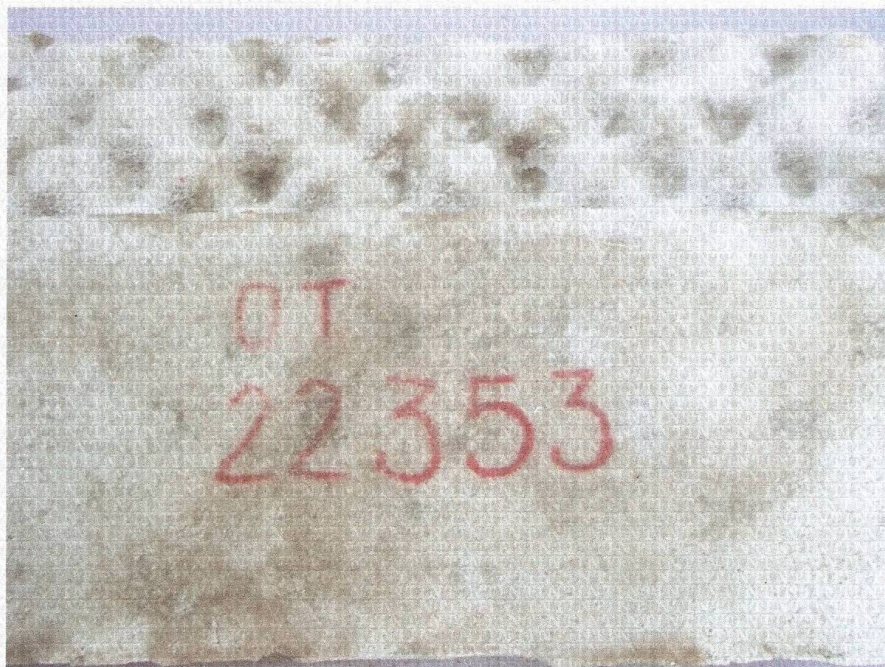
Informe: Único

1. OBJETIVO

Clasificación de acuerdo al Índice de Propagación de Llama.

2. MATERIAL

Una (1) muestra de goma espuma, identificada por el solicitante como: “Panel Acústico y Goma Espuma Ignífuga MINIT”.



3. MÉTODO EMPLEADO

El ensayo de Propagación Superficial de Llama se realizó de acuerdo a la **Norma IRAM 11910-3:1994 “Materiales de Construcción, Reacción al fuego, Determinación del índice de propagación de llama – método del panel radiante”** (coincide con los métodos de ensayo de la Norma NBR 9442:1986 y ASTM E162:1994).

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La muestra fue recibida el día 15/10/2012 y ensayada el día 06/11/2012.

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Solicitante: MINOTTI PABLO DAVID

O.T.: 101/22353

Pág.: 2/ 2

Dirección: Cochrane 2322

Fecha: 06/11/2012

(1419) – Ciudad Autónoma de Buenos Aires

Informe: Único

4. RESULTADOS OBTENIDOS

Determinación de la Propagación superficial de llama

F(promedio):	1,71
Q(promedio):	0,94
I(promedio):	1,55

De acuerdo al **Índice de Propagación de Llamas (I)** hallado y teniendo en cuenta la Tabla de Clasificación de la Norma IRAM 11910-1 del año 1994, que se detalla como referencias, el material **"Panel Acústico y Goma Espuma Ignifuga MINIT"** se clasifica como:

"Clase RE 2: Material de Muy baja propagación de llama"

(A esta clase pertenecen los materiales con un índice mayor a 0 y menor a 25)

Coincide con la Clase A de la Norma brasileña NBR 9442/1986

Referencias para el ensayo de determinación de la propagación superficial de llama

Clase	Clase ABNT	Denominación	Norma IRAM	Criterio de clasificación
RE 1	-	Incombustible	11910-2	Anexo A de la norma
RE 2	A	Muy baja propagación de llama	11910-1	Índice: 0 a 25
RE 3	B	Baja propagación de llama	11910-1	Índice: 26 a 75
RE 4	C	Mediana propagación de llama	11910-1	Índice: 76 a 150
RE 5	D	Elevada propagación de llama	11910-1	Índice: 151 a 400
RE 6	E	Muy elevada propagación de llama	11910-1	Índice mayor a 400

Definiciones:

Un factor derivado de la rapidez de propagación del frente de llama (F) y otro relativo al calor liberado por el material ensayado (Q) son combinados para proveer el índice de propagación superficial de llama (I).

I: Índice de propagación superficial de llama.

F: Factor de propagación de llama.

Q: Factor de evolución de calor

Aroldo BASILIO CASAPÁN
COORDINADOR
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INTI-CONSTRUCCIONES

Ing. VICENTE L. VOLANTINO
DIRECCIÓN
INTI - CONSTRUCCIONES

Nota:

De acuerdo a reglamentaciones internacionales, estos ensayos deben considerarse para medir y describir el comportamiento del material bajo condiciones controladas, pero no se puede estimar cuál será el comportamiento del mismo si se modifican total o parcialmente las condiciones de ensayo.

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BS5852 y CAL TB 117 Resultado PASS (Inflamabilidad Horizontal en Pasto Sintético)

IGS Industrial Global Standards LLC	Industrial Global Standards LLC 1209 MOUNTAIN ROAD PL NE STE N ALBUQUERQUE, NM 87110 EIN 37-218160 www.inglobalstandards.com industrialglobalstandards@gmail.com	TEST REPORT Nº 1143-72-135
LAB SERVICE		
Applicant/ Manufacturer	MINIT Fire Retardant (MINIT Ignifugos) Pablo David Minotti ID: 20224196270 Argentina	
Product	Synthetic Grass treated with MINIT Ignifugos Fire Retardant	
Reference Standard/ Method Tests	BS 5852 : 2006, & CAL TB 117 : 2013	
Description of Test Specimen	Synthetic grass carpet (provided by Applicant/ Manufacturer) - 1 piece treated with MINIT ignifugos fire retardant Size of Specimen : 1500mm×1500mm Nominal Thickness : 5mm	
Date Received	May 15, 2025	
Issued Date	May 22, 2025	
Pages	2	

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IGS

Industrial Global Standards LLC

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ALBUQUERQUE, NM 87110
EIN 37-218160
www.inglobalstandards.com
industrialglobalstandards@gmail.com

TEST REPORT
Nº 1143-72-135

LAB SERVICE

Following the treatment described above, the material was conditioned and tested according to BS 5852 : 2006, & CAL TB 117 : 2013
Methods of Test for the Assessment of the Ignitability of Upholstered Seating by Smouldering and Flaming Ignition Sources, Clause 11, using Ignition Source 5.

The results relate only to the ignitability of the combinations of upholstery composites (Clause 11) under the particular condition of test stated; they are not intended as a means of assessing the full potential fire hazard of the item in use.

RESULTS	REF
Specimen number	1
Duration of flaming of ignition source (min)	3'37"
Duration of flamer (min)	4'17"
Duration of smoke (min)	5'24"
Extent of damage of horizontal component	
- width (mm)	138
- length (mm)	141
- depth (mm)	34
Extent of damage of vertical component	
- width (mm)	164
- depth (mm)	34
Progressive smouldering >100mm from ignition source	No
Result	 Pass

CONCLUSION
The specimen showed non-ignition, BS 5852: 2006, Rating NI5. & CAL TB 117: 2013, This Rating represents a Pass for Crib 5.

END OF REPORT

Authorized Signatory
Industrial Global Standards LLC
1209 MOUNTAIN ROAD PL NE STE N
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Validation Code

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validacion

UIC 564-2 : 1991 (APENDICE 13) Material Plástico

INFORME DE ENSAYO	
Solicitante: MINOTTI PABLO DAVID	O.T.: 101/25498
Dirección: Cochrane 2322 (1419) C.A.B.A.	Pág.: 1/ 3
	Fecha: 16/06/2015
	Informe: Único
1. OBJETIVO Evaluación del comportamiento ante el fuego de asientos de vehículos de transporte de pasajeros.	
2. MATERIAL Una (1) unidad de asiento simple, identificada por el solicitante como: "Butaca con tratamiento retardante del fuego MINIT de Pablo Minotti" .	
	
Observaciones: La butaca se encontraba parcialmente dañada en su parte horizontal delantera.	
3. MÉTODO EMPLEADO La evaluación del comportamiento ante el fuego de asientos de vehículos de transporte de pasajeros, se realizó siguiendo de acuerdo a la Norma UIC 564-2:1991 Apéndice 13: "Regulations relating to fire protection and fire-fighting measures in passenger-carrying railway vehicles or assimilated vehicles used on international services" .	
La muestra fue recibida el día 20/04/2015 y fue ensayada el día 29/05/2011.	
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Industria

INFORME DE ENSAYO

Solicitante: MINOTTI PABLO DAVID

O.T.: 101/25498

**Dirección: Cochrane 2322
(1419) C.A.B.A.**

Pág.: 3/ 3

Fecha: 16/06/2015

Informe: Único

Criterio de aceptación de la Norma UIC 564-2:1991 Apéndice 13.

Para ambas ubicaciones del combustible:

- El fuego debe extinguirse espontáneamente antes de los 10 minutos de haber sido comenzado el ensayo.
- No deben observarse desprendimiento de partículas ardiendo.

De acuerdo al resultado obtenido la muestra **"Butaca con tratamiento retardante del fuego MINIT de Pablo Minotti"**, **CUMPLE** con las exigencias de la Norma UIC 564-2:1991 Apéndice 13.

Arq. BASILIO HAGAPOV
COORDINADOR
U.T. TECNOLOGÍA EN INCENDIOS
INTI-CONSTRUCCIONES

Lic. FABIO S. LUNA
COORDINADOR U.T.
Geología Aplicada y Ambiental
INTI - Construcciones

Nota:

De acuerdo a reglamentaciones internacionales, estos ensayos deben considerarse para medir y describir el comportamiento del material bajo condiciones controladas pero no se puede estimar cuál será el comportamiento del mismo si se modifican total o parcialmente las condiciones de ensayo.

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ENSAYOS DE EMANACIÓN DE HUMO Y GASES

IGS

Industrial Global Standards LLC

Industrial Global Standards LLC
1209 MOUNTAIN ROAD PL NE STE N
ALBUQUERQUE, NM 87110
EIN 37-218160
www.inglobalstandards.com
industrialglobalstandards@gmail.com

TEST REPORT

Nº 1143-27-522

LAB SERVICE

VALIDO SOLO CON CERTIFICADO DE COMPRA.

MINIT-IGNIFUGOS

Applicant/ Manufacturer	MINIT Fire Retatadant (MINIT Ignifugos) Pablo David Minotti ID: 20224196270 Argentina
Product	MINIT Ignifugos / Fire retardant applied on different specimens described below
Reference Standard/ Method Tests	BSS 7239-88. // ASTM E-662. // EN 13823. // ISO 5659-2. TESTS METHODS FOR TOXIC GAS GENERATION BY MATERIALS ON COMBUSTION.
Description of Test Specimens	REF A -Total pieces with fire retardant (provided by Applicant/ Manufacturer) - 4 piece of 100% cotton fabric, treated with MINIT Ignifugos/ Fire retardant - Ref 1 - 4 piece of 100% polyester fabric, treated with MINIT Ignifugos/ Fire retardant - Ref 2 - 4 piece of synthetic carpet, treated with MINIT Ignifugos/ Fire retardant - Ref 3 - 4 piece of synthetic grass carpet, treated with MINIT Ignifugos/ Fire retardant - Ref 4 - 4 piece of foam, treated with MINIT Ignifugos/ Fire retardant - Ref 5 - 4 piece of wood, treated with MINIT Ignifugos/ Fire retardant - Ref 6 REF B -Total pieces without fire retardant (provided by Applicant/ Manufacturer) - 2 piece of 100% cotton fabric, without fire retardant - Ref 1 - 2 piece of 100% polyester fabric, without fire retardant - Ref 2 - 2 piece of synthetic carpet, without fire retardant - Ref 3 - 2 piece of synthetic grass carpet, without fire retardant - Ref 4 - 2 piece of foam, without fire retardant - Ref 5 - 2 piece of wood, without fire retardant - Ref 6 Size of Specimens: 3" x 3" , specified for test methods Size of Specimens: 15" x 15" , specified for test methods
Date Received	May 20, 2025
Issued Date	Jun 27, 2025
Pages	3

1

BSS 7239-88 is a Boeing standard test method that measures the concentration of toxic gases produced during the combustion of materials, specifically focusing on those used in aircraft interiors. It is a critical tool for evaluating fire safety, especially in the confined spaces of an aircraft cabin, by assessing the potential hazards from toxic gases like carbon monoxide, hydrogen fluoride, hydrogen cyanide, hydrogen chloride, and sulfur dioxide. The test is performed in a controlled environment, where a material sample is burned and the resulting gases are analyzed.

ASTM E-662 is a standard test method that measures the amount of smoke produced by solid materials when exposed to heat and flame, specifically focusing on the specific optical density of the smoke. It's used to evaluate how much light is blocked by the smoke generated by a material, which is an indicator of visibility reduction in a fire. This test is crucial for assessing fire hazards and is often a requirement in various industries and transportation codes. The test measures the "specific optical density," which is a normalized value that accounts for the amount of smoke generated relative to the sample's exposed area and volume.

EN 13823, is a Single Burning Item (SBI) test, is a European standard for evaluating the fire behavior of building products (excluding flooring) when exposed to a thermal attack. The product is mounted in a corner configuration with two walls (or wings) forming a 90-degree angle. A propane gas burner (30kW) is placed at the bottom of the corner to simulate a fire source. The specimen and burner are placed inside an enclosure with an exhaust system that collects combustion gases. Instruments measure heat release, smoke production, and flame spread, while visual observations record burning droplets and other relevant characteristics. The SBI test results are used to classify products into Euroclasses (A1, A2, B, C, D, etc.) which indicate their fire performance.

ISO 5659-2 is an international standard that specifies a method for measuring smoke production from materials, particularly plastics or synthetic, when exposed to heat and flame. It focuses on determining the optical density of the smoke produced in a single-chamber test. This standard is primarily used for research and development, as well as in fire safety engineering for buildings, trains, and ships, rather than for setting building code ratings.



Authorized Signatory
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1209 MOUNTAIN ROAD PL NE STE N
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Validation Code



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SAFETY PROFESSIONALS

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TEST REPORT

Nº 1143-27-522

LAB SERVICE

VALIDO SOLO CON CERTIFICADO DE COMPRA.

MINIT IGNIFUGOS

BSS 7239-88 RESULTS:

Relative Room Humidity: 20% / Test Duration: 20 min. // Chamber Wall Temp: 35°C

Carbon Monoxide (CO ppm) at 1.5 minutes
at 4.0 minutes
at maximum

Nitrogen Oxides (as NO₂ ppm)
Sulfur Dioxide (SO₂ ppm)
Hydrogen Chloride (HCl ppm)
Hydrogen Fluoride (HF ppm)
Hydrogen Cyanide (HCN ppm)

REF A	HCl	HCN	HF	NO ₂	SO ₂	CO 1.5	CO 4.0	CO MAX
1	< 1	ND	ND	< 1	ND	5	55	118
2	< 2	ND	ND	< 1	ND	8	98	211
3	< 3	ND	< 2	< 1	< 1	9	101	218
4	< 3	ND	< 2	< 1	< 1	9	125	238
5	< 3	ND	< 2	< 1	< 1	9	127	247
6	< 2	ND	ND	< 1	ND	6	87	209

2

Conclusions:

Boeing BSS 7239 is solely a test procedure and as such, has no specific pass/fail criteria of its own. The reference criteria cited are typical for the transportation industry and are listed for reference purposes only. They may or may not apply to the specific products. Specimens are exposed to the combustion conditions described in ASTM E 662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials. In compliance with this standards the material tested approve the BSS 7239 Tests

ASTM E-662 RESULTS:

REF A	Relative Room Humidity: 33% / Chamber Wall Temp: 35°C
1	Ds (1.5): 34, Ds (4.0): 52, Dm: 114.
2	Ds (1.5): 61, Ds (4.0): 89, Dm: 197.
3	Ds (1.5): 63, Ds (4.0): 91, Dm: 211.
4	Ds (1.5): 64, Ds (4.0): 94, Dm: 212.
5	Ds (1.5): 68, Ds (4.0): 97, Dm: 232.
6	Ds (1.5): 64, Ds (4.0): 95, Dm: 212.

Among the parameters normally reported are:
Ds 1.5 - specific optical density after 1.5 minutes
Ds 4.0 - specific optical density after 4.0 minutes
Dm - maximum specific optical density at any time during the 20 minute test
Authorities generally specify a maximum Ds 1.5 of 100 and a maximum Ds 4.0 of 200 in either flaming or non-flaming test mode.

Conclusions:

All specimens materials, identified in this report, when tested, meet requirements to smoke rate required by authorities.



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TEST REPORT

Nº 1143-27-522

LAB SERVICE

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EN 13823 RESULTS:

Cumulative smoke production (TSP), Fire Growth Rate (FIGRA), Cumulative heat release (THR), Smoke growth rate (SMOGRA)

REF A	Lateral Flame Spread to End of Specimen	Flaming droplets	Flaming of Fallen Particle Exceeding 10s	FIGRA (w/s)	THR 600s (MJ)	SMOGRA (m²/s²)	TSP 600s (m²)
1	N	N	N	178.68	11.89	79.68	86.15
2	N	N	N	367.17	24.78	187.23	149.95
3	N	N	N	389.82	25.49	162.89	144.56
4	N	N	N	391.25	24.87	161.76	142.82
5	N	N	N	396.12	25.45	163.08	144.78
6	N	N	N	185.98	12.87	83.45	89.27

Conclusion on specimens REF A: All specimens materials, identified in this report, when tested, meet requirements to smoke rate required by authorities. (Pass)

REF B	Lateral Flame Spread to End of Specimen	Flaming droplets	Flaming of Fallen Particle Exceeding 10s	FIGRA (w/s)	THR 600s (MJ)	SMOGRA (m²/s²)	TSP 600s (m²)
1	Y	Y	Y	536.04	35.67	239.04	258.45
2	Y	Y	Y	1101.51	74.37	561.96	449.85
3	Y	Y	Y	1069.46	76.47	488.67	433.68
4	Y	Y	Y	1173.75	74.61	485.28	428.46
5	Y	Y	Y	1188.36	76.35	489.24	434.34
6	Y	Y	Y	557.94	38.61	250.35	267.81

Conclusion on specimens REF B: All specimens materials, identified in this report, when tested, do not meet smoke rate required by authorities. (Do not pass)

ISO 5659-2 RESULTS:

The radiator cone was located so that the lower rim of the radiator cone shade junction was 25 mm above the upper surface of the specimen when oriented in the horizontal position. Exposed to a radiant heat source (25kW/m² or 50kW/m²) within a closed chamber. Pilot flame was applied.

REF A	/ Relative Room Humidity: 50% / Chamber Wall Temp: 26 °C
1	Ds (1.5): 31, Ds (4.0): 49, Dm: 111.
2	Ds (1.5): 59, Ds (4.0): 86, Dm: 194.
3	Ds (1.5): 61, Ds (4.0): 88, Dm: 208.
4	Ds (1.5): 61, Ds (4.0): 91, Dm: 209.
5	Ds (1.5): 65, Ds (4.0): 94, Dm: 229.
6	Ds (1.5): 61, Ds (4.0): 25, Dm: 209.

Conclusion on specimens REF A: All specimens materials, identified in this report, when tested, meet requirements to smoke rate required by authorities. (Pass)

REF B	/ Relative Room Humidity: 50% / Chamber Wall Temp: 26 °C
1	Ds (1.5): 119, Ds (4.0): 182, Dm: 399.
2	Ds (1.5): 213, Ds (4.0): 311, Dm: 689.
3	Ds (1.5): 220, Ds (4.0): 318, Dm: 738.
4	Ds (1.5): 224, Ds (4.0): 329, Dm: 742.
5	Ds (1.5): 238, Ds (4.0): 339, Dm: 812.
6	Ds (1.5): 224, Ds (4.0): 332, Dm: 742.

Conclusion on specimens REF B: All specimens materials, identified in this report, when tested, do not meet smoke rate required by authorities. (Do not pass)



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Homologación de De Densidad de Humo NORMA IRAM 11914

Evaluación Comparativa del Índice de Densidad de Humo (Dm) de diferentes materiales, tratados con Retardante de fuego MINIT Ignífugos, según certificado de ensayo Internacional **IGS 1143-27-522** con Normativa **IRAM 11914 1**.

Comparación de Normativas, Aspecto Propósito, Método de Prueba, Criterios de Evaluación, Similitud con Normas:

ISO 5659-2 Medición de la densidad de humo en cámara cerrada. Se mide la densidad óptica de los humos en función del tiempo y calor irradiado. Densidad óptica específica máxima (Ds). Alta similitud en técnicas de medición.

EN 13823 (SBI Test) Evaluación de la densidad de humo en materiales de construcción mediante SMOGRA. Evaluación de liberación de humo durante la combustión con un objeto en llamas. Tasa de crecimiento de humo (**SMOGRA**).

Ambas normas son compatibles en parte con la evaluación de propagación del humo. IRAM 11914"

En el certificado de ensayo internacional **IGS 1143-27-522** se realizó sobre los siguientes materiales tratados con Retardante de fuego MINIT Ignífugo y no tratados en ensayos comparativos:

- Tela 100% algodón
- Tela 100% poliéster
- Alfombra 100% sintética
- Alfombra de pasto 100% sintética
- Goma espuma
- Madera

En la valuación de la densidad óptica específica corregida (Dmc) de humos en incendios se mide la absorción de luz en una cámara específica para calcular Dm. Densidad óptica específica corregida (Dmc). Especifica los mismos criterios de clasificación.

Desarrollo Comparativo de Normativas Internacionales.

ISO 5659-2 es la norma internacional utilizada para medir la densidad de humo en cámara cerrada. Su método de medición es comparable con IRAM 11914, aunque sus criterios de clasificación difieren levemente.

EN 13823 (SBI Test) evalúa la propagación del fuego y la generación de humo, midiendo SMOGRA. No es idéntico a IRAM 11914 pero se usa en conjunto para clasificar materiales.

IRAM 11914 clasifica los materiales en función de la densidad de humo corregida (Dmc):

- ≤ 132 Clasificación Baja generación de humo
- 133 – 264 Mediana generación de humo
- 265 – 396 Alta generación de humo
- > 396 Muy alta generación de humo

Para evaluar un material en Argentina según IRAM 11914, los valores obtenidos de ISO 5659-2 o EN 13823 sirven como referencia.

Conclusión Final

A partir del análisis de normativas internacionales y estudios previos, se ha determinado que los materiales tratados con retardantes de llama MINIT tienen una generación de humo moderada, lo que permite su clasificación en "**Baja a Mediana Generación de Humo**" según **IRAM 11914 (Dmc 130 - 250)**. Comparado con los materiales sin Retardante de llama.

El informe sugiere que los materiales con retardantes de llama MINIT son una opción viable para aplicaciones donde la generación de humo debe ser controlada, cumpliendo con normativas de seguridad.

Equivalencias / Homologación de ensayos aprobados comparados con normas de otros países.

Ensayos de Inflamabilidad Vertical para Textiles:

Certificaciones aprobadas: IRAM-INTI-CIT G7577, NFPA 701, & NFPA 705 Methods.

Resultado: Nivel 1 = Clase A. Resultado Cualitativo: No entra en Ignición. Pass = Complies

Equivalente con los estándares europeos:

DIN 4102 Parts 15/16 - Brandschacht (B1); NFP 92 - 503 - Bržleur flectrique;

British Standard BS 5867 and BS 5438

Ensayos de inflamabilidad horizontal para muebles y alfombras

Certificación aprobada: CAL 117 (Pass = Complies)

Equivalente con los estándares europeos:

EN 1021 - 1/2 : 1994; EN 1021 : Part 1; EN 1021 : Part 2; DIN 4102 Part 1 - Kleinbrenner (B2)

