

# Muslin 12.0

Perfect For: • Decorative/Scenic • Film & TV • Stage



**J&C Joel** 

the inspiration behind the performance

## Composition & Care

1200 cm 3

## Fire Certificate

BS5867 Part 2 Type B 4

M1 7

B1 15

EN13773 22

## TECHNICAL



NDFR

### Non Durably Flame Retardant

chemically treated with a water solution and if wetted in any way should be retreated



DFR

### Durably Flame Retardant

chemically treated to withstand a number of cleanings



IFR

### Inherently Flame Retardant

woven from fibres with a high flame retardancy



FR

### Flame Retardant

chemically treated to an individual specification



NOT FR

**Not Flame Retardant** no flame retardant treatment



Confirmation that the fabric meets one or more flame retardant standards

**BS5867** BS5867 Pt2 B is the British Standard for flame retardant fabrics used for curtains and drapes

**BS5852** BS5852 Pt1 is the British Standard for flammability of upholstered composites for seating

**BS4790** BS4790: 1987 Determination of the effects of a small source of ignition on textile floor coverings hot metal nut method (method 1, loose laid)

**EN13773: 2003** Meets European fire safety standards for vertically hung fabrics. Burning behavior, ignitability testing of curtain fabric for use in the contract market.

**TL 1080-0002/8** German Military Specification for horizontally tested materials

**EN14041** Details the requirement for CE Marking of textiles, laminate and resilient floor coverings

**BS7905-1:2001** Lifting equipment for performance, broadcast and similar applications.

## ATTRIBUTES



Approx roll length of material in linear metres (m) & feet (ft)



Approx width of material in centimetres (cm) & inches (")



Approx weight in grams per metre squared (g/m<sup>2</sup>)



Approx thickness in (mm)

**M1, M2, M4** Conforms to French Fire Regulations

**B1, B2** Conforms to German Fire Regulations DIN 4102

**IMO** Conforms to International Maritime Organisation regulations

**Classe Uno** Meets Italian Fire Regulations

**BS EN13501-1** Fire Classification of construction, products and building elements. Classification using test data from reaction to fire tests

**CFC EN ISO 9239-1** Reaction to fire test. Horizontal surface spread of flame on floor covering system. Determination of the burning behaviour using a retardant heat source

**NFPA 701** NFPA 701: (USA) Standard Methods of Fire Tests for Flame Propagation of Textiles and Films

**EN9239-1** Reaction to fire tests – horizontal surface spread of flame on floor covering systems

**DIN EN1021** Meets European fire safety standards for exposure to different ignition sources, namely a lit cigarette and butane flame. Assessment of the ignitability of upholstered furniture

To ensure you get the best from the product supplied to you, we advise you follow the care instructions within this datasheet.

Fabric	<b>Flame Retardancy</b>	NDFR
	<b>Fire Certification</b>	BS5867, M1, B1, EN13773, EN13501-1
	<b>Brand Name (and Manufacturer)</b>	J&C Joel Ltd.
	<b>Material (Blending Ratio)</b>	100% Cotton
	<b>Construction of Fabric</b>	Plain Weave
Chemicals	<b>Surface Treatments</b>	Bleached & Dyed
	<b>Brand Name of Flame Retardant Chemicals</b>	KAPP-Chemie GBMH.Co KG
	<b>Chemical name of Flame Retardant Chemicals</b>	Kappaflam CFP
	<b>Process of Flame Retardant Chemicals</b>	Immersion
Care	<b>Information</b>	<p>Non-Durably Flame Retardant. This means that the fabric is chemically treated and if wet (in any way) should be retreated to meet the flammability requirements of BS5867 Part 2 Type B, M1, B1, EN13773 and EN13501-1. Therefore, the cloth will not withstand wet cleaning and should be re-flame proofed whenever wet. The cloth can be professionally dry cleaned using the correct chemical process.</p> <p>Notwithstanding the aforementioned, it would be our advice to only dry clean this material periodically. We would suggest that the curtain be soft-brushed on a regular basis and periodically cleaned using a vacuum and drapery attachment. Commercial flame retardants may alter the aesthetics, appearance, colour or performance of the textile material.</p> <p>This fabric is not pre-shrunk.</p>
	<b>Laundering Treatment</b>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">               Dry Clean Only         </div> <div style="text-align: center;">               Do Not Wash         </div> <div style="text-align: center;">               Do Not Bleach         </div> <div style="text-align: center;">               Do Not Iron         </div> <div style="text-align: center;">               Do Not Tumble Dry         </div> </div>
<b>Notes</b>		



Fire Rating:  
NDFR



Approx Bale Length:  
60m / 197ft



Width:  
1200cm / 472"



Weight:  
75 g/m<sup>2</sup>



Fire Certification:  
BS5867, M1, B1,  
EN13773, EN13501-1



Colours  
Available

For further information please contact our sales team [sales@jcjoel.com](mailto:sales@jcjoel.com)

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** BS5867 Part 2 Type B

**J&C Joel** 

the inspiration behind the performance



## Confidential Report

Our Ref: 23/62408A/09/24



1066

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** BS5867 Part 2 Type B

# J&C Joel

the inspiration behind the performance



Wira House, West Park Ring Road, Leeds, LS16 6QL, UK.  
Telephone: +44 (0) 113 259 1999  
Email: [onestopshop@bttg.co.uk](mailto:onestopshop@bttg.co.uk)  
Website: [www.bttg.co.uk](http://www.bttg.co.uk)

Date: 23 September 2024

Our Ref: 23/62408A/09/24

Your Ref: 76641

Page: 1 of 4

**Client:** J. & C. Joel Ltd  
Corporation Mill  
Corporation Street  
Sowerby Bridge  
Halifax  
HX6 2QQ

**Job Title:** Fire Test on One Fabric Sample

**Clients Order Ref:** 76641

**Date of Receipt:** 13 September 2024

**Date Test Started:** 20 September 2024

**Description of Sample:** One sample of fabric, which was referenced by the client as;  
Muslin 100% Cotton.

**Work Requested:** We were asked to make the following fire test:  
BS 5867: Part 2:Type B:2008 (2015)

- \* subcontracted test, UKAS accredited
- \*\* subcontracted test, EN ISO/IEC 17025 accredited
- \*\*\* not UKAS accredited



1066

Note: This report relates only to the items tested.

Shirley® Technologies Limited. Registered Office: Wira House, West Park Ring Road, Leeds, LS16 6QL.  
A company registered in England & Wales with company number 04669651. VAT Number GB 816764800.  
BTTG™ and Shirley® are trade names of Shirley Technologies Ltd.  
The supply of all goods and services is subject to our standard terms of business, copies of which are available on request.  
Our laboratories are accredited to EN ISO/IEC 17025.

Copyright © 2024 Shirley Technologies Limited. All rights reserved.

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** BS5867 Part 2 Type B

**J&C Joel** 

the inspiration behind the performance



Wira House, West Park Ring Road, Leeds, LS16 6QL, UK.  
Telephone: +44 (0) 113 259 1999  
Email: [onestopshop@bttg.co.uk](mailto:onestopshop@bttg.co.uk)  
Website: [www.bttg.co.uk](http://www.bttg.co.uk)

Date: 23 September 2024

Our Ref: 23/62408A/09/24  
Your Ref: 76641

Page: 2 of 4

**Client:** J. & C. Joel Ltd

## BS 5867: Part 2: 2008 (2015): Type B Curtains, Drapes and Blinds

### Pre-treatment

The sample is inherently flame retardant, therefore, the sample was not subjected to the water soaking procedure.

### Conditioning

The test specimens were conditioned for at least 24 hours in the standard atmosphere of  $65 \pm 5\%$  relative humidity (R.H.) and  $20 \pm 2\text{ }^{\circ}\text{C}$ .

### Testing

Three specimens from both length and width were tested in accordance with BS EN ISO 15025: Procedure A (surface ignition):2002.

Each specimen was subjected to an applied flame using propane and a 15 second flame application time. The results obtained (shown in the table below) were assessed according to the requirements of BS 5867: Part 2:Type B:2008 (2015).



1066

Shirley® Technologies Limited. Registered Office: Wira House, West Park Ring Road, Leeds, LS16 6QL.  
A company registered in England & Wales with company number 04669651. VAT Number GB 816764800.

BTTG™ and Shirley® are trade names of Shirley Technologies Ltd.  
The supply of all goods and services is subject to our standard terms of business, copies of which are available on request.  
Our laboratories are accredited to EN ISO/IEC 17025.

Copyright © 2024 Shirley Technologies Limited. All rights reserved.

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** BS5867 Part 2 Type B



the inspiration behind the performance



Wira House, West Park Ring Road, Leeds, LS16 6QL, UK.  
Telephone: +44 (0) 113 259 1999  
Email: [onestopshop@bttg.co.uk](mailto:onestopshop@bttg.co.uk)  
Website: [www.bttg.co.uk](http://www.bttg.co.uk)

Date: 23 September 2024

Our Ref: 23/62408A/09/24  
Your Ref: 76641

Page: 3 of 4

Client: J. & C. Joel Ltd

## Results -

Specimen No.	Length			Width		
	1	2	3	4	5	6
Flame reached an edge	No	No	No	No	No	No
Hole reached an edge	No	No	No	No	No	No
Flaming debris separated	No	No	No	No	No	No
Afterflame (s)	0	0	0	0	0	0
Afterglow (s)	0	0	0	0	0	0

Requirements - Any "Yes" means fail except if only one specimen fails a further 6 specimens are tested, if the second 6 specimens all pass the result is a pass.

**Result: Pass**

## Comment

The fabric meets the Type B performance requirements of BS 5867: Part 2: 2008.

Where required to make a judgement to any pass/fail criteria an estimation of uncertainty of measurement has been taken into account. Under our Policy we have used a non-binary decision rule.

See our decision rules Policy (<https://www.bttg.co.uk/about-us/decision-rules-policy/>) for further information.



1066

Shirley® Technologies Limited. Registered Office: Wira House, West Park Ring Road, Leeds, LS16 6QL.  
A company registered in England & Wales with company number 04669651. VAT Number GB 816764800.  
BTTG™ and Shirley® are trade names of Shirley Technologies Ltd.  
The supply of all goods and services is subject to our standard terms of business, copies of which are available on request.  
Our laboratories are accredited to EN ISO/IEC 17025.

Copyright © 2024 Shirley Technologies Limited. All rights reserved.

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** BS5867 Part 2 Type B



the inspiration behind the performance



Wira House, West Park Ring Road, Leeds, LS16 6QL, UK.  
Telephone: +44 (0) 113 259 1999  
Email: [onestopshop@bttg.co.uk](mailto:onestopshop@bttg.co.uk)  
Website: [www.bttg.co.uk](http://www.bttg.co.uk)

Date: 23 September 2024

Our Ref: 23/62408A/09/24  
Your Ref: 76641

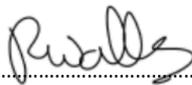
Page: 4 of 4

**Client:** J. & C. Joel Ltd

## Uncertainty Budget

**Type B** –  $\pm 1$  seconds for after flame time and afterglow time.

For the remaining criteria, measurements are not taken and pass/fail is related to flame extremities and flaming debris, as such any risk of false acceptance/false rejection is inherent with this standard and would be outside of 95% probability in any case. As such UoM is Zero providing all input parameters are correct.

Reported by:  R Walls, Laboratory Technician

Countersigned by:  B Bland, Technical Customer Service Officer

Enquiries concerning this report should be addressed to Customer Services.



1066

Shirley® Technologies Limited. Registered Office: Wira House, West Park Ring Road, Leeds, LS16 6QL.  
A company registered in England & Wales with company number 04669651. VAT Number GB 816764800.  
BTTG™ and Shirley® are trade names of Shirley Technologies Ltd.  
The supply of all goods and services is subject to our standard terms of business, copies of which are available on request.  
Our laboratories are accredited to EN ISO/IEC 17025.

Copyright © 2024 Shirley Technologies Limited. All rights reserved.

# Fire Test Certificate – Specimen

Fabric: Muslin 12.0  
Type: M1

**J&C Joel**   
the inspiration behind the performance

**CSTB**  
le futur en construction

DIRECTION SECURITE, STRUCTURES ET FEU  
Réaction au Feu



## PROCES-VERBAL DE CLASSEMENT DE REACTION AU FEU D'UN MATERIAU

Selon l'arrêté du 21 novembre 2002 modifié relatif à la réaction au feu  
des produits de construction et d'aménagement  
Laboratoire pilote agréé du Ministère de l'Intérieur (arrêté du 05/02/59 modifié)

**N° RA14-0015A**

Valable 5 ans à compter du 13 février 2014

**Marque commerciale :** Article 14/50 Velum  
Article 24/28 Toile

**Description sommaire :**  
Tissu uni à base de fibres 100 % coton, ignifugé par foulardage.

- Référence « Article 14/50 Velum » :  
Masse surfacique nominale : 75 g/m<sup>2</sup>.  
Epaisseur nominale : 0,18 mm.
- Référence « Article 24/28 Toile » :  
Masse surfacique nominale : 200 g/m<sup>2</sup>.  
Epaisseur nominale : 0,35 mm.

Coloris : divers.

**Nature de l'essai :** Essai au brûleur électrique

**Classement :**

**M1**

**Durabilité du classement (Annexe 2 – Paragraphe 5) :** Non limitée (article non lavable, non nettoyable à sec et pour usage intérieur uniquement).

compte tenu des critères résultant des essais décrits dans le rapport d'essais N° RA14-0015A annexé.

Ce procès verbal atteste uniquement des caractéristiques de l'échantillon soumis aux essais et ne préjuge pas des caractéristiques de produits similaires. Il ne constitue donc pas une certification de produits au sens des articles L 115-27 à L 115-33 et R 115-1 à R 115-3 du code de la consommation.

Champs-sur-Marne, le 13 février 2014

Le Technicien  
Responsable de l'essai

Olivier BRAULT

Le Chef du Laboratoire  
Réaction au Feu

Nicolas ROURE

Sont seules autorisées les reproductions intégrales du présent procès-verbal de classement ou de l'ensemble procès-verbal de classement et rapport d'essais annexé.

**CENTRE SCIENTIFIQUE ET TECHNIQUE DU BATIMENT**

SIÈGE SOCIAL > 84 AVENUE JEAN JAURÈS | CHAMPS-SUR-MARNE | 77447 MARNE-LA-VALLÉE CEDEX 2  
TÉL. (33) 01 64 68 84 12 | FAX. (33) 01 64 68 84 79 | [www.cstb.fr](http://www.cstb.fr)

MARNE-LA-VALLÉE | PARIS | GRENOBLE | NANTES | SOPHIA-ANTIPOLIS

Trame Procès-Verbal Rev.01

## Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** M1

**J&C Joel** 

the inspiration behind the performance

**CSTB**

*le futur en construction*

**DIRECTION SECURITE, STRUCTURES ET FEU**  
Réaction au Feu



### **RAPPORT D'ESSAIS N° RA14-0015A DE REACTION AU FEU D'UN MATERIAU**

Selon l'arrêté du 21 novembre 2002 modifié relatif à la réaction au feu  
des produits de construction et d'aménagement

**Valable 5 ans**

L'accréditation de la section Laboratoires du COFRAC atteste de la compétence des laboratoires pour les seuls essais couverts par l'accréditation.

Ce rapport d'essais atteste uniquement des caractéristiques de l'objet soumis aux essais et ne préjuge pas des caractéristiques de produits similaires. Il ne constitue pas une certification de produits au sens des articles L 115-27 à L 115-33 et R 115-1 à R 115-3 du code de la consommation.

En cas d'émission du présent rapport par voie électronique et/ou sur support physique électronique, seul le rapport sous forme de support papier signé par le CSTB fait foi en cas de litige. Ce rapport sous forme de support papier est conservé au CSTB pendant une durée minimale de 10 ans.

La reproduction de ce rapport d'essais n'est autorisée que sous sa forme intégrale.

Il comporte 7 pages.

#### **CENTRE SCIENTIFIQUE ET TECHNIQUE DU BATIMENT**

SIÈGE SOCIAL > 84 AVENUE JEAN JAURÈS | CHAMPS-SUR-MARNE | 77447 MARNE-LA-VALLÉE CEDEX 2  
TÉL. (33) 01 64 68 84 12 | FAX. (33) 01 64 68 84 79 | [www.cstb.fr](http://www.cstb.fr)  
MARNE-LA-VALLÉE | PARIS | GRENOBLE | NANTES | SOPHIA-ANTIPOLIS

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** M1

**J&C Joel**   
the inspiration behind the performance



2/7

## Rapport d'essais n°RA14-0015A



### OBJET

Les essais rapportés par le présent document ont pour but de déterminer le comportement des matériaux, conformément aux essais prescrits par l'Arrêté Ministériel référencé ci-dessous, relatif à la réaction au feu des matériaux de construction et d'aménagement.

### TEXTES DE REFERENCE

Arrêté du 21 novembre 2002 modifié.  
Annexe 2 de l'arrêté du 21 novembre 2002 modifié.

### NATURE DE (S) L'ESSAI (S)

Essai au brûleur électrique selon la norme NF P 92-503:1995.  
Epreuves de vieillissement accéléré en chambres climatiques suivant l'arrêté du 21 novembre 2002 modifié.  
Ces épreuves sont sous-traitées au CREPIM accrédité COFRAC.

### DATE (S) D'ESSAI (S)

10 octobre 2013 avant l'épreuve de vieillissement accéléré en chambres climatiques.  
24 janvier 2014 après l'épreuve de vieillissement accéléré en chambres climatiques.

### PROVENANCE ET CARACTERISTIQUE DES ECHANTILLONS

Date de livraison : 20 septembre 2013

N° Identification : ES541130458  
Marque (s) commerciale (s) : Article 14/50 Velum  
Article 24/28 Toile

L'attention est attirée sur le fait que les résultats obtenus avec l'échantillon objet du présent rapport d'essais ne sont pas généralisables sans justification de la représentativité des échantillons et essais.

Champs-sur-Marne, le 13 février 2014

**Le Technicien  
Responsable de l'essai**

**Olivier BRAULT**

**Le Chef du Laboratoire  
Réaction au Feu**

**Nicolas ROURE**

Trame rapport Rev.06

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** M1

**J&C Joel** 

the inspiration behind the performance



3/7

Rapport d'essais n°RA14-0015A



## DESCRIPTION SOMMAIRE

Tissu uni à base de fibres 100 % coton, ignifugé par foulardage.

- Référence « Article 14/50 Velum » :  
Masse surfacique nominale : 75 g/m<sup>2</sup>.  
Epaisseur nominale : 0,18 mm.
- Référence « Article 24/28 Toile » :  
Masse surfacique nominale : 200 g/m<sup>2</sup>.  
Epaisseur nominale : 0,35 mm.

Coloris : divers.

## CARACTERISTIQUES COMPLEMENTAIRES

La référence et la quantité du produit ignifugeant figurent au dossier.

Caractéristiques mesurées du produit « Article 14/50 Velum » présenté :  
Masses surfaciques : environ 80 g/m<sup>2</sup> (coloris écru) et environ 85 g/m<sup>2</sup> (coloris noir et blanc).  
Epaisseur : environ 0,15 mm pour les coloris écru, noir et blanc.

Caractéristiques mesurées du produit « Article 24/28 Toile » présenté :  
Masse surfacique : environ 210 g/m<sup>2</sup> pour les coloris écru, noir et blanc.  
Epaisseur : environ 0,35 mm pour les coloris écru, noir et blanc.

Trame rapport Rev.06

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** M1

**J&C Joel**   
the inspiration behind the performance



4/7

## Rapport d'essais n°RA14-0015A



### ESSAI AU BRULEUR ELECTRIQUE

*L'éprouvette (18 x 60 cm) tendue sur une grille est disposée sur un support à 30° sur l'horizontale. Un cache incombustible est rabattu au dos, au départ de l'essai. Le matériau est soumis au rayonnement calorifique et à un courant de gaz chauds provoqués par un brûleur électrique disposé, suivant son axe vertical, à 3 cm sous l'éprouvette. Après 20 secondes, une flamme pilote est amenée au contact de l'éprouvette pendant 5 secondes. L'opération est répétée ensuite toutes les 30 secondes pendant 5 minutes. Les éléments déterminants sont : durée d'inflammation, distances détruites depuis le bord inférieur des éprouvettes et présence ou non de chutes de gouttes.*

Les dimensions de chaque éprouvette sont vérifiées avant chaque épreuve.

#### Caractéristiques mesurées des éprouvettes testées : (Masse / Epaisseur totale)

Eprouvette n° 1 (coloris blanc) : environ 10 g / environ 0,15 mm  
Eprouvette n° 2 (coloris blanc) : environ 10 g / environ 0,15 mm  
Eprouvette n° 1 (coloris noir) : environ 11 g / environ 0,15 mm  
Eprouvette n° 2 (coloris noir) : environ 11 g / environ 0,15 mm  
Eprouvette n° 1 (coloris écru) : environ 10 g / environ 0,15 mm  
Eprouvette n° 2 (coloris écru) : environ 10 g / environ 0,15 mm

**Sur échantillons en l'état de réception :** 6 épreuves effectuées sur le produit référencé « Article 14/50 Velum ».

Désignation	Inflammation (en seconde)	Extinction (en seconde)	Percement (en seconde)	Chute de goutte ou de matière enflammée	Distance détruite (en cm)
Eprouvette n° 1 Face 1 / sens 2 Coloris blanc	—	—	—	non	19
Eprouvette n° 2 Face 2 / sens 2 Coloris blanc	—	—	—	non	20
Eprouvette n° 1 Face 2 / sens 1 Coloris noir	—	—	—	non	19
Eprouvette n° 2 Face 1 / sens 2 Coloris noir	—	—	—	non	20
Eprouvette n° 1 Face 1 / sens 1 Coloris écru	—	—	—	non	26
Eprouvette n° 2 Face 2 / sens 1 Coloris écru	—	—	—	non	20

**Résultats :** sur l'ensemble des épreuves réalisées avant vieillissement, nous n'observons pas de durée d'inflammation supérieure à 5 secondes.

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** M1

**J&C Joel**   
the inspiration behind the performance



5/7

## Rapport d'essais n°RA14-0015A



### ESSAI AU BRULEUR ELECTRIQUE (suite)

Les dimensions de chaque éprouvette sont vérifiées avant chaque épreuve.

#### Caractéristiques mesurées des éprouvettes testées : (Masse / Epaisseur totale)

Eprouvette n° 1 (coloris blanc) : environ 23 g / environ 0,35 mm  
Eprouvette n° 2 (coloris blanc) : environ 23 g / environ 0,35 mm  
Eprouvette n° 1 (coloris noir) : environ 23 g / environ 0,35 mm  
Eprouvette n° 2 (coloris noir) : environ 23 g / environ 0,35 mm  
Eprouvette n° 1 (coloris écru) : environ 23 g / environ 0,35 mm  
Eprouvette n° 2 (coloris écru) : environ 23 g / environ 0,35 mm

**Sur échantillons en l'état de réception :** 6 épreuves effectuées sur le produit référencé « Article 24/28 Toile ».

Désignation	Inflammation (en seconde)	Extinction (en seconde)	Percement (en seconde)	Chute de goutte ou de matière enflammée	Distance détruite (en cm)
Eprouvette n° 1 Face 2 / sens 2 Coloris blanc	—	—	—	non	19
Eprouvette n° 2 Face 1 / sens 1 Coloris blanc	50 / 110 / 170	53 / 111 / 171	—	non	20
Eprouvette n° 3 Face 2 / sens 1 Coloris noir	25	27	—	non	20
Eprouvette n° 4 Face 2 / sens 2 Coloris noir	25	26	—	non	19
Eprouvette n° 1 Face 2 / sens 1 Coloris écru	—	—	—	non	19
Eprouvette n° 2 Face 1 / sens 2 Coloris écru	—	—	—	non	19

**Résultats :** sur l'ensemble des épreuves réalisées avant vieillissement, nous n'observons pas de durée d'inflammation supérieure à 5 secondes.

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** M1



6/7

## Rapport d'essais n°RA14-0015A



### ESSAI AU BRULEUR ELECTRIQUE (suite)

Les dimensions de chaque éprouvette sont vérifiées avant chaque épreuve.

#### Caractéristiques mesurées des éprouvettes testées : (Masse / Epaisseur totale)

Eprouvette n° 10 (coloris blanc) : environ 10 g / environ 0,15 mm  
Eprouvette n° 11 (coloris blanc) : environ 10 g / environ 0,15 mm  
Eprouvette n° 2 (coloris noir) : environ 10 g / environ 0,15 mm  
Eprouvette n° 8 (coloris noir) : environ 10 g / environ 0,15 mm  
Eprouvette n° 9 (coloris écru) : environ 10 g / environ 0,15 mm  
Eprouvette n° 10 (coloris écru) : environ 10 g / environ 0,15 mm

**Après vieillissement accéléré en chambres climatiques et brossage** : 6 épreuves effectuées sur le produit référencé « Article 14/50 Velum ».

Désignation	Inflammation (en seconde)	Extinction (en seconde)	Perçement (en seconde)	Chute de goutte ou de matière enflammée	Distance détruite (en cm)
Eprouvette n° 10 Face 1 / sens 1 Coloris blanc	—	—	—	non	19
Eprouvette n° 11 Face 2 / sens 2 Coloris blanc	—	—	—	non	18
Eprouvette n° 2 Face 2 / sens 2 Coloris noir	—	—	—	non	18
Eprouvette n° 8 Face 1 / sens 1 Coloris noir	—	—	—	non	17
Eprouvette n° 9 Face 2 / sens 1 Coloris écru	—	—	—	non	20
Eprouvette n° 10 Face 1 / sens 2 Coloris écru	—	—	—	non	19

**Résultats** : sur l'ensemble des épreuves réalisées après vieillissement, nous n'observons pas de durée d'inflammation supérieure à 5 secondes.

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** M1

**J&C Joel**   
the inspiration behind the performance



7/7

## Rapport d'essais n°RA14-0015A



### ESSAI AU BRULEUR ELECTRIQUE (suite)

Les dimensions de chaque éprouvette sont vérifiées avant chaque épreuve.

#### Caractéristiques mesurées des éprouvettes testées : (Masse / Epaisseur totale)

Eprouvette n° 7 (coloris blanc) : environ 23 g / environ 0,35 mm  
Eprouvette n° 8 (coloris blanc) : environ 23 g / environ 0,35 mm  
Eprouvette n° 1 (coloris noir) : environ 23 g / environ 0,35 mm  
Eprouvette n° 2 (coloris noir) : environ 23 g / environ 0,35 mm  
Eprouvette n° 4 (coloris écru) : environ 23 g / environ 0,35 mm  
Eprouvette n° 5 (coloris écru) : environ 23 g / environ 0,35 mm

**Après vieillissement accéléré en chambres climatiques et brossage** : 6 épreuves effectuées sur le produit référencé « Article 24/28 Toile ».

Désignation	Inflammation (en seconde)	Extinction (en seconde)	Percement (en seconde)	Chute de goutte ou de matière enflammée	Distance détruite (en cm)
Eprouvette n° 7 Face 2 / sens 1 Coloris blanc	25	27	—	non	17
Eprouvette n° 8 Face 1 / sens 2 Coloris blanc	—	—	—	non	17
Eprouvette n° 1 Face 1 / sens 2 Coloris noir	—	—	—	non	16
Eprouvette n° 2 Face 2 / sens 1 Coloris noir	25	28	—	non	16
Eprouvette n° 4 Face 2 / sens 2 Coloris écru	25	29	—	non	17
Eprouvette n° 5 Face 1 / sens 1 Coloris écru	—	—	—	non	18

**Résultats** : sur l'ensemble des épreuves réalisées après vieillissement, nous n'observons pas de durée d'inflammation supérieure à 5 secondes.

.....FIN DU RAPPORT D'ESSAIS

## Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** B1

**J&C Joel**   
the inspiration behind the performance

### General site supervision certificate

**Number:** P-BWU03-I-16.5.417

(Translation of the German original, no verified by by MPA - Universität Stuttgart (Otto-Graf-Institut))

**Subject matter:** Flame retardant agent "RUCO-FLAM NGF" for finishing fabrics made of cellulosic fibres including jute as flame retardant building material (building material class DIN 4102-B1) according to Building Rules List A, part 2, edition 2015/2 with changes 2016/1 and notification of change 2016/2, serial no. 2.10.2

**Date of issue:** 17 November 2017

**Date of expiry:** 30 November 2022

Due to this general site supervision certificate, the above mentioned subject matter is applicable according to the state building regulation.

This general site supervision certificate contains 7 pages and 0 annexes. Jurisdiction and place of performance is Stuttgart.

## I. General provisions

1. The general site supervision certificate does not replace legal approvals, consents and certificates required for implementing building projects.
2. The general site supervision certificate is granted without prejudice to the rights of third parties, especially private proprietary rights.
3. Manufacturers and distributors of the building product have to provide copies of the general site supervision certificate to the user of the building product without prejudice to further regulations under “Special provisions” and have to point out that the general site supervision certificate has to be available at the point of use. All parts involved shall receive copies of the general site supervision certificate upon request.
4. The general site supervision certificate must always be copied entirely. The publication of extracts requires the approval of the MPA - Universität Stuttgart (Otto-Graf-Institut). Texts and drawings of promotions must not contradict the general site supervision certificate. Translations of the general site supervision certificate must contain the remark “Translation of the German original, not verified by MPA - Universität Stuttgart (Otto-Graf-Institut).”
5. The general site supervision certificate is revocable. The provisions of the general site supervision certificate can be amended at a later date, especially if new technical findings require it.
6. The building product mentioned in the present general site supervision certificate require a proof of conformity (certificate of conformity) and a labelling with the conformity mark according to the regulation on marks of conformity of the federal states.

## II. Special provisions

### 1. Subject matter and field of application

#### 1.1 Subject matter

Flame retardant agent “RUCO-FLAM NGF” for finishing fabrics made of cellulosic fibres including jute as flame retardant building material (building material class DIN 4102-B1) according to Building Rules List A, part 2, edition 2015/2 with changes 2016/1 and notification of change 2016/2, serial no. 2.10.2

#### 1.2 Field of application

- 1.2.1 The flame retardant may be used for finishing of fabrics made of cellulosic fibres in all colours - jute included - if this fabric is used as a building product (e.g. stage curtains), which must be securely installed.
- 1.2.2 The weight per unit area of the finished fabric made of cellulosic fibres - jute excluded - must be 88 g/m<sup>2</sup> to 557 g/m<sup>2</sup>, with a flame retardant dry coverage of approximately 200 g/kg.  
The weight per unit area of the finished fabric made of jute must be 330 g/m<sup>2</sup> to 361 g/m<sup>2</sup>, with a flame retardant dry coverage of approximately 200 g/kg.
- 1.2.3 The fabrics finished with the flame retardant must only be used in closed spaces without moisture penetration. The flame retardant is not resistant to the penetration of water as well as washing and dry cleaning. After a care treatment by washing or dry cleaning, the flame retardant finish must be renewed.
- 1.2.4 The fabrics finished with the flame retardant must not be exposed to weather.
- 1.2.5 The fabrics finished with the flame retardant maintain their flame retardant properties only without additional paintings, coatings or similar.
- 1.2.6 This general site provision certificate is only valid, if requirements according to the Building Rules List A, part 2, edition 2015/2 with changes 2016/1 and notification of change 2016/2, serial no. 2.10.2 have to be fulfilled.
- 1.2.7 The prove of further site provision requirements as e.g. stability, resistance to fire, heat or sound insulation or health and environmental protection are no subject matters of the present general site provision certificate. Therefore, further/other certificates (general site provision approval) might be necessary.

**Fabric:** Muslin 12.0  
**Type:** B1

## 2. Requirements of building product

### 2.1 Properties and composition

2.1.1 The flame retardant is a colourless, clear and water-dilutable liquid based on phosphate.

The flame retardant has to be produced in such a way that the fabrics made of cellulosic fibres including jute finished comply with the requirements on flame retardant building materials (building material class B1) according to DIN 4102-1: 1998-05.

2.1.2 The composition must correspond to the data stored with the MPA - Universität Stuttgart (Otto-Graf-Institut).

2.1.3 Test method

The building product must comply with the requirements on flame retardant building materials (building material class 81) according to DIN 4102-1:1998-05.

2.1.4 Basis for granting the general site supervision certificate

Name of test centre	No. of certificates/test reports/reports date	test method/rules
MPA - Universität Stuttgart Otto-Graf-Institut	certificate 903 3583 000 of 17/11/2017	DIN 4102-1 DIN 4102-16

2.1.5 Requirements of the execution of building product

2.1.5.1 The flame retardant may be used for finishing of fabrics made of cellulosic fibres - jute included - if this fabric is used as a building product (e.g. stage curtains), which must be securely installed.

2.1.5.2 The weight per unit area of the finished fabric made of cellulosic fibres - jute excluded - must be 88 g/m<sup>2</sup> to 557 g/m<sup>2</sup>, with a flame retardant dry coverage of approximately 200 g/kg.

The weight per unit area of the finished fabric made of jute must be 330 g/m<sup>2</sup> to 361 g/m<sup>2</sup>, with a flame retardant dry coverage of approximately 200 g/kg.

2.1.5.3 The fabrics finished with the flame retardant must only be used in closed spaces without moisture penetration. The flame retardant is not resistant to the penetration of water as well as washing and dry

**Fabric:** Muslin 12.0  
**Type:** B1

cleaning. After a care treatment by washing or dry cleaning, the flame retardant finish must be renewed.

- 2.1.5.4 The fabrics finished with the flame retardant have only flame retardant properties, if the distance to other flat building materials is at least 40 mm.
- 2.1.5.5 The finished fabrics must not be treated with paintings, coatings or similar.
- 2.1.5.6 The suitability of the building material for the application as heat insulation and for sound insulation is not proved.
- 2.1.5.7 During the production of the building product, the requirements of paragraph II 2.1 have to be fulfilled.

## 2.2 Conformity mark

The manufacturer has to label each building product with the conformity mark (Ü-symbol) according to the regulations on conformity marks of the federal states. It must be only labelled, if it complies with the requirements according to paragraphs 3.1 to 3.3.

The Ü-symbol must be fixed on the building product or on the packaging (applies also for instruction leaflets) or, if not possible, on the delivery note.

The following information must be fixed to the building material or to the packaging:

- product name
- conformity mark (Ü-symbol) with
- name of manufacturer
- certificate number: P-BWU03-I-16.5.417
- graphical symbol or name of certification body
- manufacturing plant
- building material class flame retardant (DIN 4102-B1) according to application area

### 3. Certificate of conformity

#### 3.1 General

Conformity of the building product with the regulations of the present general site supervision certificate must be confirmed for each manufacturing plant by means of a certificate of conformity based on in-company production control and regular external supervision including initial test of the building material according to the regulations of the present general site supervision certificate.

For granting the certificate of conformity and for carrying out external supervision including the product tests to be realised, the manufacturer must involve a recognised certification and supervision authorities.

#### 3.2 In-company production control

An in-company production control<sup>1)</sup> has to be established and carried out assuring by means of the manufacturer's continuous supervision of production that the building product complies with the regulations of the general site supervision certificate.

For maintaining and implementing the in-company production control, the "regulations on the certificate of conformity"<sup>2)</sup> are pertinent.

The results of the in-company production control must be recorded and evaluated. The records must at least include the following information:

- name of the building product
- type of control
- manufacturing date and date of production control of building product
- test results and comparison with requirements
- signature of person responsible for in-company production control

The retention period for records is at least five years and must be presented to the supreme building supervisory board responsible for the external supervision. In case of an unsatisfactory control result, the manufacturer must immediately take the necessary steps to correct the defects and to eliminate all products concerned. The in-company production control has to guarantee that building products not complying with the requirements are not labelled with the Ü-symbol. After correcting the defect, the respective control has to be repeated.

1) In this case, the general requirements on the Building Rules List A, section 1, paragraph 4, edition 2015/2 (DIBt communications 06 October 2015) must be considered.

2) "Directive on certificate of conformity of flame retardant building materials (building material class DIN 4102-B1) after the general site supervision approval" (Communications DIBT 2/1997)

**Fabric:** Muslin 12.0  
**Type:** B1

### 3.3 External supervision

In every manufacturing plant, the in-company production control must be regularly verified at least once a year by an external supervision authority.

The relevant version of the “Certificate of conformity regulations”<sup>2)</sup> is standard for the supervision.

The external supervision must include an initial inspection of the building product. During the external supervision, samples for spot tests must be taken. The recognised supervision body is responsible for sampling and tests.

The retention period for the results of certification and external supervision is at least five years. They must be presented upon request to the responsible supreme building supervisory board by the certification body or external supervision.

### 3.4 Legal basis

This general site supervision certificate is issued on the basis of article 17 of the “Bayerische Bauordnung” (BayBO = Bavarian Building Regulations), version 14 August 2007, last amendment on 17/11/2014 in combination with the Building Rules List A, part 2, edition 2015/2 with changes 2016/1 and notification of change 2016/2. The corresponding legal basis is contained in the state building regulations of the other federal states.

### 3.5 Advice on legal remedies

An objection against this general site supervision certificate may be filed within one month upon receipt. The objection has to be filed either in writing or for record at Universität Stuttgart, Keplerstraße 7, 70174 Stuttgart or PO box 106037, 70049 Stuttgart.

2) “Directives on the certificate of conformity of flame retardant building materials (building material class DIN 4102-81) according to the general site supervision approval” (Communications DIBT 2/ 1997)

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** EN13773

**J&C Joel** 

the inspiration behind the performance

Exova Warringtonfire, Frankfurt  
Industriepark Höchst, C369  
Frankfurt am Main  
D-65926  
Germany

T : +49 (0) 69 305 3476  
F : +49 (0) 69 305 17071  
E : EBH@exova.com  
W: www.exova.com



Testing. Advising. Assuring.

## Test report No. 2011-2508-1 issued 12.01.2012

**Auftragsdatum:** 13.12.2011  
**Datum der Probenahme:** no official taking out of the specimen from a representative of the Exova Warringtonfire, Frankfurt  
**Eingang der Proben:** 13.12.2011  
**Datum der Prüfungen:** 11.01.2012

### Auftrag:

Determination of the ignition time according to nach EN 1101 (ISO 6940 ) and of the vertical flame spread according to DIN EN 13772 with classification to DIN EN 13773.

### Description / designation of the test object

Textile sample designated as "article (Schleier-) Nessel- and Dekomolton "

### Description of the relevant test procedure

EN 1101

DIN EN 13772

DIN EN 13773 (Mai 2003)

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** EN13773

**J&C Joel** 

the inspiration behind the performance



Testing. Advising. Assuring.

Test report No. 2011-2508-1 issued 12.01.2012

page 2 from 6

## 1. Description of the test material

### 1.1 Details of the customer:

Textile sample designated as “article (Schleier-) Nessel and Dekomolton”

Construction: Cotton flame retardant treated

Application area: Stage area and deko area

### 1.2 At the specimen preparation from Exova Warringtonfire, Frankfurt determined values:

Flame retardant treated cotton fabric

Colour: black

Thickness: 0,5 mm (average)

Square weight: 204 g/m<sup>2</sup> (average)

Testing after clima storing 23°C and 50% rel. Luftfeuchte.

05.04.2012

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** EN13773



Testing. Advising. Assuring.

Test report No. 2011-2508-1 issued 12.01.2012

page 3 from 6

## 2.1.1 Test sheet according to EN 1101 (ISO 6940)

(Determination of the ignition time)

Test room: 21°C / 40% r. L.F.

Ignition times: 1 - 20 s

Specimen no.		1	2	3	4	5	6	7	8
Test direction	L/Q	L	L	L	L	Q	Q	Q	Q
Kind of ignition	E/S	E	E	E	E	E	E	E	E
Ignition time	[s]	1	2	3	4	1	2	3	4
Total burn time	[s]	1	2	3	4	1	2	3	4
After flame time	[s]	0	0	0	0	0	0	0	0
After glow time	[s]	0	0	0	0	0	0	0	0
After flaming ≥ 5 [s]	yes/no	no							
Reaching of the upper edge of the specimen	yes/no	no							
Reaching the side edges	yes/no	no							
Drop of from sample parts*		-	-	-	-	-	-	-	-
Ignition of the filter paper*		-	-	-	-	-	-	-	-
Ignition	yes/no	no							

If not the case, - L = length Q = width S = surface E = edge

Remarks: none

05.04.2012

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** EN13773



the inspiration behind the performance



Testing. Advising. Assuring.

Test report No. 2011-2508-1 issued 12.01.2012

page 4 from 6

## 2.1.2 Test sheet according to EN 1101 (ISO 6940)

(Determination of the ignition time)

Test room: 21°C / 40% r. L.F.

Ignition times: 1 - 20 s

Specimen no.		9	10	11	12	13	14	15	16
Test direction	L/Q	L	L	L	L	Q	Q	Q	O
Kind of ignition	E/S	E	E	E	E	E	E	E	E
Ignition time	[s]	5	10	15	20	5	10	15	20
Total burn time	[s]	5	10	15	20	5	10	15	20
After flame time	[s]	0	0	0	0	0	0	0	0
After glow time	[s]	0	0	0	0	0	0	0	0
After flaming ≥ 5 [s]	yes/no	no							
Reaching of the upper edge of the specimen	yes/no	no							
Reaching the side edges	yes/no	no							
Drop of from sample parts*		-	-	-	-	-	-	-	-
Ignition of the filter paper*		-	-	-	-	-	-	-	-
Ignition	yes/no	no							

If not the case, - L = length Q = width S = surface E = edge

Remarks: none

05.04.2012

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** EN13773



the inspiration behind the performance



Testing. Advising. Assuring.

Test report No. 2011-2508-1 issued 12.01.2012

page 5 from 6

## 2.2.1 Test results according to DIN EN 13772: (Determination of the vertical flame spread)

Impact time of the radiator: 30s

Ignition time: 10 s

Specimen no.		1	2	3	4	5	6
Test direction	L/Q	L	L	L	Q	Q	Q
Kind of ignition	S/E	E	E	E	E	E	E
Ignition time	[s]	10	10	10	10	10	10
Total burn time	[s]	18	20	17	18	15	15
After flame time	[s]	8	10	7	8	5	5
After glow time	[s]	0	0	0	0	0	0
Reaching the 1. mark in	[s]	-	-	-	-	-	-
Reaching the 2. mark in	[s]	-	-	-	-	-	-
Reaching the 3. mark in	[s]	-	-	-	-	-	-
Flame spread v1	[mm/min]	0	0	0	0	0	0
Flame spread v2	[mm/min]	0	0	0	0	0	0
Flame spread t v3	[mm/min]	0	0	0	0	0	0
Separating of sample parts*		-	-	-	-	-	-
Ignition of the filter paper*		-	-	-	-	-	-
Destroyed area	length [mm]	170	160	180	170	180	170
Destroyed area	width [mm]	30	30	40	40	30	40

If not the case, - L = length Q = width S = surface E = edge

**Remarks:** none

05.04.2012

# Fire Test Certificate – Specimen

**Fabric:** Muslin 12.0  
**Type:** EN13773

**J&C Joel** 

the inspiration behind the performance



Testing. Advising. Assuring.

Test report No. 2011-2508-1 issued 12.01.2012

page 6 from 6

### 3. Classification:

The in chapter 1 described material fulfils the requirements of the class 1 according to DIN EN 13773.

### Besonderer Hinweis

The fire test result is only valid for the in chapter 1 described material.

In the composition with other materials (for example coatings, deposits) the burning behaviour could be influenced unfavourable so that the above classification is not any longer valid.  
The burning behaviour in composition with other materials has to be tested separately.

This test report replaces the translation of the test report 2011-2508 from January 12<sup>th</sup> 2012 (date of signature) which is invalid from now on

Frankfurt, 04<sup>th</sup> April 2012

  
P. Scheinkönig  
Tester in Charge

  
Dipl.-Ing. T. Zachäus  
Laboratory Supervisor

The results of the tests relate only to the behaviour of the test specimen which is designated in chapter one.  
Test reports are only allowed to be published or reproduced, not changed in form and tenor without permission of the Exova Warringtonfire, Frankfurt.  
The abridged account of a test report is only allowed with the agreement of the Exova Warringtonfire, Frankfurt.  
This test report is a translation of the German version 2011-2508-1 (issued 04.04.2012). In case of doubt only the German version is valid.  
The report contains 6 pages.

05.04.2012

# J&C Joel

the inspiration behind the performance



**J&C Joel United Kingdom - HQ**  
uksales@jcjoel.com



**J&C Joel Europe**  
eusales@jcjoel.com



**J&C Joel Middle East**  
uaesales@jcjoel.com



**J&C Joel Vietnam**  
asiasales@jcjoel.com



**J&C Joel Macau**  
asiasales@jcjoel.com



**J&C Joel Hong Kong**  
asiasales@jcjoel.com