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Grad.Dip Bushfire Prone Areas. (UWS) Consultant in:
Fire Investigation * Post Fire Analysis * Fire Safety Assessments * BCA & Performance Assessments.
Bushfire Safety Engineering and Assessments (79B &100B) * Alternative Solutions.

Ray Manser Fire Engineering

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Certified Business
Bushfire Planning & Design
BPAD-PA-09557

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Builders Professional Board Reg No: BPB0777
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Fire Safety Engineering Assessment and Compliance Report

Building Classification: Temporary Structure Class 9b.

Report Prepared by;
Ray Manser. CEng FIFireE. MA(FireInvestigation)CSturt.
Grad Dip. Design for Bushfire Prone Areas (UWS)

Client: Natalie Weber
Webers Circus

Project title	**Temporary Structure Webers Circus**
Reference	**092/10**

Revision/Verification History

Date	Version	Purpose	Author	Peer Review	Authorised
24/02/10	1	Performance Verification	Ray Manser	Anthony Hulbert	Ray Manser

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Executive Summary

This fire safety engineering compliance report has been prepared at the request of Webers Circus, and relates to the proposed temporary fabric structure manufactured by Serge Ferrari Textiles France. The report describes the proposed fire safety strategy and documents the findings of a fire safety engineering assessment undertaken to determine whether the circus tent fabric complies with **Clause NSW H102.8** of the Building Code of Australia.

Temporary places of public entertainment must comply with the applicable provisions of Regulation 98C and Schedule 3A, as contained within the EP&A Regulation together with the applicable requirements detailed in **NSW Part H102** of the Building Code of Australia (BCA2009). This report has been prepared to identify the extent to which the Temporary Structure complies with the relevant provisions of Schedule 3A from the EP&A Regulation and **NSW Part H102** of BCA 2009.

The circus tent fabric is made from PVC coated polyester fabric with a referenced product name of 'Precontraint 702. The fabric is 0.63mm thick with a nominal mass of 830g/m² and is constructed in 27% Polyester 1100dtex yarn with 73% flame retardant PVC coating inside and outside. The manufacturers (Serge Farrari) have certification relating to the flame retardant qualities of the fabric in accordance with **NFPA 701; BS7837; EN 13501.1: and AS1530.3** the results of three of these tests are detailed later in the report.

The fire safety engineered report provides a fire engineered assessment that through the analysis of the various test results carried out by Australian and overseas testing authorities (of which full copies are attached in Appendix A) a conclusion can be made in relation to the flammability of the tent fabric.

The methodology used in this assessment is to demonstrate by a quantitative analysis to assess the flammability index of the fabric and provide conclusive evidence contained within this compliance report that the results from the analysis will establish whether or not the fabric will comply with acceptance criteria of **Clause NSW H102.8** of the BCA 2009 (the fabric's flammability index was not greater than 6).

The assessment methodology, consisting of a site inspection, an analysis of the material's properties and the test reports provide conclusive evidence that the use of the fabric Precontraint 702 manufactured by Serge Ferrari (France) is a suitable product used as a form of construction for a temporary structure (Circus Tent).. The fabric has a flammability Index of 1 as calculated from the AS1530.3 test results therefore it complies with **Clause H102.8** of BCA 2009. As a consequence the Temporary Structure complies with **NSW Part H102** of the BCA 2009; Regulation 98C and Schedule 3A, as contained within the EP&A Regulation.

Introduction

This fire safety engineering compliance report has been prepared at the request of Webers Circus, and relates to the proposed temporary fabric structure manufactured by Serge Ferrari Textiles France. The report describes the proposed fire safety strategy and documents the findings of a fire safety engineering assessment undertaken to determine whether the circus tent fabric complies with **Clause NSW H102.8** of the Building Code of Australia.

This report is based upon and limited to, the information depicted in the documentation provided for assessment, and does not make assumptions regarding "design intention" or the like. From this documentation, it is understood that the proposed development encompasses the erection of a temporary tent structure, incorporating internal demountable tiered seating.

Temporary places of public entertainment must comply with the applicable provisions of Regulation 98C and Schedule 3A, as contained within the EP&A Regulation together with the applicable requirements detailed in **NSW Part H102** of the Building Code of Australia (BCA2009). This report has been prepared to identify the extent to which the Temporary Structure complies with the relevant provisions of Schedule 3A from the EP&A Regulation and **NSW Part H102** of BCA 2009.

The content of this report reflects the level of compliance with –

(a) Regulation 98C and Schedule 3A in the Environmental Planning & Assessment Regulation 2000 (EP&A Regulation);
(b) The Building Code of Australia 2009 (BCA 2009);
(c) Site inspection undertaken 24th February 2010 at Swansea NSW.

It is conveyed that this report should not construed to infer that an assessment for compliance with the following has been undertaken –

(a) Structural and services design documentation;
(b) General building services (i.e. passenger lifts);
(c) The individual requirements of service providers (i.e. Telstra, Sydney Water, Energy Australia);
(d) The individual requirements of the Workcover Authority;
(e) Those provisions of BCA 2009 not relevant to temporary places of public entertainment;
(f) Disability Discrimination Act 1992 (DDA).

Temporary Structure Description

The circus tent fabric is made from PVC coated polyester fabric with a referenced product name of 'Precontraint 702. The fabric is 0.63mm thick with a nominal mass of 830g/m² and is constructed in 27% Polyester 1100dtex yarn with 73% flame retardant PVC coating on the inside and outside. The manufacturers (Serge Farrari) have certification relating to the flame retardant qualities of the fabric in accordance

with **NFPA 701; BS7837; EN 13501.1: and AS1530.3** the results of three of these tests are detailed later in the report.

The tent structure consist of king poles and supplementary support poles and guy ropes and the fabric. The tent is 32m in diameter and has an audience seating capacity of 594 persons. An inspection of the tent was carried out at Swansea on Wednesday 24th February 2010 to ascertain compliance with the requirements of **NSW Part H102** of BCA 2009 and that the tent fabric was in good condition with no blemishes or non compliant repairs and that the fabric had been maintained to the manufacturer's specification.

Site Inspection

The site inspection was conducted at 09:00am on Wednesday 24th February 2009 and in the context of the Building Code of Australia (BCA2009) **NSW Part H102**, the following table lists the compliance status of the applicable Clauses relevant to the Circus Tent.

BCA Clause	Description	Compliance
H102.4.	Based upon a peak occupant load within the tent structure of 594 persons, a total of four (4) exits with an aggregate exit width of 6000mm must be provided around the perimeter of the building.	**Complies**
H102.5	A clear unobstructed height not less than 2000-mm must be maintained to the exits.	**Complies**
H102.7	Curtains or blinds used within the tent structure must have a flammability index not greater than 6	**Complies**
H102.8	The tent fabric must have a flammability index not greater than 6	**Complies**
H102.9	Guardrails of minimum 750-mm height must be provided to the sides and rear of steeper platforms and seating areas	**Complies**
H102.10	The position and installation of seating must accord with **NSW H101 .11.**	**Complies**
H102.11	Sanitary facilities must be provided in close proximity to the proposed tent, and be of a sufficient number to accommodate the proposed population	**Complies**
H102.14	Electrical installations must comply with local authority requirements, AS 3002, and AS/NZS 3000	**Complies**

H102.15	Artificial lighting switches must be in accessible to members of the public, and instantly re-light via an override button if having a dimming capacity Emergency lighting must be provided and have a minimum 0.2 lux, and have a minimum 30-minute battery supply	**Complies**
H102.16	Exit signs must be provided above the exits	**Complies**
H102.17	AS 2444 compliant portable fire extinguishers should be provided throughout, in areas accessible to staff	**Complies**

In relation to **Clause NSW H102.8** of the BCA 2009 the tent fabric must have a flammability index not greater than 6. To ascertain compliance with this clause a fire engineering analysis and assessment was undertaken to establish that the fabric's flammability index was not greater than 6.

Fire Engineered Assessment of the Tent Fabric

Methodology

This fire safety engineered report provides a fire engineered assessment that through the analysis of the various test results carried out by Australian and overseas testing authorities (of which full copies are attached in Appendix A) a conclusion can be made in relation to the flammability of the tent fabric.

The methodology used in this assessment is to demonstrate by a quantitative analysis to assess the flammability index of the fabric and provide conclusive evidence contained within this compliance report that the results from the analysis will establish whether or not the fabric will comply with acceptance criteria of **Clause NSW H102.8** of the BCA 2009 (the fabric's flammability index was not greater than 6).

Background

Architectural fabric structures are well established as a dynamic form of construction uniquely suited to particular building applications. The interpretation of the various specifications quoted by fabric manufacturers is a major exercise. Apart from the differences in dimensional units, the standards have to be compared to see if the test methods are similar. Ideally, all the fabrics should be tested to a single standard, and this should be a goal of the membrane structures industry.

The chief problem at the moment is that most of the quality fabrics used in Australia is imported from the USA and Europe, and with the exception of fire testing, there has been no incentive for manufacturers to conduct tests to Australian Standards where they exist. Therefore when imported into Australia they come with an ASTM, DIN, or BS test results. However in this instance the manufacturers of the fabric used in the Webers

Circus tent submitted a sample for testing in Australia. This was carried out by AWTA Textile Testing in Melbourne Victoria and was tested in accordance with AS/NZ 1530.3.

In developing the 'Model Code for Architectural Fabric Structures' it must be recognised that in spite of the long standing tradition of building terminology such as combustible and non-combustible (and hour fire ratings), and its ingrained use in building codes, its use in relation to fabric structures is misleading. All the fabrics used for architectural fabric structures, when exposed to a fire, will melt, creating a hole in the fabric. The primary difference is that with 100% polymeric membranes, the hole will be generated quickly, as soon as temperatures exceed 160-250°C.

The melting characteristic has significant benefits in allowing much of the heat and smoke to vent rather than being confined in the occupied space. The essential characteristic of fire resistant fabrics is that 'spread of flame' is limited to the source area, and that the fabric self-extinguishes when the source is removed. Also 'smoke developed' must be limited, however for the reasons given above, the smoke is more likely to vent in 100% polymeric fabrics, so is less important than in most situations.

Test Results

Referring to tests carried out by AWTA Textile Testing (Test No.7-516909-BO) the tests that simultaneously determine ignitability, flame propagation, heat release and smoke release carried out in accordance with AS/NZ1530.3 provide the information to calculate the flammability index. The Flammability Index is the sum of the Heat Factor plus the larger of the Spread Factor or Speed Factor.

The results from this test are as follows

IGNITION TIME	3.25 minutes
FLAME PROPAGATION TIME	Nil
HEAT RELEASE INTEGRAL	49.5 kJ/m²
SMOKE RELEASE, LOG D	0.1055
OPTICAL DENSITY, D	1.3091/m

The above results are from a mean average of 6 specimens that were tested and which reflect the following regulatory indices.

IGNITABILITY INDEX	17	RANGE 0 - 20
SPREAD OF FLAME INDEX	0	RANGE 0 - 10
HEAT EVOLVED INDEX	1	RANGE 0 - 10
SMOKE DEVELOPED INDEX	8	RANGE 0 - 10

NSW Part H102 of the BCA 2009 requires the flammability index is to be below 6 therefore to establish the flammability index from the above tests we add the heat evolved index of 1 to the spread of flame index which was 0 resulting in a flammability index of 1. As a result of this testing according to AS/NZ 1530.3 the fabric complies with **NSW Clause H102.8** of BCA 2009

To support this conclusion there is a need to verify the above tests with other testing methods used and in this instance the test method for flammability testing to BS7837 (UK). Referencing the test report 30/02084/3 carried out by Fire Technology Services (UK) dated 23rd June 2005 the following results from 6 specimens tested are listed in the following table;

Specimen	1↑	2↓	3↑	4→	5←	6→
Duration of flaming, s	1.6	1.4	1.5	1.6	2.0	1.5
Duration of afterglow, s	0	0	0	0	0	0
Flaming debris	No	No	No	No	No	No
Flame to edge	No	No	No	No	No	No
Hole to edge	No	No	No	No	No	No
Glow to edge	No	No	No	No	No	No
Max damaged length, mm	45	45	46	39	49	39
Ignition of filter paper	No	No	No	No	No	No

The coated fabric complied in all facets of the test as demonstrated in the above table furthermore once the flaming was removed there was no duration of afterglow or smouldering. In addition flaming debris / droplets did not occur during the test. This test is more stringent than the AS1530.3 tests because a flame is applied to the bottom edge of the fabric.

The Reaction to Fire Classification report No. RA05-0534 and the test carried out by CSTB (Centre for Scientifique Et Technique Du Bâtiment which is a French Government testing agency operated by the French Ministry of the Interior) offers a realistic fire performance characteristics of the fabric. The tests are based on the Single Burning Item (SBI) principle and were carried out on samples on 13th December 2005 in accordance with EN 13501 - 1.

The testing criteria identifies the following;-

- The maximum of the quotient of heat release rate and time needed for it. This is known as the Fire Growth Rate Index (FIGRA Watts per second) and tested against the threshold values: 0.4 MJ and 0.2 MJ.
- Total Heat Release over first 600 seconds (THR600s (MJ)
- Smoke Growth Rate index. (SMOGRA m^2/s^2)
- Total Smoke Production over first 600 s (TSP600s $/m^2$)
- Lateral Flame Spread on large wing of sample (LFS edge)
- Flame spread (Fs)
- Falling or flaming particles or droplets

The results of the test are shown in the following tables;-

A2.2 (a (v) Test certificates supplied by CSTB (France) and Fire Technology Services (UK)

The assessment methodology, consisting of a site inspection, an analysis of the material's properties and the test reports provide conclusive evidence that the use of the fabric Precontraint 702 manufactured by Serge Ferrari (France) is a suitable product used as a form of construction for a temporary structure (Circus Tent).. The fabric has a flammability Index of 1 as calculated from the AS1530.3 test results therefore it complies with **Clause H102.8** of BCA 2009. As a consequence the Temporary Structure complies with **NSW Part H102** of the BCA 2009; Regulation 98C and Schedule 3A, as contained within the EP&A Regulation.

NOTE AND DISCLAIMER:

- Ray Manser Fire Engineering Consultants makes all reasonable efforts to incorporate practical and advanced fire protection concepts into its advice. This Assessment has been based on the adoption of the recommendations in this report and cannot guarantee that a building will survive an extreme fire event on every occasion. This is substantially due to the unpredictable behaviour and nature of fire and the difficulties associated with extreme events such as arson or terrorist activities.

- The implementation of this Fire Safety Engineering Strategy including detailed development of drawings and specifications; the installation of hardware and construction systems; the operation and maintenance of those systems is the responsibility of others. Any change in building, occupant or fuel conditions outside of those considered in this report may result in outcomes not anticipated by the strategy, and should be reviewed.

Evidence of Suitability; I Raymond Manser registered as a professional Chartered Engineer (Register No.574418 Engineering Council UK) and registered with the NSW BPB as a C10 certifier (Fire Safety Engineer Reg No.BPB0777), do certify that the Temporary Structure known as the Webers Circus Tent as stated in this report will comply with the BCA 2009; Regulation 98C and Schedule 3A, as contained within the EP&A Regulation.

Ray Manser CEng FIFireE. MA (Fire Investigation) CSturt.
GradDip Design in Bushfire Prone Areas UWS
Fire Safety Engineering Consultant.
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Appendix A

AWTA TEXTILE TESTING

Australian Wool Testing Authority Ltd – trading as AWTA Textile Testing
A.B.N. 43 006 014 106
26 Robertson Street, Kensington, Victoria 3031
P.O. Box 240, North Melbourne, Victoria 3051
Phone (03) 9371 2126 Fax (03) 9371 2102

TEST REPORT

CLIENT : TISSAGE ET ENDUCTION SERGE
FERRARI SA
Z.I-BP54-38352 LA TOUR DU PIN
CEDEX FRANCE

TEST NUMBER : 7-516909-BO
DATE : 21/02/2003

SAMPLE DESCRIPTION: CLIENTS REF: PRECONTRAINT 702 OPAQUE (BLACKOUT)
ARCHITECTURAL COATED PLASTIC COLOUR: WHITE
END USE: TEXTILE ARCHITECTURE

THESE RESULTS MUST BE CONSIDERED IN CONJUNCTION
WITH THE COMMENTS ON THE FOLLOWING PAGE(S)

MATERIAL SPECIFICATION PROVIDED BY CLIENT:
NOMINAL COMPOSITION: PES YARNS COATED WITH PVC FLAME RETARDANT ON BOTH SIDES AND VARNISHED
NOMINAL MASS: 830 g/m2 NOMINAL THICKNESS: 0.63mm

AS/NZS 1530.3 - 1999 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION, HEAT RELEASE AND SMOKE RELEASE

RESULTS: FACE TESTED: BOTH SIDES

	MEAN		STANDARD ERROR
IGNITION TIME	3.25	min	0.11
FLAME PROPAGATION TIME	NIL	s	NIL
HEAT RELEASE INTEGRAL	49.5	kJ/m2	9.0
SMOKE RELEASE, LOG D	0.1055		0.0457
OPTICAL DENSITY, D	1.3091	/m	

NUMBER OF SPECIMENS IGNITED: 6

NUMBER OF SPECIMENS TESTED: 6

REGULATORY INDICES:		
IGNITABILITY INDEX	17	RANGE 0-20
SPREAD OF FLAME INDEX	0	RANGE 0-10
HEAT EVOLVED INDEX	1	RANGE 0-10
SMOKE DEVELOPED INDEX	8	RANGE 0-10

COMMENTS:

THESE RESULTS ONLY APPLY TO THE SPECIMEN MOUNTED, AS DESCRIBED IN THIS REPORT.

THE RESULTS OF THIS FIRE TEST MAY BE USED TO DIRECTLY ASSESS FIRE HAZARD, BUT IT SHOULD BE RECOGNIZED THAT A SINGLE TEST METHOD WILL NOT PROVIDE A FULL ASSESSMENT OF FIRE HAZARD UNDER ALL FIRE CONDITIONS.

124090 1 (CONTINUED NEXT PAGE) PAGE 1

This Laboratory is accredited by the National Association of Testing Authorities, Australia, for:
- Chemical Testing of Textiles & Related Products : Accreditation No. 983
- Mechanical Testing of Textiles & Related Products : Accreditation No. 985
- Heat & Temperature Measurement : Accreditation No. 1396

The tests reported herein have been performed in accordance with its terms of accreditation. Samples, and their identifying descriptions have been provided by the client unless otherwise stated. AWTA Ltd makes no warranty, implied or otherwise, as to the source of the tested samples. The above test results relate only to the sample or samples tested. This document shall not be reproduced except in full and shall be rendered void if amended or altered. This document, the names AWTA Textile Testing and AWTA Ltd may be used in advertising providing the content and format of the advertisement have been approved in advance by the Managing Director of AWTA Ltd.

APPROVED SIGNATORY

MICHAELA JACKSON B.Sc.(Hons)
MANAGING DIRECTOR

0204/8/01

FIRE
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SERVICES
Part of Advanced Materials Services Ltd

Unit 4B Stag Industrial Estate
Atlantic Street, Broadheath
Altrincham, Cheshire
WA14 5DW
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Web: www.bttg.co.uk

CONFIDENTIAL REPORT

Ref: 30/02084/3 Page 1 of 2

Date: 23 June 2005

Client: Serge Ferrari S.A.
Zone Industrielle – B.P. 54
38352 La Tour-du-Pin Cedex
France

Job title: Flammability testing of one coated fabric

Client's order or ref no: Letter 6 June 2005

Date of receipt: 13 June 2005

Description of sample(s): One PVC coated polyester fabric, referenced:
PRECONTRAINT 702
Weight: 750 g/m² ±5%
Thickness: 0.60mm ±10%
Polyester 1100dtex: 27%
PVC flame retardant: 73%

Work requested: Flammability testing to BS 7837: 1996

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FIRE TECHNOLOGY SERVICES — CONFIDENTIAL REPORT

Ref: 30/02084/3

Client: Serge Ferrari S.A.

Sample: One PVC coated polyester fabric, referenced:
PRECONTRAINT 702
Weight: 750 g/m² ±5%
Thickness: 0.60mm ±10%
Polyester 1100dtex: 27%
PVC flame retardant: 73%

Performance Standard: BS 7837: 1996

Test Method: BS 5438: 1989 Test 2B (Bottom edge ignition)
Flame application time = 10s
Trimmed edge
Face marked by client towards burner

Cleansing Pretreatment: Watersoaked according to BS 5651: 1989 Clause 3

Summary of Results:

"These results were obtained using the specified test conditions and do not necessarily represent the behaviour of the test material under other conditions of test or use."

Specimen	1↑	2↓	3↑	4→	5←	6→
Duration of flaming, s	1.6	1.4	1.5	1.6	2.0	1.5
Duration of afterglow, s	0	0	0	0	0	0
Flaming debris	No	No	No	No	No	No
Flame to edge	No	No	No	No	No	No
Hole to edge	No	No	No	No	No	No
Glow to edge	No	No	No	No	No	No
Max damaged length, mm	45	45	46	39	49	39
Ignition of filter paper	No	No	No	No	No	No

Assessment:

BS 7837: 1996 Requirements
The sample shall be deemed to perform satisfactorily (pass), if, for at least five of the six test specimens: (a) the duration of flaming does not exceed 5s after removal of the igniting flame; and (b) the lowest boundary of any flame does not reach the upper or either vertical edge; and (c) the filter paper does not smoulder or flame.

This coated fabric complies with the requirements of BS 7837: 1996.

END OF REPORT

Reported by: Joan Jackson ..... J M Jackson (Laboratory Technician)

Countersigned by: P M Eaton ..... P M Eaton (Operational Head)

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CSTB
le futur en construction
SAFETY, STRUCTURES AND FIRE DEPARTMENT
Reaction to fire

REACTION TO FIRE CLASSIFICATION REPORT
No. RA05-0534
ACCORDING TO THE EUROPEAN STANDARD
NF EN 13501-1

Provided the Ordinance from the Ministry of the Interior, November 21, 2002.
Pilot laboratory approved by the Ministry of the Interior (Ordinance of February 5, 1959, amended)
Seule la version française fait foi.
Only the French version is legally acceptable.

Valid 5 years as from December 13th, 2005

Owner:	**SERGE FERRARI SA** **TISSAGE et ENDUCTION** **Zone Industrielle** **38352 LA TOUR DU PIN** **FRANCE**
Commercial brand(s):	**PRECONTRAINT 702**
Brief description:	**Textile architecture** (see detailed description in paragraph 2)
Date of issue:	**December 13th, 2005**

The indicated classification does not prejudge the conformity of marketed materials with the samples submitted to the tests and under no circumstances, this document should not be considered as type approval or certification of the product in the sense of the L 115-27 article of the consumption's code and of the law dated June 3rd, 1994.
The reproduction of this classification report is only authorised in its integral form, with or without its test report attached.
It comprises 4 pages.

PARIS - MARNE-LA-VALLÉE - GRENOBLE - NANTES - SOPHIA ANTIPOLIS
CENTRE SCIENTIFIQUE ET TECHNIQUE DU BÂTIMENT
84, avenue Jean-Jaurès - Champs-sur-Marne - BP 2 - F-77447 Marne-la-Vallée Cedex 2
Tél. : 01 64 68 84 12 - Fax : 01 64 68 84 79 - Site web : dasf.cstb.fr

1. Introduction

This classification report defines the classification assigned to the above-mentioned product(s) in accordance with the procedures given in the EN 13501-1 standard.

2. Product description

Coated fabric for textile architecture.
Textile consisting of 100 % polyester fibres fabric coated on both sides with fire retardant polyvinyle chloride.
Nominal thickness: 0.87 mm.
Nominal weight per unit area: 750 g/m².
Colours: various.

3. Tests reports and tests results in support of this classification

3.1 Tests reports

Name of laboratory	Name of sponsor	Test identification	Test report Nos.	Test method
CSTB	SERGE FERRARI SA TISSAGE et ENDUCTION Zone Industrielle 38352 LA TOUR DU PIN FRANCE	ES541050473	RA05-0534	EN ISO 11925-2 EN 13823

3.2 Tests results

Test method	Product	Number of tests	Parameters	Results Compliance parameters
EN ISO 11925-2 30s edge exposure	PRECONTRAINT 702	6	Fs = 150 mm Filter paper	Not reached Not ignited
EN ISO 11925-2 30s surface exposure	PRECONTRAINT 702	6	Fs = 150 mm Filter paper	Not reached Not ignited

Test method	Product	Number of tests	Parameters	Results Continuous parameters mean value	Results Compliance parameters
EN 13823	Precontraint 702	3	$FIGRA_{0.2MJ}$(W/s) $FIGRA_{0.4MJ}$(W/s) LFS THR_{600s}(MJ)	105.3 58.4 2.1	- - Not reached -
			SMOGRA(m^2/s^2) TSP_{600s}(m^2)	104.2 130.1	- -
			Flaming droplets or debris	-	None

(-) means : not applicable

4. Classification and direct field of application

4.1 Reference of the classification

This classification has been carried out in accordance with clauses 10.6, 10.9.3, 10.10.1 of the EN 13501-1 standard.

4.2 Classification

Fire behaviour		Smoke production		Flaming droplets or debris
B	-	s2	,	d0

Classification: B - s2, d0

4.3 Field of application

This classification is valid for the following product parameters:

- Various colours.

This classification is valid for the following end use conditions:

- With any A1 or A2 substrate with a density ≥ to 800 kg/m^3.
- With a minimum air gap of 80 mm.

Champs-sur-Marne, December 13th, 2005

Technician Responsible for the test	Head of the Reaction to Fire Laboratory
Gildas CREACH	Martial BONHOMME

.....-END OF THE CLASSIFICATION REPORT-

MIOTTI GIANANTONIO & C. s.a.s.
PRODUZIONE TELONI IMPERMEABILI
TAPPEZZERIA AUTO

Romano d'Ezzelino, 25 September 2006

SPETT.LE DITTA

Weber Circus
537 Jacobs Well Road
Alberton Queensland
(Australia)

Oggetto : FIREPROOF DECLARATION

We certify that the material PRECONTRAINT 702 M2, ref. our invoice **n. 128** dated **25/09/2006** was approved with reaction fire's test CSE RF 1/75/A CSE RF 3/77 – DIN - by LAPI SRL CALENZANO with number **MN222A70CD200003** of MINISTERO DEGLI INTERNI - DIREZIONE GENERALE DELLA PROTEZIONE CIVILE on behalf of F.LLI GIOVANARDI SNC – VILLIMPENTA MN.

The material has been manufacture from our company with the observance of the rules.

Direction for use : 1) Material's use

2) The material's laying : .....

3) Maintenance : Method "C" and "D", enclosure 1.6 – D.M. Dated 26/06/84

36060 ROMANO D'EZZELINO (VI) - Via del Commercio, 12 - Tel. 0424/35585 - Fax 0424/512955 - P. IVA IT 00276770245 - Iscr. Reg. Impr. VI012-2763
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