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Data	Ns. rif.:	Vs. rif.:
30/10/2008	Ufficio Tecnico	

Oggetto:

DICHIARAZIONE CLASSIFICAZIONE DELLA REAZIONE AL FUOCO DEI TESSUTI.

Ligra Srl con sede in Vigolzone, Via Artigiani 29/31, nella persona di Gianluigi Cravedi, Legale Rappresentante, sulla base delle prove di classificazione di reazione al fuoco effettuate dal centro di Ricerca francese SME e dal laboratorio nazionale d'essais francese LNE:

DICHIARA

- che il tessuto ALKORFIX BIANCO, NERO e GRIGIO 1083 (0.40 e 0.47 mm) utilizzato per la fabbricazione dei nostri prodotti, è stato classificato come materiale M2, e descritto come foglio di policloruro di vinile plastificato e reso ignifugo nella massa (vedi allegato Processo e verbale di classificazione di reazione al fuoco dei materiali n° G101154 CEMATE/I della LNE), e come materiale B1 (TEST N° 12739 - WFRGENT NV).
- che il tessuto ALKORFIX FUME' 1031 (0.30 mm) utilizzato per la fabbricazione dei nostri prodotti, è stato classificato come materiale M1, e descritto come foglio di PVC plastificato e reso ignifugo nella massa (vedi allegato Processo e verbale di classificazione di reazione al fuoco dei materiali n° 11901-04 della SME).
- che il tessuto ALKORFIX ACCOPPIATA 2150 (0.42 mm) utilizzato per la fabbricazione dei nostri prodotti, è stato classificato come materiale M1, e descritto come foglio di policloruro di vinile plastificato e reso ignifugo nella massa per l'accoppiamento di due fogli di formula e spessori identici (vedi allegato Processo e verbale di classificazione di reazione al fuoco dei materiali n° F051331 - CEMATE/2 della LNE).
- che il tessuto ALKORFIX ACOUSTIK 1077 (0.25 e 0.30 mm) utilizzato per la fabbricazione dei nostri prodotti, è stato classificato come materiale M2, e descritto come foglio di PVC plastificato e reso ignifugo nella massa (vedi allegato Processo e verbale di classificazione di reazione al fuoco dei materiali n° 11178-03 della SME), e come materiale B1 (TEST N°12344B - WFRGENT NV).

Vigolzone, 24 marzo 2009

Gianluigi Cravedi
(Legale Rappresentante)



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

prévu à l'article 5 de l'arrêté du 21 novembre 2002

VALABLE 5 ANS à compter du 14 décembre 2006

N° G101154 - CEMATE/1

et annexe de 5 pages

Matériau présenté par : ALKOR DRAKA
75, rue Pasteur
60140 LIANCOURT

Marque commerciale : ALKORFIX® 1083

Description sommaire : **Composition globale :**
Feuille en polychlorure de vinyle plastifié et ignifugé dans la masse
Masse : (450 et 600 ± 10 %) g/m²
Epaisseur : (0,30 et 0,40 ± 5 %) mm
Coloris : Divers

Rapport d'essai : N° G101154 - CEMATE/1 du 14 décembre 2006

Nature des essais : Essais au brûleur électrique.

Classement :

M2

Durabilité du classement (NF P 92-512 : 1986) : NON LIMITEE A PRIORI

compte tenu des critères résultant des essais décrits dans le rapport d'essai N° G101154 - CEMATE/1 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 pas une certification de produits au sens de l'article L. 115-27 du code de la consommation et de la loi du 3 juin 1994.

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Trappes, le 14 décembre 2006

Le Chef de la Division
Comportement au Feu

La Responsable Technique



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Sur www.cofrac.fr

Alain SAINRAT



Catherine BASSI

Laboratoire national de métrologie et d'essais

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ALKOR DRAKA

DATA SHEET

AlkorFix®

1031

all
colours

all

Matt 2001-satin

REAR PROJECTIONS / REAR LIGHTS

Product description

- * *plasticizer:* monomeric (non DEHP)
- * *stabilisation system:* without heavy metals
- * *comments:* Other colours & embossings are available on demand. By slitting, other width can be obtained (to be discussed case by case)

Supplier

Alkor Draka
75 rue Pasteur
F- 60140 Liancourt
Contact: Sales Manager

Typical application

Rear projection screens

Particular points concerning use

Flexibility level of this film has been developed for the application. It is necessary to validate the film in function of its final use

General Properties	Unit	Method	Typical Value
Weight/m ²	g/m ²	ISO 4591	420-460
Thickness	mm	ISO 4593 (nominal)	0,3
Possible width	mm		Maximum 2400

Physical Properties	Unit	Method	Typical Value
Elongation at break	%	NF EN ISO 527-3	Minimum 180
			Minimum 180
Tensile strenght at break	Mpa	NF EN ISO 527-3	Minimum 13
			Minimum 13
Tear resistance	N	NF EN 12310-2	Minimum na
			Minimum na
Dimensional Stability	%	NF EN ISO 11501	-3,5 (maximum shrinkage)
			(minimum expansion)
Cold crack	°C	ISO 8570	-1
Weldability (Q)		XPT 54-197	0,6

ALKOR DRAKA

DATA SHEET	AlkorFix®	1031	- all colours	all	- Matt 2001-satin
REAR PROJECTIONS / REAR LIGHTS					

Reaction to fire	Method	Classification
French normalisation (official PV is available on demand)	NF P 92-503	M1

Transformation	Yes	No	limitations
Welding HF	X		Optimisation needed in function of machine
Welding (hot air)	X		Optimisation needed in function of machine
Printability with conventional techniques for PVC (hélio, silk screen, digital)	X		In case of structured surface: to be tested
Inkjet - waterbased inks		X	Topcoat needed

Conformity to legislation	Yes	No	Remarks
European Standard for safety of toys EN 71-Part 3: Migration of certain elements	X		
Directive on Packaging and Packaging waste (heavy metals lead, cadmium, mercury and hexavalent chrome less than 100 ppm) - EC 94/62	X		
Directive 2002/95/EC (RoHS) (restriction of the use of certain hazardous substances (lead, mercury, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated ethers (PBDE)) in electrical and electronic equipment)	X		
Bio-compatibility - ISO 10993/EN 30993	na		
Food Contact Approval (FDA, BGA,...)		X	
Directive 2003/11/EC (penta, octa & decaB(romo)D(phenyl)E(ther))	X		
Directive 76/769/EEC (restriction on the marketing and use of certain dangerous substances and preparations)	X		

Light resistance	Unit	Method	Typical Value
	Units	NF EN ISO 105 B02	na

Storage & Handling	
Storage temperature	Inside storage: maximum 25°C
Storage time	Taking into account the storage temperature, the storage time is limited and should not be longer than 10 months. By higher temperatures, the storage time is lower
Processing temperature	20 - 25 °C: material should be acclimatised to room temperature before processing
General information	See our general information sheet

The data and numerical results contained in this document are provided for the sake of general information and are given in good faith. The numerical data and tables of results show typical average measures of products and are based on a representative numbers of individual measures. They cannot be considered as specifications. The possible applications of our products are many and varied and are beyond our control. Our responsibility does not cover misuse of our products. The purchaser and end-user must satisfy himself that the application is appropriate and, if necessary, execute all tests that are necessary to consider whether the product is appropriate for the intended use. The information presented here cannot be considered as suggestion to use our products without taking into account existing patents, or legal provisions or regulations, whether national or local. The purchaser is obliged to verify whether the possession, use or marketing of our products is subject within his territory to particular rules, especially with respect to public health, hygiene and worker and/or consumer safety. The purchaser alone assumes the duties of information and advice for the ultimate user. Alkor Draka can in no event be held responsible for possible failure on the part of the purchaser to respect these regulations, provisions

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

prévu à l'article 5 de l'arrêté du 21 novembre 2002

VALABLE 5 ANS à compter du 24 août 2005

N° F051331 - CEMATE/2

et annexe de 5 pages

Matériau présenté par : ALKOR DRAKA
75 Rue Pasteur - BP 30214
60332 LIANCOURT CEDEX

Marque commerciale : 2150

Description sommaire : **Composition globale :**
Feuille de polychlorure de vinyle plastifiée et ignifugée
dans la masse, réalisée par doublage de deux feuilles
de formulation et d'épaisseur identiques
Masse : (625 ± 10 %) g/m²
Epaisseur : (0,42 ± 10 %) mm
Coloris : Blanc/Noir

Rapport d'essai : N° F051331 - CEMATE/2 du 24 août 2005

Nature des essais : Essais au brûleur électrique, essais de propagation de
la flamme.

Classement : **M1**

Durabilité du classement (annexe 22) : NON LIMITEE A PRIORI

compte tenu des critères résultant des essais décrits dans le rapport d'essai N° F051331 - CEMATE/2 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 pas une certification de produits au sens de l'article L. 115-27 du code de la consommation et de la loi du 3 juin 1994.

Nota : Sont seules autorisées les reproductions intégrales et par photocopie du présent Procès-verbal de classement ou de l'ensemble Procès-Verbal et rapport annexé.

Trappes, le 24 août 2005

Le Chef de la Division
Comportement au Feu

~~Alain SAURAT~~



La Responsable Technique

Catherine BASSI

TEST REPORT NR. 12344B

As a basis for a general report for the building and housing inspection

Valid until 2011-08-10

Sponsor

ALKOR DRAKA N.V.
75, rue Pasteur
F-60140 LIANCOURT
FRANCE

Date of order: 2006-06-02
Date of sampling: 2006-06-02
Arrival of the samples: 2006-06-23
Date of test : 2006-08-10

Order

"Brandschacht"-test (Building material class B1) according to DIN 4102 - Part 1 (May 1998)

Material and Commercial name

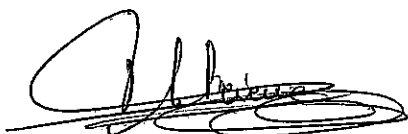
PVC foil **Alkorfix® 1077**

Regulations concerning the test report

DIN 4102 - Part 1 (May 1998)

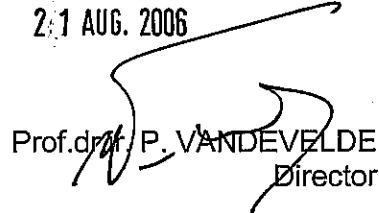
Result of the tests

The material has met the demands for normal inflammable building materials.



Ing. F. DUTRIEUE
Project Manager

Gent, 21 AUG. 2006


Prof. dr. P. VANDEVELDE
Director

The results of the tests apply only on the materials mentioned in this report

This report contains 9 pages including 3 annexes.

DIN 4102 teil 16 WG 1E*

This document is the original version of this test report and is written in English.

This report may be used only literally and completely for publications. - For publications of certain texts, in which this report is mentioned, our permission must be obtained in advance.

1 IDENTIFICATION OF THE PRODUCT

Commercial name: "Alkorfix® 1077"

Description of the material: The tested material consists of a homogeneous PVC foil treated with fire retardants. The foil has got a white colour.

Description of the material		
	Nominal values (*)	Measured values (**)
Thickness (mm)	0,30	0,27
Surface mass (g/m ²)	430	426

(*) based on the information of the sponsor.

(**) values verified by the laboratory.

Special remarks: None

2. TEST RESULTS

2.1. "Brandschacht"-Test according to DIN 4102 Part 16

Result of the „Brandschacht“-test (part 1)			
	Measured values for the three samples		
	A	B	C
1 <u>Number of sample-classification</u> according to DIN 4102 Teil 15 Tabelle 1	1	1	1
2 <u>Maximum height of flame</u> from the bottom of the sample cm	90	80	50
3 at time (1) min : s	0:22	0:13	0:30
4 <u>Melting through/ Burning through</u> at time (1) min : s	No	No	No
5 <u>Observations on the backside of the sample</u> Flames/glowing at time (1) min : s	No	No	No
6 Colouring at time (1) min : s	No	No	No
7 <u>Flaming droplets</u> Start at (1) min : s	No	No	No
8 Dimension : Single falling droplets	-	-	-
9 Continuous falling droplets	-	-	-
10 <u>Falling of burning particles</u> Start at (1) min : s	No	0:24	No
11 Dimension : Single falling of burning particles	-	Yes	-
12 Continuous falling of burning particles	-	No	-
13 Afterburning on the floor (Max) min : s	-	No	-
14 <u>Diminishing of the burner flame due to falling material</u> at time (1) min : s	No	No	No
15 <u>Early termination of test</u> Stop of flaming of the sample min	No	No	No
16 Time of termination min : s	-	-	-

(1) Time- indication from the start of the test

Result of the „Brandschacht“-test (part 2)						
		Measured values for the three samples				
		A		B		C
<u>Afterburning after the end of the test</u>						
17	Duration	min : s		No	No	No
18	Number of samples	-	-	-	-	-
19	Front side of the sample	-	-	-	-	-
20	Back side of the sample	-	-	-	-	-
21	Length of the flames	cm		-	-	-
<u>Afterglowing after the end of the test</u>						
22	Duration	min : s		No	No	No
23	Number of Samples	Place of occurring:		-	-	-
24	Top half of the sample	-	-	-	-	-
25	Bottom half of the sample	-	-	-	-	-
26	Front side of the sample	-	-	-	-	-
27	Back side of the sample	-	-	-	-	-
<u>Smoke attenuation</u>						
28	< 400 % x min	112,6		145,8	96,6	
29	> 400 % x min	-		-	-	
30	Graph in Annex Nr.	1		2	3	
<u>Lengths at the end of the test</u>						
31	Separate values	cm		26	23	48
				46	46	33
				48	45	50
				33	39	49
				49	62	62
32	Average of the separate measurements	cm		35,25	41,25	49,75
<u>Smoke gas temperature</u>						
33	Max of the average values	°C		163	155	124
34	at time (1)	min : s		27	27	600
35	Graph in Annex Nr.			1	2	3
36	Remarks	None				

(1) Time- indication from the start of the test

2.2. "Kleinbrenner" – Test for B2-Classification (DIN 4102 Part 1) (Side exposure of the test material)

Test Nr.	1	2	3	4	5
Ignition (s)	1	1	1	1	1
Reaching the test-mark (s)	No	No	No	No	No
Self-extinction (s)	15	14	15	13	15
Extinguished after (s)	No	No	No	No	No
Maximum flame height within the first 20s (cm) reached after (s)	3 9	2 10	3 9	2,5 11	3 10
Smoke development	Moderate	Moderate	Moderate	Moderate	Moderate
Time of flaming droplets (s)	No	No	No	No	No

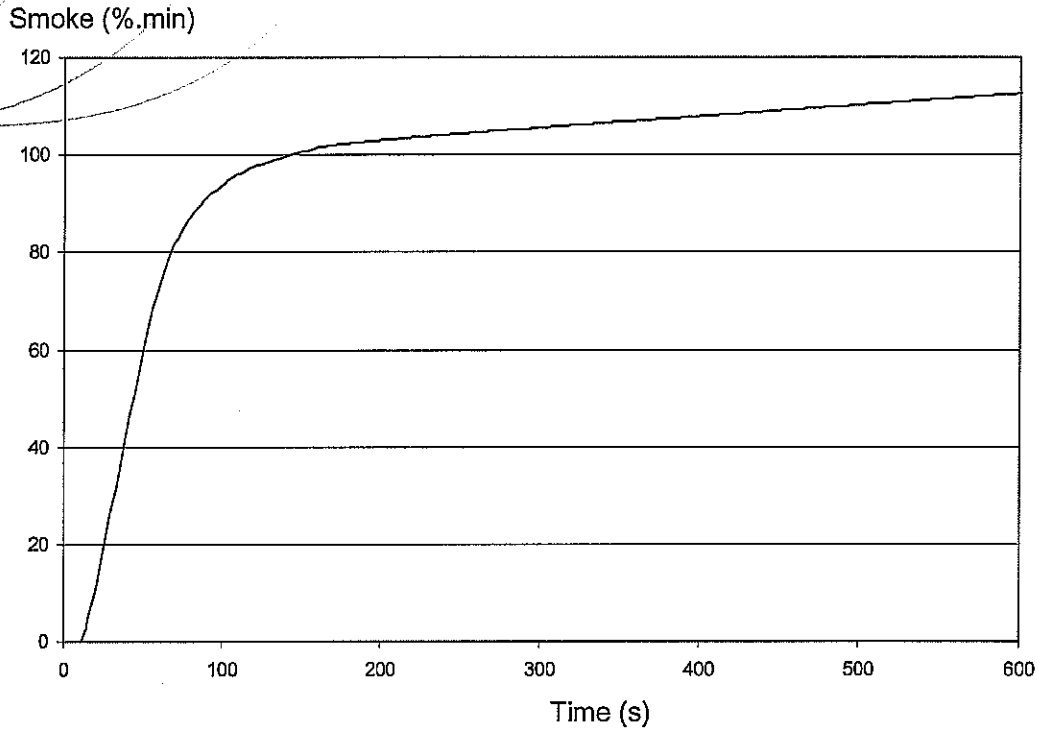
3. Assessment

The building material, described on page 2, has complied with the requirements for difficultly combustible building materials (schwerentflammbare Baustoffe) Class B1 according to the standard DIN 4102-1 (Edition May 1998) paragraph 6.1.2.2 and 6.2.2

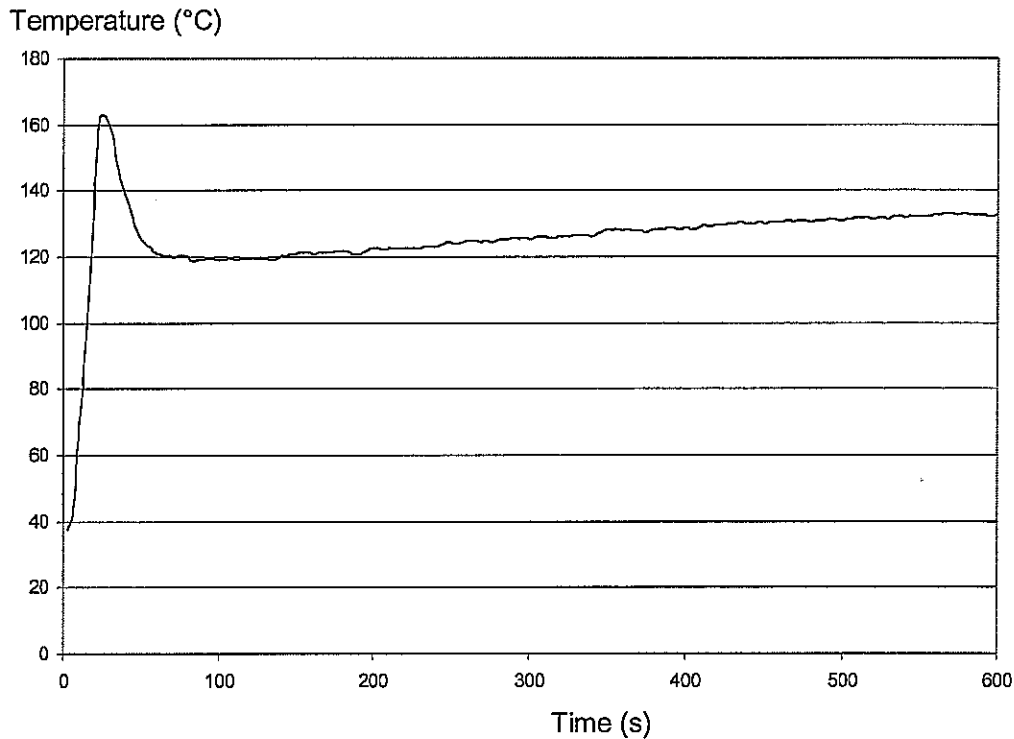
4. Special remark

- 4.1 The results of this fire test are valid only for the building product as described on page 2. In connection with other building materials its fire behaviour can be influenced unfavourably. Therefore its fire behaviour in connection with other building materials should be proven separately according to the standard DIN 4102-1.
- 4.2 This test report does not replace the compulsory general approval of the building inspection. It serves as a basis for the prescribed use approval.

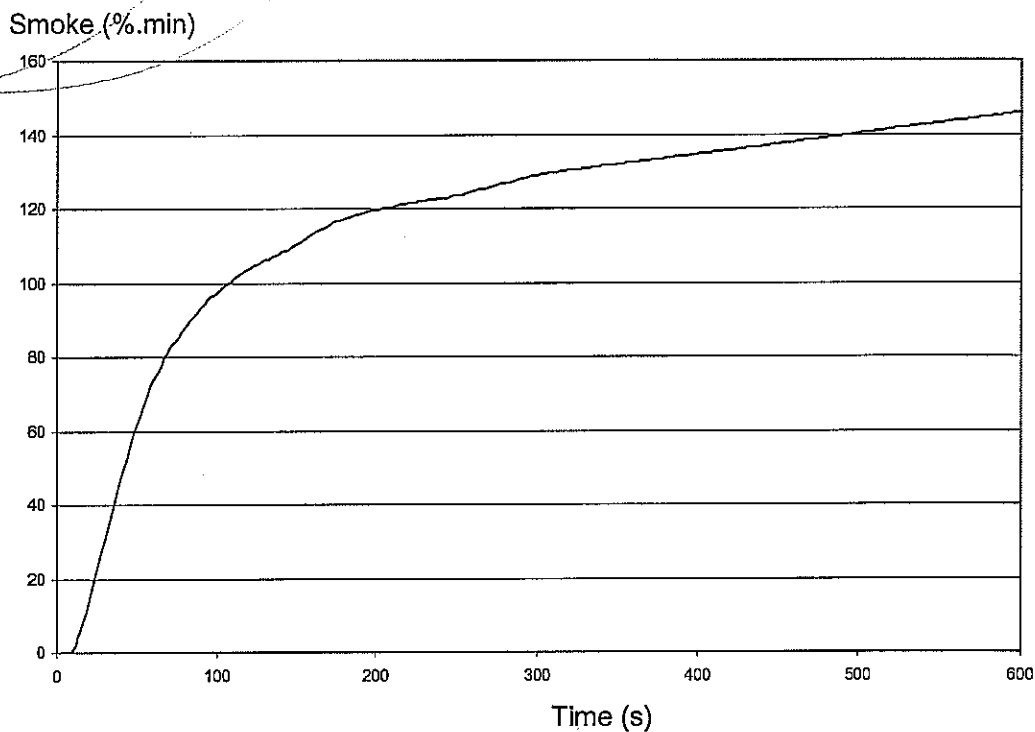
Graph of Smoke Attenuation for Sample A



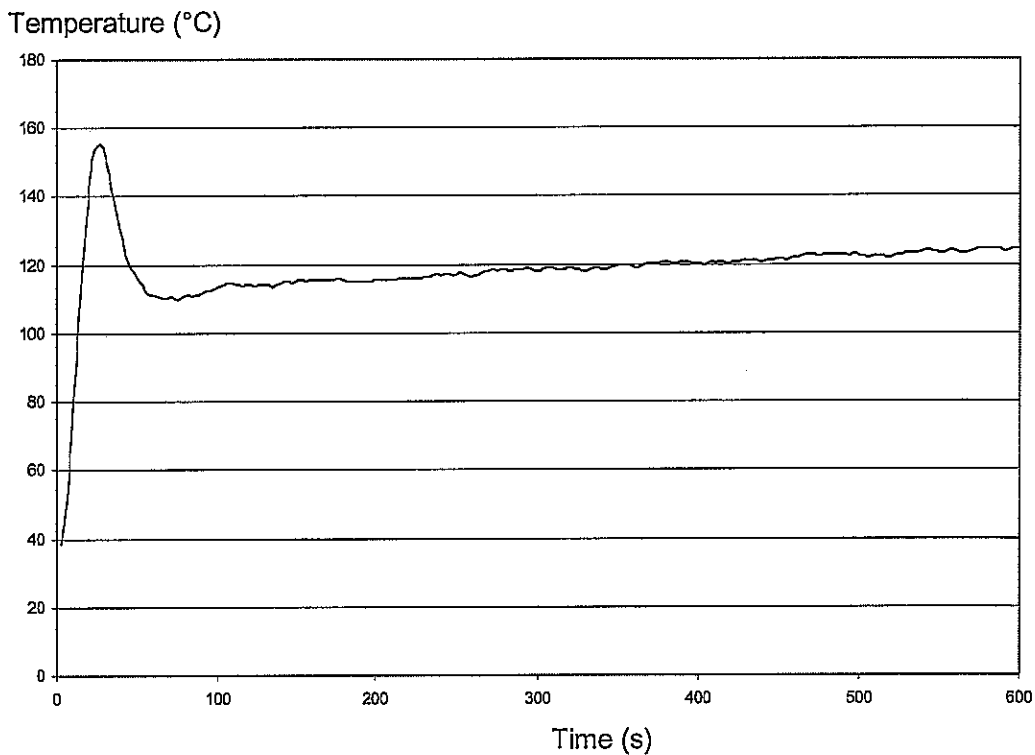
Graph of Smoke Gas Temperature for Sample A



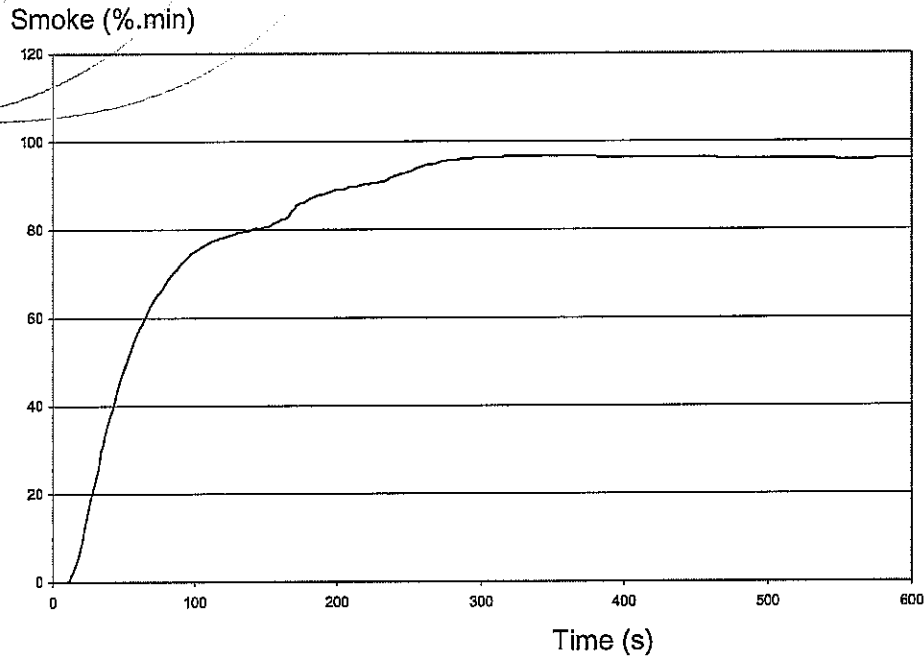
Graph of Smoke Attenuation for Sample B



Graph of Smoke Gas Temperature for Sample B



Graph of Smoke Attenuation for Sample C



Graph of Smoke Gas Temperature for Sample C

