



DIVISIONE:
DIVISION:

COSTRUZIONI
CONSTRUCTIONS

LABORATORIO:
LABORATORY:

REAZIONE
REACTION

RAPPORTO DI PROVA (Test Report)		Pag. 1 di/of
		pag. 9
N°	0643/DC/REA/10_6	Data: 08.10.2010 Date:

IDENTIFICAZIONE E DESCRIZIONE DEL CAMPIONE:
SPECIMEN DESCRIPTION:

Nome commerciale: **EUROCARB®**
Product Name

Descrizione.....: **Vedi pagina 3**
Description.....: **See page 3**

DATI IDENTIFICATIVI DEL CLIENTE:
CLIENT:

Nome / Name: **G A Plastics S.A.**

Indirizzo / Address.....: **Ind Area Of Stavrochori**

Città / City.....: **Kilkis - Greece**

NORMA DI RIFERIMENTO:
REFERENCE STANDARD:

Norma Tecnica / Technical standard: **EN 13823:2002 - Reaction to fire tests for building products – Building products excluding floorings exposed to the thermal attack by a single burning item**

DISTRIBUZIONE ESTERNA:
OUTSIDE DISTRIBUTION:

Originale cliente
Original : Client

DISTRIBUZIONE INTERNA:
INSIDE DISTRIBUTION:

Copia capo laboratorio
Copy: Head of laboratory

ENTE DI ACCREDITAMENTO:
ACCREDITATION BODY:

Mod. 37/1 - Rev. 6

DATI GENERALI / GENERAL DATA :

- Data ricevimento campioni / *Product supply date*..... : **14.09.2010**
- Data esecuzione prove / *Date of test*..... : **05.10.2010**
- Identificazione delle norme di riferimento..... : **EN 13823:2002**
Standard reference identification : **EN 13238:2001**
- Identificazione dei metodi di prova..... : **Orientativo**
Test method identification : **Pre-test**
- Campionamento / *Sampling*..... : **Provette di materiale fornite dal cliente.**
Specimens supplied by the client.
- Costruzione dei provini / *Specimens construction* : **Nessun giunto**
No joint
- Condizionamento secondo EN 13238 : **23 °C - 55 % u.r. per 336 ore**
Conditioning complying EN 13238..... : **23 °C - 55 % r.h. for 336 hours**
- Procedura normalizzata / *Standard procedure* : **SI / Yes**
- Deviazione dai metodi di prova : **SI (*) / Yes (*)**
Standard procedure deviation
- Controllo calcoli / *Calculation check*..... : **SI / Yes**

CAMPIONI ANALIZZATI / SAMPLES TESTED:

- N. 4 provette campione denominate / N. 4 specimen of sample identified:

EUROCARB®

Descrizione..... : **Lastra in polycarbonato alveolare a 2, 3 o 4 pareti. Colore bronzo.**

Description : **Polycarbonate 2, 3 or 4 walls structured panel. Bronze colour.**

Spessore..... : **6 - 8 - 10 - 16 mm**

Thickness..... : **6 - 8 - 10 - 16 mm**

Peso per unità di superficie..... : **1300 - 1500 - 1700 - 2700 g/m²**

Mass unit area..... : **1300 - 1500 - 1700 - 2700 g/m²**

Tipo di substrato / *Substrate type*:

Nessuno.

None.

Allestimento del campione / *Specimen mounting and fixing*:

Costruzione del provino come da EN 13823 par 5.2 a) con pannelli sul retro posti a 80 mm dal campione. Per il sostegno del campione sono stati utilizzati due telai rettangolari lungo le estremità delle due ali. I telai sono in acciaio con tubolari a sezione rettangolari di altezza 20 mm e spessore 40 mm e sono stati premuti contro il campione. Presenza della griglia conforme al par. 4.4.6 f)

Specimen mounting complying to EN 13823 par 5.2 a) with backing boards at a distance of 80 mm from the specimen. To fix the sample two rectangular frames have been used on the edges of the two wings. The frames are in steel rectangular pipes 20 mm high and 40 mm thick and have been pressed on the specimens. Grid presence according to par. 4.4.6 f).

DICHIARAZIONE / DECLARATIONS :

- I risultati di prova contenuti nel presente rapporto si riferiscono esclusivamente al campione provato.
Test results contained in this test report relate only to specimens tested.
- Il presente rapporto non può essere riprodotto parzialmente senza l'autorizzazione del Responsabile del Centro.
The test report shall not be reproduced except in full without the written approval of the Managing Director.
- I dati tecnici riportati nella descrizione del campione sono desunti dalla scheda tecnica allegata dal cliente al campione di prova.
The technical data reported on the specimen description are taken from client technical sheet
- I risultati di prova si riferiscono esclusivamente al comportamento dei provini di un materiale nelle particolari condizioni della prova; essi non sono destinati ad essere l'unico criterio per la valutazione della pericolosità potenziale del materiale in opera.
The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.
- (*) E' stato provato un numero ridotto di provini.
(*) A reduced number of specimens has been tested.



CSI
Certificazione e Testing

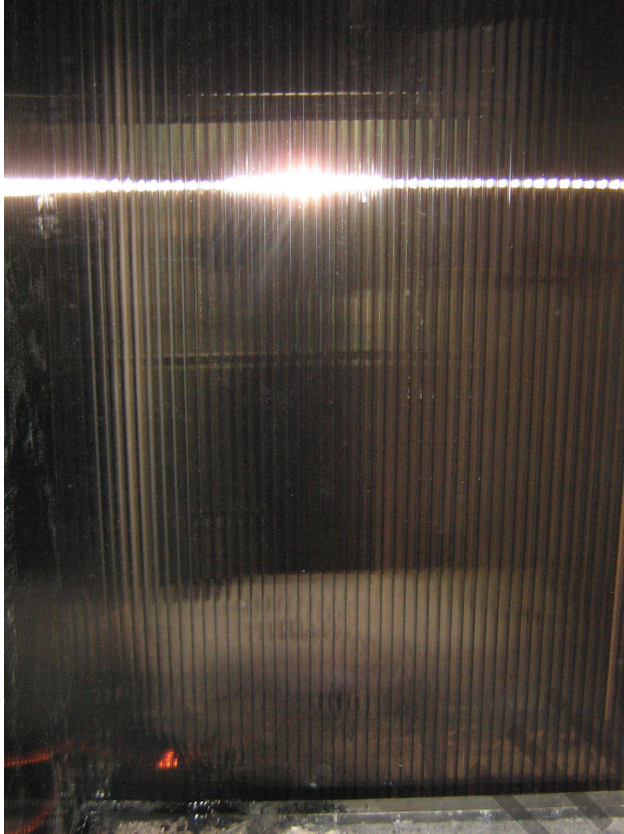
RAPPORTO DI PROVA
(*Test Report*)

N° 0643/DC/REA/10_6

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di/of
pag. 9

Data: 08.10.2010
Date:

FOTOGRAFIE / PHOTOGRAPHS



Vista frontale ala lunga /
Long wing front view



Angolo verticale esterno dell'ala lunga /
Long wing vertical outer edge

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RISULTATI / RESULTS:

- Metodo di prova
EN 13823:2002

Identificazione provetta Specimen identification	FIGRA 0.2MJ/0.4MJ [W/s]	THR [MJ]	LFS [Si/Yes – No/No]	SMOGRA [m ² /s ²]	TSP [m ²]	FDP [No/No - <10s - >10s]
1	Soglia non raggiunta <i>Threshold not reached</i>	0,9	No/No	1,6	25,8	No/No
2	Soglia non raggiunta <i>Threshold not reached</i>	0,6	No/No	2,8	39,1	No/No
3	Soglia non raggiunta <i>Threshold not reached</i>	0,7	No/No	7,1	39,5	No/No
4	64,3 a/at 387s 41,8 a/at 426s	1,4	No/No	8,5	34,6	No/No

FIGRA = fire growth rate index
 THR = total heat release
 LFS = lateral flame spread
 SMOGRA = smoke growth rate index
 FDP = flaming droplets or particles

Note: Provetta 1 = 6 mm 2 pareti, provetta 2 = 8 mm 3 pareti, provetta 3 = 10 mm 3 pareti, provetta 4 = 16 mm 4 pareti

Notes: Specimen 1 = 6 mm 2 walls, specimen 2 = 8 mm 3 walls, specimen 3 = 10 mm 3 walls, specimen 4 = 16 mm 4 walls

CLASSIFICAZIONE / CLASSIFICATION:

- Classificazione attribuita al campione:
Sample classification:

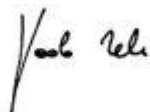
potenzialmente B-s1, d0
potentially B-s1, d0

 DATA
 Date

08/10/2010

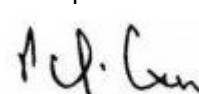
 IL RESP. Divisione Costruzioni
 Division Head

Paolo Mele



 IL RESP. DEL CENTRO
 Managing Director

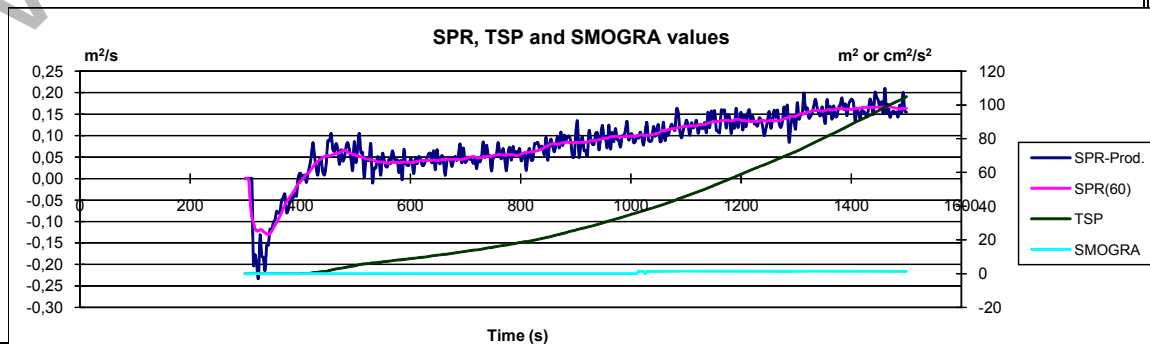
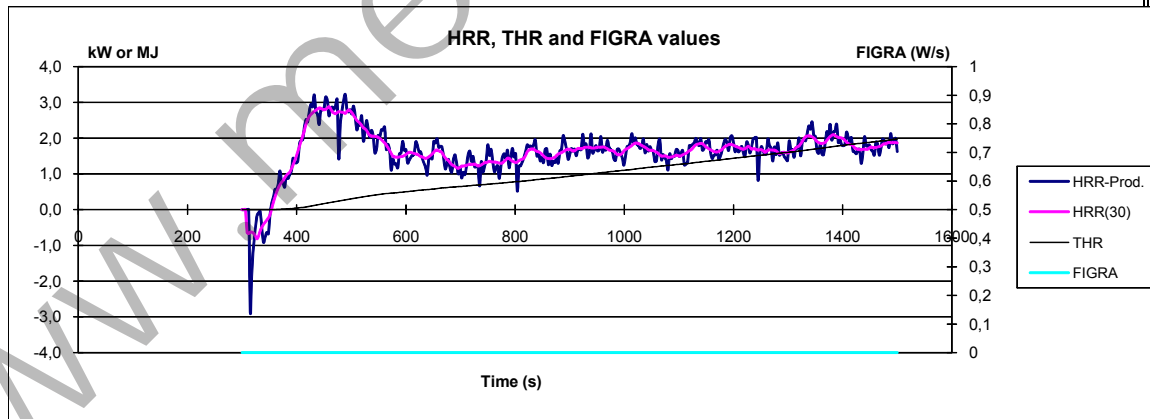
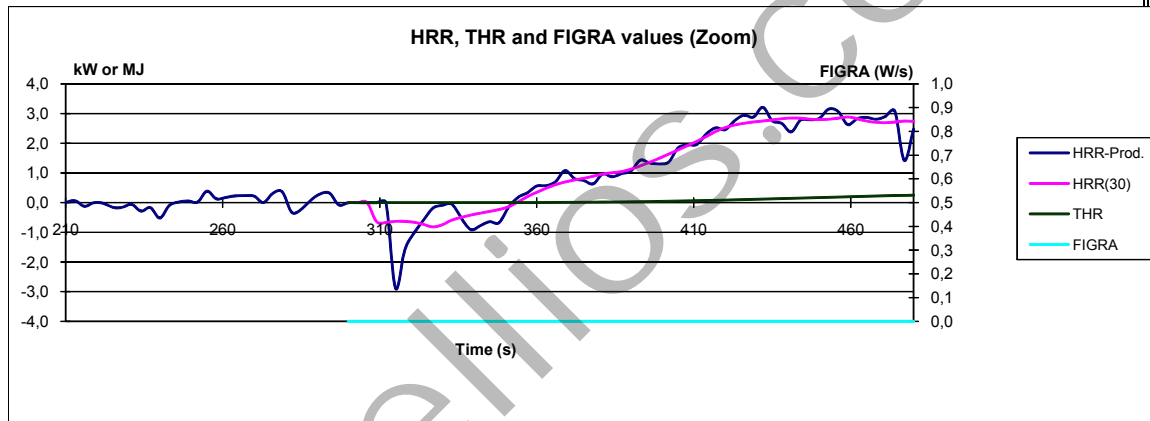
Pasqualino Cau



SBI Test Report

 Laboratory: CSI S.p.A.
 Product: EUROCARB

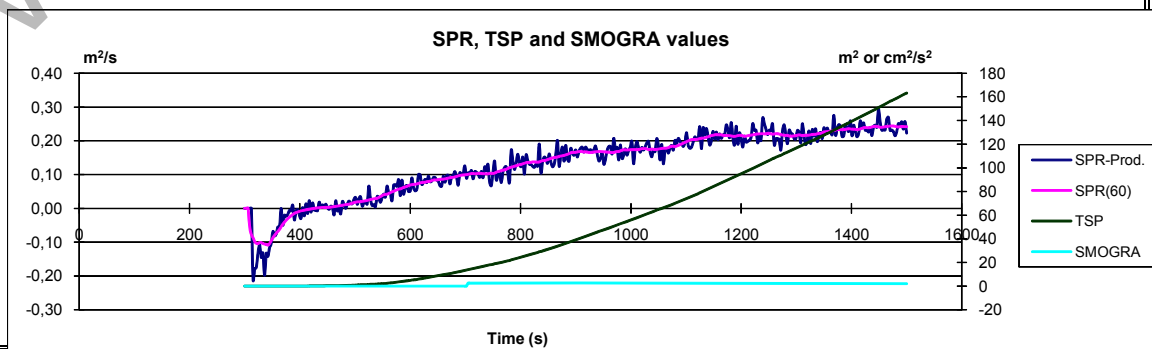
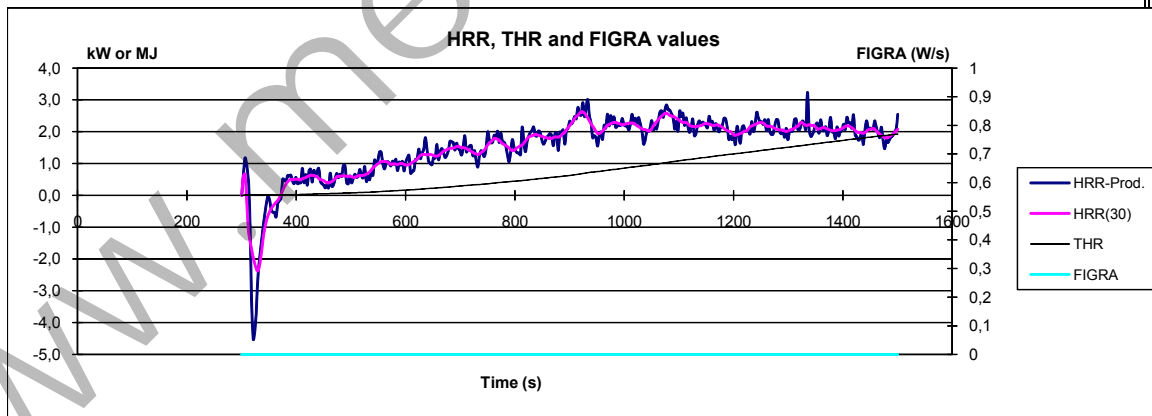
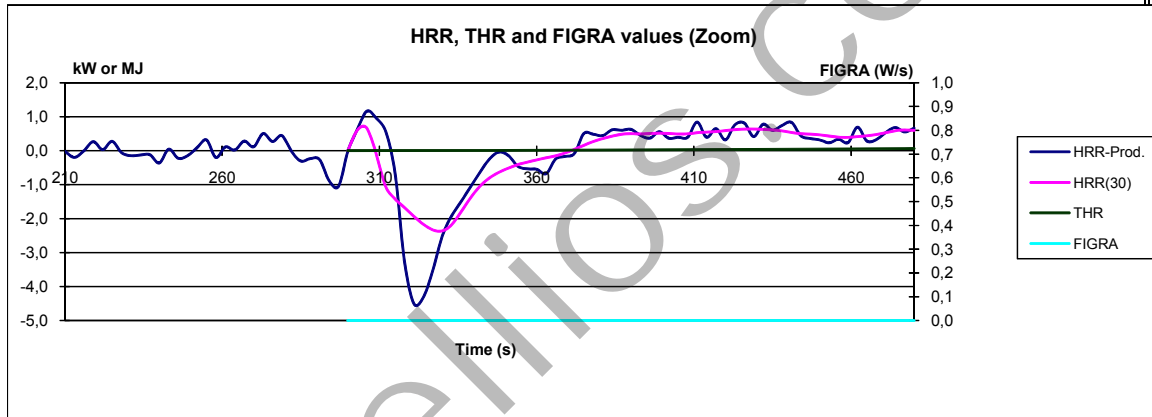
Test condition		Check points		Results	
Baseline duct temp. (t=30-90) [K]	294,88	HRR _{av, burner} [KW]	31,591	FIGRA threshold: 0.2 MJ [W/s]	0,0
Ambient pressure. [Pa]	100094	HRR _{std burner} [KW]	0,202	FIGRA threshold: 0.4 MJ [W/s]	0,0
Humidity [%]	70,1	CO ₂ /O ₂ Ratio _{burner}	0,538	THR ₆₀₀ [MJ] *	0,9
k _t	0,8420	SPR _{av, burner} [m ² /s]	0,094	Lateral flame spread (LFS) reach the edge?	No
k _p	1,0800	SPR _{std burner} [m ² /s]	0,009	SMOGR _A [cm ² /s ²]	1,6
E' [KJ/m ²]	17200	Ambient temp. (t=30-90) [K]	292,76	TSP ₆₀₀ [m ²] *	25,8
Duct diameter: [m]	0,315	No. of acceptable thermocouples	3	Flaming droplets/particles (FDP) (flaming <= 10 s)?	No
		Minimum for flow [m ² /s]	0,5479	Flaming droplets/particles (FDP) (flaming > 10 s)?	No
		Maximum for flow [m ² /s]	0,5802	Time to FIGRA _{0,2} [s] *	0
		Burner response time [s]	12	Time to FIGRA _{0,4} [s] *	0
				Tig (2*6KW) [s] *	Not reach
				* After ignition of main burner	
Baseline O ₂ ^a (t=30-90) [%]	20,5660			Synchronisation information	
Baseline O ₂ (t=30-90) [%]	20,9490	End data O ₂ [%]	20,9305	Baseline	Last point
Baseline CO ₂ (t=30-90) [%]	0,0286	End data CO ₂ [%]	0,0294	T-Duct (2.5 K drop from baseline)	318,54
Baseline light signal (t=30-90)	99,9053	End data light signal	98,9212	O ₂ (0.05% rise from baseline)	20,6555
				CO ₂ (0.02% drop from baseline)	0,1868
					309



SBI Test Report

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 Product: EUROCARB

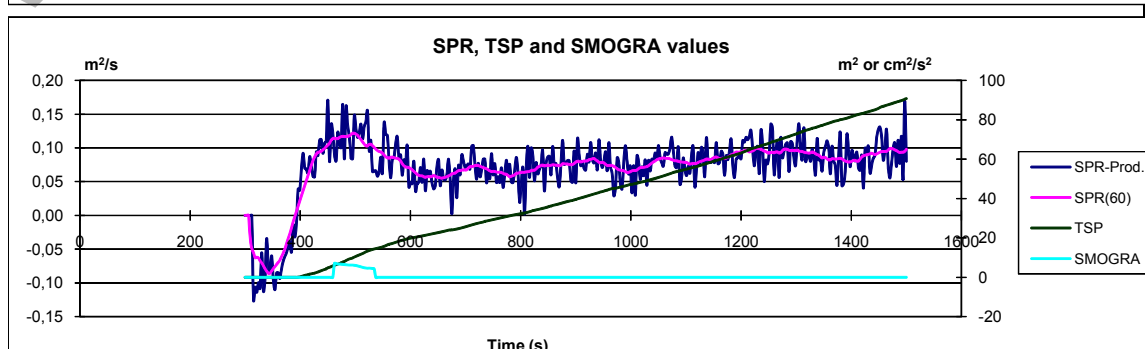
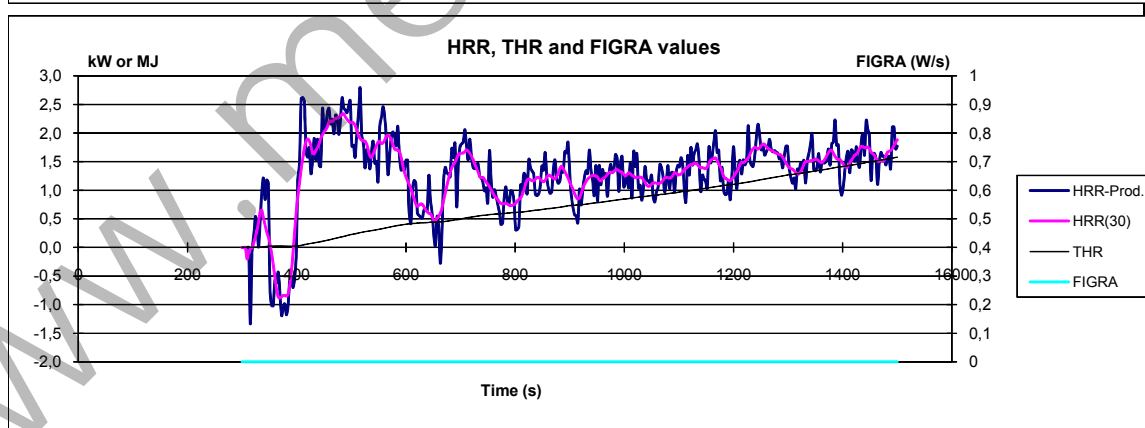
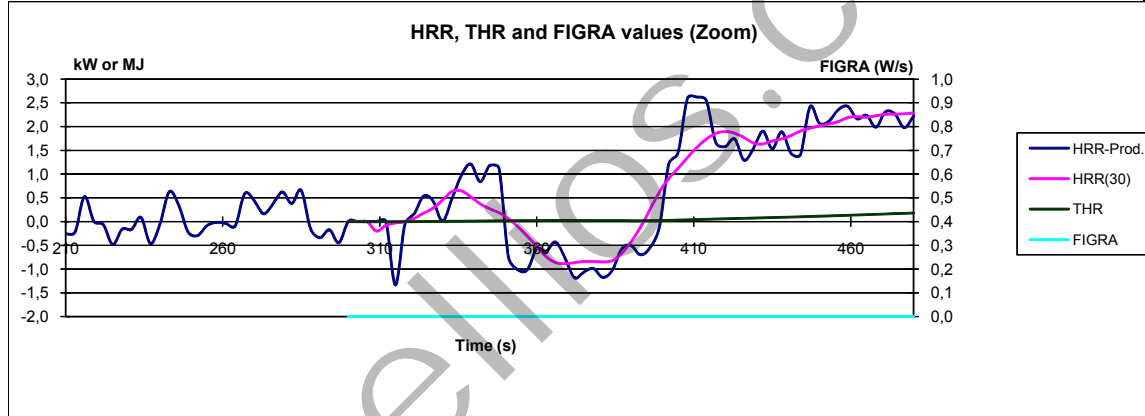
		Test no.	Test date:	Print date:	
		2	05/10/2010	08/10/2010	
Test condition		Check points		Results	
Baseline duct temp. $_{(t=30-90)}$ [K]	296,59	HRR _{av, burner} [KW]	31,254	FIGRA threshold: 0.2 MJ [W/s]	0,0
Ambient pressure. [Pa]	100121	HRR _{std burner} [KW]	0,188	FIGRA threshold: 0.4 MJ [W/s]	0,0
Humidity [%]	69,8	CO ₂ /O ₂ Ratio _{burner}	0,542	THR ₆₀₀ [MJ] *	0,6
		SPR _{av, burner} [m ² /s]	0,097	Lateral flame spread (LFS) reach the edge?	No
k _t	0,8420	SPR _{std burner} [m ² /s]	0,009	SMOGRAM [cm ² /s ²]	2,8
k _p	1,0800			TSP ₆₀₀ [m ²] *	39,1
E' [KJ/m ²]	17200	Ambient temp. $_{(t=30-90)}$ [K]	293,22	Flaming droplets/particles (FDP) (flaming <= 10 s)?	No
Duct diameter: [m]	0,315	No. of acceptable thermocouples	3	Flaming droplets/particles (FDP) (flaming > 10 s)?	No
		Minimum for flow [m ² /s]	0,5453	Time to FIGRA _{0,2} [s] *	0
		Maximum for flow [m ² /s]	0,5773	Time to FIGRA _{0,4} [s] *	0
		Burner response time [s]	12	Tig (2*6KW) [s] *	Not reach
				* After ignition of main burner	
Baseline O ₂ $_{(t=30-90)}$ [%]	20,5225			Synchronisation information	
Baseline O ₂ $_{(t=30-90)}$ [%]	20,9457	End data O ₂ [%]	20,9345	T-Duct (2.5 K drop from baseline)	Baseline Last point
Baseline CO ₂ $_{(t=30-90)}$ [%]	0,0284	End data CO ₂ [%]	0,0312	Synchronisation not fulfilled	320,49 306
Baseline light signal $_{(t=30-90)}$	100,2031	End data light signal	99,2459	CO ₂ (0.02% drop from baseline)	20,6500 0,1890 306



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		Test no.	Test date:	Print date:
		3	05/10/2010	08/10/2010
Test condition		Check points		Results
Baseline duct temp. (t=30-90) [K]	292,97	HRR _{av, burner} [KW]	32,369	FIGRA threshold: 0.2 MJ [W/s] 0,0
Ambient pressure. [Pa]	99898	HRR _{std burner} [KW]	0,326	FIGRA threshold: 0.4 MJ [W/s] 0,0
Humidity [%]	72	CO ₂ /O ₂ Ratio _{burner}	0,534	THR ₆₀₀ [MJ] * 0,7
k _t	0,8420	SPR _{av, burner} [m ² /s]	0,097	Lateral flame spread (LFS) reach the edge? No
k _p	1,0800	SPR _{std burner} [m ² /s]	0,009	SMOGR _A [cm ² /s ²] 7,1
E' [KJ/m ²]	17200	Ambient temp. (t=30-90) [K]	292,08	TSP ₆₀₀ [m ²] * 39,5
Duct diameter: [m]	0,315	No. of acceptable thermocouples	3	Flaming droplets/particles (FDP) (flaming <= 10 s)? No
		Minimum for flow [m ² /s]	0,5537	Flaming droplets/particles (FDP) (flaming > 10 s)? No
		Maximum for flow [m ² /s]	0,6034	Time to FIGRA _{0,2} [s] * 0
		Burner response time [s]	12	Time to FIGRA _{0,4} [s] * 0
				Tig (2*6KW) [s] * Not reach
				* After ignition of main burner
Baseline O ₂ (t=30-90) [%]	20,5985	End data O ₂ [%]	20,9321	Synchronisation information
Baseline O ₂ (t=30-90) [%]	20,9485	End data CO ₂ [%]	0,0329	Baseline Last point
Baseline CO ₂ (t=30-90) [%]	0,0315	End data light signal	100,5681	T-Duct (2.5 K drop from baseline) 315,01 306
Baseline light signal (t=30-90)	100,0316			O ₂ (0.05% rise from baseline) 20,6578 306
				CO ₂ (0.02% drop from baseline) 0,1872 306



SBI Test Report

 Laboratory: CSI S.p.A.
 Product: EUROCARB

		Test no.	Test date:	Print date:
		4	05/10/2010	08/10/2010
Test condition		Check points		Results
Baseline duct temp. $_{(t=30-90)}$ [K]	293,59	HRR _{av, burner} [KW]	31,900	FIGRA threshold: 0.2 MJ [W/s] 64,3
Ambient pressure. [Pa]	100149	HRR _{std burner} [KW]	0,193	FIGRA threshold: 0.4 MJ [W/s] 41,8
Humidity [%]	76	CO ₂ /O ₂ Ratio _{burner}	0,531	THR ₆₀₀ [MJ] * 1,4
k _t	0,8420	SPR _{av, burner} [m ² /s]	0,098	Lateral flame spread (LFS) reach the edge? No
k _p	1,0800	SPR _{std burner} [m ² /s]	0,009	SMOGRA [cm ² /s ²] 8,5
E' [KJ/m ²]	17200	Ambient temp. $_{(t=30-90)}$ [K]	292,09	TSP ₆₀₀ [m ²] * 34,6
Duct diameter: [m]	0,315	No. of acceptable thermocouples	3	Flaming droplets/particles (FDP) (flaming <= 10 s)? No
		Minimum for flow [m ² /s]	0,5488	Flaming droplets/particles (FDP) (flaming > 10 s)? No
		Maximum for flow [m ² /s]	0,5812	Time to FIGRA _{0,2} [s] * 87
		Burner response time [s]	15	Time to FIGRA _{0,4} [s] * 126
				Tig (2*6KW) [s] * 72
				* After ignition of main burner
Baseline O ₂ $_{(t=30-90)}$ [%]	20,5657	End data O ₂ [%]	20,9358	Synchronisation information
Baseline O ₂ $_{(t=30-90)}$ [%]	20,9488	End data CO ₂ [%]	0,0327	T-Duct (2.5 K drop from baseline)
Baseline CO ₂ $_{(t=30-90)}$ [%]	0,0284	End data light signal	98,8416	O ₂ (0.05% rise from baseline)
Baseline light signal $_{(t=30-90)}$	99,9153			CO ₂ (0.02% drop from baseline)
				Baseline Last point
				316,91 306
				20,6510 318
				0,1869 309

