

## RAPPORTO DI PROVA / TEST REPORT

**NUMERO / NUMBER**

1328\DC\REA\24

**DATA DI EMISSIONE / EMISSION DATE**

26/08/2024

**BUSINESS AREA**

BA Building &amp; Construction

**LABORATORIO / LABORATORY**

Reaction to Fire

**IDENTIFICAZIONE E DESCRIZIONE DEL CAMPIONE / SPECIMEN DESCRIPTION**

EGGBOARD BAFFLE

**CLIENTE / CUSTOMER**Artemide S.p.A.  
Via Bergamo, 18  
Pregnana Milanese (MI)**NORMA DI RIFERIMENTO / REFERENCE STANDARD**

EN 13823:2020+A1:2022 - Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item

**Dati generali / General data**

Data ricevimento campione / Date of test specimen arrival: 15/07/2024

Data accettazione campione /Date of test specimen acceptance: 15/07/2024

Data inizio prove / Test beginning date: 02/08/2024

Data fine prove / Test end date: 02/08/2024

Luogo di prova/ Test site: Viale Lombardia, 20, 20021 Bollate (MI) Italia

Deviazione dai metodi di prova/  
Deviations from test methods: NO/NO

**Campionamento/Sampling**

Il campionamento e il prelievo iniziali sono stati eseguiti dal committente. / The initial sampling has been done by the client.

**Campioni analizzati / Samples tested:**

3 provette campione denominate / 3 specimens of sample identified:

**EGGBOARD BAFFLE**

Descrizione : Pannello in fibra di poliestere rivestito con tessuto in poliestere.

Description : Polyester fiber panel covered with polyester fabric.

Massa areica rivestimento : 200 g/m<sup>2</sup>

Cover mass per area unit : 200 g/m<sup>2</sup>

Densità anima : 43 kg/m<sup>3</sup>

Core density : 43 kg/m<sup>3</sup>

Spessore : 5 mm

Thickness : 5 mm

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 a 80 mm dal campione. Giunti verticali ogni 400 mm.  
Specimen mounting compiling to EN 13823 par 5.2 a) with backing boards at 80 mm from the specimen. Vertical joints every 400 mm.

Condizionamento secondo EN 13238: 23 °C - 50 % u.r. fino a massa costante  
Conditioning compliing EN 13238: 23 °C - 50 % r.h. until constant mass

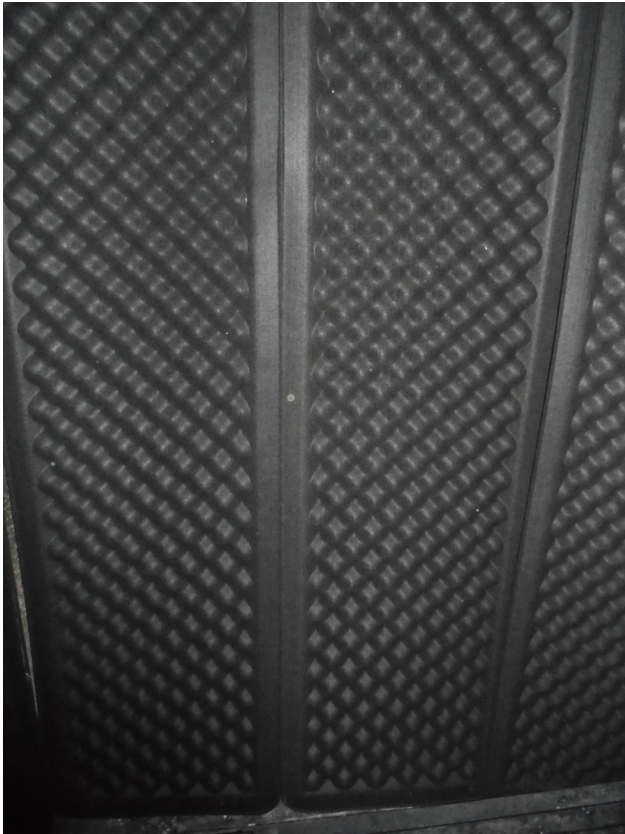
### Dichiarazioni / Statement

I risultati di prova contenuti nel presente rapporto si riferiscono esclusivamente al campione provato, così come ricevuto. / Test results contained in this test report pertain exclusively to the tested sample, as received.

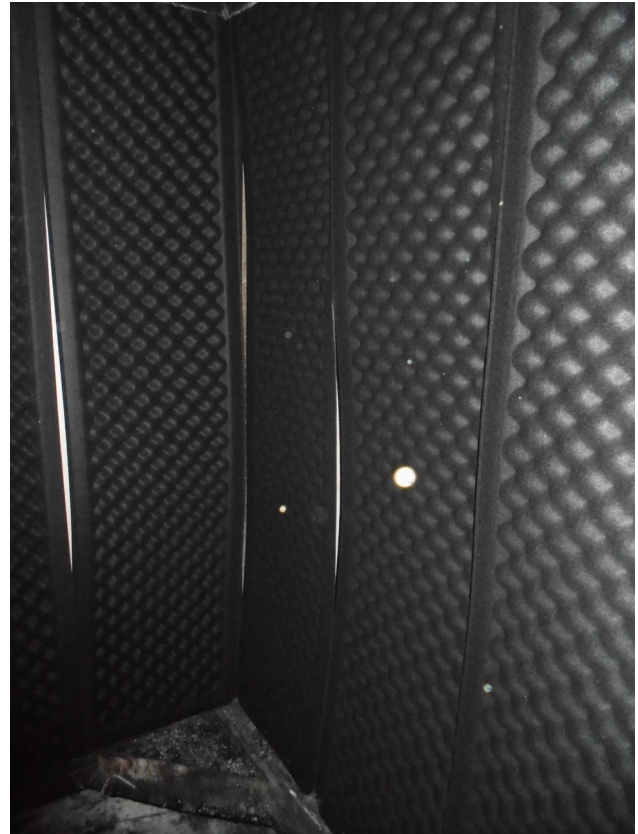
I dati relativi al campione sono forniti dal cliente e non verificati dal laboratorio, se non espressamente indicato. Il laboratorio ne declina ogni responsabilità. / The data relating to the sample are provided by the customer and not verified by the laboratory, unless expressly indicated. The laboratory declines all responsibility.

Il presente rapporto non può essere riprodotto parzialmente senza l'autorizzazione del Responsabile del laboratorio. / This test report cannot be reproduced partially without the consent of the laboratory managing director.

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.

**Fotografie / Photographs:**

Vista frontale ala lunga  
*Long wing front view*



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

**Risultati / Results:**

Metodo di prova / Test method: EN 13823:2020+A1:2022

| Identificazione provetta<br>Specimen identification | FIGRA<br>0.2MJ/0.4MJ<br>[W/s]                 | THR<br>[MJ] | LFS<br>[Si/Yes –<br>No/No] | SMOGRA<br>[m <sup>2</sup> /s <sup>2</sup> ]   | TSP<br>[m <sup>2</sup> ] | FDP<br>[No/No -<br><10s - >10s] |
|-----------------------------------------------------|-----------------------------------------------|-------------|----------------------------|-----------------------------------------------|--------------------------|---------------------------------|
| 1                                                   | 10,7<br>a/at 675s<br>10,7<br>a/at 675s        | 1,3         | No/No                      | Soglia non raggiunta<br>Threshold not reached | 10,0                     | No/No                           |
| 2                                                   | 15,2<br>a/at 513s<br>14,7<br>a/at 519s        | 1,8         | No/No                      | Soglia non raggiunta<br>Threshold not reached | 12,5                     | No/No                           |
| 3                                                   | Soglia non raggiunta<br>Threshold not reached | 0,2         | No/No                      | Soglia non raggiunta<br>Threshold not reached | 16,1                     | No/No                           |
| <b>Media Average</b>                                | <b>8,6<br/>8,5</b>                            | <b>1,1</b>  | <b>No/No</b>               | <b>0</b>                                      | <b>12,9</b>              | <b>No/No</b>                    |

FIGRA = fire growth rate index

THR = total heat release

LFS = lateral flame spread

SMOGRA = smoke growth rate index

TSP = total smoke production

FDP = flaming droplets or particles

**DATA**  
Date

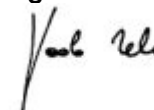
26/08/2024

**Operating Sector Fire Reaction**  
Operating Sector Fire Reaction

Dr. Lorenzo Zavaglio


**BA Building & Construction**  
BA Building & Construction

Ing. Paolo Mele



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| Test condition                                     |         | Check points                                            |         | Results                                             |            |             |
|----------------------------------------------------|---------|---------------------------------------------------------|---------|-----------------------------------------------------|------------|-------------|
|                                                    |         |                                                         |         | Test no.                                            | Test date: | Print date: |
|                                                    |         |                                                         |         | 1                                                   | 02/08/2024 | 02/08/2024  |
| Laboratory: CSI S.p.A.<br>Product: EGGBOARD BAFFLE |         |                                                         |         |                                                     |            |             |
| Baseline duct temp. (t=30-90) [K]                  | 299.11  | HRR <sub>av, burner</sub> [KW]                          | 29.217  | FIGRA threshold: 0.2 MJ [W/s]                       |            | 10.7        |
| Ambient pressure. [Pa]                             | 100826  | HRR <sub>std, burner</sub> [KW]                         | 0.380   | FIGRA threshold: 0.4 MJ [W/s]                       |            | 10.7        |
| Humidity [%]                                       | 65      | CO <sub>2</sub> /O <sub>2</sub> Ratio <sub>burner</sub> | 0.591   | THR <sub>600</sub> [MJ] *                           |            | 1.3         |
| k <sub>i</sub>                                     | 0.9000  | SPR <sub>av, burner</sub> [m <sup>2</sup> /s]           | 0.022   | Lateral flame spread (LFS) reach the edge?          |            | No          |
| k <sub>p</sub>                                     | 1.2400  | SPR <sub>std, burner</sub> [m <sup>2</sup> /s]          | 0.004   | SMOGRA [m <sup>2</sup> /s <sup>2</sup> ]            |            | 0.0         |
| E' [KJ/m <sup>2</sup> ]                            | 17200   | Ambient temp. (t=30-90) [K]                             | 299.17  | TSP <sub>500</sub> [m <sup>3</sup> ] *              |            | 10.0        |
| Duct diameter: [m]                                 | 0.315   | No. of acceptable thermocouples                         | 3       | Flaming droplets/particles (FDP) (flaming <= 10 s)? |            | No          |
|                                                    |         | Minimum for flow [m <sup>2</sup> /s]                    | 0.5583  | Flaming droplets/particles (FDP) (flaming > 10 s)?  |            | No          |
|                                                    |         | Maximum for flow [m <sup>2</sup> /s]                    | 0.6129  | Time to FIGRA <sub>0.2</sub> [s] *                  |            | 375         |
|                                                    |         | Burner response time [s]                                | 15      | Time to FIGRA <sub>0.4</sub> [s] *                  |            | 375         |
|                                                    |         |                                                         |         | Tig (2*6KW) [s] *                                   |            | Not reach   |
|                                                    |         |                                                         |         | * After ignition of main burner                     |            |             |
| Baseline O <sub>2</sub> (t=30-90) [%]              | 20.4965 | End data O <sub>2</sub> [%]                             | 20.9465 | Synchronisation information                         |            |             |
| Baseline O <sub>2</sub> (t=30-90) [%]              | 20.9522 | End data CO <sub>2</sub> [%]                            | 0.0734  | T-Duct (2.5 K drop from baseline)                   | Baseline   | Last point  |
| Baseline CO <sub>2</sub> (t=30-90) [%]             | 0.0733  | End data light signal                                   | 99.8240 | O <sub>2</sub> (0.05% rise from baseline)           | 20.6792    | 306         |
| Baseline light signal (t=30-90)                    | 99.9935 |                                                         |         | CO <sub>2</sub> (0.02% drop from baseline)          | 0.2346     | 303         |
|                                                    |         | Main burner average (390-450s)                          |         |                                                     |            |             |
|                                                    |         | SPR <sub>av, main burner</sub> [m <sup>2</sup> /s]      | 0.028   |                                                     |            |             |
|                                                    |         | SPR <sub>std, main burner</sub> [m <sup>2</sup> /s]     | 0.004   |                                                     |            |             |

**HRR, THR and FIGRA values (Zoom)**

**HRR, THR and FIGRA values**

**SPR, TSP and SMOGRA values (alternative baseline method)**

| SBI Test Report                                |         |                                                         | Laboratory: CSI S.p.A.<br>Product: EGGBOARD BAFFLE |                                                     |             |
|------------------------------------------------|---------|---------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------|-------------|
|                                                |         |                                                         | Test no.                                           | Test date:                                          | Print date: |
|                                                |         |                                                         | 2                                                  | 02/08/2024                                          | 02/08/2024  |
| Test condition                                 |         | Check points                                            |                                                    | Results                                             |             |
| Baseline duct temp. $(t_{(t=30-90)})$ [K]      | 301.01  | HRR <sub>av, burner</sub> [KW]                          | 30.426                                             | FIGRA threshold: 0.2 MJ [W/s]                       | 15.2        |
| Ambient pressure. [Pa]                         | 100810  | HRR <sub>std, burner</sub> [KW]                         | 0.425                                              | FIGRA threshold: 0.4 MJ [W/s]                       | 14.7        |
| Humidity [%]                                   | 65      | CO <sub>2</sub> /O <sub>2</sub> Ratio <sub>burner</sub> | 0.567                                              | THR <sub>600</sub> [MJ] *                           | 1.8         |
|                                                |         | SPR <sub>av, burner</sub> [m <sup>2</sup> /s]           | 0.026                                              | Lateral flame spread (LFS) reach the edge?          | No          |
|                                                |         | SPR <sub>std, burner</sub> [m <sup>2</sup> /s]          | 0.004                                              | SMOGRA [m <sup>2</sup> /s <sup>2</sup> ]            | 0.0         |
| k <sub>i</sub>                                 | 0.9000  |                                                         |                                                    | TSP <sub>500</sub> [m <sup>2</sup> ] *              | 12.5        |
| k <sub>p</sub>                                 | 1.2400  | Ambient temp. $(t_{(t=30-90)})$ [K]                     | 299.50                                             | Flaming droplets/particles (FDP) (flaming <= 10 s)? | No          |
| E' [KJ/m <sup>2</sup> ]                        | 17200   | No. of acceptable thermocouples                         | 3                                                  | Flaming droplets/particles (FDP) (flaming > 10 s)?  | No          |
| Duct diameter: [m]                             | 0.315   | Minimum for flow [m <sup>2</sup> /s]                    | 0.5634                                             | Time to FIGRA <sub>0.2</sub> [s] *                  | 213         |
|                                                |         | Maximum for flow [m <sup>2</sup> /s]                    | 0.6081                                             | Time to FIGRA <sub>0.4</sub> [s] *                  | 219         |
|                                                |         | Burner response time [s]                                | 9                                                  | Tig (2*6KW) [s] *                                   | Not reach   |
|                                                |         |                                                         |                                                    | * After ignition of main burner                     |             |
| Baseline O <sub>2</sub> $(t_{(t=30-90)})$ [%]  | 20.4445 |                                                         |                                                    | <b>Synchronisation information</b>                  |             |
| Baseline O <sub>2</sub> $(t_{(t=30-90)})$ [%]  | 20.9545 | End data O <sub>2</sub> [%]                             | 20.9470                                            | T-Duct (2.5 K drop from baseline)                   | 323.99 303  |
| Baseline CO <sub>2</sub> $(t_{(t=30-90)})$ [%] | 0.0735  | End data CO <sub>2</sub> [%]                            | 0.0729                                             | O <sub>2</sub> (0.05% rise from baseline)           | 20.6713 306 |
| Baseline light signal $(t_{(t=30-90)})$        | 99.9867 | End data light signal                                   | 99.7048                                            | CO <sub>2</sub> (0.02% drop from baseline)          | 0.2339 303  |
|                                                |         | <b>Main burner average (390-450s)</b>                   |                                                    |                                                     |             |
|                                                |         | SPR <sub>av, main burner</sub> [m <sup>2</sup> /s]      | 0.028                                              |                                                     |             |
|                                                |         | SPR <sub>std, main burner</sub> [m <sup>2</sup> /s]     | 0.004                                              |                                                     |             |

**HRR, THR and FIGRA values (Zoom)**

**HRR, THR and FIGRA values**

**SPR, TSP and SMOGRA values (alternative baseline method)**

