

AP/610-FC



Description

Highly conformable gloss vinyl film with excellent covering power and stability. Designed for full or partial permanent decorations of flat, curved and shaped surfaces. Easy application due to the glue with channels "Air Free FTX System" that allows the air to escape. Easy printability and brilliant colours even on dark backgrounds. Fire resistance B-S2-D0 and railway vehicles in accordance with the European classification.

Colours: white gloss.

Printability: printable by printers using Solvent, Eco-solvent, UV and Latex inks.

Technical information

Technical data

Film:	Calendered P.V.C.
Film Thickness (without adhesive):	75 +/- 3% μ m (Op. Istr. n° 4).
Liner:	PE-Liner 1 side siliconised "Air Free FTX System" (Micro Channel Technology)
Release:	70 +/- 25 cN/20mm.
Adhesive:	ultra-permanent acrylic high cohesion.
Grammage:	35 +/- 5 g/m ² .
Adhesion after 20 min.:	min. 450 N/m. Peel 180° at 20°C on steel (Op. Istr. n° 7).
Adhesion after 72 h. :	min. 650 N/m. Peel 180° at 20°C on steel (Op. Istr. n° 7).
Method of application:	dry.
Application temperature:	suggested between 10° and 28°C.
Shrinkage:	< 0,2 mm after 48 h. at 70°C on steel (Op. Istr. n° 8).
Temperature resistance:	from -50°C to +90°C adhered to steel no variation (Op. Istr. n° 15).
Reaction to fire classification:	B-S2-D0 (Standard EN 13501-1:2007+A1 Classification report CSI n° 0626/DC/REA/14_3).

Railway vehicles classification: The product complies with the tests T10.01, T10.02, T10.04 and T11.01 requirements R1 and R7 for HL1 and HL2 of standard EN 45545-2:2013+A1:2015 (Classification report CSI n° 0077\DC\TOX\21).

The product complies with the tests T02 requirements R1 and R7 for HL1, HL2 and HL3 of standard EN 45545-2:2013+A1:2015 (Classification report CSI n° 0873\DC\REA\21).

The product complies with the tests T03.01 requirements R1 and R7 for HL1, HL2 and HL3 of standard EN 45545-2:2013+A1:2015 (Classification report CSI n° 0873\DC\REA\21_2).

Seawater resistance: adhered to steel no variation after 100 h. at 20°C (Op. Istr. n° 14).

Average expected lifetime

The data below refer to the film as it is, applied on a standard flat surface and not taking into consideration the final application. Therefore, they are indicative values intended only as a source of information, and do not constitute a guarantee.

Life estimates are determined on the basis of the results of UV and Xenon accelerated aging lab tests which simulate some conditions when unprocessed, non shaped, non printed film is submitted/**exposed vertically** (+/- 10% from the vertical) and in weather conditions typical of **Central Europe, correctly applied** on a flat surface.

Factors which drastically reduce the film's expected lifetime:

- horizontal/oblique exposure (angle greater than +/-10 ° from the vertical).
- exposure to long periods of sunlight as in southern climatic regions, areas characterised by high temperatures, high altitudes or high pollution.
- exposure facing towards the sun.
- imperfect application of the film and improper use of laminating machines.
- attack by solvents and other volatile parts contained in printing inks.
- excessive film deformation.
- improper cleaning and maintenance (use of aggressive detergents, scratches, abrasions and contaminations that may occur during installation or the lifetime of the product).
- surfaces subject to high temperatures.

The actual lifetime of a product depends on several factors, including the quality and the preparation of the surface, exposure (environment, weather, exposure angle), film maintenance, pollution. **Therefore, only the operator can determine the suitability of the product and its expected lifetime.**

In order to extend as much as possible the film's lifespan, we recommend following the instructions for Application, Cleaning and Maintenance set out below in this data sheet.

Data from lab testing (UV – XENON TEST):

7 years.

Storage

1 year, film must be kept warehoused at room temperature (20°C / 50% R.H.) suspended horizontally or placed in a vertically upright position in polythene bag. During the storage, gloss vinyl could become matt. This phenomenon, due to the pressure

of the rolling up of the material, could worsen when close to the cardboard core and, is more frequent when the storage temperature is above 25°C and/or when the vinyl is particularly glossy and soft.

It is possible to return the gloss of the vinyl by heating the surface with an industrial heat gun.

Note

The values and the data given are based on tests we believe to be reliable and are typical values intended only as a source of information, and do not constitute a guarantee.

Purchasers must independently determine, before use, the suitability of the material for their own specific use and under their own operating conditions with the aim to determine if the APA product is suited for the specific goal and is furthermore suited for the use and the pre-selected application-method.

All APA-Print films are produced and packed under very strict quality control procedures in order to guarantee that the films are clean, free of dust and other impurities that might compromise the printability. It's important that the inks are thoroughly dried before application and before any lamination takes place. The residual solvents can otherwise change the products' specific features. Purchasers must independently determine, the suitability of the product with their own printer and inks, under their own operating conditions, with the aim to determine if the APA product is suited for the specific goal.

General information

Warranty / exclusions of liability

APA materials are guaranteed to be free from all manufacturing defects.

In the event of ascertained defectiveness of the product, APA shall replace the materials used upon manufacturing the decorations.

APA shall not be liable for any additional costs, such as the work necessary for reprinting the design, the losses related to production time, the costs for removing or re-applying the graphics. APA, in addition, does not assume responsibility for the replacement of materials not produced by APA.

A.P.A. SpA cannot be held responsibility for any damages other than the substitution of the goods.

APA guarantees to maintain the interval of the variability of the colours of its products in the best possible way, using instrumental and visual checks.

To avoid colour variation, all the parts of the vinyl applied have to belong to the same production batch. It is also the case for decorations that are required for a long duration of time, updating or improvements of the decoration. Therefore, it is recommended to ask beforehand for the required material, belonging to the same production batch.

No salesman, representative, agent or distributor has authority to supply data different from those reported in this Technical Data Sheet. To make improvements all products may be modified without prior notice.

For a safe use of the self-adhesive materials by A.P.A. it is recommended to read the dedicated safety information.

For a safe use of the cleaners mentioned in this data sheet it is recommended to read the dedicated safety sheets.

Print

The film is developed to be used on major printers using Solvent, Eco Solvent, UV and Latex inks. For a good printability and converting result we recommend allowing the rolls acclimatise in the print room at least 24 hours before printing or converting.

Too much temperature or humidity deviation between material and room climate can cause lay flatness and printability issues. Setting the most suitable profile, to get the best printing result.

Over-lamination

It's important that the inks are thoroughly dried before application and before any lamination takes place. The residual solvents can otherwise change the products' specific features. Therefore after print we recommend to let the film rest at least 48 hours in a room with a temperature of 20° C.

Recommended lamination are the APA Over-lamination calendered film L/111-KS and L/118-KS.

Application

The film is conceived for a highly professional use.

The staff that apply the vinyl must possess the requirements and the training necessary.

Before applying the film always test the compatibility between the self-adhesive vinyl and the surface of the decoration and in particular verify the presence of oil, wax and other substrates, including those made by the cleaning, that could compromise the adhesion of the film and cause it to detach in the future. Make a general cleaning of the surface with APA EASY CLEANER. Before using APA EASY CLEANER always test the compatibility of the products on a corner of the surface which has to be cleaned.

It is recommended to apply the film in a room with a temperature between 10 and 28°C.

Apply the vinyl only using the dry method. Do not use water.

This vinyl is not compatible with:

- surfaces with small superficial tensions, silicone, rubber, PP, PE and all apolar surfaces
- painted surfaces with poor adhesion of the paint to the surface underneath
- flexible surfaces such as banners, truck curtains or textiles
- surfaces that give out gas (out-gassing)
- gasoline vapors or spillages

Cleaning the vinyl

Proceed with the cleaning process if the printed film has been over-laminated. use water with soft cloths.

Use water with soft cloths and non-aggressive detergents.

Do not use rough sponges and cloths, abrasive creams or very strong solvents.

Cleaning with unsuitable products and tools could cause a premature deterioration of the vinyl. To remove ground in dirt, we advise the use of the quick cleaner APA CLEANER FILM and water. **Do not use wax or polishing products** which, in addition to being difficult to remove, may alter or accelerate the deterioration of the film.

If water under pressure is used for cleaning, never aim the jet at the edges of the film because the force of the water could lift it or detach it. However the nozzle must be perpendicular and never oblique to the surface to be cleaned and at least 1 meter away. The film with a gloss finish, if treated badly, could go matt and stripe beyond remedy.

Maintenance

The surface of the vinyl is delicate and therefore should be treated with care. Avoid rubbing against objects that could cause scratches or ripping of the vinyl beyond repair.

An extended exposition to solar rays and to atmospheric agents could provoke a premature aging of the film, especially for the parts exposed horizontally or to the south.

In this regard, gloss films can lose shine and give a matt appearance.

In conclusion, we recommend protecting the decorated surface from the sun and the elements to the greatest extent possible.

If a film deterioration should arise, for example, fading, change of colour or become brittle, then an immediate removal is recommended.

For a good maintenance of the vinyl regular cleaning is recommended.

Removal

During the removal process it is important to apply heat with a heat gun to the self-adhesive vinyl.

The operations of the vinyl removal are conditioned by many factors, such as the time passed from the application, exposure of the decoration either outdoors or indoors, type of surface, temperature of the room and of the surface, etc... **Therefore it is difficult to quantify and determine the speed and execution time of the removal by A.P.A. SpA.**

Should glue traces remain on the surface, these can easily be removed with the ready-for-use liquid APA REMOVER. Before using APA REMOVER always test the compatibility of the product on a corner of the surface which has to be cleaned.

The company APA cannot be held responsible of any damage caused during the removal phase and/or damages of the surface upon which the film has been applied.

CSI SpA
Certificazione e Testing

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Mutual Recognition Agreements

RAPPORTO DI CLASSIFICAZIONE *CLASSIFICATION REPORT* 0626\DC\REA\14_3

Rapporto di classificazione di reazione al fuoco del prodotto
Reaction to fire classification report of product : **FILM CALANDRATO CON
ADESIVO
ULTRAPERMANENTE**

Descrizione
Description..... : **Vedi pag. 2 / see page 2**

Per conto di
On behalf of..... : **A.P.A S.p.A.**

Indirizzo
Address..... : **Via Marradi, 1
20123 Milano**

Norma tecnica: **EN 13501-1 - Classificazione al fuoco di prodotti ed elementi da costruzione -
Parte 1: Classificazione sulla base dei dati di prova derivati da prove di reazione al fuoco**
*Technical standard: EN 13501-1 Fire classification of construction products and building
elements - Part 1: Classification using test data from reaction to fire tests*

Data / Date.....: **04/09/2014**

1. DATI GENERALI / *GENERAL DATA* :

Identificazione delle norme di riferimento / *Standard reference identification*:

- EN 13501-1:2007+A1 - **Classificazione al fuoco di prodotti ed elementi da costruzione - Parte 1: Classificazione sulla base dei dati di prova derivati da prove di reazione al fuoco**
- *EN 13501-1:2007+A1 Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests.*
- EN ISO 11925-2:2010 **Prove di reazione al fuoco prodotti edilizi - parte 2 - innesco quando soggetto al diretto contatto della fiamma**
- *EN ISO 11925-2:2010 Reaction to fire tests for building products - part. 2 -ignitability when subjected to direct impingement of flame.*
- EN 13823:2010 **Prove di reazione al fuoco prodotti edilizi - Prodotti edilizi escluse le pavimentazioni esposti ad un attacco termico di un singolo elemento in combustione**
- *EN 13823:2010 Reaction to fire tests for building products _ Building products excluding floorings exposed to the thermal attack by a single burning item.*

2. IDENTIFICAZIONE DELLE PROCEDURE / *PROCEDURES IDENTIFICATION*

- Procedura normalizzata / *Standard procedure* : : **SI / YES**
- Controllo calcoli e trasferimento dati / *Calculation and data transfer check* : **SI / YES**

3. DETTAGLI DEL PRODOTTO CLASSIFICATO / *DETAILS OF CLASSIFIED PRODUCT*

3.1 Natura e impiego / *Nature and end use application* :

Il prodotto **FILM CALANDRATO CON ADESIVO ULTRAPERMANENTE** è definito come un rivestimento murale decorativo. La sua classificazione è valida per le seguenti condizioni di impiego:

*The product **FILM CALANDRATO CON ADESIVO ULTRAPERMANENTE** is defined as a decorative wallcovering. Its classification is valid for the following end use application(s):*

- Rivestimento parete – Incollato su supporto incombustibile o cartongesso
- *Wall covering – Glued on non combustible substrate or gypsum plasterboard*
- Rivestimento soffitto – Incollato su supporto incombustibile o cartongesso
- *Ceiling covering – Glued on non combustible substrate or gypsum plasterboard*

3.2 Descrizione / *Description*:

Il prodotto **FILM CALANDRATO CON ADESIVO ULTRAPERMANENTE** è compiutamente descritto nei rapporti di prova in sussidio della classificazione elencati in 5.1

*The product **FILM CALANDRATO CON ADESIVO ULTRAPERMANENTE** is fully described in the test reports in support of the classification listed in 5.1.*

4. DICHIARAZIONI / *DECLARATIONS*

- Questo rapporto di classificazione definisce la classificazione assegnata al prodotto indicato in copertina secondo le procedure stabilite nella norma EN 13501-1 /
- *This classification report defines the classification assigned to the product mentioned on the cover in accordance with the procedures given in EN 13501-1.*
- I risultati di prova contenuti nel presente rapporto di classificazione si riferiscono esclusivamente al campione provato
- *Test results contained in this classification report relate only to the specimens tested.*
- Il presente rapporto di prova non può essere riprodotto parzialmente senza l'autorizzazione del Responsabile di Laboratorio
- *The test report shall not be reproduced except in full without the written approval of the Managing Director.*

5. RAPPORTI DI PROVA E RISULTATI DI PROVA IN SUPPORTO DI QUESTA CLASSIFICAZIONE

TEST REPORTS AND TEST RESULTS IN SUPPORT OF THIS CLASSIFICATION

5.1 Rapporti di prova / test reports

Nome del laboratorio / <i>Name of laboratory</i>	Nome del Committente / <i>Name of sponsor</i>	Numero di Identificazione del rapporto di prova / <i>Test report ref. No.</i>	Metodo di prova / <i>test method</i>
CSI S.p.A.	A.P.A S.p.A.	0626/DC/REA/14_1	EN 13823
CSI S.p.A.	A.P.A S.p.A.	0626/DC/REA/14_2	EN ISO 11925-2

5.2 Risultati di prova per prodotti da costruzione esclusi i pavimenti

Test results for construction products except floorings

Metodo di prova <i>Test method</i>	Parametro <i>Parameter</i>	Numero di prove <i>Number of tests</i>	Risultati / <i>Results</i>	
			Parametri continui media / <i>Continuous parameter average</i>	Parametri di conformità / <i>Compliance parameter</i>
EN ISO11925-2				
Attacco della fiamma in superficie <i>Surface flame attack</i>	Fs ≤ 150 mm	6	(-)	S / Y
Applicazione 30 s / 30 s exposure Attacco della fiamma all'estremità <i>Edge flame attack</i>	Fs ≤ 150 mm	6	(-)	S / Y
Applicazione 30 s / 30 s exposure Gocce/parti accese / <i>Flamig droplets/particle</i>	Innesco della carta da filtro/ <i>Ignition of the filter paper</i>	12	(-)	N / N
EN 13823				
	FIGRA _{0,2MJ}	3	0	(-)
	FIGRA _{0,4MJ}		0	(-)
	LFS < Edge		(-)	S / Y
	THR _{600s} [MJ]		0,6	(-)
	SMOGRA [m ² /s ²]	3	14,3	(-)
	TSP _{600s} [m ²]		57,8	(-)
	Gocce/parti accese <i>Flaming droplets/ particles</i>	3	(-)	N / N

Solo la copia completa di questo Rapporto di Classificazione permette un normale impiego dei risultati /
Only the full copy of this classification report allows a normal use of results



6. CLASSIFICAZIONE E CAMPO DIRETTO DI APPLICAZIONE *CLASSIFICATION AND DIRECT FIELD OF APPLICATION*

6.1 Riferimenti e campo diretto di applicazione / *Reference and direct field of application*

Questa classificazione è stata condotta conformemente alla clausola 8.2 della EN 13501-1:2007+A1.
This classification has been carried out in accordance with clause 8.2 of EN 13501-1: 2007+A1.

6.2 Classificazione / *Classification*

Il prodotto **FILM CALANDRATO CON ADESIVO ULTRAPERMANENTE** in relazione al suo comportamento alla reazione al fuoco è classificato:
*The product **FILM CALANDRATO CON ADESIVO ULTRAPERMANENTE** in relation to its fire reaction behaviour is classified.*

B

La classificazione aggiuntiva in relazione allo sviluppo di fumo è:
The additional classification in relation to smoke production is:

s2

La classificazione aggiuntiva in relazione alle gocce/particelle accese è:
The additional classification in relation to flaming droplets/particles is:

d0

Il formato per la classificazione di reazione al fuoco per i prodotti da costruzione eccetto i pavimenti è la seguente:
The format of the reaction to fire classification for construction products except flooring is:

Comportamento al fuoco <i>Fire behaviour</i>		Sviluppo di fumo <i>Smoke production</i>			Parti infiammate <i>Flaming droplets</i>	
B	-	s	2	-	d	0

6.3 Campo di applicazione / *Field of application*

Questa classificazione è valida per le seguenti condizioni di impiego /
This classification is valid for the following end use conditions:

- Incollato su supporto incombustibile o cartongesso
Glued on non combustible substrate or gypsum plasterboard
- Senza cavità
Without gap
- Tipo di fissaggio: incollato
Type of fixings: glued



Questa classificazione è anche valida, per i seguenti parametri del prodotto /
This classification is also valid, , for the following product parameters:

- Colore: qualsiasi
Colour: any

- Altre denominazioni commerciali incluse:
Other trade names included:
SERIE NW
SERIE S
SERIE FS
SERIE T
SERIE ST
SERIE AP (prodotti con processo di calandratura e dotati di adesivo ultrapermanente / *manufactured with calendering and with ultrapermanent adhesive*)
SERIE L (prodotti con processo di calandratura e dotati di adesivo ultrapermanente / *manufactured with calendering and with ultrapermanent adhesive*)

7. LIMITAZIONI / *LIMITATIONS*

7.1 Avvertimento / *Warning*

Questo documento non rappresenta un'approvazione di tipo od una certificazione del prodotto
This document does not represent type approval or certification of the product.

La classificazione assegnata al prodotto in questo rapporto è relativa ad una dichiarazione di conformità del fabbricante nel contesto del sistema 3 di attestazione di conformità e marcatura CE ai sensi della regolamento sui prodotti da costruzione.

Il fabbricante ha presentato una dichiarazione, che è conservata in archivio. Questo conferma che il progetto del prodotto non richiede specifici processi, procedure o fasi (p.e. senza aggiunta di ritardanti di fiamma, limitazione del contenuto organico, o aggiunta di cariche) che sono diretti a migliorare la prestazione al fuoco per ottenere la classificazione ottenuta. Come conseguenza il fabbricante ha concluso che il sistema 3 di attestazione è appropriato. Il laboratorio di prova, pertanto, non ha svolto alcun ruolo nel campionamento del prodotto per la prova, anche se conserva riferimenti appropriati, forniti dal fabbricante, a fornire la tracciabilità dei campioni provati.

The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 attestation of conformity and CE marking under the Construction Products Regulation.

The manufacturer has made a declaration, which is held on file. This confirms that the products design requires no specific processes, procedures or stages (e.g. no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence the manufacturer has concluded that system 3 attestation is appropriate.

The test laboratory has, therefore, played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide for traceability of the samples tested.

DATA
Date

RESP. DIVISIONE
Division Head

RESP. DEL CENTRO
Managing Director

04/09/2014

Paolo Mele

Raoul Gatti

RAPPORTO DI PROVA / TEST REPORT

NUMERO / NUMBER

0077\DC\TOX\21

DATA DI EMISSIONE / EMISSION DATE

15/07/2021

BUSINESS AREA

BA Product Conformity Assessment

LABORATORIO / LABORATORY

Reaction to Fire

IDENTIFICAZIONE E DESCRIZIONE DEL CAMPIONE / SPECIMEN DESCRIPTION

SERIE SX*, AP/6*, L/11*, XF*, S/*, FS/*, AP/HT*. HT*, AB/*, AV/*

CLIENTE / CUSTOMERA.P.A. SPA
VIA RUFFILLI, 6
20060 PESSANO CON BORNAGO (MI)**NORMA DI RIFERIMENTO / REFERENCE STANDARD**

EN 45545-2:2013 + A1:2015 - ISO 5659-2:2017

0077\DC\TOX\21

15/07/2021

Dati generali / General data

Data ricevimento campione / Date of test specimen arrival: 22/06/2021

Data accettazione campione /Date of test specimen acceptance: 22/06/2021

Data inizio prove / Test beginning date: 13/07/2021

Data fine prove / Test end date: 13/07/2021

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 della prova. / The initial sampling has been done by the customer.

Campioni analizzati / Samples tested:

3 Provette campione denominate / 3 Specimens of sample identified:

SERIE SX*, AP/6*, L/11*, XF*, S/*, FS/*, AP/HT*. HT*, AB/*, AV/*

Descrizione	:	Pellicola autoadesiva IN PVC.
Description	:	PVC self-adhesive film.
Massa areica / Mass per area unit	:	130 g/m ²
Spessore / Thickness	:	0,1 mm

0077\DC\TOX\21

15/07/2021

Tipo di substrato / Substrate type:

Lastra in acciaio come da EN 45545-2:2013+A1:2015 tabella 7
Steel sheet according to EN 45545-2:2013+A1:2015 Table 7

Allestimento del campione / Specimen mounting and fixing:
Appoggiato su substrato.
Loose laid on substrate.

Dichiarazioni / Declaration

I risultati di prova contenuti nel presente rapporto si riferiscono esclusivamente al campione provato / Test results contained in this test report pertain exclusively to the tested specimen

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

Risultati / Results:

Metodo di prova / Test method: ISO 5659-2:2017

Campione / Specimen N°	NON FLAMING 50 KW/m ²		
	D _{4min}	D _{max}	VOF4
1	68,8	96,2	235,0
2	56,4	78,8	191,7
3	59,7	82,9	204,8
Media / Average	61,6	86,0	210,5

0077\DC\TOX\21

15/07/2021

Metodo di prova / Test method: EN 45545-2:2013+A1:2015 Annex C Method 1

GAS	CONCENTRAZIONE 240 s CONCENTRATION 240 s ppm	CONCENTRAZIONE 480 s CONCENTRATION 480 s ppm
ANIDRIDE CARBONICA CARBON DIOXIDE	1073	1127
OSSIDO DI CARBONIO CARBON MONOXIDE	90	160
ACIDO CLORIDRICO HYDROGEN CHLORIDE	< 0,1	< 0,1
ACIDO BROMIDRICO HYDROGEN BROMIDE	< 0,1	< 0,1
ACIDO FLUORIDRICO HYDROGEN FLUORIDE	< 0,1	< 0,1
ACIDO CIANIDRICO HYDROGEN CYANIDE	< 0,1	< 0,1
OSSIDI DI AZOTO NITROGEN OXIDES	< 0,1	< 0,1
ANIDRIDE SOLFOROSA SULPHUR DIOXIDE	< 0,1	< 0,1

NON FLAMING 50 KW/m2	
CIT 240s	CIT 480s
0,008	0,013

0077\DC\TOX\21

15/07/2021

Il prodotto **è conforme** alla norma EN 45545-2:2013+A1:2015 requisiti **R1 e R7**

per HL1 e HL2 per le prove **T10.01, T10.02, T10.04 e T11.01**

The product **complies** with the tests **T10.01, T10.02, T10.04** and **T11.01** requirements **R1** and **R7**

for HL1 and HL2 of standard EN 45545-2:2013+A1:2015

DATA
Date

Operating Sector Reaction to Fire
Operating Sector Reaction to Fire

BA Product Conformity Assessment
BA Product Conformity Assessment

15/07/2021

Dr. Lorenzo Zavaglio



Ing. P. Fumagalli



Il documento è firmato digitalmente ai sensi del D.Lgs. 82/2005 s.m.i. e norme collegate e sostituisce il documento cartaceo e la firma autografa / The document is digitally signed in accordance with Legislative Decree n. 82/2005 as amended and replaces the paper document and the handwritten signature.

RAPPORTO DI PROVA / TEST REPORT

NUMERO / NUMBER

0873\DC\REA\21

DATA DI EMISSIONE / EMISSION DATE

15/07/2021

BUSINESS AREA

BA Product Conformity Assessment

LABORATORIO / LABORATORY

Reaction to Fire

IDENTIFICAZIONE E DESCRIZIONE DEL CAMPIONE / SPECIMEN DESCRIPTION

SERIE SX*, AP/6*, L/11*, XF*, S/*, FS/*, AP/HT*. HT*, AB/*, AV/*

CLIENTE / CUSTOMERA.P.A. SPA
VIA RUFFILLI, 6
20060 PESSANO CON BORNAGO (MI)**NORMA DI RIFERIMENTO / REFERENCE STANDARD**

ISO 5658-2:2006+A1:2011 - Reaction-to-fire tests – Spread of flame – Part 2: Lateral spread on building products in vertical configuration

0873\DC\REA\21

15/07/2021

Dati generali / General data

Data ricevimento campione / Date of test specimen arrival: 22/06/2021

Data accettazione campione /Date of test specimen acceptance: 22/06/2021

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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 della prova. / The initial sampling has been done by the customer.

Campioni analizzati / Samples tested:

6 Provette campione denominate / 6 Specimens of sample identified:

SERIE SX*, AP/6*, L/11*, XF*, S/*, FS/*, AP/HT*. HT*, AB/*, AV/*

Descrizione	:	Pellicola autoadesiva IN PVC.
Description	:	PVC self-adhesive film.
Massa areica / Mass per area unit	:	130 g/m ²
Spessore / Thickness	:	0,1 mm

Tipo di substrato / Substrate type:

Lastra in acciaio conforme alla tabella 7 della norma EN 45545-2:2013+A1:2015.

Stell sheet complying to table 7 of the EN 45545-2:2013+A1:2015 standard.

Allestimento del campione / Specimen mounting and fixing:

Incollato su substrato.

Glued on substrate

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 / Test results contained in this test report pertain exclusively to the tested specimen

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

Risultati / Results:

ISO 5658-2:2006+A1:2011

Senso longitudinale / Machine direction

Identificazione della provetta/ Specimen identification	N. 1	N. 2	N. 3	Media Average
Tempo di innesco / Ignition time [s]	24	19	14	19
Tempo di spegnimento / Flame out time [s]	64	69	49	61
Zona danneggiata / Extent of burn [mm]	290	300	300	297
Durata della prova / Test duration [s]	600	600	600	600
Calore medio per la combustione sostenuta / Average heat for substained burning [MJ/m ²]	1,34	0,97	0,83	1,05
Flusso di calore critico allo spegnimento Critical heat flux at extinguishment CFE [KW/m ²]	31,2	30,0	30,0	30,4

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Senso trasversale / Cross direction

Identificazione della provetta/ Specimen identification	N. 1	N. 2	N. 3	Media Average
Tempo di innesco / Ignition time [s]	19	23	13	18
Tempo di spegnimento / Flame out time [s]	82	66	48	65
Zona danneggiata / Extent of burn [mm]	275	300	300	292
Durata della prova / Test duration [s]	600	600	600	600
Calore medio per la combustione sostenuta / Average heat for substained burning [MJ/m ²]	1,35	1,23	1,03	1,20
Flusso di calore critico allo spegnimento Critical heat flux at extinguishment CFE [KW/m ²]	32,9	30,0	30,0	31,0

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Il prodotto è **conforme** alla norma EN 45545-2:2013+A1:2015 requisiti **R1** e **R7** per HL1, HL2 e HL3 per la prova **T02**

The product **complies** with the test **T02** requirement **R1** and **R7** for HL1, HL2 and HL3 of standard EN 45545-2:2013+A1:2015

DATA
Date

Operating Sector Reaction to Fire
Operating Sector Reaction to Fire

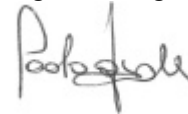
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Dr. Lorenzo Zavaglio



Ing. P. Fumagalli



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RAPPORTO DI PROVA / TEST REPORT

NUMERO / NUMBER

0873\DC\REA\21_2

DATA DI EMISSIONE / EMISSION DATE

15/07/2021

BUSINESS AREA

BA Product Conformity Assessment

LABORATORIO / LABORATORY

Reaction to Fire

IDENTIFICAZIONE E DESCRIZIONE DEL CAMPIONE / SPECIMEN DESCRIPTION

SERIE SX*, AP/6*, L/11*, XF*, S/*, FS/*, AP/HT*. HT*, AB/*, AV/*

CLIENTE / CUSTOMERA.P.A. SPA
VIA RUFFILLI, 6
20060 PESSANO CON BORNAGO (MI)**NORMA DI RIFERIMENTO / REFERENCE STANDARD**

ISO 5660-1:2015 - Reaction-to-fire tests – Heat release, smoke production and mass loss rate

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Dati generali / General data

Data ricevimento campione / Date of test specimen arrival: 22/06/2021

Data accettazione campione /Date of test specimen acceptance: 22/06/2021

Data inizio prove / Test beginning date: 13/07/2021

Data fine prove / Test end date: 13/07/2021

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 della prova. / The initial sampling has been done by the customer.

Campioni analizzati / Samples tested:

3 Provette campione denominate / 3 Specimens of sample identified:

SERIE SX*, AP/6*, L/11*, XF*, S/*, FS/*, AP/HT*. HT*, AB/*, AV/*

Descrizione	:	Pellicola autoadesiva IN PVC.
Description	:	PVC self-adhesive film.
Massa areica / Mass per area unit	:	130 g/m ²
Spessore / Thickness	:	0,1 mm

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Tipo di substrato / Substrate type:

Lastra in acciaio conforme alla tabella 7 della norma EN 45545-2:2013+A1:2015.

Stell sheet complying to table 7 of the EN 45545-2:2013+A1:2015 standard.

Allestimento del campione / Specimen mounting and fixing:

Incollato su substrato.

Glued on substrate.

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 / Test results contained in this test report pertain exclusively to the tested specimen

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Risultati / Results:

Metodo di prova / Test method: ISO 5660-1

PROVINO N° / SPECIMEN N°	1	2	3	Media Average
Preparazione del provino / Specimen preparation	Presenza del telaio di contenimento / Retainer frame presence			-
Area della superficie del provino / Specimen surface area [cm ²]	88,4	88,4	88,4	88,4
Costante di calibrazione C della velocità del flusso nel condotto / Orifice flow rate calibration constant C	0,0419	0,0419	0,0419	0,0419
Irraggiamento / Heat flux [kW/m ²]	50	50	50	50
Velocità del flusso nel condotto di estrazione / Exhaust system flow rate [m ³ /s]	0,024	0,024	0,024	0,024
Tempo di innesco / Time to ignition [s]	50	55	51	52
Tempo estinzione fiamma / Flameout [s]	72	109	116	99
Tempo di durata della prova / Test end time [s]	1200	1200	1200	1200
Valore medio nei primi 180 s dopo l'innesco / Average values for the first 180 s after ignition [kW/m ²]	4,98	3,00	11,5	6,5
Calore totale rilasciato / Total heat release [MJ/m ²]	1,1	1,3	2,3	1,6
Picco del tasso di rilascio di calore / Heat release rate peak [kW/m ²]	25,5	28,5	37,8	30,6
Tasso di rilascio di calore medio / Average heat release rate [kW/m ²]	2,6	0,9	19,7	7,7
Massima emissione media di calore / Maximum Average Heat Emission (MAHRE) [kW/m ²]	8,5	6,5	18,8	11,3

Il prodotto **è conforme** alla norma EN 45545-2:2013+A1:2015 requisiti **R1** e **R7** per HL1, HL2 e HL3 per la prova **T03.01**

The product **complies** with the test **T03.01** requirements **R1** and **R7** for HL1, HL2 and HL3 of standard EN 45545-2:2013+A1:2015

DATA
Date

Operating Sector Reaction to Fire
Operating Sector Reaction to Fire

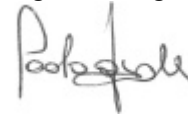
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