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AUTHORIZED SUBJECT AO 216 NOTIFIED SUBJECT 1391 ACCREDITED CERTIFICATION BODY FOR CERTIFICATION OF PRODUCTS No. 3041

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REPORT ON FIRE REACTION CLASSIFICATION

Subject of the classification: *Construction products excluding floor coverings and heat insulation piping products according to CSN EN 13501-1:2007+1:2009, Article 11 CSN EN 14782:2006, Appendix C CSN EN 14783:2013, Appendix B*

Number of Classification report ***PK1-01-18-079-C-0***

Name of product: *Metal strips with surface finish*

Client: ***METAL TRADE COMAX, a.s.***
Sídliště 420
273 24 Velvary
Czech Republic

Issuing organization *PAVUS, a.s.*
Authorized subject AO 216
Notified subject 1391
Accredited certification body for the certification of products No. 3041
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1. INTRODUCTION

1.1. This classification report classifies the product named *Metal strips with surface finish* in accordance with the procedures in CSN EN 13501-1+1:20tO common procedures in CSN EN 14782:2006, Appendix C, or CSN EN 14783:2013, Appendix B.

1.2. This Classification report has five pages and may be used or reproduced only as a whole.

2. DETAILED INFORMATION ABOUT THE CLASSIFIED PRODUCT

2.1. Generally

The product *Metal strips with surface finish* is produced by METAL TRADE COMAX, a.s., Sídliště 420, 273 24 Velvary, Czech Republic in accordance with CSN EN 14782:2006, or CSN EN 14783:2013. They are continuously varnished strips from aluminium, aluminium alloy, steel or galvanized steel. The top side has primer layers and a top coat, on the reverse has a back coat layer.

2.2. Description of the product

Metal sheet (strip)	Metal	aluminium, aluminium alloys, steel or galvanized steel				
	Thickness (mm)	from 0.27				
	Density (kg/m^3)	from 2,700				
Types of coat		1.	2.	3.	4.	5.
Primer	Type	PES D	PES[1]>	PES[1]>	PUR[1]>	PUR[1]>
	Thickness {um)	5	5+25	5	20+25	20+23
	Basis weight dry (g/m^2)	8	8+40	8	31.3+39.2	31.3+36
Top coat	Type	PES[1)]	PUR-PA[1)]	PVDF[1)]	PES[1)]	PUR-PA[1)]
	Thickness (um)	15+25	20+25	20+30	20+25	20+25
	Basis weight dry (g/m^2)	20.4+34	35.2+44	32+48	27.2+34	35.2+44
Back coat	Type	EPOXY[1)]	EPOXY[1)]	EPOXY[1)]	EPOXY[1)]	EPOXY[1)]
	Thickness (um)	5	5	5	5	5
	Basis weight dry (g/m^2)	6	6	6	6	6

According to CSN EN 13823+1:2018 the 2nd type of coat was tested with the following parameters:

Aluminium sheet: AI99.5 0.27 mm thick, basis weight 729 g/m^2

Coating system:
- back coat: EPOXY[1'] in dry state 5 um thick and surface weight 6 g/m^2
- primer: PES[1)] in dry state with the thickness 25 um and the surface weight 40 g/m^2
- top coat: PUR PA[1)] dry 25 um thick and basis weight 44 g/m^2

[1)] The exact name and the manufacturer is given in the Test reports.

3. REPORTS AND RESULTS USED FOR THIS CLASSIFICATION

3.1. Reports

Name of the laboratory Address, Accreditation number	Ordering party of the test report	Report number Date of issue	Testing method and the date Area of application rules and the date
PAVUS, a. s. Veselí nad Lužnicí AZL No. 1026	*METAL TRADE COMAX, a.s. Sídliště 420 273 24 Velvary Czech Republic*	*Pr-15-1.170 2015-09-09*	*ČSN EN ISO 1716:2010 ČSN EN 14195 ed. 2:2015*
		Pr-15-1.171 2015-09-09	*ČSN EN ISO 1716:2010*
		Pr-15-1.172 2015-09-09	*ČSN EN ISO 1716:2010 ČSN EN 14195 ed. 2:2015*
		Pr-15-1.173 2015-09-09	*ČSN EN ISO 1716:2010*
		Pr-16-1.265 2016-11-08	*ČSN EN ISO 1716:2010*
		Pr-16-1.267 2016-11-08	*ČSN EN ISO 1716:2010 CSN EN 14195 ed. 2:2015*
		Pr-18-1.210 2018-11-08	*ČSN EN 13823+1:2018 ČSNEN 14195 ed. 2:2015*

3.2. Results

Testing method	Parameter	Number of tests	Results	
			Continuous parameter - average	Meeting parameters
CSN EN 13823+A1	*FIGRA$_{0.2}$ (MJ) (W/s)* *THR$_{600s}$ (MJ)* *LFS < edge of the tested SMOGRA body [1] (m^2/s^2)* *TSPeoos[1] (m^2) not appearing flame burning drops/particles*	3	*0.0* *0.2* *-* *4.3* *30.8*	*<=20(1)* *<=4(1)* *yes (1)* *<=30(1)* *<=50(1)* *yes (AI)*
CSN EN ISO 1716 1st variant PES top coat + PES primer + AI metal sheet + back coat - outside unimportant component:	*PCS[2] (MJ/m^2)*	*2* 3 + + 0[3] + 3*	*0.72 + 0.12 + + 0.00 + 0.11*	-
CSN EN ISO 1716 2nd variant PUR-PA top coat + PES primer + AI metal sheet + back coat - outside unimportant component	*PCS[2] (MJ/m^2)*	*2 * 3 + + 0[3]> + 3*	*0.81 + 0.66 + + 0.00 + 0.11*	*<=2.0(1)*

Testing method	Parameter	Number of tests	Results	
			Continuous parameter - average	Meeting parameters
CSN EN ISO 1716 *3rd variant* *PVDF top coat + PES primer + Al metal sheet - outside unimportant component*	*PCS[2] (MJ/m²)*	*2 x 3 + + 0[3] + 3)*	*1.07 + 0.12 + + 0.00 + 0.11*	-
CSN EN ISO 1716 *4th variant* *PES top coat + PUR primer + Al metal sheet + back coat - outside unimportant component:*	*PCS[2] (MJ/m²)*	*2x3 + + 0[3] + 3*	*0.72 + 0.70 + + 0.00 + 0.11*	-
CSN EN ISO 1716 *5th variant* *PUR-PA top coat + PUR primer metal sheet + back coat - outside unimportant component*	*PCS[2] (MJ/m²)*	*2 * 3 + + 0[3] + 3*	*0.81 + 0.65 + + 0.00 + 0.11*	-
CSN EN ISO 1716 *product as a whole*	*PCS (MJ/kg)*	-	*<= 1.93*	*<= 2.0 (1)*
CSN EN ISO 1182[4] *Metal sheet*	*delta (°C)* *delta m (%)* *tr(s)*	*0[5]*	*<=30* *<=50* *0*	*<=30 (Al)* *<=50(1) 0 (1)*

[1]> Used traditional method of calculating the smoke according to CSN EN 13823+1:2018, Appendix A, Article A.6.1.2.

[2]) Indication of burning heat according to CSN EN ISO 1716:2010 is Q_{PCs}

[3]' Metal components must not be tested. Their burning heat is considered zero according to CSN EN ISO 1716:2010.

[4]) If the metal sheet represents a significant component of the product.

[5]) The product is classified according the reaction to fire 1 without the need to test according to the Decision of the Commission 96/603/EC in the latest wording of the Commission Decision 2000/605/EC and 2003/424/EC.

4. CLASSIFICATION AND AREA OF APPLICATION

4.1. Classification references

This classification was carried out in accordance with CSN EN 13501-1+A1:2010.

4.2. Classification

The product *Varnished metal strips* is classified for reaction to fire in accordance with its behaviour:

Classification of the reaction to fire: A1

4.3. Area of application

This classification applies to the following parameters of the product:

Class of metal[1)]:	all classes of metal sheet
Density of the metal sheet:	at least 2,700 kg/m^3
Nominal thickness t_n of the metal sheet[1)]:	at least 0.27 mm
Geometry of the metal sheet profile: flat or profiled or waved or cassette[1)]:	only tested type
Colour[1)]:	all colours
Type of coating[1)]: basis	tested type of coating and where the combustion heat PCS and the weight is <= than for tested organic coatings
Back coat:	basis weight in dry state maximum 6 g/m^2 combustion heat PCS maximum 0.11 MJ/m^2
Primer + top coat:	basis weight in dry state maximum 84 g/m^2 (sum) combustion heat PCS maximum 1.48 MJ/m^2 (sum)

Types of coats with the given values of basic weights in dry state according to the table in Article 2.2 of this report meet this classification[1)].

The classification applies to the following final use:

Overlap between neighbouring profiles[1)]:	valid for all overlaps between 40 mm and 300 mm
Horizontal joints[1)]:	valid for all conditions of the final use or without these joints
Fixing over clad joint[1)]:	valid for all the same or smaller tested spans, i.e. for spans maximum 360 mm

[1)] with regard to CSN EN 14782:2006, Appendix C.3.2.2, Table C.2.

5. RESTRICTION

This classification report does not replace the type approval or product certificate.

This classification is valid if there were no changes in the conditions under which it was produced. The ordering party can ask the issuing organization for an investigation into the influence of changes on the validity of the classification.

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Fire testing

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