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Notified Body 1020

in function under CPR, Annex V, Article 2, as amended by Commission Delegated Regulation (EU) No 568/2014, amending Annex V to Regulation (EU) No 305/2011

Branch 0700 - Ostrava

REPORT

on the assessment of performance: Reaction to fire

according to the Regulation (EU) 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), Art. 1.4 of the Annex V (system 3)

No. 1020-CPR-070062650

Trade name:

Cement-bonded particleboard CETRIS® ECO
in types without surface treatment and with surface treatment

EN 13986:2004+A1:2015

Manufacturer:

CIDEM Hranice, a.s.

INo:	14617081
Address:	Skalní 1088
	Hranice I - Město
	753 01 Hranice, Czech Republic
Plant:	CIDEM Hranice, a.s.
	Division CETRIS
Address:	Nová 223
	753 01 Hranice, Czech Republic
Order:	Z070230041

Number of Report pages including title page: 3 Number of Annexes: 26

This report is a partial document of the notified body and does not replace the performance assessment report.

The person taking responsibility for the content of this report:

Vladimír Plaček, Ph.D.
Head Assessor

The person taking responsibility for correctness of this report:

Stamp of the Notified Body 1020

Ostrava, 1 December 2023

Vojtěch Šebek, M.Sc.
Deputy Manager of the Notified Body 1020

1 Specification of tested subject

Description and intended use of the product:

Cement-bonded particleboard CETRIS® ECO without surface treatment (BASIC, INCOL, AKUSTIK, PROFIL) and with surface treatment (PLUS, FINISH, LASUR, DEKOR).

Cement-bonded particleboards CETRIS® ECO in all versions are manufactured in accordance with EN 13986:2004+A1:2015.

Intended use of the cement-bonded particleboard CETRIS® ECO in all versions comply with EN 13986+A1, Table 1 to 6.

Composition: Cement, timber mass, treated waste from cement-bonded particleboard production, water, liquid pigment (in case of CETRIS® ECO INCOL boards), additives (see Annex 1 and 2)

Detailed information about the product is stated in Annex 1 and 2.

Technical specification:	EN 13986:2004+A1:2015
Manufacturer:	CIDEM Hranice, a.s. Skalní 1088 Hranice I - Město 753 01 Hranice, Czech Republic
Plant:	CIDEM Hranice, a.s. Division CETRIS Nová 223 753 01 Hranice, Czech Republic

2 Sampling

Date of sampling:	See test report
Place of sampling:	CIDEM Hranice, a.s., Division CETRIS
Sampler:	Marie Libosvárová (manufacturer's representative)
Sampling method:	Random sampling according to EN 326-1
Transport mode:	Arranged by the manufacturer
Date of the taking over:	See test report
Sample Registration number:	N/A

3 The assessment of performance on basis of testing, calculation, tabulated values, descriptive documentation

3.1 The assessment on basis of testing

3.1.1 Reaction to fire

Sample specification:	Cement-bonded particleboard CETRIS® ECO without surface treatment and with surface treatment
Test according to test method:	EN ISO 1716:2018 and EN 13823:2021
Test was carried out by:	FIRES s.r.o., Batizovce, Slovak Republic
Date of the test ending:	See reaction to fire reports

Test result:

Type of board	Cement-bonded particleboard CETRIS® ECO without surface treatment (BASIC, INCOL, AKUSTIC, PROFIL) and with surface treatment (PLUS, FINISH, LASUR, DEKOR)
Class of reaction to fire	B - s1, d0
Classification of the reaction to fire of cement-bonded particleboard CETRIS® in all versions was performed in accordance with: - report on classification of reaction to fire No. FIRES-CR-036-23-NURE, date of issue 7 March 2023; - report on extended application for reaction to fire No. FIRES-ER-024-23-NURE, date of issue 24 February 2023. Application of the final use of the cement-bonded particleboards CETRIS® in all versions and their classification is valid under the conditions stated in the above-mentioned reports. Reports were issued by the FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic.	

4 Annexes

4.1 Annex 1

Classification of reaction to fire report No. FIRES-CR-036-23-NURE, issued on 07/03/2023 by FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic (6 pages)

4.2 Annex 2

Reaction to fire extended application report No. FIRES-ER-024-23-NURE, issued on 24/02/2023 by FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic (20 pages)

FIRES
The Experts on Fire Safety

CLASSIFICATION OF REACTION TO FIRE
with extended field of application

FIRES-CR-036-23-NURE

Name of the product: Cement-bonded particleboard CETRIS ECO® in types without surface treatment (BASIC, INCOL, AKUSTIC, PROFIL) and with surface treatment (PLUS, FINISH, LASUR, DEKOR)

Sponsor:
CIDEM Hranice, a.s.
Skalní 1088
735 01 Hranice
Czech Republic

Prepared by:
FIRES, s.r.o.
Notified Body No. 1396
Osloboditeľov 282
059 35 Batizovce
Slovak Republic

Task No.: PR-22-0242
Date of issue: 07. 03. 2023

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FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic
tel. 00421 52 285 1611, www.fires.sk
Notified Body No. 1396, Approved Body No. SK01, Member of EGOLF

1. INTRODUCTION

This classification report defines the reaction to fire classification assigned to element Cement-bonded particleboard CETRIS ECO® in types without surface treatment (BASIC, INCOL, AKUSTIC, PROFIL) and with surface treatment (PLUS, FINISH, LASUR, DEKOR) in accordance with the classes given in EN 13501-1: 2018.

Extended application of test results has been elaborated in accordance with CEN/TS 15117: 2005 and is stated in extended application report [1] listed in cl. 3.1 of this document.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Cement-bonded particleboard CETRIS ECO® in types without surface treatment (BASIC, INCOL, AKUSTIC, PROFIL) and with surface treatment (PLUS, FINISH, LASUR, DEKOR), is used in vertical and horizontal building constructions, non-loadbearing walls and partitions, cladding of walls, shaft walls, exterior loadbearing and non-loadbearing walls, floor systems, hollow core floors, cladding of timber and steel constructions in order to increase fire resistance, as membrane of suspended ceiling according to EN 13964, and Cement-bonded particleboard CETRIS ECO® AKUSTIC is used as acoustic cladding of walls and ceilings, which is fixed to the steel supporting construction with a layer of mineral wool.

2.2 PRODUCT DESCRIPTION

Cement-bonded particleboard CETRIS ECO® in types without surface treatment (BASIC, INCOL, AKUSTIC, PROFIL) and with surface treatment (PLUS, FINISH, LASUR, DEKOR) consist of timber mass, cement, water, hydrating ingredients and surface treatment. Cement-bonded particleboards in types CETRIS ECO® AKUSTIC have drilled openings with diameter 12 mm. The openings are evenly spaced across the entire surface of the boards at a mutual distance of 32 mm.

The content of individual components in case of CETRIS ECO® boards (in weight %)
- timber mass 21 %;
- cement 63 %;
- treated waste from cement-bonded particleboard production 4 %;
- water 10 %;
- hydrating ingredients 2 %.

Boards thickness: from 8 mm to 40 mm.

The content of individual components in case of CETRIS ECO® INCOL boards (in weight %)
- timber mass 18 %;
- cement 62 %;
- treated waste from cement-bonded particleboard production 4 %;
- liquid pigment 4 %;
- water 10 %;
- hydrating ingredients 2 %.

Boards thickness: 12 mm.

Bulk density: CETRIS ECO®, CETRIS ECO® INCOL (1400 ± 50) kg.m^{-3}.

All types of cement-bonded particleboards CETRIS ECO® / CETRIS ECO® AKUSTIC with thickness of 12 mm could be substitute by boards CETRIS ECO® INCOL.

Cement-bonded particleboards CETRIS ECO® are offered also in version without surface treatment (BASIC, INCOL, AKUSTIC, PROFIL) and they produced with surface treatment as follows:

BASIC (significant component)	smooth surface, without surface treatment;

PROFIL (significant component)	relief surface, without surface treatment;
AKUSTIC (significant component)	smooth surface, evenly drilled openings;
INCOL (significant component)	smooth surface, mixture coloured by black pigment;
PLUS (non-significant component)	smooth surface, with surface treatment: • base coat BTAitop 1000A/CRT, area density (140 – 220) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight (manufacturer: BTA Industry, a.s., Czech Republic);
PROFIL PLUS	relief surface, with surface treatment: • base coat BTAitop 1000A/CRT, area density (140 – 220) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight;
FINISH (non-significant component)	smooth surface, with surface treatment: • base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight; • base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 56 % by weight; • top coat BTAitop 1000A/CTS, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight;
FINISH PROFIL	relief obverse side, with surface treatment: • base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight; • base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 56 % by weight; • top coat BTAitop 1000A/CTS, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight;
AKUSTIC FINISH	smooth surface, evenly drilled openings, with surface treatment: • base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight; • base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 56 % by weight; • top coat BTAitop 1000A/CTS, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight;

LASUR (non-significant component)	smooth surface, with surface treatment: • base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight; • base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 56 % by weight; • scumble varnish BTAitop 1000A/CTS - lazura, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 38 % by weight;
PROFIL LASUR	relief obverse side, with surface treatment: • base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight; • base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 56 % by weight; • scumble varnish BTAitop 1000A/CTS - lazura, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 38 % by weight;
DEKOR (significant component)	• water-dilutable base coat HC-4, area density 150 g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 60 % by weight (manufacturer: Stomix, a.s., Czech Republic); • water-dilutable acrylic mosaic decorative plaster Alfadekor G, area density 4500 g.m^{-2} (in wet state), applied on obverse side of board, grain size (1,2 – 1,8) mm, dry matter content min. 70 % by weight (manufacturer: Stomix, a.s., Czech Republic);

3. EXTENDED APPLICATION REPORTS AND TEST RESULTS IN SUPPORT OF CLASSIFICATION

3.1 EXTENDED APPLICATION REPORTS

No.	Name of laboratory	Name of sponsor	Report No.	Date of issue
[1]	FIRES, s.r.o., Batizovce, SR	CIDEM Hranice, a.s., Hranice, CZ	FIRES-ER-024-23-AUNE	24. 02. 2023

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with classes defined in clause 11.6 of EN 13501-1: 2018.

4.2 CLASSIFICATION

The element, Cement-bonded particleboard CETRIS ECO® in types without surface treatment (BASIC, INCOL, AKUSTIC, PROFIL) and with surface treatment (PLUS, FINISH, LASUR, DEKOR), in relation to its reaction to fire behaviour is classified:

B

The additional classification in relation to smoke production is:

s1

The additional classification in relation to flaming droplets / particles is:

d0

The format of the reaction to fire classification for construction products excluding floorings and linear pipe thermal insulation products is:

Fire behaviour		Smoke production			Flaming droplets	
B	-	s	1	,	d	0

Reaction to fire classification: B - s1, d0

4.3 FIELD OF APPLICATION

This extended application report is valid for product described in clause 2.2 and following end use:

i) in horizontal (excluding floorings) and vertical position;
ii) without surface treatment;
iii) with surface treatment according to clause 2.2 (all colour shades);
iv) without cavity;
v) with cavity;
vi) with timber supporting construction;
vii) with steel supporting construction;
viii) gaps in joints of boards without mastic;
ix) gaps in joints of boards with mastic.

This extended application report is valid for following product parameters:

Thickness	- thickness of cement-bonded particleboards CETRIS ECO® and CETRIS ECO® AKUSTIC may vary in range from 8 mm to 40 mm, board CETRIS ECO® INCOL is produced only with thickness 12 mm, board CETRIS ECO® PROFIL may vary in range from 10 mm to 40 mm; - thickness of mineral wool may be changed; - change in surface treatment thickness is allowed within the scope of manufacturing tolerances;
Bulk density [$kg.m^{-3}$]	- change in the bulk density of cement-bonded particleboards CETRIS ECO® in types (BASIC, INCOL, AKUSTIC, PROFIL), is allowed within the scope of manufacturing tolerances; - increase in the bulk density of mineral wool is allowed;
Area density [$kg.m^{-2}$]	- decrease in area density of surface treatments is allowed only, increase against the values listed in clause 2.2 is not allowed, maximal values of area density of surface treatments are listed in the table of clause 2.2;

Product composition	- content of individual components CTD according to clause 2.2.2 shall not be changed; - only surface treatment according to clause 2.2.2 may be used for CTD; - only mineral wool with minimal reaction to fire class A2-s1, d0 is allowed to be used in construction of the product; - ceiling according to EN 13964 is produced with/without cavity above membrane, only mineral wool with reaction to fire class A1 may be used for insulation; - supporting construction may be made of timber, timber-based materials and steel, or other materials with reaction to fire class A1.

5. LIMITATIONS

This classification document does not represent type approval or certification of the product.

The classification is valid provided that the product, field of application, standards and regulations are not changed.

Approved by:

Ing. Štefan Rástocký
Chief Operating Officer

Prepared by:

Ing. Samuel Skokan
Technician of the Testing Laboratory

TESTING LABORATORY • SKÚŠOBNÉ LABORATÓRIUM • PRÜFLABORATORIUM
FIRES
The Experts On Fire Safety

FIRES
The Experts on Fire Safety

REACTION TO FIRE
EXTENDED APPLICATION REPORT

FIRES-ER-024-23-NURE

Name of the product:	Cement-bonded particleboard CETRIS® and CETRIS ECO®, in types (BASIC, INCOL, AKUSTIC, PROFIL) without surface treatment and with surface treatment (PLUS, FINISH, LASUR, DEKOR)
Sponsor:	CIDEM Hranice, a.s. Skalní 1088 735 01 Hranice Czech Republic
Prepared by:	FIRES, s.r.o. Notified Body No. 1396 Osloboditeľov 282 059 35 Batizovce Slovak Republic
Task No.:	PR-22-0242
Date of issue:	24. 02. 2023
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FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic
tel. 00421 52 285 1611, www.fires.sk
Notified Body No. 1396, Approved Body No. SK01, Member of EGOLF

1. INTRODUCTION

This extended application report concerns test results obtained in accordance with test methods:

- EN 13823: 2020 + A1: 2022 - Reaction to fire tests for building products. Building products excluding floorings exposed to the thermal attack by single burning item;
- EN ISO 1716: 2018 - Reaction to fire tests for building products. Determination of the heat of combustion (calorific value).

This extended application was prepared according to:

- CEN/TS 15117: 2005 - Guidance on direct and extended application.

2. DETAILS OF PRODUCT

2.1 GENERAL

The element, Cement-bonded particleboard CETRIS® and CETRIS ECO®, in types (BASIC, INCOL, AKUSTIC, PROFIL) without surface treatment and with surface treatment (PLUS, FINISH, LASUR, DEKOR), is used in vertical and horizontal building constructions, non-loadbearing walls and partitions, cladding of walls, shaft walls, exterior loadbearing and non-loadbearing walls, floor systems, hollow core floors, cladding of timber and steel constructions in order to increase fire resistance, as membrane of suspended ceiling according to EN 13964, and Cement-bonded particleboard CETRIS® AKUSTIC and CETRIS ECO® AKUSTIC is used as acoustic cladding of walls and ceilings, which is fixed to the steel supporting construction with a layer of mineral wool.

2.2 PRODUCT DESCRIPTION

2.2.1 TESTED PRODUCT DESCRIPTION

This clause was prepared on the basis of a product tested and evaluated in test reports [1] to [11], listed in clause 3.1 of this document. Following text is integral part of test reports [1] to [11] and its purpose in this document is to provide basic information about tested specimen from test reports [1] to [11].

Test specimen according to test report [1]

Cement-bonded particleboard (CTD) CETRIS® BASIC

- manufacturer: CIDEM Hranice, a.s., Czech Republic;
- thickness: (12,20 ± 0,05) mm;
- bulk density: (1410 ± 10) kg.m^{-3};
- area density: (17,2 ± 0,1) kg.m^{-2};
- composition:
  - timber mass 19 % by weight;
  - cement 66 % by weight;
  - liquid pigment 5 % by weight;
  - water 10 % by weight;
  - hydrating ingredients 2 % by weight.

Test specimen according to test report [2]

Cement-bonded particleboard (CTD) CETRIS® INCOL

- manufacturer: CIDEM Hranice, a.s., Czech Republic;
- thickness: 12 mm;
- bulk density: (1450 ± 50) kg.m^{-3};
- area density: 16,8 kg.m^{-2};
- composition:
  - timber mass 17 % by weight;
  - cement 66 % by weight;
  - liquid pigment 5 % by weight;
  - water 10 % by weight;
  - hydrating ingredients 2 % by weight.

Test specimen according to test report [3]

Cement-bonded particleboard (CTD) CETRIS® ECO
- manufacturer: CIDEM Hranice, a.s., Czech Republic;
- thickness: 10,3 mm;
- bulk density: (1400 ± 50) kg.m^{-3};
- area density: (17,2 ± 0,1) kg.m^{-2};
- composition:
  - timber mass 21 % by weight;
  - cement 63 % by weight;
  - treated waste from cement-bonded particleboard production 4 % by weight;
  - water 10 % by weight;
  - hydrating ingredients 2 % by weight.

Test specimens according to test report [4]

Specimens consist from cement-bonded particleboards CETRIS ECO® AKUSTIC with surface treatment type FINISH, which were fix to the wooden supporting construction.

Cement-bonded particleboard (CTD) CETRIS® ECO
- manufacturer: CIDEM Hranice, a.s., Czech Republic;
- thickness: 8 mm;
- bulk density: (1350 ± 1450) kg.m^{-3};
- composition:
  - timber mass 21 % by weight;
  - cement 63 % by weight;
  - treated waste from cement-bonded particleboard production 4 % by weight;
  - water 10 % by weight;
  - hydrating ingredients 2 % by weight.

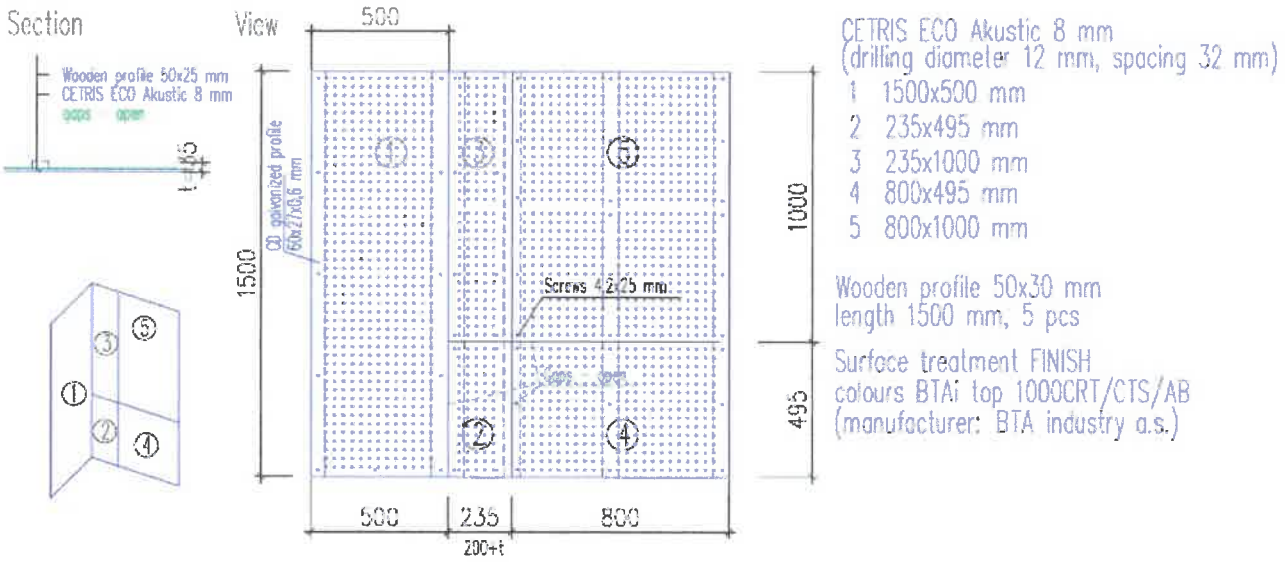
Surface treatment FINISH
- base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight (manufacturer: BTA Industry, a.s., Czech Republic);
- base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse side of board and on edges of board, dry matter content min. 56 % by weight (manufacturer: BTA Industry, a.s., Czech Republic);
- top coat BTAitop 1000A/CTS, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse side of board and on edges of board, dry matter content min. 52 % by weight (manufacturer: BTA Industry, a.s., Czech Republic).

Construction / application of surface treatment on the particleboards CTD CETRIS EKO® AKUSTIC FINISH was carried out by company CIDEM Hranice, a.s..

Particleboards CTD CETRIS ECO® AKUSTIC FINISH were fix to the supporting construction made of vertically oriented spruce profiles with dimensions (30 x 50) mm and length of 1500 mm. Profiles on the short leaf were place alongside of vertical edges of boards. Profiles on the long leaf were place alongside of vertical edges of boards and in the point of vertical joint. Particleboards CTD CETRIS ECO® AKUSTIC FINISH were fix to the loadbearing profiles by means of steel countersunk screws (Ø 4,2 x 35,0) mm placed in spacing approximately 430 mm.

The vertical joint of boards was simulate at long leaf in distance of 200 mm from specimens´ corner line and horizontal joint of boards in distance of 500 mm from specimens´ bottom edge.

Test EN 13 823 (SBI) – CETRIS ECO (CIDEM Hranice, a.s.)
Set 8 – CETRIS ECO Akustic Finish 8 mm (wooden grate) – 3x



Profiles of supporting construction formed air gap with deepness of 30 mm behind the particleboards CTD CETRIS ECO®.

Test specimens according to test report [5]

Specimens consist from cement-bonded particleboards CETRIS ECO® with surface treatment type DEKOR, which were fix to the wooden supporting construction.

Cement-bonded particleboard (CTD) CETRIS® ECO

- manufacturer: CIDEM Hranice, a.s., Czech Republic;
- thickness: 8 mm;
- bulk density: (1400 ± 50) kg.m^{-3};
- composition:
  - timber mass 21 % by weight;
  - cement 63 % by weight;
  - treated waste from cement-bonded particleboard production 4 % by weight;
  - water 10 % by weight;
  - hydrating ingredients 2 % by weight.

Surface treatment DEKOR

- water-dilutable base coat HC-4, area density 150 g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 60 % by weight (manufacturer: Stomix, a.s., Czech Republic);
- water-dilutable acrylic mosaic decorative plaster Alfadekor G, area density 4500 g.m^{-2} (in wet state), applied on obverse side of board, grain size (1,2 – 1,8) mm, dry matter content min. 70 % by weight (manufacturer: Stomix, a.s., Czech Republic);

Construction / application of surface treatment on the particleboards CTD CETRIS ECO® DEKOR was carried out by company CIDEM Hranice, a.s..

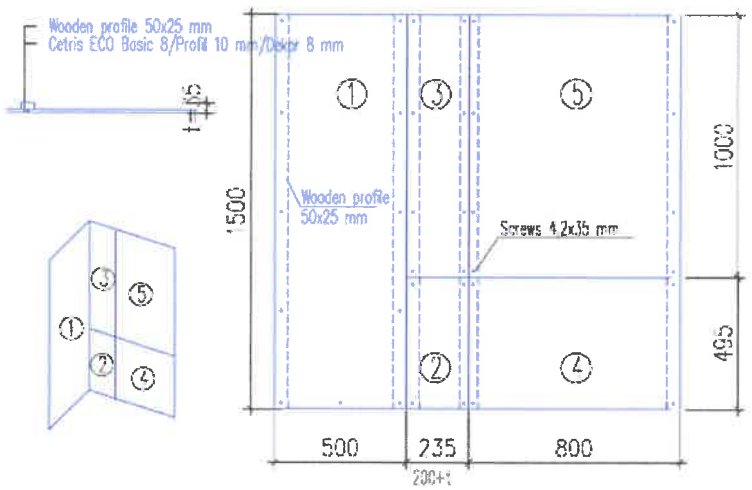
Particleboards CTD CETRIS ECO® DEKOR were fix to the supporting construction made of vertically oriented spruce profiles with dimensions (30 x 50) mm and length of 1500 mm. Profiles on the short leaf were place alongside of vertical edges of boards. Profiles on the long leaf were place alongside of vertical edges of boards and in the point of vertical joint. Particleboards CTD CETRIS ECO® DEKOR were fix to the loadbearing profiles by means of steel countersunk screws (Ø 4,2 x 35,0) mm placed in spacing approximately 430 mm.

The vertical joint of boards was simulate at long leaf in distance of 200 mm from specimens´ corner line and horizontal joint of boards in distance of 500 mm from specimens´ bottom edge.

Test EN 13 823 (SBI) – CETRIS ECO (CIDEM Hranice, a.s.)

Set 8 – CETRIS ECO Dekor 8 mm (wooden grate) – 3x

Section View



Cetris ECO Basic 8/Profil 10 mm/Dekor 8 mm
1 1500x500 mm
2 235x495 mm
3 235x1000 mm
4 800x495 mm
5 800x1000 mm

Wooden profile 50x30 mm
length 1500 mm, 5 pcs

Fire resistant acrylic mastic
DenBroven (set 2)

Surface treatment DEKOR
colour HC-4. plaster ALfadekor
(manufacturer: STOMIX a.s.)

Profiles of supporting construction formed air gap with deepness of 30 mm behind the particleboards CTD CETRIS ECO® DEKOR.

Test specimens according to test report [6]

Specimens consist from cement-bonded particleboards CETRIS ECO® BASIC, CETRIS ECO® AKUSTIC and CETRIS ECO® PROFIL without surface treatment, which were fix to the wooden supporting construction.

Cement-bonded particleboard (CTD) CETRIS® ECO BASIC and AKUSTIK
- manufacturer: CIDEM Hranice, a.s., Czech Republic;
- thickness: 8 mm;
- bulk density: (1400 ± 50) kg.m^{-3};
- composition: - timber mass 21 % by weight;
  - cement 63 % by weight;
  - treated waste from cement-bonded particleboard production 4 % by weight;
  - water 10 % by weight;
  - hydrating ingredients 2 % by weight.

Cement-bonded particleboard (CTD) CETRIS® ECO PROFIL
- manufacturer: CIDEM Hranice, a.s., Czech Republic;
- thickness: 10 mm;
- bulk density: (1400 ± 50) kg.m^{-3};
- composition: - timber mass 21 % by weight;
  - cement 63 % by weight;
  - treated waste from cement-bonded particleboard production 4 % by weight;
  - water 10 % by weight;
  - hydrating ingredients 2 % by weight.

Particleboards CTD CETRIS ECO® (BASIC, AKUSTIC, PROFIL) were fix to the supporting construction made of vertically oriented spruce profiles with dimensions (30 x 50) mm and length of 1500 mm. Profiles on the short leaf were place alongside of vertical edges of boards. Profiles on the long leaf were place alongside of vertical edges of boards and in the point of vertical joint. Particleboards CTD CETRIS ECO® (BASIC, AKUSTIC, PROFIL) were fix to the loadbearing profiles by means of steel countersunk screws (Ø 4,2 x 35,0) mm placed in spacing approximately 430 mm.

The vertical joint of boards was simulate at long leaf in distance of 200 mm from specimens´ corner line and horizontal joint of boards in distance of 500 mm from specimens´ bottom edge.

Joints / gaps of specimen No. 2 were sealed by means of mastic, type FP Acrylic Sealant (manufacturer: DenBraven, Netherlands).

Specimens No. 5 and No. 6 were insulated from unexposed side by means of mineral wool, type Isover UNI with thickness of 80 mm, bulk density of 40 kg.m^{-3} and reaction of fire class A1 (manufacturer: Saint-Gobain Construction Products CZ a.s. divize Isover). The mineral wool was insert into the air gap formed by spruce profiles, unexposed side of cement-bonded particleboards CETRIS ECO® and backside boards.

Specimen No. 1.

- cement-bonded particleboards (CTD) CETRIS ECO® BASIC were fix to the supporting construction made of spruce profiles.
- spruce profiles of supporting construction formed an air gap with deepness of 30 mm behind the particleboards CTD CETRIS ECO®.

Specimen No. 2.

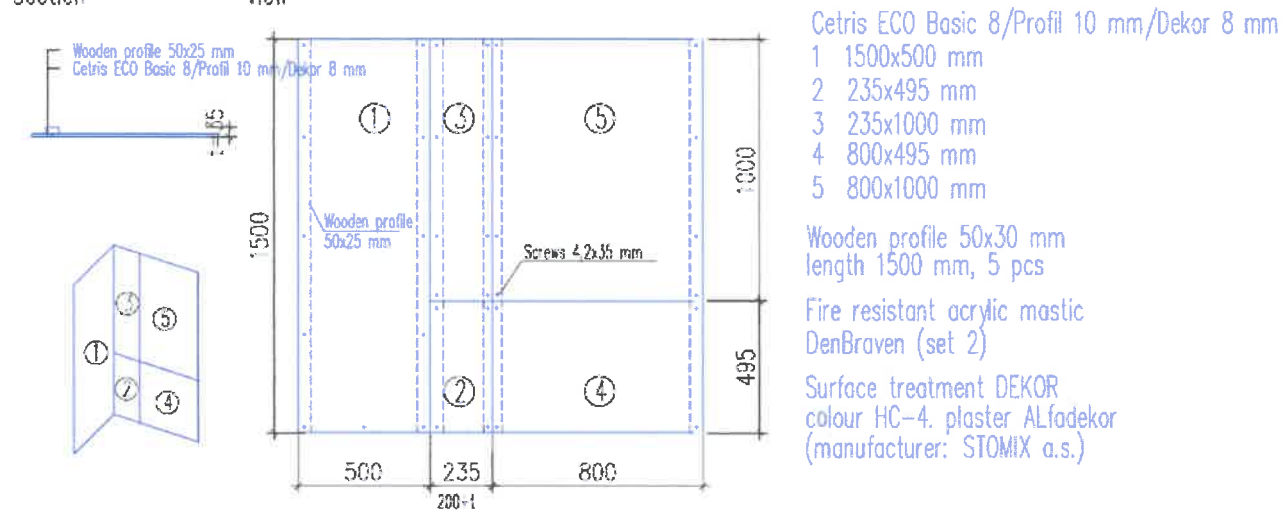
- cement-bonded particleboards (CTD) CETRIS ECO® BASIC were fix to the supporting construction made of spruce profiles.
- Joints / gaps sealed by means of mastic, type FP Acrylic Sealant.
- spruce profiles of supporting construction formed an air gap with deepness of 30 mm behind the particleboards CTD CETRIS ECO®.

Specimen No. 3.

- cement-bonded particleboards (CTD) CETRIS ECO® PROFIL were fix to the supporting construction made of spruce profiles.
- spruce profiles of supporting construction formed an air gap with deepness of 30 mm behind the particleboards CTD CETRIS ECO®.

Test EN 13 823 (SB) – CETRIS ECO (CIDEM Hranice, a.s.)

Set 1 – CETRIS ECO Basic 8 mm (wooden grate)
Set 2 – CETRIS ECO Basic 8 mm (wooden grate, sealed gap)
Set 3 – CETRIS ECO Profil 10 mm (wooden grate)

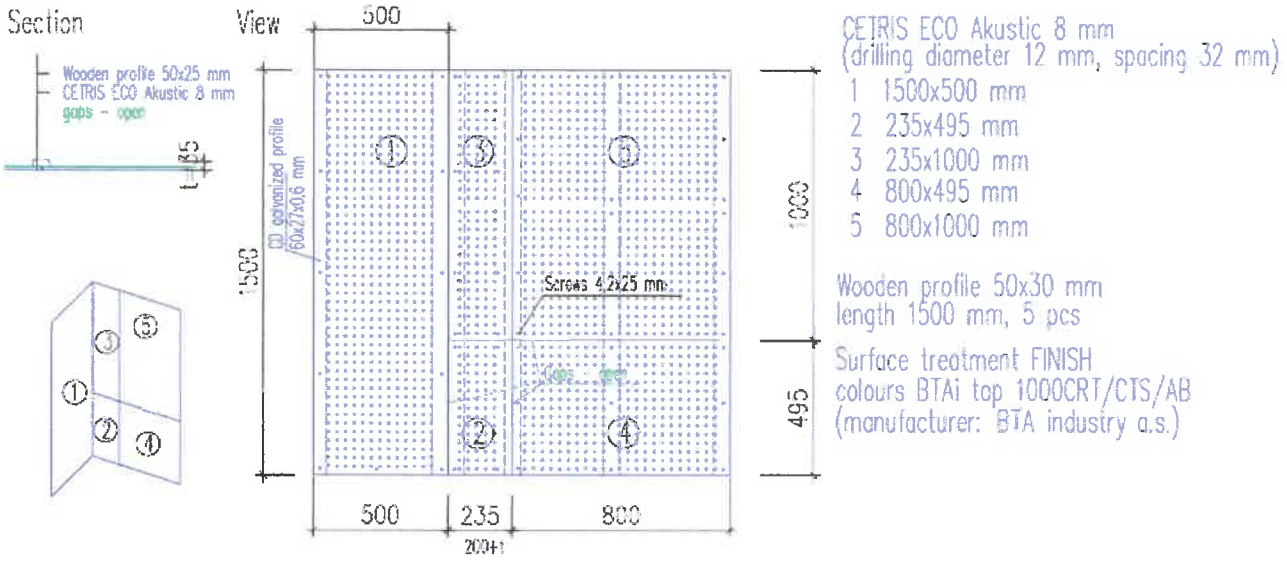


Specimen No. 4.

- cement-bonded particleboards (CTD) CETRIS ECO® AKUSTIC were fix to the supporting construction made of spruce profiles.
- spruce profiles of supporting construction formed an air gap with deepness of 30 mm behind the particleboards CTD CETRIS ECO®.

Test EN 13 823 (SBI) – CETRIS ECO (CIDEM Hranice, a.s.)

Set 4 – CETRIS ECO Akustic 8 mm (wooden grate)

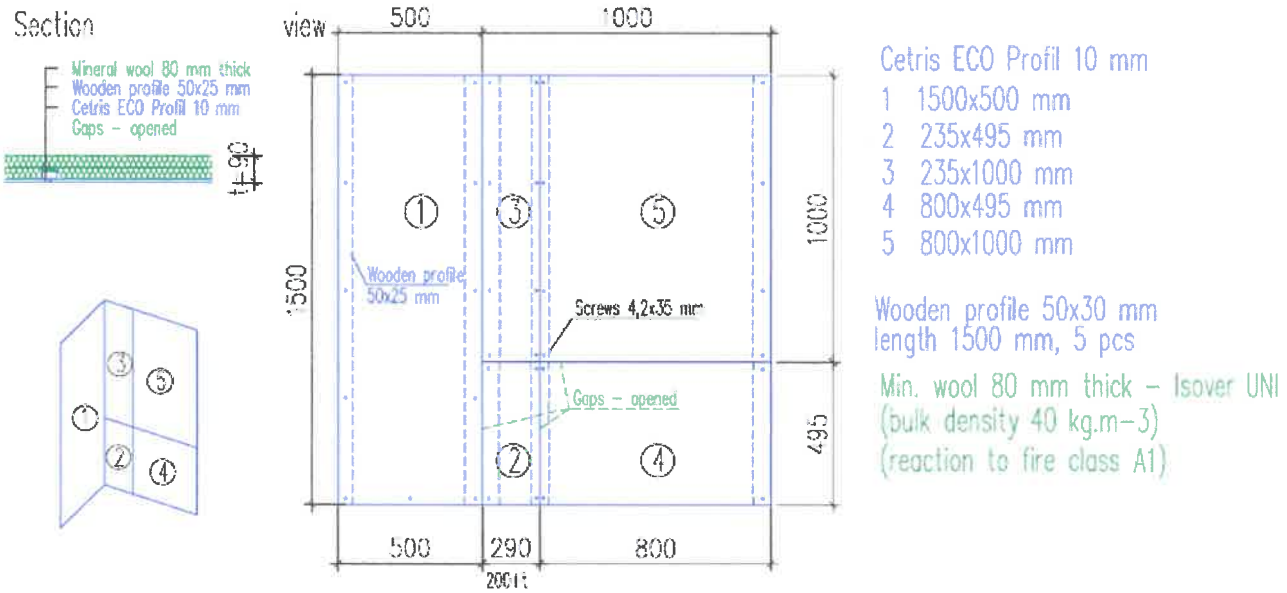


Specimen No. 5.

- cement-bonded particleboards (CTD) CETRIS ECO® PROFIL were fix to the supporting construction made of spruce profiles.
- air gap was filled from unexposed side by means of mineral wool, type Isover UNI.

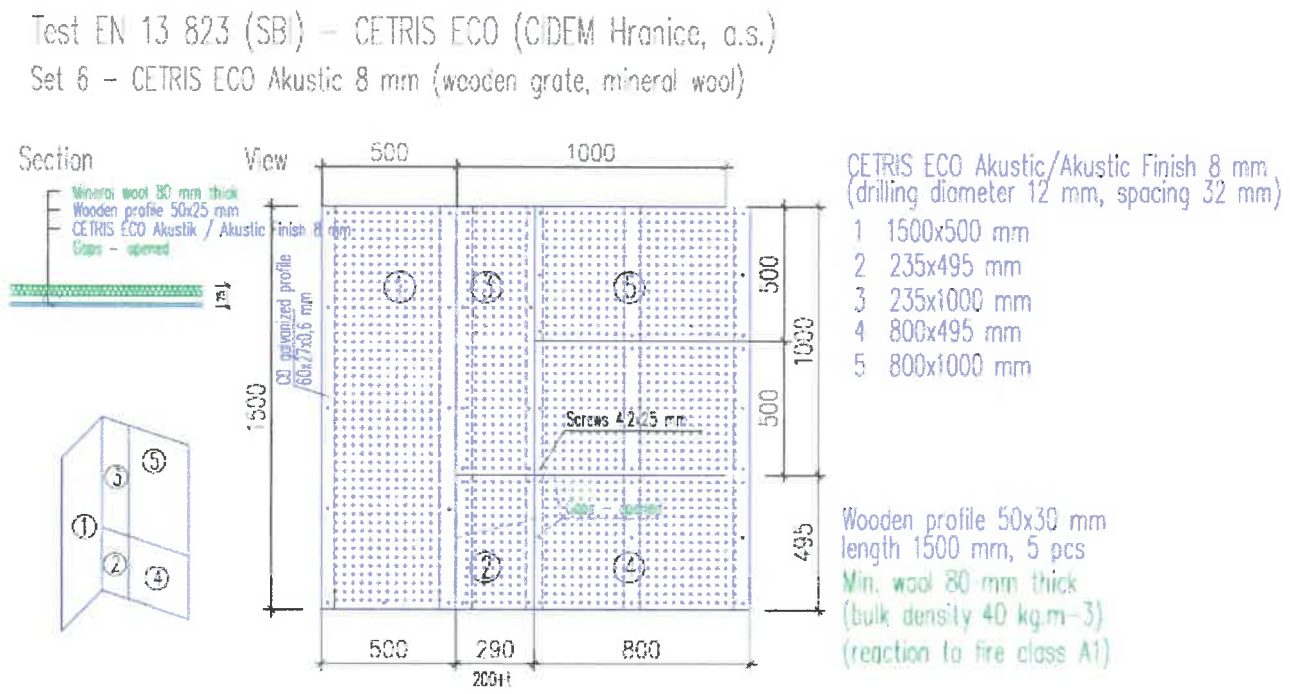
Test EN 13 823 (SBI) – CETRIS ECO (CIDEM Hranice, a.s.)

Set 5 – CETRIS ECO Profil 10 mm (wooden grate, min. wool)



Specimen No. 6.

- cement-bonded particleboards (CTD) CETRIS ECO® AKUSTIC were fix to the supporting construction made of spruce profiles.
- air gap was filled from unexposed side by means of mineral wool, type Isover UNI.



Test specimens according to test report [7]

Specimens consist from cement-bonded particleboards CETRIS ECO® BASIC without and with surface treatment FINISH and DEKOR and from mastic FP Acrylic Sealant (manufacturer: DenBraven, Netherlands).

Cement-bonded particleboard (CTD) CETRIS ECO® BASIC

- manufacturer: CIDEM Hranice, a.s., Czech Republic;
- thickness: 8 mm;
- bulk density declares by manufacturer: (1400 ± 50) kg.m^{-3};
- composition:
  - timber mass 21 % by weight;
  - cement 63 % by weight;
  - treated waste from cement-bonded particleboard production 4 % by weight;
  - water 10 % by weight;
  - hydrating ingredients 2 % by weight.

Surface treatment FINISH

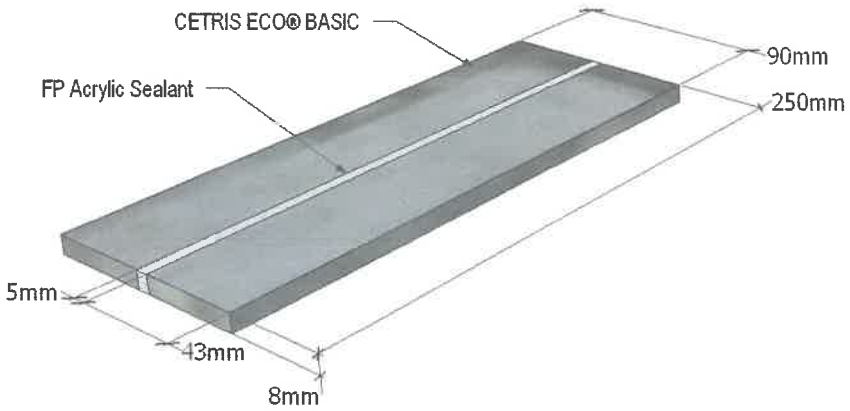
- base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight (manufacturer: BTA Industry, a.s., Czech Republic);
- base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse side of board and on edges of board, dry matter content min. 56 % by weight (manufacturer: BTA Industry, a.s., Czech Republic);
- top coat BTAitop 1000A/CTS, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse side of board and on edges of board, dry matter content min. 52 % by weight (manufacturer: BTA Industry, a.s., Czech Republic).

Surface treatment DEKOR

- water-dilutable base coat HC-4, area density 150 g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 60 % by weight (manufacturer: Stomix, a.s., Czech Republic);
- water-dilutable acrylic mosaic decorative plaster Alfadekor G, area density 4500 g.m^{-2} (in wet state), applied on obverse side of board, grain size (1,2 – 1,8) mm, dry matter content min. 70 % by weight (manufacturer: Stomix, a.s., Czech Republic);

Cement-bonded particleboard (CTD) CETRIS ECO® BASIC without and with surface treatment type FINISH and DEKOR were cut to dimensions (250 x 90) mm.

Specimens with mastic FP Acrylic Sealant were prepare from cement-bonded particleboards (CTD) CETRIS ECO® BASIC. The gap with dimensions (250 x 5 x 8) mm (length x width x thickness) was form between cement-bonded particleboards (CTD) CETRIS ECO® BASIC and filled by mastic FP Acrylic Sealant. Total dimensions of specimens were (250 x 90 x 8) mm (length x width x thickness).



Test specimens according to test report [8]

Coating material BTAitop 1000A/CRT: a homogeneous, single-component, water-dilutable coating material of white color based on modified acrylic resin, pigments, fillers and special additives (manufacturer: BTA Industry, a.s., Czech Republic).

Test specimens according to test report [9]

coating material BTAitop 1000A/CTS: a homogeneous, single-component, water-dilutable coating material in RAL 8013 color shade based on modified acrylic resin, pigments, fillers and special additives (manufacturer: BTA Industry, a.s., Czech Republic).

Test specimens according to test report [10]

coating material BTAitop 1000A/CTS – lazúra: a homogeneous, single-component, water-dilutable coating material in NCS S 7005-G70Y color shade based on modified acrylic resin, pigments, fillers and special additives (manufacturer: BTA Industry, a.s., Czech Republic).

Test specimens according to test report [11]

coating material BTAitop EP 3000 AB: a two-component, water-dilutable coating material based on water dispersion of epoxy resin, water-dilutable hardener, pigments, fillers and special additives (manufacturer: BTA Industry, a.s., Czech Republic).

2.2.2 CLASSIFIED PRODUCT DESCRIPTION

Cement-bonded particleboards CETRIS® and CETRIS ECO® in types (BASIC, INCOL, AKUSTIC, PROFIL) without surface treatment and with surface treatment (PLUS, FINISH, LASUR, DEKOR) consist of timber mass, cement, water, hydrating ingredients and surface treatment. Cement-bonded particleboards types CETRIS® AKUSTIC and CETRIS ECO® AKUSTIC have drilled openings with diameter 12 mm. The openings are evenly spaced across the entire surface of the boards at a mutual distance of 32 mm.

The content of individual components in case of CETRIS® boards (in weight %)
- timber mass 19 %;
- cement 69 %;
- water 10 %;
- hydrating ingredients 2 %.

The content of individual components in case of CETRIS® INCOL boards (in weight %)
- timber mass 17 %;
- cement 66 %;
- liquid pigment 5 %;
- water 10 %;
- hydrating ingredients 2 %.

The content of individual components in case of CETRIS ECO® boards (in weight %)
- timber mass 21 %;
- cement 63 %;
- treated waste from cement-bonded particleboard production 4 %;
- water 10 %;
- hydrating ingredients 2 %.

Boards thickness: from 8 mm to 40 mm.

The content of individual components in case of CETRIS ECO® INCOL boards (in weight %)
- timber mass 18 %;
- cement 62 %;
- treated waste from cement-bonded particleboard production 4 %;
- liquid pigment 4 %;
- water 10 %;
- hydrating ingredients 2 %.

Boards thickness: 12 mm.

Bulk density: CETRIS®, CETRIS® INCOL (1450 ± 50) kg.m^{-3}.
CETRIS ECO®, CETRIS ECO® INCOL (1400 ± 50) kg.m^{-3}.

All types of cement-bonded particleboards CETRIS® / CETRIS ECO® / CETRIS® AKUSTIC / CETRIS ECO® AKUSTIC with thickness of 12 mm could be substitute by boards CETRIS® INCOL / CETRIS ECO® INCOL.

Cement-bonded particleboards CETRIS® and CETRIS ECO® are offered also in version without surface treatment (BASIC, INCOL, AKUSTIC, PROFIL) and they produced with surface treatment as follows:

BASIC (significant component)	smooth surface, without surface treatment;
PROFIL (significant component)	relief surface, without surface treatment;
AKUSTIC (significant component)	smooth surface, evenly drilled openings;

INCOL (significant component)	smooth surface, mixture coloured by black pigment;
PLUS (non-significant component)	smooth surface, with surface treatment: • base coat BTAitop 1000A/CRT, area density (140 – 220) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight (manufacturer: BTA Industry, a.s., Czech Republic);
PROFIL PLUS	relief surface, with surface treatment: • base coat BTAitop 1000A/CRT, area density (140 – 220) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight;
FINISH (non-significant component)	smooth surface, with surface treatment: • base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight; • base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 56 % by weight; • top coat BTAitop 1000A/CTS, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight;
FINISH PROFIL	relief obverse side, with surface treatment: • base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight; • base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 56 % by weight; • top coat BTAitop 1000A/CTS, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight;
AKUSTIC FINISH	smooth surface, evenly drilled openings, with surface treatment: • base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight; • base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 56 % by weight; • top coat BTAitop 1000A/CTS, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight;
LASUR (non-significant component)	smooth surface, with surface treatment: • base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight; • base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 56 % by weight; • scumble varnish BTAitop 1000A/CTS - lazura, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 38 % by weight;

PROFIL LASUR	relief obverse side, with surface treatment: • base coat BTAitop 1000A/CRT, area density (200 – 250) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 52 % by weight; • base coat BTAi EP 3000 AB, area density (110 – 130) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 56 % by weight; • scumble varnish BTAitop 1000A/CTS - lazura, area density (160 – 200) g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 38 % by weight;
DEKOR (significant component)	• water-dilutable base coat HC-4, area density 150 g.m^{-2} (in wet state), applied on obverse / seamy side of board and on edges of board, dry matter content min. 60 % by weight (manufacturer: Stomix, a.s., Czech Republic); • water-dilutable acrylic mosaic decorative plaster Alfadekor G, area density 4500 g.m^{-2} (in wet state), applied on obverse side of board, grain size (1,2 – 1,8) mm, dry matter content min. 70 % by weight (manufacturer: Stomix, a.s., Czech Republic);

3. TEST REPORTS AND TEST RESULTS USED FOR THIS EXTENDED APPLICATION REPORT

3.1 TEST REPORTS

No.	Name of laboratory	Name of sponsor	Test report No.	Date of the test	Test method
[1]	MFPA Leipzig GmbH, Lipsko, Germany	CIDEM Hranice, a.s., Hranice, CZ	PB 3.1/21-356-1	12. 01. 2022	DIN EN ISO 1716:2010-11
[2]	PTEU MV SR, Bratislava, SR		95/2020	30. 07. 2020	STN EN ISO 1716: 2019
[3]			95/2022	11. 01. 2023	
[4]	FIRES, s.r.o., Batizovce, SR		FIRES-RF-138-22-AUNS	06. 12. 2022	STN EN 13823: 2021
[5]			FIRES-RF-139-22-AUNS	06. 12. 2022	
[6]			FIRES-RF-140-22-AUIS	05. 12. 2022	
[7]			FIRES-RF-009-23-AUNS	19. 01. 2023 20. 01. 2023	STN EN ISO 11925-2: 2021
[8]	PTEU MV SR, Bratislava, SR		59/2010	30. 06. 2010	STN EN ISO 1716: 2003
[9]			60/2010	01. 07. 2010	
[10]			61/2010	02. 07. 2010	
[11]			26/2017	08. 03. 2017	STN EN ISO 1716: 2010

3.2 TEST RESULTS

Test report number and test method	Characteristic value	Number of tests	Results	
			Continuous parameter - mean (m)	Compliance with parameters
[1] STN EN ISO 1716 CETRIS® BASIC	PCS (MJ/kg)	3	2,9	(-)
[2] STN EN ISO 1716 CETRIS® INCOL	PCS (MJ/kg)	3	2,244 ± 0,094	(-)

Test report number and test method	Characteristic value	Number of tests	Results	
			Continuous parameter - mean (m)	Compliance with parameters
[3] STN EN ISO 1716 CETRIS® ECO	PCS (MJ/kg)	3	3,266 ± 0,101	(-)
[4] STN EN 13823 CETRIS ECO® AKUSTIC, with thickness of 8 mm and surface treatment FINISH	$FIGRA_{0,2MJ}$ $FIGRA_{0,4MJ}$ LFS<edge of specimen THR_{600s}	3	30,8 30,8 (-) 4,4	(-) (-) compliant (-)
	SMOGRA (m^2/s^2) TSP600s (m^2)		3,0 45,9	(-) (-)
	flaming droplets/particles		occurrence flaming ≤10 s flaming >10 s	non-compliant (-) (-)
[5] STN EN 13823 CETRIS ECO® BASIC, with thickness of 8 mm and surface treatment DEKOR	$FIGRA_{0,2MJ}$ $FIGRA_{0,4MJ}$ LFS<edge of specimen THR_{600s}	3	22,1 21,0 (-) 2,1	(-) (-) compliant (-)
	SMOGRA (m^2/s^2) TSP600s (m^2)		2,5 26,4	(-) (-)
	flaming droplets/particles		occurrence flaming ≤10 s flaming >10 s	non-compliant (-) (-)
[6] Informative test specimen No. 1 STN EN 13823 CETRIS ECO® BASIC, thickness of 8 mm	$FIGRA_{0,2MJ}$ $FIGRA_{0,4MJ}$ LFS<edge of specimen THR_{600s}	3	12,6 12,6 (-) 1,4	(-) (-) compliant (-)
	SMOGRA (m^2/s^2) TSP600s (m^2)		1,2 5,9	(-) (-)
	flaming droplets/particles		occurrence flaming ≤10 s flaming >10 s	non-compliant (-) (-)
[6] Informative test specimen No. 2 STN EN 13823 CETRIS ECO® BASIC, with thickness of 8 mm, gaps filled by mastic FP Acrylic Sealant	$FIGRA_{0,2MJ}$ $FIGRA_{0,4MJ}$ LFS<edge of specimen THR_{600s}	3	10,4 10,4 (-) 0,9	(-) (-) compliant (-)
	SMOGRA (m^2/s^2) TSP600s (m^2)		0,0 5,6	(-) (-)
	flaming droplets/particles		occurrence flaming ≤10 s flaming >10 s	non-compliant (-) (-)
[6] Informative test specimen No. 3 STN EN 13823 CETRIS ECO® PROFIL, thickness of 10 mm,	$FIGRA_{0,2MJ}$ $FIGRA_{0,4MJ}$ LFS<edge of specimen THR_{600s}	3	5,5 5,5 (-) 0,9	(-) (-) compliant (-)
	SMOGRA (m^2/s^2) TSP600s (m^2)		0,0 6,2	(-) (-)
	flaming droplets/particles		occurrence flaming ≤10 s flaming >10 s	non-compliant (-) (-)

Test report number and test method	Characteristic value	Number of tests	Results	
			Continuous parameter - mean (m)	Compliance with parameters
[6] Informative test specimen No. 4 STN EN 13823 CETRIS ECO® AKUSTIC, thickness of 8 mm,	$FIGRA_{0,2MJ}$ $FIGRA_{0,4MJ}$ LFS<edge of specimen THR_{600s}	3	21,2 21,2 (-) 2,9	(-) (-) compliant (-)
	SMOGRA (m^2/s^2) TSP600s (m^2)		2,3 34,4	(-) (-)
	flaming droplets/particles		occurrence flaming ≤10 s flaming >10 s	non-compliant (-) (-)
[6] Informative test specimen No. 5 STN EN 13823 CETRIS ECO® PROFOL, thickness of 10 mm, with mineral wool	$FIGRA_{0,2MJ}$ $FIGRA_{0,4MJ}$ LFS<edge of specimen THR_{600s}	3	11,8 11,8 (-) 1,6	(-) (-) compliant (-)
	SMOGRA (m^2/s^2) TSP600s (m^2)		0,0 4,3	(-) (-)
	flaming droplets/particles		occurrence flaming ≤10 s flaming >10 s	non-compliant (-) (-)
[6] Informative test specimen No. 6 STN EN 13823 CETRIS ECO® AKUSTIC, thickness of 8 mm, with mineral wool	$FIGRA_{0,2MJ}$ $FIGRA_{0,4MJ}$ LFS<edge of specimen THR_{600s}	3	13,1 13,1 (-) 1,6	(-) (-) compliant (-)
	SMOGRA (m^2/s^2) TSP600s (m^2)		0,0 6,6	(-) (-)
	flaming droplets/particles		occurrence flaming ≤10 s flaming >10 s	non-compliant (-) (-)
[7] EN ISO 11925-2 CETRIS ECO® BASIC (exposure time 30 s)	$F_s \leq 150$ mm	12	(-)	compliant
flaming droplets/particles	ignition of filter paper		(-)	non-compliant
[7] EN ISO 11925-2 CETRIS ECO® BASIC with surface treatment FINISH (exposure time 30 s)	$F_s \leq 150$ mm	12	(-)	compliant
flaming droplets/particles	ignition of filter paper		(-)	non-compliant
[7] EN ISO 11925-2 CETRIS ECO® BASIC with surface treatment DEKOR (exposure time 30 s)	$F_s \leq 150$ mm	12	(-)	compliant
flaming droplets/particles	ignition of filter paper		(-)	non-compliant

Test report number and test method	Characteristic value	Number of tests	Results	
			Continuous parameter - mean (m)	Compliance with parameters
[7] EN ISO 11925-2 CETRIS ECO® BASIC with mastic FP Acrylic Sealant (exposure time 30 s)	$F_s \leq 150$ mm	12	(-)	compliant
flaming droplets/particles	ignition of filter paper		(-)	non-compliant
[8] STN EN ISO 1716 BTAitop 1000A/CRT	PCS (MJ/kg)	3	14,051 ± 0,074	(-)
[9] STN EN ISO 1716 BTAitop 1000A/CTS	PCS (MJ/kg)	3	14,331 ± 0,081	(-)
[10] BTAitop 1000A/CTS-lazura	PCS (MJ/kg)	3	15,871 ± 0,080	(-)
[11] BTAi EP 3000 AB	PCS (MJ/kg)	3	17,951 ± 0,057	(-)

4. EXTENDED APPLICATION

4.1 PRINCIPLES APPLIED FOR THE EXTENSION OF THE FIELD OF APPLICATION

This extended application procedure (according to the rules specified in CEN/TS 15117:2005) is based on product tests in the state of final use [3], [4], [5], and [6], preceded by tests to determine the critical reference surface [6], surface treatment [8] - [11], and colour shade [1] and [2] of the product. Additionally, the procedure is based on the concept of the "worst" behaviour of specimens. This means that any change in the product parameter or its final use that leads to improved reaction to fire can be applied, allowing the expansion of the test results to the declared scope and use of the product while maintaining the declared reaction to fire class.

4.2 PROCEDURE

To determine the reaction to fire class, it was necessary to establish representative specimens whose tests would cover the product construction according to chapter 2.2.2 and the following combinations of products with cement-bound particleboards:

1) without surface treatment;
2) with surface treatment in accordance with table listed in chapter 2.2.2 of this document;
3) with smooth surface, by profiling/embossing or evenly drilled openings;
4) without cavity, with base from mineral wool;
5) with cavity;
6) timber loadbearing construction;
7) steel loadbearing construction;
8) gaps in joints not sealed by mastic;
9) gaps in joints sealed by mastic.

Selection of representative specimens based on test in compliance with EN ISO 1716:

Tested products/components

- Cement-bonded particleboards (CTD) CETRIS® BASIC [1]
- Cement-bonded particleboards (CTD) CETRIS® INCOL [2]
- Cement-bonded particleboards (CTD) CETRIS ECO® [3]
- Coating material BTAitop 1000A/CRT [8]
- Coating material BTAitop 1000A/CTS [9]
- Coating material BTAitop 1000A/CTS – lazúra [10]
- Coating material BTAitop EP 3000 AB [11]

From the test results [1] and [2], it is evident that changing the composition by adding liquid pigment does not worsen the product's reaction to fire, but changing the composition in the case of CETRIS ECO® products [3] has a significant influence on worsening the reaction to fire. For these reasons, CETRIS ECO® board was selected as representative for CETRIS®, CETRIS® INCOL and CETRIS ECO® INCOL boards in further tests. CETRIS® boards were evaluated as significant components of the non-homogeneous product.

Serial number of the test report / name of tested product	**Heat of combustion PCS [MJ/kg]**
[1] CETRIS® BASIC	2,9
[2] CETRIS® INCOL	2,244 ± 0,094
[3] CETRIS ECO®	3,266 ± 0,101

Surface treatment FINISH was chosen as a worst/representative surface treatment based on the tests [8] – [11]. Surface treatments PLUS, FINISH and LASUR were evaluated as insignificant components of the non-homogeneous product.

Surface treatment	**Layer**	**Area density**	**Heat of combustion**		**Total**
		[kg.m^{-2}]	MJ.kg^{-1}	MJ.m^{-2}	MJ.m^{-2}
PLUS	BTAitop 1000A/CRT	0,220	14,125	3,108	**3,108**
FINISH	BTAitop 1000A/CRT	0,250	14,125	3,531	**8,754**
	BTAi EP 3000 AB	0,130	18,008	2,341	
	BTAitop 1000A/CTS	0,200	14,412	2,882	
LASUR	BTAitop 1000A/CRT	0,200	14,125	2,825	**8,356**
	BTAi EP 3000 AB	0,130	18,008	2,341	
	BTAitop 1000A/CTS-lazura	0,200	15,951	3,190	

Selection of representative specimens based on test in compliance with EN 13823:

Tested products

- Specimen No. 1
  Cement-bonded particleboards (CTD) CETRIS ECO® BASIC were fix to the supporting construction made of spruce profiles. The spruce profiles of supporting construction formed an air gap with deepness of 30 mm behind the particleboards CTD CETRIS ECO®. [6]
- Specimen No. 2
  Cement-bonded particleboards (CTD) CETRIS ECO® BASIC were fix to the supporting construction made of spruce profiles. The spruce profiles of supporting construction formed an air gap with deepness of 30 mm behind the particleboards CTD CETRIS ECO®. Joints / gaps sealed by means of mastic, type FP Acrylic Sealant. [6]

- Specimen No. 3
  Cement-bonded particleboards (CTD) CETRIS ECO® PROFIL were fix to the supporting construction made of spruce profiles. The spruce profiles of supporting construction formed an air gap with deepness of 30 mm behind the particleboards CTD CETRIS ECO®. [6]
- Specimen No. 4
  Cement-bonded particleboards (CTD) CETRIS ECO® AKUSTIC were fix to the supporting construction made of spruce profiles. The spruce profiles of supporting construction formed an air gap with deepness of 30 mm behind the particleboards CTD CETRIS ECO®. [6]
- Specimen No. 5
  Cement-bonded particleboards (CTD) CETRIS ECO® PROFIL were fix to the supporting construction made of spruce profiles. The air gap was filled from unexposed side by means of mineral wool, type Isover UNI. [6]
- Specimen No. 6
  Cement-bonded particleboards (CTD) CETRIS ECO® AKUSTIC were fix to the supporting construction made of spruce profiles. The air gap was filled from unexposed side by means of mineral wool, type Isover UNI. [6]

The evaluation of tests was verified an influence of:
- sealing gaps by mastic FP Acrylic Sealant;
- air gap with deepness min. 30 mm;
- insulation base from mineral wool with thickness of 80 mm, bulk density of 40 kg.m^{-3} and reaction to fire class A1;
- shape/fragmentation surface of openings into product.

The construction of specimen No. 4 was chosen as a worst/representative construction based on the tests [6], which was used for specimens´ preparation together with the worst/representative surface treatment FINISH for test [4].

Serial number of the specimen	1	2	3	4	5	6
$FIGRA_{0,2MJ}$ [W/s]	12,6	10,4	5,5	**21,2**	11,8	13,1
$FIGRA_{0,4MJ}$ [W/s]	12,6	10,4	5,5	**21,2**	11,8	13,1
THR_{600s} [MJ]	1,4	0,9	0,9	**2,9**	1,6	1,6
SMOGRA [m^2/s^2]	1,2	0,0	0,0	**2,3**	0,0	0,0
TSP_{600s} [m^2]	5,9	5,6	6,2	**34,4**	4,3	6,6
LFS<edge of specimen	yes	yes	yes	yes	yes	yes
Flaming droplets/particles	no	no	no	no	no	no

5. EXTENDED APPLICATION RESULTS

5.1 APPLICATION RANGE – PRODUCT FAMILY

This extended application report is valid for product described in clause 2.2.2 and following end use:

i) in horizontal (excluding floorings) and vertical position;
ii) without surface treatment;
iii) with surface treatment according to clause 2.2.2 (all colour shades);
iv) without cavity;
v) with cavity;
vi) with timber supporting construction;
vii) with steel supporting construction;
viii) gaps in joints of boards without mastic;
ix) gaps in joints of boards with mastic.

This extended application report is valid for following product parameters:

Thickness	- thickness of cement-bonded particleboards CETRIS® in types (BASIC, INCOL, AKUSTIC), CETRIS ECO® and CETRIS ECO® AKUSTIC may vary in range from 8 mm to 40 mm, board CETRIS ECO® INCOL is produced only with thickness 12 mm, board CETRIS® PROFIL, CETRIS ECO® PROFIL may vary in range from 10 mm to 40 mm; - thickness of mineral wool may be changed; - change in surface treatment thickness is allowed within the scope of manufacturing tolerances;
Bulk density [$kg.m^{-3}$]	- change in the bulk density of cement-bonded particleboards CETRIS®, CETRIS ECO® types (BASIC, INCOL, AKUSTIC, PROFIL), is allowed within the scope of manufacturing tolerances; - increase in the bulk density of mineral wool is allowed;
Area density [$kg.m^{-2}$]	- decrease in area density of surface treatments is allowed only, increase against the values listed in clause 2.2.2 is not allowed, maximal values of area density of surface treatments are listed in the table of clause 2.2.2;
Product composition	- content of individual components CTD according to clause 2.2.2 shall not be changed; - only surface treatment according to clause 2.2.2 may be used for CTD; - only mineral wool with minimal reaction to fire class A2-s1, d0 is allowed to be used in construction of the product; - ceiling according to EN 13964 is produced with/without cavity above membrane, only mineral wool with reaction to fire class A1 may be used for insulation; - supporting construction may be made of timber, timber-based materials and steel, or other materials with reaction to fire class A1.

5.2 REACION TO FIRE PERFORMANCE PARAMETERS

5.2.1

The element, cement-bonded particleboards CETRIS® in types (BASIC, INCOL, AKUSTIC, PROFIL) without surface treatment, in relation to its reaction to fire behaviour is classified:

A2

The additional classification in relation to smoke production is:

s1

The additional classification in relation to flaming droplets / particles is:

d0

The format of the reaction to fire classification for construction products excluding floorings and linear pipe thermal insulation products is:

Fire behaviour		Smoke production			Flaming droplets	
A2	-	s	1	,	d	0

Reaction to fire classification: A2 - s1, d0

5.2.2

The element, cement-bonded particleboard

- CETRIS® in types (BASIC, INCOL, AKUSTIC, PROFIL) with surface treatment (PLUS, FINISH, LASUR, DECOR);
- CETRIS ECO® in types (BASIC, INCOL, AKUSTIC, PROFIL) without surface treatment and with surface treatment (PLUS, FINISH, LASUR, DECOR)

in relation to its reaction to fire behaviour is classified:

B

The additional classification in relation to smoke production is:

s1

The additional classification in relation to flaming droplets / particles is:

d0

The format of the reaction to fire classification for construction products excluding floorings and linear pipe thermal insulation products is:

Fire behaviour		Smoke production			Flaming droplets	
B	-	s	1	,	d	0

Reaction to fire classification: B - s1, d0

6. LIMITATIONS

The extended application results relate to the behaviour of a product/product family 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/product family in use.

This extended application report is valid unless test results are not in conflict with it.

This document does not represent type approval or certification of the product. Classification classes are stated in separate classification report based on this extended application report.

The resistance to fire extended application report is valid provided that the product, field of application, standards and regulations are not changed.

Approved by:

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Chief Operating Officer

Prepared by:

Ing. Samuel Skokan
Technician of the Testing Laboratory