

Approval body for construction products  
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and  
Laender Governments



## European Technical Assessment

**ETA-23/0881**  
**of 2 October 2024**

English translation prepared by DIBt - Original version in German language

### General Part

Technical Assessment Body issuing the  
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

"Crystal Cel"

Product family  
to which the construction product belongs

Intumescent products for fire sealing and fire stopping  
purposes

Manufacturer

Celsion Brandschutzsysteme GmbH  
Cäcilienstraße 5  
01219 Dresden  
GERMANY

Manufacturing plant

CELSION Brandschutzsysteme GmbH, Werk All Bautzen  
Dresdener Straße 51  
02625 Bautzen

This European Technical Assessment  
contains

5 pages including 1 annex which forms an integral part of  
this assessment

This European Technical Assessment is  
issued in accordance with Regulation (EU)  
No 305/2011, on the basis of

EAD N° 350005-00-1104, Edition May 2015

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## Specific Part

### 1 Technical description of the product

Object of this European technical assessment (ETA) is the intumescent construction product "Crystal Cel".

When exposed to high temperatures in case of fire, the intumescent construction product expands and generates foam. This foam seals joints and gaps, closes voids and cavities and restricts this way the passage and the spread of heat, smoke, flames or any combination of them.

The construction product "Crystal Cel" is a putty-like, pasty mastic that essentially consists of an aqueous mineral binder and expandable substances.

It is delivered in pails, cartridges or flexible tubular packaging and is used in thicknesses of 5 mm ± 0.5 mm to 15 mm ± 1.5 mm, e.g. as a joint sealant. In its final use it creates a layer that expands in case of fire.

The technical characteristics used for the fire sealing and fire stopping effect of the construction product "Crystal Cel" are given in Annex 1.

### 2 Specification of the intended use in accordance with the applicable European assessment Document

#### 2.1 Intended use

The construction product "Crystal Cel" is assessed on the basis of EAD N° 350005-00-1104, edition May 2015<sup>1</sup> as an intumescent product for fire sealing and fire stopping purposes without defined final use (IU 1).

The construction product "Crystal Cel" is intended to be used as essential component in, between or on construction products, assemblies, kits and special constructions which meet requirements concerning the safety in case of fire. In case of fire the product delays the heat transfer through fire resistant assemblies, construction products and construction elements by expanding under the impact of high temperatures and restricts the propagation of fire.

#### 2.2 General information

The performance "resistance to fire" shall be tested for the final use if requested.

The performance given in Section 3 are only valid if the intumescent construction product "Crystal Cel" is used considering the remarks and boundary conditions of clause 3.4.

The tests and assessment methods on which this European Technical Assessment is based lead to an assumption of working life of the intumescent construction product "Crystal Cel" in final use of at least 10 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

<sup>1</sup> Official Journal of the EU N° C 378/02 of 13 November 2015.

### 3 Performance of the product and references to the methods used for the assessment

#### 3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	class A2-s1, d0 according to EN 13501-1 <sup>2</sup>
Resistance to fire	No performance assessed. The performance "resistance to fire" shall be demonstrated separately for the intended final use if requested.

#### 3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Content and release of dangerous substances	No dangerous substances <sup>3</sup>

The detailed chemical composition of the intumescent construction product "Crystal Cel" was assessed at DIBt and is deposited with DIBt.

#### 3.3 Sustainable use of natural resources (BWR 7)

No performance assessed.

#### 3.4 General aspects

The evidence of durability is part of testing the basic works requirements and of the achievement of the assessed performance. The durability is only presumed if the following provisions for the intended use are considered.

The proof and the assessment of the durability with regard to the fire protection performance criteria was carried out for climatic conditions of type Z<sub>2</sub>: frost-free indoor use at humidities of less than 85 % RH in accordance with EAD No. 350005-00-1104, Section 1.2.2 and EOTA Technical Report 024, clause 2.2.7<sup>4</sup>.

Result:

The intumescent construction product "Crystal Cel" may be used in dry, frost-free interior rooms at a relative humidity ≤ 85 % without expecting essential changes in relevant the fire sealing and fire stopping properties and the resulting performance.

Additionally, "Crystal Cel" was tested under specific application conditions according to EOTA TR 024:

- Exposure to constant temperatures of up to 80 °C for 40 days according to EOTA TR 024, clause 2.3.2.
- Subsequent over-painting according to EOTA TR 024, clause 2.3.3. (tested using coating of a silicate-based interior paint, a chalk-based paint and a synthetic resin dispersion-based paint)

The characteristics "expansion ratio" and "expansion pressure" did not change essentially due to the exposure.

<sup>2</sup> EN 13501-1:2019-05 Fire classification of construction products and building elements, Part 1: Classification using data from reaction to fire tests

<sup>3</sup> In accordance with the Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 (published in the Official Journal of the EU N° L 353 of 31/12/2008, p 1)

<sup>4</sup> EOTA TR 024:2019-08, Edition 2006, amended July 2009, amended 2019.

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**4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base**

In accordance with EAD No. 350005-00-1104, the applicable European legal act is: Commission Decision No 1999/454/EC<sup>5</sup>, amended by Commission Decision No 2001/596/EC<sup>6</sup> on the assessment and verification of constancy of performance (AVCP) (see Annex V in conjunction with Article 65(2) of Regulation (EU) No 305/2011).

The System to be applied is: **System 1**

Product	intended use	characteristic	System
"Crystal Cel"	Components effective in the view of safety in case of fire (BWR) used in construction products, elements, kits, assemblies and special constructions	Reaction to fire Properties relevant for the fire sealing and fire stopping effect	<b>1</b>

**5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD**

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 2 October 2024 by Deutsches Institut für Bautechnik

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Head of Department

*beglaubigt:*  
Haberstroh

<sup>5</sup> Official Journal of the Eu. Comm. L 178 of 14 July 1999, p 42.  
<sup>6</sup> Official Journal of the Eu. Comm. L 209 of 2 August 2001, p 33.

## CHARACTERISTICS RELEVANT FOR THE FIRE SEALING AND FIRE STOPPING EFFECTS OF THE CONSTRUCTION PRODUCT

### "Crystal Cel"

Characteristic	Range of determined values and tolerances	Test method*
Density (delivery form)	1750 kg/m <sup>3</sup> ± 100 kg/m <sup>3</sup>	See control plan
Content of non-volatile components (determined at 105 °C for 3 hours)	≥ 94,0 %	
Loss of mass at a certain temperature (determined at 450 °C for 30 minutes)	8,0 % to 18,0 %	
Expansion ratio (determined at 450 °C for 30 minutes with a top-load on ca. 5 mm to ca. 15 mm thick samples)	1,5 to 5,5	
Expansion pressure (determined at 350 °C on ca. 5 mm and ca. 9 mm thick samples)	1,3 N/mm <sup>2</sup> to 3,0 N/mm <sup>2</sup>	

The foaming reaction starts at around 300°C.

\* Details of the test methods are deposited with DIBt.