

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-23/0578
of 30 October 2023

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

Klimasan F

Product family
to which the construction product belongs

Renderings and rendering kits intended for fire resisting
application

Manufacturer

Klimasan Perlit GmbH
Röntgenstraße 4
97230 Estenfeld
DEUTSCHLAND

Manufacturing plant

Klimasan Perlit GmbH
Röntgenstr. 4
97230 Estenfeld

This European Technical Assessment
contains

7 pages including 2 annexes which form an integral part
of this assessment

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

350140-00-1106, Edition September 2017

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Specific Part

1 Technical description of the product

Object of this European Technical Assessment (ETA) is the rendering kit for establishing the fire protective rendering "Klimasan F".

The product will be assessed as a kit in accordance with the European assessment document EAD N° 350140-00-1106¹ option 3.

The kit consists of the factory-made mineral dry mix "Klimasan Perlit Brandschutzputz F" and the mineral bonding mortar "Der Vorspritzer".

The fire protective rendering "Klimasan F" is manufactured on site from the above components.

The dry mix "Klimasan Perlit Brandschutzputz F" for the fire protective rendering "Klimasan F" is a factory-made, homogeneous powder of light grey colour, consisting essentially of hydrated lime and Portland cement as binder and of perlite as light aggregate². The dry mix is supplied in bags of 50 liters.

The bonding mortar "Der Vorspritzer" is a pre-sprayed mortar from Knauf based on Portland cement, which improves the adhesion of the fire protection layer to the substrate. It complies with EN 998-1³, class CS IV.

The fire protective rendering "Klimasan F" is produced as a two-layer fire protection system on site by applying the bonding mortar "Der Vorspritzer", freshly mixed with clean water, in a layer thickness of at least 1 mm to the clean, grease-free substrate using a suitable spraying device. Then, after the pre-sprayed bonding mortar has set, the fire protective layer is applied using a commercially available plastering machine, e.g. PFT G 5 or PFT Twister D6.

The effective layer for fire protection is created when the dry mix "Klimasan Perlit Brandschutzputz F" is mechanically mixed with a defined quantity of clean water and applied directly to the full surface of the substrate prepared with the bonding bridge.

The applied fire protective rendering "Klimasan F" is a two-layer system which, when hardened, effectively retards the heat input when exposed to fire.

The thickness of the fire protective rendering "Klimasan F" depends on the intended duration of fire resistance, the condition of the substrate and the type of construction element to be protected. Annex B can be used for the design and dimensioning of the necessary thickness according to EN 1992-1-1⁴.

The essential technical characteristics of the described fire protective rendering "Klimasan F" and its components are listed in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document (EAD) N° 350140-00-1106

The fire protective rendering "Klimasan F" kit is intended for the protection of load-bearing flat concrete structures, e.g. ceilings, walls without any lathing or reinforcement, under one-sided thermal impact stress in case of fire. But the use of a lathing or reinforcement made of non-combustible materials is permissible.

¹ "Renderings and rendering kits intended for fire resisting applications", Edition September 2017, published first in the Official Journal of the EU N° C 435/07 of 15 December 2017, p 152

² The chemical composition of the components is deposited with DIBt.

³ EN 998-1:2017-02 Specification for mortar for masonry – Part 1: Rendering and plastering mortar

⁴ EN 1992-1-1:2011-01 Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings

The performances in section 3 can only be assumed if the specifications and conditions mentioned in section 3.4 as well as the manufacturer's instructions are taken into account when using the fire protective rendering "Klimasan F".

The test and assessment methods on which this European Technical Assessment (ETA) is based, lead to an assumption of working life of the fire protective rendering "Klimasan F" of at least 25 years in final use.

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.

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

3.1 Safety in case of fire - BWR 2

3.1.1 Reaction to fire

| Essential characteristic | Performance |
|--------------------------|---|
| Reaction to fire* | Class A1 in accordance with EN 13501-1 ⁵ |

* The final product contains less than 2 % organic ingredients

3.1.2 Fire resistance and thermal insulation

According to the tests results according to EN 13381-3⁶ and a classification according to EN 13501-2⁷ the following performances can be achieved with the fire protective rendering "Klimasan F" (design/dimensioning acc. to EN1992⁴ by using Annex B)

| substrate | application thickness | classification acc. to EN 13501-2 ⁷ Fehler! Textmarke nicht definiert. |
|---|-----------------------|---|
| concrete walls, concrete ceilings (one-sided fire impact) | 15,0 mm to 30,0 mm | REI 30 to REI 240 |

3.3 Hygiene, health and the environment - BWR 3

| Essential characteristic | Performance |
|---|--------------------------------------|
| Content and release of dangerous substances | No dangerous substances ⁸ |

The manufacturer's detailed written declaration concerning the chemical composition of the rendering "Klimasan F" as described in clause 1 was assessed by DIBt and is deposited with DIBt.

3.4 General aspects of durability

Durability testing shall be an integral part of assessing the basic requirements for works and to achieve the evaluated performance. The following specific provisions for use shall be complied with to ensure the durability of the performance.

The properly executed fire protective rendering "Klimasan F" without lathing or reinforcement is suitable to permanently maintain the evaluated fire protection relevant performance of the coated ceilings and walls made of concrete, reinforced or prestressed concrete as well as mineral aerated concrete under conditions of use of type Z₂ - product intended for frost-free indoor use at a permanent humidity below 85 % - according to EAD 350140 00 1106¹, Section 2.2.12.

⁵ EN 13501-1:2019-05 Fire classification of construction products and building elements, Part 1 Classification using test data from reaction to fire tests

⁶ EN 13381-3:2015-06 Test methods for determining the contribution to the fire resistance of structural members; Part 3: Applied protection to concrete members;

⁷ EN 13501-2:2016-12 Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services

⁸ 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)

English translation prepared by DIBt

3.5 General aspects of execution of the fire protective rendering "Klimasan F"

For the execution of the fire protective rendering "Klimasan F" only the components of the kit mentioned in section 1 of this ETA shall be used.

The manufacturer is responsible for ensuring that all necessary information is correctly and completely provided to the person carrying out the work. The execution on site shall be carried out by skilled workers who have experience with this type of product.

When executing the fire protective rendering "Klimasan F", test specimens shall be made in parallel at least for testing the density in order to prove the conformity of the executed rendering with the requirements of this ETA.

Furthermore, it is necessary to check the layer thickness of the freshly applied fire protective rendering after application, e.g. with a penetrating measuring needle or a profometer. The results shall be documented. The measured thicknesses may not be below the designed minimum thickness at any point.

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

In accordance with the European Assessment Document EAD N° 350140-00-1106¹ the following legal basis applies: Decision of the commission N° 1999/454/EC⁹.

For the assessment and verification of constancy of performance (AVCP) **system 1** shall be applied (see Regulation (EU) N° 305/2011) Annex V in conjunction with Article 65 (2)) according to the following table:

| Product | Intended use | characteristics | AVPC System |
|---|---|---|-------------|
| kit for fire protective renderings "Klimasan F" | Fire protective rendering to improve or maintain the fire resistance of loaded and unloaded concrete, reinforced concrete and prestressed concrete ceilings and walls | Fire behaviour, Fire resistance duration relevant characteristics of the material | 1 |

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

The technical details necessary for the implementation of the system 1 for assessment and verification of constancy of performance are laid down in the control plan (confidential part of this ETA) deposited with Deutsches Institut für Bautechnik.

The CE-marking for the kit shall be affixed on every component (stick-on label or directly on the packing unit) and the commercially accompanying documents. The declaration of performance shall be based on and in accordance with this ETA.

Issued in Berlin on 30 October 2023 at Deutsches Institut für Bautechnik

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Head of Section

beglaubigt:
Dr.-Ing. Dierke

⁹ Decision of the commission N° 1999/454/EC of 22 June 1999 (OJ of the EU L 178 of 14 July 1999, p 42), amended by EC Decision 2001/596/EC of 8 January 2001(OJ of the EU L 209 of 2 August 2001, p 2)

Description of the fire protective rendering kit "Klimasan F"

Table A1: Relevant characteristics of the components

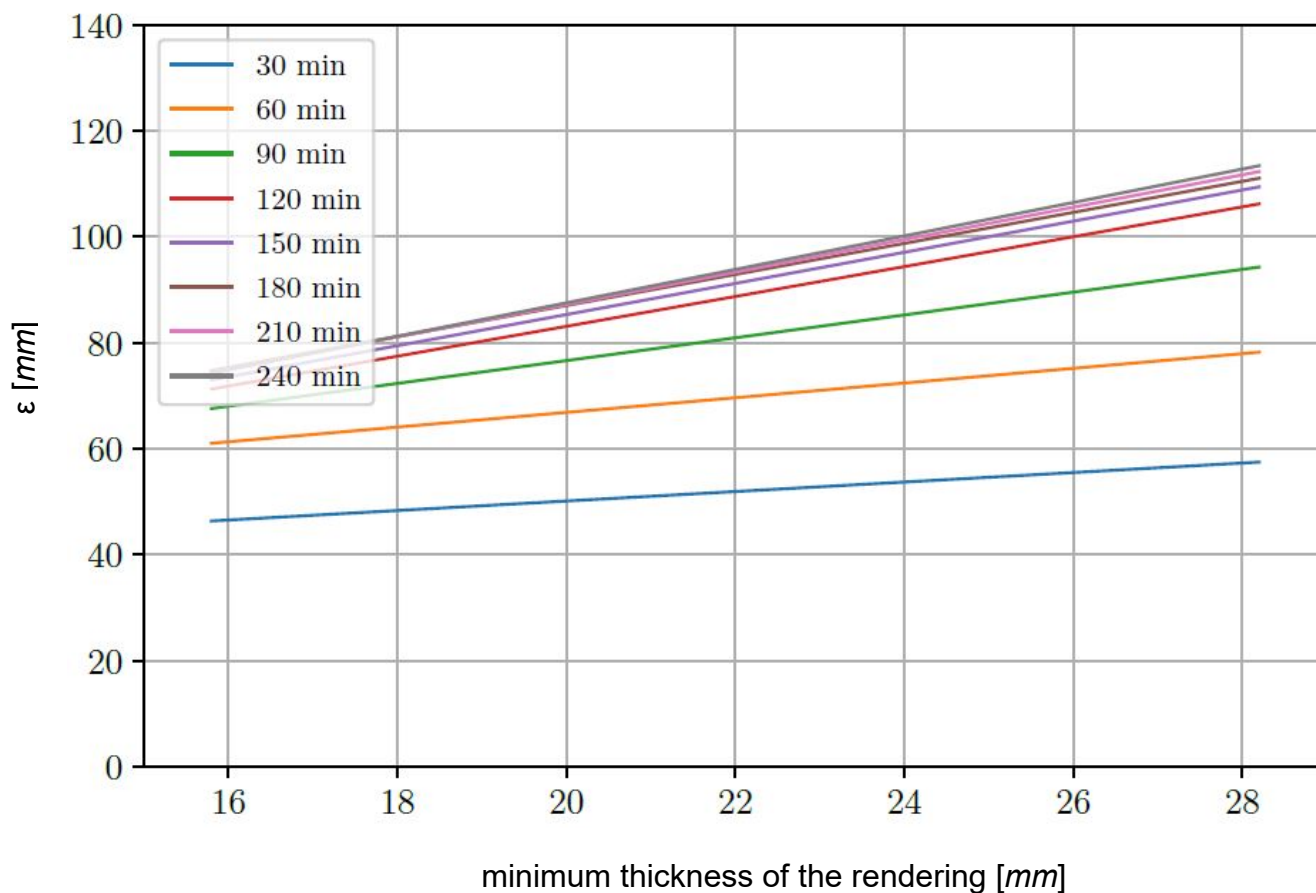
| Characteristic | Parameter and tolerances | Test method |
|--|--|--------------------------|
| Dry mix "Klimasan Perlit Brandschutzputz F" | | |
| particle size | 4 mm to 6 mm | EN 12620; screen passage |
| colour | light grey | visual |
| pH value | ≥ 11 | indicator test |
| Bonding plaster "Der Vorspritzer" | | |
| Bond strength | ≥ 0,08 N/mm ² | EN 1015-12 |
| Compressive strength, 28 d | ≥ 10,0 N/mm ² | EN 1015-11 |
| Capillary water absorption w | W2 | EN 1015-18 |
| Fire protective rendering "Klimasan F" | | |
| density, dry | 480 kg/m ³ ± 75 kg/m ³ | See control plan |
| Compressive strength, 28 d | ≥ 1,6 N/mm ² | |
| Thickness of the rendering without a lathing | 10 mm to 30 mm tolerance: + 0,5 mm | |
| Reaction to fire | class A1 | EN 13501-1 |

Fire protective rendering kit "Kliasan F"

Decription of the kit an its components

Annex A

Equivalent concrete depth and basis of design



Fire-protective rendering kit "Klimasan F"

Intended Use
Flat concrete elements (walls, ceilings) – design/dimensioning – equivalent concrete depth

Annex B