

Public-law institution jointly founded by the federal states and the Federation

European Technical Assessment Body
for construction products



European Technical Assessment

ETA-24/0256
of 27 May 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

Knauf Insulation LDS FlexPlus

Product family to which the construction product belongs

Humidity-dependent vapour control layer

Manufacturer

Knauf Insulation GmbH
Heraklithstraße 8
84359 Simbach am Inn

Manufacturing plant

F12 und F13

This European Technical Assessment contains

6 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 030271-00-0605

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

Specific part

1 Technical description of the product

The humidity-dependent vapour control layer Knauf Insulation LDS FlexPlus is a multi-layer composite with one-sided fleece.

The thickness of the humidity-dependent vapour control layer is 0.14 mm ± 0.05 mm and the mass per unit is 75 g/m² ± 5 g/m².

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

The performances given in Section 3 are only valid if the humidity-dependent vapour control layer Knauf Insulation LDS FlexPlus is used in compliance with the specifications and conditions given in Annex 1.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the humidity-dependent vapour control layer Knauf Insulation LDS FlexPlus of at least 50 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.

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

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class E in accordance with EN 13501-1 ¹

3.2 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Resistance to tearing (nail shank)	See Annex 1.2.1
Water vapour transmission properties	See Annex 1.2.2
Durability of water vapour transmission properties - artificial ageing by long-term exposure to elevated temperature	See Annex 1.2.2
Tensile properties	See Annex 1.2.3
Durability of tensile properties - artificial ageing by long-term exposure to elevated temperature and exposure to UV and heat	See Annex 1.2.3
Air permeability	No performance assessed
Water tightness	No performance assessed
Resistance to impact	No performance assessed
Durability - chemical resistance	No performance assessed
Joint strength	No performance assessed

¹ EN 13501:2018

Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

Essential characteristic	Performance
Dangerous substances	No performance assessed

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

In accordance with EAD No.030271-00-0605, the applicable European legal act is: [1999/90/EC(EU)] amended by Commission decision [2001/596/EC].

The system to be applied is: 3

For reaction to fire the system to be applied is: 3.

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 27 May 2024 by Deutsche Institut für Bautechnik

Anja Dewitt
Head of Section

beglaubigt:
Vössing

Annex 1.1 Specification of intended use

EN 1995-1-1¹ applies for the installation of the humidity-dependent vapour control layer Knauf Insulation LDS FlexPlus.

The humidity-dependent vapour control layer Knauf Insulation LDS FlexPlus is protected from UV radiation.

Annex 1.2 Specification of essential characteristics

A.1.2.1 Resistance to tearing (nail shank)

The resistance to tearing in longitudinal direction of the humidity-dependent vapour control layers of Knauf Insulation LDS FlexPlus in accordance with EN 12310-1² is: 35 N.

The resistance to tearing in transverse direction of the humidity-dependent vapour control layers of Knauf Insulation LDS FlexPlus in accordance with EN 12310-1 is: 40 N.

A.1.2.2 Durability of water vapour transmission properties – artificial ageing by long-term exposure to elevated temperature

The initial values of the s_d -values for the humidity-dependent vapour control layer Knauf Insulation LDS FlexPlus tested in accordance with EN ISO 12572³ meet the values in Table A.1.2.2.

The values after artificial ageing of the s_d -values for the humidity-dependent vapour control layer Knauf Insulation LDS FlexPlus tested in accordance with EN 1296⁴ meet the values in accordance with Table A.1.2.2.

Table A.1.2.2: s_d -values of Knauf Insulation LDS FlexPlus in [m]

Conditionings / Arithmetic average of dry point and wet point	23°C, 0/50% rel. hum. / 25 % rel. humidity [m]	23°C, 50/93% rel. hum. / 72 % rel. humidity [m]	23°C, 83/97% rel. hum. / 90 % rel. humidity [m]
Initial mean values	17.9 ± 20 %	0.62 ± 20 %	0.10 ± 40 %
Mean values after artificial ageing (Storage at 80(±2) °C for 24 weeks)	19.3 ± 20 %	0.83 ± 20 %	0.17 ± 40 %

¹ EN 1995-1-1: 2004+AC:2006+A1:2008+A2:2014

² DIN EN 12310-1:1999

³ EN ISO 12572:2017

⁴ EN 1296:2000

Eurocode 5: Design of timber structures – Part 1-1: General - Common rules and rules for buildings

Flexible sheets for waterproofing – Part 1: Bitumen sheets for roof waterproofing; determination of resistance to tearing (nail shank)

Hygrothermal performance of building materials and products - Determination of water vapour transmission properties - Cup method

Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roofing. Method of artificial ageing by long term exposure to elevated temperature

Knauf Insulation LDS FlexPlus	Annex 1.1
Specification of essential characteristics	

A.1.2.3 Durability of tensile properties – artificial ageing by long-term exposure to elevated temperature and exposure to UV and heat

The initial values and the values after artificial ageing of the maximum tensile force and the maximum tensile force elongation for the humidity-dependent vapour control layer Knauf Insulation LDS FlexPlus determined in accordance with EN 13984⁵ and EN 13859-1⁶ correspond to the values in Table A.1.2.3 for both the longitudinal and transversal directions of the sheet. The specifications of the test standard with regard to the number and selection of test specimens have been fully complied with.

Table A.1.2.3: Values of tensile force and elongation at maximum force before and after exposure

Knauf Insulation LDS FlexPlus	longitudinal		transversal	
	strength F_H [N / 50 mm]	elongation ϵ_H [%]	strength F_H [N / 50 mm]	elongation ϵ_H [%]
Initial mean values	180	26	180	26
Mean values after artificial ageing (Elevated temperature)	180	26	180	26
Mean values after artificial ageing (UV and heat)	120	3	91	2

⁵ EN 13984:2013

Flexible sheets for waterproofing – Plastic and rubber vapour control layers – Definitions and characteristics

⁶ EN 13859-1:2014

Flexible sheets for waterproofing - Definitions and characteristics of underlays - Part 1: Underlays for discontinuous roofing

Knauf Insulation LDS FlexPlus	Annex 1.2
Specification of essential characteristics	