Deutsches Institut für Bautechnik

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Approval body for construction products and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and Laender Governments

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European Technical Assessment ETA-18/1146 of 28 November 2019

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General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Humidity-dependent vapour control layers INTELLO and INTELLO PLUS
Product family to which the construction product belongs	Membranes,including liquid applied and kits (for water and/or water vapour control)
Manufacturer	MOLL bauökologische Produkte GmbH pro clima Rheintalstraße 35-43 68723 Schwetzingen DEUTSCHLAND
Manufacturing plant	Werk D1
This European Technical Assessment contains	8 pages including 3 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	EAD 030271-00-0605

Deutsches Institut für Bautechnik
Kolonnenstraße 30 B | 10829 Berlin | GERMANY | Phone: +49 30 78730-0 | Fax: +49 30 78730-320 | Email: dibt@dibt.de | www.dibt.de

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Specific part

1 Technical description of the product

The humidity-dependent vapour control layers INTELLO and INTELLO PLUS consist of several layers (INTELLO two, INTELLO PLUS three) of plastic sheets with or without reinforcement nets. They are made of a fleece and a membrane and INTELLO PLUS is additionally reinforced with a polypropylene fabric.
Dimensions, thickness and mass per unit area see Annex 1.

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 layers INTELLO and INTELLO PLUS are used in compliance with the specifications and conditions given in Annex 1 to 3.

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 layers INTELLO and INTELLO PLUS 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	Euroclass E

3.2 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Dimensions and tolerances	See Annex 1
Thickness and mass per unit area	See Annex 1
Resistance to tearing (nail shank)	See Annex 1
Water vapour transmission properties	See Annex 3
Durability of water vapour transmission properties - artificial ageing through high temperature	See Annex 3
Tensile properties	See Annex 3
Durability of tensile properties - UV resistance and - artificial ageing through high temperature	See Annex 3
Air permeability	See Annex 3

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)].

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 28 November 2019 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Baumann

Deutsches Institut für Bautechnik DIBt

Annex 1 Technical description of the product

A.1.1 Dimension and tolerances

Length, width and straightness are determined in accordance with EN 1848-2[1]. The deviation from straightness does not exceed 75 mm per 10 m length.

A.1.2 Thickness and mass per unit areas

The thickness according to EN 1849-2 of the humidity-dependent vapour control layers are:

- 0,25 ± 0,1 mm for INTELLO and
- 0,4 ± 0,15 mm for INTELLO PLUS.

The mass per unit according to EN 1849-2 of the humidity-dependent vapour control layers are:

- 85 ± 15 g/m^2 for INTELLO and
- 110 ± 20 g/m^2 for INTELLO PLUS.

A.1.3 Resistance to tearing

The resistance to tearing along and across the humidity-dependent vapour control layers of INTELLO in accordance with EN 12310-1[2] is: 60 N / 60 N.

The resistance to tearing along and across the humidity-dependent vapour control layers of INTELLO PLUS in accordance with EN 13859-1[3], Annex A is: 200 N / 200 N.

1	DIN EN 1849-2:2010	Flexible sheets for waterproofing - Determination of thickness and mass per unit area - Part 2: Plastic and rubber sheets
2	DIN EN 12310-1:1999	Flexible sheets for waterproofing – Part 1: Bitumen sheets for roof waterproofing; determination of resistance to tearing (nail shank)
3	DIN EN 13859-1:2014	Flexible sheets for waterproofing – definitions and characteristics of underlays; Part 1:Underlays for discontinuous roofing

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Annex 2 Specification of intended use

A.2.1 Use conditions (environmental conditions)

A.2.1.1 Condensation protection

The design of the construction is verified by means of hygrothermal simulation according to EN 15026[1] using the initial values of the s_d-values (Table A.3.1).

A.2.1.2 Installation

When constructing wooden structures with humidity-dependent vapour control layers INTELLO and INTELLO PLUS, the national requirements for wood preservation are observed.

The humidity-dependent vapour control layers INTELLO and INTELLO PLUS are protected from UV radiation.

[1] EN 15026:2007 Hygrothermal performance of building components and building elements - Assessment of moisture transfer by numerical simulation

Humidity-dependent vapour control layers INTELLO and INTELLO PLUS	Annex 2
Specification of intended use Condensation protection and installation	

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Annex 3 Specification of essential characteristics

A.3.1 Durability of water vapour transmission properties

The initial values of the s_d-values for the humidity-dependent vapour control layers INTELLO and INTELLO PLUS tested according to EN ISO 12572[1] meet the values in Table A.3.1.

The ageing values of the s_d-values for the humidity-dependent vapour control layers INTELLO and INTELLO PLUS tested in accordance with EN 1296[2] and the test plan deposited with DIBt fulfil the values according to Table A.3.1.

Table A.3.1: s_d-values of INTELLO and INTELLO PLUS 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. / 71,5 % rel. humidity [m]	23°C, 85/95% rel. hum. / 90 % rel. humidity [m]
Initial values	34 ± 20 %	1,7 ± 20 %	0,30 ± 40 %
Aged values	55 ± 20 %	2,0 ± 20 %	0,30 ± 40 %

A.3.2 Durability of tensile properties for humidity-dependent vapour control layers INTELLO

The initial values and the aged values of the maximum tensile force and the maximum tensile force elongation for the humidity-dependent vapour control layer INTELLO determined in accordance with EN 12311-2[3] correspond to the values in Table A.3.2 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.3.2: Minimum tensile strength of INTELLO according to EN 12311-2

INTELLO	longitudinal		transversal	
	strength F_H [N / 50 mm]	elongation ε_H [%]	strength F_H [N / 50 mm]	elongation ε_H [%]
Initial values	110	40	80	35
Aged values	100	25	70	25

1 EN ISO 12572:2016 Hygrothermal performance of building materials and products - Determination of water vapour transmission properties - Cup method

2 EN 1296:2001 Flexible sheets for waterproofing. Bitumen, plastic and rubber sheets for roofing. Method of artificial ageing by long term exposure to elevated temperature

3 EN 12311-2:2013 Flexible sheets for waterproofing – determination of tensile properties - Part 2: Plastic and rubber sheets for roof waterproofing

Humidity-dependent vapour control layers INTELLO and INTELLO PLUS	Annex 3.1
Specification of essential characteristics Water vapour transmission properties of INTELLO and INTELLO PLUS and tensile properties of INTELLO	

A.3.3 Durability of tensile properties for humidity-dependent vapour control layer INTELLO PLUS

The initial values and the aged values of the maximum tensile force and the maximum tensile force elongation for the humidity-dependent vapour control layer INTELLO PLUS determined in accordance with Annex A of EN 13859-1[4] correspond to the values in Table A.3.3 for both the longitudinal and transversal directions of the sheet.

Table A.3.3 Minimum tensile strength of INTELLO PLUS according to EN 13859-1

INTELLO PLUS	longitudinal		transversal	
	strength F_H [N / 50 mm]	elongation ε_H [%]	strength F_H [N / 50 mm]	elongation ε_H [%]
Initial values	340	15	220	15
Aged values	330	13	210	13

A.3.4 Air permeability

The maximum air permeability Q_{50} [$m^3/(m^2*h*50\ Pa)$], tested in accordance with EN 13859-2[5], clause 4.3.4 and EN 12114[6] with edge gluing on steel frame with adhesive tape, expressed in maximum area-related reference permeability at 50 Pa see Table A.2.4.

Table A.2.4 Maximum air permeability of INTELLO and INTELLO PLUS

	Max. air permeability Q_{50} [$m^3/(m^2*h*50\ Pa)$]
INTELLO	0.0095
INTELLO PLUS	0.0095

4 EN 13859-1:2014 Flexible sheets for waterproofing – Definitions and characteristics of underlays - Part 1: Underlays for discontinuous roofing

5 EN 13859-2:2014 Flexible sheets for waterproofing – Definitions and characteristics of underlays – Part 2: Underlays for walls

6 EN 12114:2000 Thermal performance of buildings – Air permeability of building components and building elements