

pro clima translation of DIBt certificate



Zulassungsgegenstand: / Subject of approval

Vapour check INTELLO and INTELLO PLUS

TRANSLATOR'S NOTE: This translation of the original German version has not been certified by the German Institute for Building Technology.

This translation is for information purposes only. The original German version takes precedence over this translation and is the only binding version.

I GENERAL PROVISIONS

1. This national technical approval verifies the applicability and suitability for its intended purpose of the subject of approval as defined by the building regulations of the German federal states.
2. To the extent that this national technical approval specifies requirements with regard to the particular skills and experience of those persons responsible for the manufacture of construction products and construction types in accordance with German federal state regulations that correspond to § 17, section 5 of the Model Building Regulation, it should be noted that these skills and this experience can also be verified by similar evidence from other member states of the European Union. This also applies, if appropriate, to comparable evidence that is presented within the framework of the Treaty on the European Economic Area (EEA) or other bilateral agreements.
3. This national technical approval is not a replacement for those permissions, approvals and certificates that are legally required for the implementation of construction projects.
4. This national technical approval is granted without prejudice to the rights – in particular, the private property rights – of third parties.
5. Manufacturers and distributors of the subject of approval must – without prejudice to the further regulations under "Special provisions" – provide the user or handler of the subject of approval with copies of the national technical approval and must inform the user or handler that the national technical approval must be present at the place of use. Upon request, copies of the national technical approval are to be made available to the authorities involved.
6. The national technical approval may only be copied in full. The publication of excerpts requires the consent of the German Institute for Building Technology (Deutsches Institut für Bautechnik, DIBt). Texts and illustrations in advertising material must not contradict the national technical approval. Translations of the national technical approval must include the following note: "Vom Deutschen Institut für Bautechnik nicht geprüfte Übersetzung der deutschen Originalfassung (This translation of the original German version has not been certified by the German Institute for Building Technology)".
7. The national technical approval may be withdrawn. The provisions of the national technical approval can be supplemented and altered subsequently, particularly if this is necessitated by new engineering findings.

II SPECIAL PROVISIONS



1. Subject of approval and area of application

1.1 Subject of approval

For the purposes of this national technical approval, the INTELLO and INTELLO PLUS humidity-variable vapour retarder membranes from Moll bauökologische Produkte GmbH are multi-layer (INTELLO is two-layer, INTELLO PLUS is three-layer) composite films with and without a reinforcement structure. They are manufactured by combining a fleece and a membrane, and INTELLO PLUS is additionally reinforced with a polypropylene roving. The INTELLO and INTELLO PLUS humidity-variable vapour retarder membranes are construction materials that have normal flammability with Class E fire behaviour in accordance with DIN EN 13501-1:2010-011. The humidity-variable vapour retarder membranes are also referred to by the names stated in Annex 1.

1.2 Area of application

Under the provisions of this national technical approval, the INTELLO and INTELLO PLUS humidity-variable vapour retarder membranes may be used in accordance with the areas of application in DIN 68800-2:2012-022, section 7.5, paragraph two, sentence two.

2. Provisions for construction products

2.1 Properties and composition

2.1.1 Thickness and mass per unit area

The thickness of the humidity-variable vapour retarder membranes, as measured in accordance with DIN EN 1849-2:2010-43, must be 0.25 ± 0.05 mm for INTELLO and 0.4 ± 0.1 mm for INTELLO PLUS. The mass per unit area of the vapour retarder membranes, as measured in accordance with DIN EN 1849-2:2010-4, must be 85 ± 10 g/m² for INTELLO and 110 ± 15 g/m² for INTELLO PLUS.

2.1.2 Durability of vapour-diffusion-equivalent air-layer thicknesses (sd values), initial values and aging values

The initial values of the sd values in accordance with DIN EN ISO 12572:2001-094 for the INTELLO and INTELLO PLUS humidity-variable vapour retarder membranes and the aging values of the sd values that are tested based on DIN EN 1296:2001-035 and the testing plan filed with DIBt must correspond to the values in Table 1.

Table 1: sd values in [m]

Climate differential (Average humidity)	23°C, 0/50% r.h. 25% r.h. [m]	23°C, 50/93% r.h. 71.5% r.h. [m]	23°C, 85/95% r.h. 90% r.h. [m]
INTELLO / INTELLO PLUS			
Initial value	$34 \pm 20\%$	$1.7 \pm 20\%$	$0.30 \pm 40\%$
Aging value	$55 \pm 20\%$	$2.0 \pm 20\%$	$0.30 \pm 40\%$

2.1.3 Resistance to tear propagation (nail shank)

The longitudinal and lateral tear-propagation resistance of the humidity-variable vapour retarder membranes, as determined in accordance with DIN EN 13859-1:2010-11, Annex B, must be at least 70 N / 70 N for INTELLO and at least 200 N / 200 N for INTELLO PLUS.



2.1.4 Durability of tensile elongation behaviour

2.1.4.1 General requirements

The tensile elongation behaviour must be tested in accordance with DIN EN 13859-1:2010-11, Annex A. In the case of INTELLO, the referenced document DIN EN 123111:1999-11 applies unchanged. In the case of INTELLO PLUS, the samples to be tested are to have a width of 100 mm instead of 50 mm, which represents a deviation from DIN EN 123111:1999-11. The maximum tensile force and the elongation at the maximum tensile force – if this can be identified – are to be determined for the two largest force peaks.

2.1.4.2 Initial values of the maximum tensile force and the elongation at the maximum tensile force

The initial values of the maximum tensile force and the elongation at the maximum tensile force determined in accordance with the specifications in Section 2.1.4.1 must correspond to the initial values in Table 2 for both the longitudinal and lateral directions.

2.1.4.3 Aging values of the maximum tensile force and the elongation at the maximum tensile force

The aging values of the maximum tensile force and the elongation at the maximum tensile force as tested in accordance with Section 2.1.4.1 after warm storage of the samples in accordance with the testing plan filed with DIBt must correspond to the values in Table 2.

Table 2: Tensile elongation behaviour in accordance with DIN EN 12311-1:1999-11

	Longitudinal		Lateral	
	Maximum tensile force F_H [N / 50 mm]	Elongation at maximum tensile force ϵ^H [%]	Maximum tensile force F_H [N / 50 mm]	Elongation at maximum tensile force ϵ^H [%]
INTELLO PLUS				
Initial value	430 ± 20%	16 ± 3	350 ± 20%	19 ± 4
Aging value	420 ± 20%	16 ± 3	370 ± 20%	18 ± 4

2.1.5 Fire behaviour

The fire behaviour as tested in accordance with DIN EN ISO 11925-2:2011-02 must correspond to Class E as per DIN EN 13501-1:2010-01.

2.2 Marking

The packaging or delivery note for the vapour retarder membranes must be labelled by the manufacturer with the conformity mark in accordance with the conformity mark regulations of the German federal states. Labelling with the conformity mark may only be used when the requirements specified in Section 2.3 have been fulfilled.

In addition, the packaging or delivery note must contain the following information:

- Designation of the subject of approval: "INTELLO or INTELLO PLUS humidity-variable vapour retarder membrane or designation corresponding to Annex 1 on use in accordance with DIN 68800-2:2012-02"



2.3 Verification of conformity

2.3.1 General information

The conformity of the INTELLO and INTELLO PLUS humidity-variable vapour retarder membranes with the provisions of this national technical approval must be confirmed for every factory by means of a certificate of conformity based on factory production control and regular third-party monitoring, including initial type-testing of the humidity-variable vapour retarder membrane in accordance with the following provisions.

The manufacturer of the humidity-variable vapour retarder membrane must appoint a recognised certification body and a recognised inspection body for granting of the certificate of conformity and for regular third-party monitoring, including the product testing which must be conducted for these purposes.

The manufacturer must declare that a certificate of conformity has been granted by means of labelling of the construction products with a conformity mark and a statement of their intended purpose.

The certification body is to provide the German Institute for Building Technology with a copy of the certificate of conformity granted by the certification body by way of notification.

2.3.2 Factory production control

Factory production control must be set up and carried out at every manufacturing plant. The term "factory production control" refers to the continuous monitoring of production to be carried out by the manufacturer by which the manufacturer ensures that the construction products that it manufactures comply with the provisions of this national technical approval.

Factory production control shall include the measures listed below as a minimum, which are to be carried out at least once a week:

- Testing of the resistance to tear propagation as per Section 2.1.3
- Testing of the initial values of tensile elongation behaviour as per Section 2.1.4.2
- Testing of the mass per unit area as per Section 2.1.1

Further details regarding factory production control are to be specified in the monitoring agreement.

The results of factory production control are to be recorded and evaluated. These records must include at least the following information:

- Designation of the construction product or of the raw material and its constituents
- Type of control or testing
- Date of manufacture and of testing of the construction product or of the raw material or constituents
- Result of controls and testing and, if appropriate, comparison with requirements
- Signature of the person responsible for factory production control

These records are to be kept for at least five years and are to be submitted to the inspection body appointed for third-party monitoring. Upon request, these records are to be submitted to the German Institute for Building Technology and to the highest relevant construction supervision authority.

In the event of an unsatisfactory test result, the manufacturer must immediately implement the measures necessary to rectify the shortcoming. Construction products that do not meet the requirements are to be handled in such a manner as to exclude any possibility of these products being mixed up with products that do conform. After rectification of the shortcoming, the relevant test is to be repeated immediately, if technically possible and if necessary in order to verify that the shortcoming has been rectified.



2.3.3 Third-party monitoring

Factory production control must be regularly checked by third-party monitoring at least once a year.

Initial type-testing of the humidity-variable vapour retarder membrane is to be carried out as part of third-party monitoring; samples may also be taken here for random inspections. Taking samples and testing are the responsibility of the recognised inspection body. The following must be tested as a minimum:

- The initial values of the s_d values as per Section 2.1.2
- The resistance to tear propagation as per Section 2.1.3
- The initial values of tensile elongation behaviour as per Section 2.1.4.2
- The mass per unit area as per Section 2.1.1

The s_d values and the tensile elongation behaviour after artificial aging as per Sections 2.1.2 or 2.1.4.3 are to be tested after four years or else, at the latest, before extension of the national technical approval.

The results of the certification and third-party monitoring must be kept for at least five years. Upon request, the certification body or inspection body is to submit these results to the German Institute for Building Technology and to the highest relevant construction supervision authority.

3 Provisions for condensation protection

DIN 688002:201202, in connection with DIN EN 15026:2007-07 and the WTA information sheets 6-1-01/D:2002 and 6-2-01/D:2014, applies for the verification of the condensation protection of timber constructions that use the INTELLO PLUS and INTELLO humidity-variable vapour retarder membranes.

Verification of the structures is to be carried out using hygrothermal simulation in accordance with DIN EN 15026:2007-07 using the initial values of the s_d values as per Table 1.

The s_d values are evaluated as a function of the relative humidity by carrying out linear interpolation between the three individual values. Horizontal extrapolation is carried out between 0% r.h. and the dry range value at 25% r.h. by using the dry range value. Extrapolation is carried out in an analogous manner between the average relative humidity of the highest humidity range value and the point at 100% r.h.

Conservative values of parameters are to be used in the simulation with regard to the structure type, the characteristic values of construction materials, and the construction and climate-related framework conditions (e.g. colour of the roof covering, location, shading).

4 Provisions for implementation

DIN 68800-2:2012-02 must be observed when implementing timber constructions with the INTELLO and INTELLO PLUS humidity-variable vapour retarder membranes.

The INTELLO and INTELLO PLUS humidity-variable vapour retarder membranes are to be protected against UV radiation.