



# Isover VARIO® XtraSafe

Unique intelligent vapour barrier

## TECHNICAL SPECIFICATION

Isover VARIO® XtraSafe vapour barrier was developed as a polyamide based foil, which, apart from being a vapour barrier, also has a variable equivalent diffusion  $s_d$  thickness, providing for the control of the construction moisture.

## APPLICATION

Isover VARIO® XtraSafe vapour barrier can be used in all kinds of wall, ceiling and roof structures. Its use is especially advisable, if it is required to reduce dissipation of heat from the interior (air tightness) and stress the constructions are exposed to due to humidity migration from interior to exterior. Due to variable = adaptable vapour permeability according to ambient conditions (ambient temperature relative humidity), the vapour barrier Isover VARIO® XtraSafe maintains the stability of the construction moisture conditions. In summertime it supports drying of the interior moisture, it contributes significantly to the optimization of moisture conditions in timber structures, protecting them against degradation caused by increased humidity (moulds). In wintertime, on the other hand, it protects constructions against higher relative humidity in the interior. The vapour barrier Isover VARIO® XtraSafe, compared to the standard vapour barrier Isover VARIO® KM DUPLEX has a higher value of an equivalent diffusion  $s_d$  thickness (0,3 - 25 m).

These properties are advantageous in new buildings and they also have a positive effect in timber buildings and unaired perimeter structures vapour tight on the exterior side. As regards the existing buildings, it protects the construction against substantial changes in the cycle of humidity variation in the course of the year and eliminates increased moisture stress. The system can also be used advantageously when restoring thermal insulation and other layers of an existing roof structure, without the requirement of an access from the occupied interior. This means that the vapour barrier can be laid over the rafters from the outside (on the external side of the

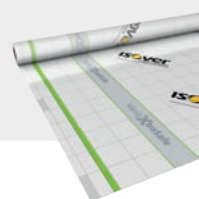
inner cladding). The vapour barrier is laid parallel with the eaves edge with 100 mm overlap joined by VARIO® XtraTape adhesive tape and attached by staples in timber structures, the joints being secured by wooden battens. It can also be attached to metal structures using Isover VARIO DS sealant. Isover VARIO® XtraSafe also comprises an adhesive web working as a Velcro tack when in contact with wooden rafters. The system of Isover VARIO® vapour barrier contributes to the exchange of air between the heated and unheated areas and influences the overall energy balance of buildings. The maximum efficiency of variable diffusion permeability can be ensured using an interior cladding with the equivalent diffusion  $s_d$  thickness of approx. 2 m. The vapour barrier is not suitable for buildings with high moisture stress. If this is the case, it is recommended to consult a construction physics expert regarding a suitable vapour barrier system. When complying with the conditions of construction design, realization and thermal calculation, the vapour barrier life span is 50 years. The material is recyclable.

## PACKAGING, TRANSPORT, WAREHOUSING

Isover VARIO® XtraSafe has package in 1,5 m long rolls. By transporting may not be any mechanical damage of product, stocking at dry place.

## BENEFITS

- adaptable protection against air humidity and condensate
- variably diffusion permeable - water vapour permeability
- environmentally friendly and hygienic
- together with sealing and adhesive tapes creates a water vapour barrier system
- easy formability and adaptability in details
- enhanced adhesion to wooden constructions by an adhesive web



## DIMENSIONS AND PACKAGING

Thickness	[mm]	0.20
Dimensions	[mm]	40 000 × 1 500
Packaging in box	[m <sup>2</sup> ]	60
Weight	[kg]	5.7

## TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	
<b>Geometric shape</b>				
Thickness $d$	[mm]	-	cca 0.20	
Surface weight	[g·m <sup>-2</sup> ]	-	cca 80	
Tensile strength	[N]	EN 13 984	≥ 110 N/50 mm	
Resistance to nail puncture (lengthwise and crosswise)	[N]	EN 13 984	≥ 50	
<b>Fire safety properties</b>				
Reaction to fire class	[-]	Declaration according to EN 13501-1	E	
<b>Other properties</b>				
Dynamic equivalent diffusion $s_d$ thickness	[m]	EN ISO 12572	0.3 to 25	
Static equivalent diffusion $s_d$ thickness	[m]	EN 1931	11.04	
Temperature resistance	[°C]	-	-40 to +80	
UV-resistance	[-]	-	1 month (< 55 MJ/m <sup>2</sup> )	
<b>Environmental properties / impacts</b>				
Volume of Pre-consumer recycled content for production	[%]	ČSN ISO 14021	-	
Volume of Post-consumer recycled content for production	[%]	ČSN ISO 14021	-	
Non-hazardous waste disposed <sup>1)</sup>	[kg /FU <sup>2)</sup> ]	EN 15804+A1, ČSN ISO 14025	2.3E-02	NHWD
Total use of non-renewable primary energy resources	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	6.5	PENRT
Global Warming Potential	[kg CO <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	4.7E-01	GWP
Ozone Depletion	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	1.6E-08	ODP
Acidification potential	[kg SO <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	1.4E-03	AP
Eutrophication potential	[kg PO <sub>4</sub> <sup>3-</sup> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	6.2E-04	EP
Photochemical ozone creation	[kg C <sub>2</sub> H <sub>4</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	2.5E-04	POPC
Abiotic depletion potential for non-fossil resources	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	9.9E-09	ADP-elements
Abiotic depletion potential for fossil resources	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	10	ADP-fossil fuels

<sup>1)</sup> In this case it is standard mixed waste.

<sup>2)</sup> FU = functional unit (1 m<sup>2</sup> of airtight membrane for live cycle phases A1-A3).

## RELATED DOCUMENTS

- Prohlášení o vlastnostech Vario-001

4. 7. 2019 The information is valid up to date of publishing. The manufacturer reserves right to change the data.