

# Isover NF 333

## Stone wool insulation



### TECHNICAL SPECIFICATION

Insulating slabs made of Isover mineral wool with perpendicular fibres. The production is based on the defibring method used for the mineral composition of the melt with other additives and ingredients. The mineral fibres that are produced processed into the final slab shape on the production line. The entire surface of the fibre is hydrophobic and the fibres are perpendicular to the wall plane. The slabs in the construction have to be suitably protected (layers of the contact wall insulation system).



### APPLICATION

Isover NF 333 slabs are suitable for ETICS facade systems where the insulating slabs are fully glued on a sufficiently flat and bearing surface. The layers of contact insulating systems are applied on the slabs: bond, reinforcement grid, penetration, plaster, and paint. Smaller slab size and perpendicular orientation of fibres enables matching to curved surfaces. Furthermore, there is the possibility to regrind slab surface for keeping its face smooth. There are lesser requirements for mechanical bond due to full gluing (see manufacturers of the ETICS system anchors for recommended bond plans). Upon agreement can be produced thickness. insulation up to 340 mm.

### PACKAGING, TRANSPORT, WAREHOUSING

Insulation slabs are packed in PE film in loose bales or as bales on pallet. Isover NF 333 is supplied as standard on EPS beams including interleaving beams. Thicknesses above 300 mm are only available as loose slabs on a pallet.

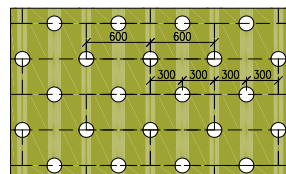
### BENEFITS

- Up to 40% faster workability because of the slab dimensions 1200 × 333 mm compared to normal strips and low consumption of anchors.
- High tensile strength (possibility of gluing heavy ceramic facings, possibility of use on ceilings).
- Possibility of bending the slabs on round walls.
- Lower demands on mechanical anchoring.
- Good thermal insulation performance.
- Fire resistance.
- Low vapour resistance – good water vapour penetrability.
- Environment-friendly and hygienic.
- Completely hydrophobic.
- Excellent acoustic properties in terms of noise absorption.
- Long life span.
- Resistant to wood-destroying pests, rodents, and insects.
- Easy workability – can be cut, drilled into, glued, brushed, etc.

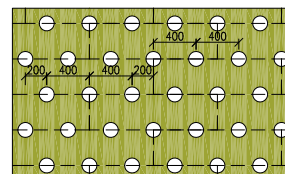
### ANCHORING

**Anchoring scheme according to TZÚS recommendations (Technical and Testing Institute) and CZB (Guild for Building Insulation).**

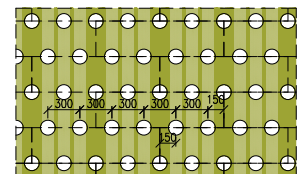
As a rule, it is anchored with facade dowels to with an extension plate  $\varnothing$  140 mm or space-formed dowels which allow to provide the anchor point with a plug.



5 pcs/m<sup>2</sup>



7,5 pcs/m<sup>2</sup>



10 pcs/m<sup>2</sup>

### DIMENSIONS AND PACKAGING

Thickness [mm]	Length × width [mm]	Volume per package			Quantity per pallet [pcs]	Quantity per pallet [m <sup>2</sup> ]	Declared thermal resistance R <sub>b</sub> [m <sup>2</sup> ·K·W <sup>-1</sup> ]
		[pcs]	[m <sup>2</sup> ]	[m <sup>3</sup> ]			
30	1200 × 333	20	8.00	0.240	12	95.99	0.75
40	1200 × 333	15	6.00	0.240	12	71.99	1.00
50	1200 × 333	12	4.80	0.240	12	57.59	1.25
60	1200 × 333	8	3.20	0.192	15	48.00	1.50
80	1200 × 333	6	2.40	0.192	15	36.00	2.00
100	1200 × 333	6	2.40	0.240	12	28.80	2.50
120	1200 × 333	4	1.60	0.192	15	24.00	3.00
140	1200 × 333	3	1.20	0.168	18	21.60	3.50
150	1200 × 333	4	1.60	0.240	12	19.20	3.75
160	1200 × 333	3	1.20	0.192	15	18.00	4.00
180	1200 × 333	3	1.20	0.216	15	18.00	4.50
200	1200 × 333	3	1.20	0.240	12	14.40	5.00
220	1200 × 333	2	0.80	0.176	18	14.40	5.50
240	1200 × 333	2	0.80	0.192	15	12.00	6.00
260*	1200 × 333	2	0.80	0.208	15	12.00	6.50
280*	1200 × 333	1	0.40	0.112	27	10.80	7.00
300*	1200 × 333	2	0.80	0.240	12	9.60	7.50

\* Consult the producer for terms of delivery. Upon agreement can be produced thickness. Insulation up to 340 mm.

# Isover NF 333

Stone wool insulation

## TECHNICAL PARAMETERS

Parameter	Unit	Methodology	Value	Designation code					
<b>Geometric shape</b>									
Length <i>l</i>	[% , mm]	EN 822	±1%						
Width <i>b</i>	[% , mm]	EN 822	±1,5%						
Thickness <i>d</i>	[% , mm]	EN 823	-1 % or -1 mm <sup>1)</sup> and +3 mm	Class of thickness tolerances T5					
Deviation from squareness of the edge on length and width <i>S<sub>e</sub></i>	[mm·m <sup>-1</sup> ]	EN 824	2						
Deviation from flatness <i>S<sub>max</sub></i>	[mm]	EN 825	5						
Relative change in length $\Delta\epsilon_l$ , in width $\Delta\epsilon_b$ , in thickness $\Delta\epsilon_d$	[%]	EN 1604	1	Dimensional stability under the specified temperature and humidity conditions DS(70/90)					
<b>Thermal technical properties</b>									
Declared value of thermal conductivity coefficient $\lambda_b$ <sup>2)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	Declaration according to EN 13162+A1 Measurement according to EN 12667	0.040						
Design thermal conductivity $\lambda_d$ <sup>3)</sup>	[W·m <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	0.042						
Specific heat capacity <i>c<sub>p</sub></i>	[J·kg <sup>-1</sup> ·K <sup>-1</sup> ]	ČSN 73 0540-3	800						
<b>Mechanical properties</b>									
Compressive stress at 10% deformation $\sigma_{10}$	[kPa]	Declaration according to EN 826	40	Declared level of compressive stress at 10% deformation CS(10)40					
Tensile strength perpendicular to faces $\sigma_{nt}$	[kPa]	Declaration according to EN 1607	80	Declared level of tensile strength perpendicular to faces TR80					
Shear strength $\tau$	[kPa]	Declaration according to EN 12090	20 <sup>5)</sup>	Level of shear strength SS20					
The point load at a given deformation <i>F<sub>p</sub></i>	[N]	Declaration according to EN 12430	1000 <sup>5)</sup>						
<b>Fire safety properties</b>									
Reaction to fire class	[-]	Declaration according to EN 13501-1+A1	A1						
Maximum temperature for use	[°C]		200						
Melting temperature <i>t<sub>f</sub></i>	[°C]	DIN 4102 part 17	≥ 1000						
<b>Hydrothermal properties</b>									
Short-term water absorption <i>W<sub>p</sub></i>	[kg·m <sup>-2</sup> ]	Declaration according to EN 13162+A1 Measurement according to EN 1609	1	Declared level for short-term water absorption WS					
Long-term water absorption by partial immersion <i>W<sub>ip</sub></i>	[kg·m <sup>-2</sup> ]	Declaration according to EN 13162+A1 Measurement according to EN 12087	3	Declared level for long-term water absorption by partial immersion WL(P)					
Water vapour diffusion resistance factor $\mu$	[-]	Declaration according to EN 13162+A1 Measurement according to EN 12086	1	Declared value for water vapour diffusion resistance factor MU1					
<b>Other properties</b>									
Density	[kg·m <sup>-3</sup> ]	EN 1602	80-90						
<b>Acoustic properties<sup>4)</sup></b>									
Practical sound absorption coefficient $\alpha_p$	[-]	EN 13162+A1 EN ISO 11654 Measurement according to EN ISO 354	Level of practical sound absorption coefficient				AP		
		Frequency	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	
		Thickness	60 mm	0.20	0.70	1.00	1.00	0.95	0.95
			100 mm	0.45	1.00	1.00	1.00	1.00	1.00
140 mm	0.65	1.00	1.00	1.00	1.00	1.00			
Weighted sound absorption coefficient $\alpha_w$	[-]	EN ISO 11654 (for NRC according ASTM C423)	Level of weighted sound absorption coefficient				AW		
		Single number value	$\alpha_w$				NCR		
		Thickness	60 mm	0.95	-	-	-	0.90	
			100 mm	1.00	-	-	-	1.00	
140 mm	1.00	-	-	-	1.00				
Specific air flow resistivity <i>r</i>	[mm] [kPa·s·m <sup>-2</sup> ]	EN 13162+A1 Measurement according to EN ISO 9053-1	Level of air flow resistivity						
		100	120 <sup>5)</sup>	140 <sup>5)</sup>	150 <sup>5)</sup>	160	180 <sup>5)</sup>	200 <sup>5)</sup>	
		11.5	11.5	11.5	11.5	11.5	11.5	11.5	
		Value of dynamic rigidity				SD			
Dynamic rigidity <i>s'</i>	[mm] [MN·m <sup>-2</sup> ]	EN 13162+A1 Measurement according to ČSN ISO 9052-1 (idt. EN 29052-1)	Value of dynamic rigidity				SD		
		100	120 <sup>5)</sup>	140 <sup>5)</sup>	150 <sup>5)</sup>	160	180 <sup>5)</sup>	200 <sup>5)</sup>	
		81.5	73.4	65.4	61.3	57.3	49.2	41.2	
<b>Environmental properties/impacts</b>									
Volume of pre-consumer recycled content for production <sup>6)</sup>	[%]	ČSN ISO 14021	67						
Volume of post-consumer recycled content for production <sup>6)</sup>	[%]	ČSN ISO 14021	0						
Non-hazardous waste disposed <sup>7)</sup>	[kg /FU <sup>8)</sup> ]	EN 15804+A1, ČSN ISO 14025	2.51	NHWD					
Total use of non-renewable primary energy resources	[MJ /FU]	EN 15804+A1, ČSN ISO 14025	133	PENRT					
Global warming potential	[kg CO <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	12.7	GWP					
Ozone depletion	[kg CFC 11 ekv. /FU]	EN 15804+A1, ČSN ISO 14025	6.65E-07	ODP					
Acidification potential	[kg SO <sub>2</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0898	AP					
Eutrophication potential	[kg PO <sub>4</sub> <sup>3-</sup> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.00846	EP					
Photochemical ozone creation	[kg C <sub>2</sub> H <sub>4</sub> ekv. /FU]	EN 15804+A1, ČSN ISO 14025	0.0132	POPC					
Abiotic depletion potential for non-fossil resources	[kg Sb ekv. /FU]	EN 15804+A1, ČSN ISO 14025	2.44E-07	ADP-elements					
Abiotic depletion potential for fossil resources	[MJ (Calorific value) /FU]	EN 15804+A1, ČSN ISO 14025	123	ADP-fossil fuels					

<sup>1)</sup> Value with greatest numerical tolerance.

<sup>2)</sup> Declared values were set under the following conditions: (reference temperature 10 °C, humidity  $u_{rel}$  reached by drying) according to EN ISO 10456.

<sup>3)</sup> Valid for typical use in construction with risk of condensation. In the case of construction without any risk of condensation, it is possible to use the declared value of thermal conductivity.

<sup>4)</sup> Informative non-declared value beyond the scope of CPR, obtained by specific tests. <sup>5)</sup> Interpolated and extrapolated values. <sup>6)</sup> According to EN ISO 14021, part 7.8 - Recycled content.

<sup>7)</sup> In this case it is standard mixed waste. <sup>8)</sup> FU = functional unit (1 m<sup>2</sup> of insulation at a thickness of 120 mm for life cycle phases A1-A3).

## RELATED DOCUMENTS

- Certificate of constancy of performance
- Declaration of Performance CZ0001-023
- Quality class A
- Environmental Product Declaration
- ISO 9001, ISO 14001, ISO 45001, ISO 50001



1/8/2023 The information provided herein is valid at the time of publication. The manufacturer reserves the right to change the data.