ETICS Mineral Wool Insulation Board 3522

WDVS Mineralwolle-Dämmplatte 3522

MW 036 WAP-zg, non-combustible, sound insulation enhancing, with increased tear-off strength and two-layer characteristics

Properties

Non-combustible mineral wool insulation board made of mineral raw materials according to DIN EN 13162, WAP application type in accordance with DIN 4108-10. High thermal insulation, water-repellent, diffusion-open, dimensionally stable if exposed to temperature variations, sound insulation enhancing, aging resistant and chemically neutral. With two-layer characteristics i.e. the wall side is soft/flexible, the outside is hard/compacted. For safe and correct installation the outside is marked with an imprint.

Field of Application

Mineral wool insulation boards, tested in the system build-up, for use in the Brillux ETIC system. For facade insulations with 6 cm insulation board thickness in the bonding and anchoring process on buildings for which “Nichtbrennbarkeit” (non-combustibility) is desired or required.

Material description

Building material class:
Euroclass A1 in accordance with DIN EN 13501-1
Application type:
WAP-zg (old WV) in accordance with DIN 4108-10
Rated thermal conductivity λ:
0.036 W/(m·K)
according to DIN V 4108-4
Temperature behavior
can be used up to 150°C, melting point > 1,000°C
Water vapor diffusion resistance coefficient μ:
1.0 as per EN 12086
Tensile strength, perpendicular to board surface:
≥ 5 kPa according to DIN EN 1607
Length tolerance:
± 5 mm
Width tolerance:
± 2 mm
Thickness tolerance:
+3/-1 mm
Squareness:
2 mm to 50 cm leg length, corresponds to 4 mm/m
Edge design:
blunt edges

Insulation board formats:
Insulation board thickness 6.0 cm:
Length: 80 cm
Width: 62.5 cm
Insulation board thickness ≤ 5.0 cm:
Length: 120 cm
Width: 40.0 cm

Insulation board thickness / Packaging:

Insulation-board thickness	m² per pack
2,0 cm [1)]	ca. 5,76 m²
3,0 cm [1)]	ca. 3,84 m²
4,0 cm [1)]	ca. 2,88 m²
5,0 cm [1)]	ca. 1,92 m²
6,0 cm	ca. 2,00 m²

[1)] Insulation board thickness ≤ 5.0 cm is only suitable for insulating small areas e.g. reveals. Also note the different board format in this context.

Use

Substrate preparation
The substrate must be clean, solid, dry, stable, load-bearing and free from any efflorescence, sintered layers and separating agents. The surface must be pretreated according to the specific conditions and requirements.

Remove projecting mortar or concrete parts mechanically. Evenness of the substrate must be in accordance with DIN 18202 "Tolerances in building construction - Structures, Table 3, Evenness tolerances for unfinished walls".
Mechanically eliminate greater substrate unevenesses or compensate them with suitable plaster mortar in accordance with DIN EN 998-1, category CS II, CS III or CS IV.
Minor unevenness of the substrate may be leveled out by the glue layer. Check existing plaster for solidity and hollow areas, check existing coats for their bearing capacity. Completely remove non-bearing plasters and coatings. Substrates can be primed, if necessary, with Lacryl Deep-Penetrating Primer LF 595. Compatibility of any existing coats with the gluing mortar must be verified by an expert. Also see VOB Part C, DIN 18345, Section 3.

Gluing insulation boards
ETICS hard foam insulation boards can be glued to the pretreated substrate (gluing technique using ETICS Powder Adhesive 3550 or ETICS Powder Adhesive VZ 3600 or ETICS Adhesion And Reinforcement Mortar L 3500) from bottom to top, in alignment, level and without offset. Fix the insulation board with the marked side facing out.

Apply the adhesive using the edge-beading lump method. Apply a bead to the edge on the back of the insulation board and lumps of adhesive to the surface (at least 3 places). Initially apply a thin coat of adhesive and press into the surface (press-filling) and then add the required amount of adhesive.

To avoid thermal bridges, ensure a tight joint connection and a proper, adhesive-free implementation of the insulation board joints. It is necessary to dovetail the insulation boards on all corners of the building (offset joints) and ensure a vertical and flush corner formation. Cross joints must generally be avoided.

Anchoring of the insulation boards
After drying, the ETICS Mineral Wool Insulation Boards 3522 must be anchored with approved ETICS anchors. In this context, please comply with the information on anchoring in the following.

Reinforcement
To reinforce ETICS Mineral Wool Insulation Board 3522 use ETICS Adhesion and Reinforcement Mortar L 3500, ETICS Powder Adhesive 3550 or ETICS Powder Adhesive VZ 3600. Apply the ETICS Reinforcement Fiber Mesh 3797 without bubbles and folds, insert the individual fabric sheets into the wet reinforcement layer with an overlap of approx. 10 cm and then cover wet in moist with a second layer of reinforcement plaster.

Further information on the reinforcement formation can be found in the "ETICS Reinforcement Fiber Mesh 3797" Data Sheet.

Cutting insulation boards to size
The individual insulation boards can be cut to size with a cutter or a saw. Further information can be found in the Brillux tool product range

Bridging joint areas
On composite construction (e.g. concrete-skeleton construction with brickwork infill), facade cracks or joints on prefabricated buildings, bridge the transition or joint area by at least 10 cm with the insulation board. Do not arrange the board joints congruently. The existing expansion joints in the substrate are to be adopted as is.

Insulation board arrangement in the case of an offset in the facade
Do not mount the insulation board joints directly above a substrate offset. The insulation board must be cut to appropriate size (min. width 10 cm).

Storage

Store in a dry place, do not expose to direct weather impact.

Anchoring of the ETICS Mineral Wool Insulation Board 3522

Please note!
The insulation board thicknesses ≤ 5.0
cm are only admissible for insulating small surfaces e.g. reveals.
The anchoring information only applies to the use of the ETICS Mineral Wool Insulation Boards 3522 as facade insulation with an insulation thickness of 6.0 cm and flush-surface anchoring.

The ETICS Mineral Wool Insulation Board 3522 with an insulation thickness of 6.0 cm must be anchored to all substrates in a statically relevant manner in accordance with the general building inspectorate approval no. Z-33.43-257 when used as facade insulation. Approved ETICS anchors must be used for this purpose.
A higher absorbable wind load and therefore a lower number of anchors may result from using the ETICS Anchor Plate 3711, Type VT 90 (diameter 90 mm) in individual cases.

The following information is always based on a surface-flush anchor under the fabric. The ETICS anchor to be used and the resulting anchoring depth are dependent on the substrate.
A "mattress effect" (due to screwing the anchor in too deeply) must be avoided.
Substrate unevennesses of up to max. 2 cm/m can be bridged with statically relevantly anchored ETICS insulation boards.

Anchor selection for statically relevant anchoring in accordance with the category of use

Category of use	ETICS Sunk Anchor STR U 2G 3811 [1)]	WDVS Impact Anchor H1 eco 3856 ETA [1)]
(A) Standard concrete	X	X
(B) Solid bricks	X	X
(C) Hollow/perforated bricks	X	X
(D) Lightweight aggregate concrete	X	
(E) Aerated concrete	X	

[1)] Only in surface-flush anchoring in conjunction with ETICS Anchor Plate 3711, Type VT 90.

Please follow the instructions on anchor application, anchor lengths and approved anchoring substrates with anchor load classes in the data sheets of the respective ETICS anchor.

Calculating wind load

The wind loads for the statically relevant anchoring must be calculated in accordance with DIN EN 1991-1-4/NA. The anchor quantities can be stipulated in line with the information below in accordance with calculated max. wind loads depending on the anchor load class.
Further information on calculating the wind loads is available in the "ETICS Wind Loads 5b05" Technical Information Sheet.

Calculating the anchor quantities

Across-the-board assumption of anchor quantities
The anchor quantity can also be stipulated across the board for buildings with a rectangular layout with the aid of Table 1 below as a function of the building height by solely determining the wind zone.
A detailed calculation of the wind load must be performed for all other buildings. This results in a reduction of the number of anchors in some cases.

In accordance with the determined wind load
The number of anchors for the statically-relevant anchoring of the ETICS Mineral Wool Insulation Boards 3522 can be calculated by using the calculated wind loads given in Table 2 below.

Table 1
Across-the-board anchor quantities for statically-relevant anchoring of the ETICS Mineral Wool Insulation Boards 3522 as a function of the building height

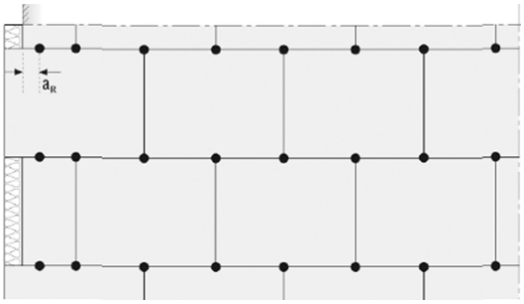
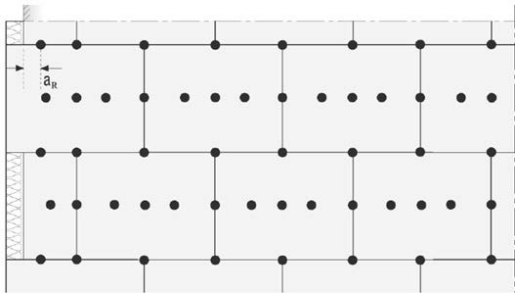
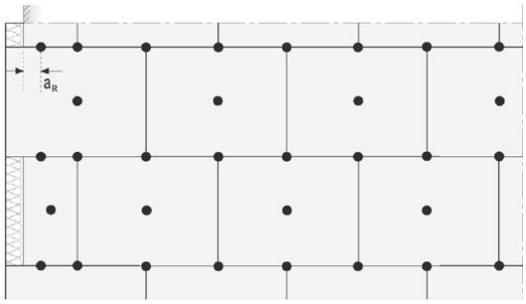
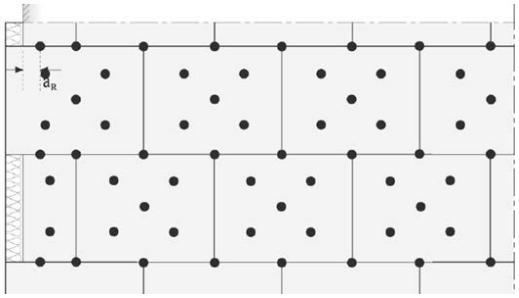
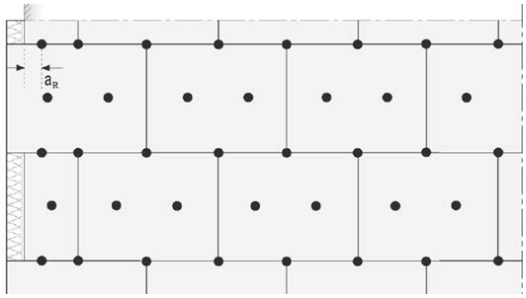
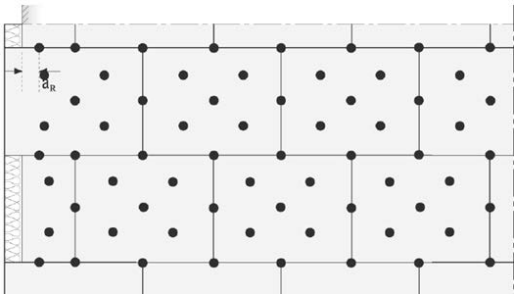
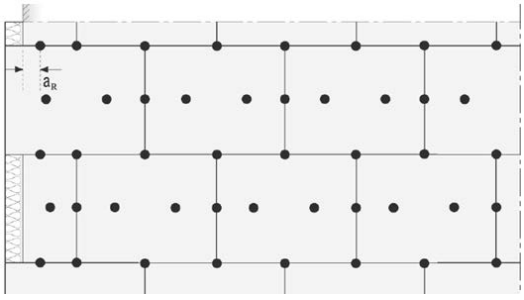
Required number of anchors per m² (surface and edge area) depending on the calculated wind zone and the insulation thickness [1)].

Building height	≤ 10 m	> 10 m to ≤ 18 m	> 18 m to ≤ 25 m
Insulation thickness [mm]	60–200	60–200	60–200
Anchor load class [kN]	≥ 0,167	≥ 0,167	≥ 0,167
Wind zone 1 Inland	6	8	8
Wind zone 2 Inland	8	10	10
Wind zone 2 Coasts and islands of the Baltic sea	10	12	14
Wind zone 3 Inland	10	12	14
Wind zone 3 Coasts and islands of the Baltic Sea	12	14	16
Wind zone 4 Inland	12	14	16
Wind zone 4 Coasts and islands of the Baltic sea	16	2)	2)
Wind zone 4 Islands of the North Sea	3)	3)	3)

1) Anchor arrangement in accordance with the overview below. For surface-flush anchoring with a standard anchor plate diameter of 60 mm. If the ETICS Anchor Plate 3711, Type VT 90 (diameter 90 mm) is also used, the number of anchors will not be lower.
2) No general information possible due to the excessive wind load calculated.
3) In accordance with the standard, the simplified calculation procedure cannot be used in this case. Precise calculations are required based on the calculated wind load.

In the across-the-board assumption of anchor quantities presented here, more anchors may be used than would be required following a precise calculation.

Anchor arrangements for the statically-relevant anchoring of the ETICS Mineral Wool Insulation Boards 3522

Number of anchors *Anchor/m²*	Anchor arrangement	Number of anchors *Anchor/m²*	Anchor arrangement
4		12	
6		14	
8		16	
10			

Differing anchor arrangements are possible, but generally result in higher anchor quantities/m². In this context, the Brillux Consulting Service should be consulted.
The minimum distance (a_r) to building corners must be complied with. Also refer to "Edge distance" under Notes.

Table 2
Load-bearing capacity table for statically-relevant anchoring of the ETICS Mineral Wool Insulation Board 3522 with only a 60 mm insulation thickness *)

Anchor plate	Insulation board thickness [mm]	Anchor load class [2] [kN]	Maximum absorbable wind load [3] [kN/m²]	Number of anchors Anchor/m²
Standard Ø 60 mm	≥ 60	≥ 0,150	-0,561	**4**
VT 90/VT 2G [1]	≥ 60	≥ 0,167	-0,653	
Standard Ø 60 mm	≥ 60	≥ 0,150	-0,842	**6**
VT 90/VT 2G [1]	≥ 60	≥ 0,150	-0,842	
Standard Ø 60 mm	≥ 60	≥ 0,150	-1,123	**8**
VT 90/VT 2G [1]	≥ 60	≥ 0,150	-1,123	
Standard Ø 60 mm	≥ 60	≥ 0,150	-1,348	**10**
VT 90/VT 2G [1]	≥ 60	≥ 0,150	-1,368	
Standard Ø 60 mm	≥ 60	≥ 0,150	-1,550	**12**
VT 90/VT 2G [1]	≥ 60	≥ 0,150	-1,598	
Standard Ø 60 mm	≥ 60	≥ 0,150	-1,730	**14**
VT 90/VT 2G [1]	≥ 60	≥ 0,150	1,814	
Standard Ø 60 mm	≥ 60	≥ 0,150	-1,888	**16**
VT 90/VT 2G [1]	≥ 60	≥ 0,150	-2,016	

*) This sometimes results in higher load-bearing capacity values in individual cases. Anchor arrangement in accordance with the overview above.

[1] Only for surface-flush anchoring in conjunction with the ETICS Anchor Plate 3711, Type VT 90 (diameter of 90 mm).

[2] The determined load for each anchor is decisive for lower load-bearing capacity values.
[Load-bearing capacity for each anchor (calculated pull-out value) x number of anchors = max. absorbable wind load]

[3] Consult the Brillux Consulting Service in the event of even higher wind loads (up to -2,200 kN/m²).

Notes

Cables on the exterior wall
If cables are installed on the exterior wall, it is important to mark their paths on the insulation board to avoid damage (resulting from an additional mechanical mounting) to them .

Reveal formation
In order to form the insulation in the reveal area, it is necessary to vary the insulation board thickness such that the frames of windows and doors of the same width remain visible and the edges of the reveals of structural openings that are located one above the other are aligned vertically.

Protect and rework insulation boards for a short period of time
Protect the insulation boards glued to the facade from e.g. the rain and cover with reinforcement plaster for a short period of time.

Size of the anchor plate
The stipulated anchor quantities apply to anchoring the Mineral Wool Insulation Boards 3522 with statically relevant anchors with a standard anchor plate dimension (diameter of = 60 mm) or in conjunction with the ETICS Anchor Plate 3711 Type VT 90 (diameter of 90 mm).

Anchoring substrate
If the anchoring base on the object cannot be allocated to any of the listed standardized construction materials, tensile strength tests must be conducted on the object for assessment and anchor selection purposes.

Edge distance c_{min}
Depending on the substrate, a minimum distance to the building corners must be adhered to for the anchoring to ensure that the anchor to be mounted can be adequately anchored and the edge area does not break off. The axial and edge distances (a_r) amount to at least 10 cm.

Anchoring on three-layer exterior wall elements (prefabricated construction)
Please consult the Brillux Advisory Service for anchoring on three-layer exterior wall elements (prefabricated construction). They are generally attached to the weather shell. The minimum layer thickness of the weather shell must be 40 mm. The concrete used must at least correspond to the quality class C12/15.

Approval
Type Coverrock 036, National Technical Approval Z-33.4–1571 (60 mm only).

Further specifications
Follow the instructions on the data sheets of the products used.

Remark

This Data Sheet has been prepared taking into account the current applicable German laws, standards, specifications and codes of practice. All details have been translated from the current German version. The contents do not form a legal contract. The user and/or the purchaser is not released from the responsibility of checking that our products are suitable for the proposed use. In addition our Terms of Conditions and Payment apply.

When a new version of this Data Sheet appears with updated information the previous version no longer applies.
The current Version of this information sheet can be obtained at Brillux. Version I

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Figure 1
Cracks, joints or transitions e.g. concrete skeleton structures with brickwork filling and panel constructions must be bridged by the insulation board by at least 10 cm.

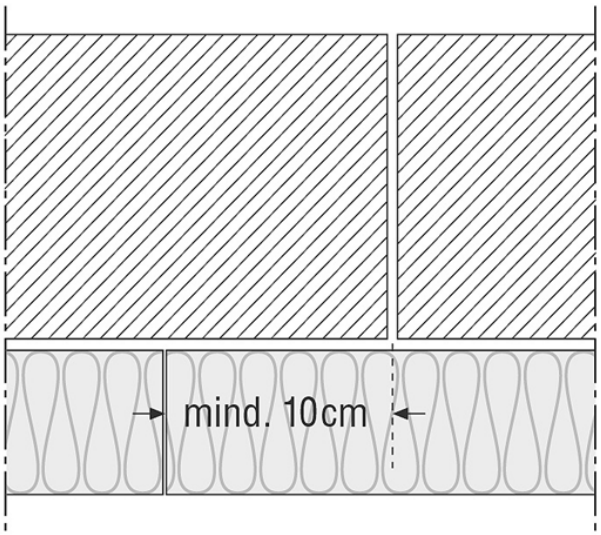

Figure 2
Ensure that the insulation board joint is not directly above a substrate offset. Cut the insulation board to size with a minimum width of 10 cm.

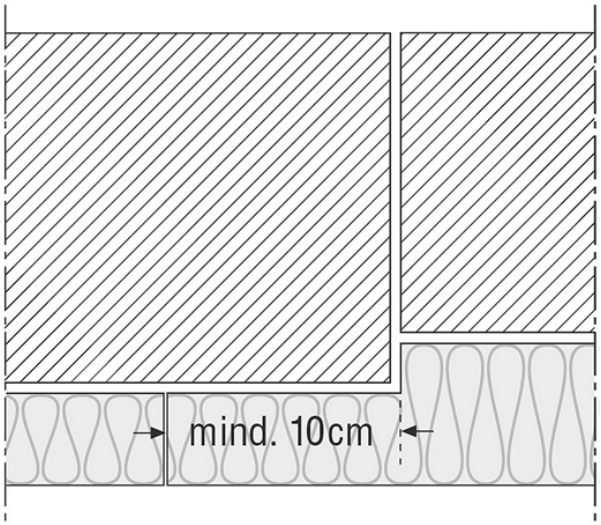

Figure 3
ETICS Mineral Wool Insulation Board 3522, MW 036 WAP