

Thermowall® WDVS

WHOLESOME. DURABLE. EFFICIENT.

THE ECOLOGICAL EXTERNAL THERMAL INSULATION COMPOSITE SYSTEM

No ETICS offers more freedom
in the choice of render manufacturer



Trades

A complete system solution from

GUTEX
NATURALLY MADE FROM WOOD





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1. SYSTEM SOLUTION

GUTEX Thermowall® – good for the occupants, good for the building

A good external thermal insulation-render system should do more than just protect against the cold in winter, the heat in summer and exterior noise. If it's good, it will provide a wholesome indoor environment, like ours does. GUTEX Thermowall® ETICS consists of a single-ply, homogeneous wood fibre insulation board and render components. It makes houses significantly more energy-efficient. And thanks to its integral moisture management and exceptional diffusion-openness, it keeps the building substance and structure permanently dry, even drying them out. Furthermore, GUTEX Thermowall® defuses tension and movement, including expansion and contraction of different building elements, due to the ideal density spectrum possessed by the insulation boards.

1.1 Main components

1. GUTEX Thermowall®
GUTEX Thermowall®-gf
GUTEX Thermowall®-L*
GUTEX Thermowall® NF
GUTEX Thermowall® Durio
2. GUTEX® Klebe- und Spachtelputz (cementitious dry base coat mortar)
3. GUTEX Universal-Armierungsgewebe (universal fibre reinforcement mesh)
GUTEX Sockelanstrich (foundation paint)
4. GUTEX® Isoliergrund (isolating primer)
5. GUTEX® Combiputz (render)
GUTEX® Combi-Silikonharzputz (silicone render)
GUTEX Durio® Silikonharz-Oberputz (silicone render)
6. GUTEX® Combi-Mineralfarbe (silicate mineral paint)
GUTEX® Combi-Mineralfarbe-PV (silicate paint w. fungicide)
GUTEX Durio® Fassadenfarbe (exterior paint)

* Applied for certification

Endowed by Nature with toughness to resist algae, mould and even impact

Wood fibre's high thermal storage capacity means new exterior wall surfaces stay warm and dry longer, which is bad news for algae, mould and mildew. In fact, sometimes you can even skip using paints with fungicide and algaecides. But that's not all. Besides retaining their beautiful renders longer, the walls are actually longer lasting, because the system is more capable of withstanding impact than most other render-insulation composite systems. The German building materials and physics-testing authorities verify GUTEX Thermowall®'s performance and high degree of compliance with sound building science guidelines. Insulation courses of up to 200 mm in a single installation step are possible.

Choose render products from 13 manufacturers

GUTEX's Z-33.47-660 and Z-33.43-942 certifications (German building authority) for GUTEX Thermowall® wood fibre-based ETICS allow you to use render components from thirteen different manufacturers. Only GUTEX offers you such freedom!



- ➔ Other render systems P. 28
- ➔ Fasteners P. 14 and P. 42
- ➔ More components P. 43 and ff.

1.1.1 Plasterboard technical data

GUTEX Thermowall®					
Joint Type	Butt				Tongue and Groove
Installed on timber studs				●	●
Installed on solid wood substrate	●	●	●	●	●
Installed on composite wood boarding/sheathing			●		●
Sheathing on masonry substrates	●	●			●
Uses as per DIN V 4108-10	Dlzg, DEODs, WABds, WAPzh				
Length (mm)	1250	830	2600	2800	1300
Width (mm)	590	600	1250		600
Nominal thickness (mm)	20/40/ 60/80	100/120/ 140/160	80/100/120		80/100/120/ 140/160
Actual coverage, length x width (mm)					1276/576
Square metres per sheet (m ²)	0.738	0.498	3.25	3.5	0.78
Weight per sheet (kg)	2.4/4.7/ 7.1/9.4	8.0/9.6/ 11.2/12.7	41.6/52.0/ 62.4	44.8/56.0/ 67.2	10.0/12.5/ 15.0/17.5/20.0
Weight per m ² (kg)	3.2/6.4/ 9.6/12.8	16.0/19.2/ 22.4/25.6	12.8/16.0/19.2		12.8/16.0/ 19.2/22.4/25.6
Boards per pallet	224/112/ 70/56	42/32/ 28/24	12/9/8		54/44/36/ 32/28
Weight per pallet (kg)	540.0	320.0	520.0	560.0	560.0
Density (kg/m ³)	~160.0				
Thermal conductivity λ (W/mK) as per German reg.	0.042				
Thermal resistance R (m ² K/W)	0.45/0.95/ 1.40/1.90	2.35/2.85/ 3.30/3.80	1.90/2.35/2.85		1.90/2.35/ 2.85/3.30/3.80
sd-value (m)	0.08/0.16/ 0.24/0.32	0.40/0.48/ 0.56/0.64	0.32/0.40/0.48		0.32/0.40/ 0.48/0.46/0.64
Compressive stress/ strength (kPa)	100				
Tensile strength perpendicular to board surface (kPa)	10				
Short-term water absorption (kg/m ²)	≤ 1.0				
Air flow resistivity (kPa·s/m ²)	100				
Specific heat capacity (J/kgK)	2100				
Fire reaction Euro Class as per DIN EN 1350-1	Euro Class E				

Joint Type	GUTEX Thermowall® NF		GUTEX Thermowall®-gf ¹⁾			
	Tongue and Groove		Butt		Tongue and Groove	
Installed on timber studs	●		●		●	
Installed on solid wood substrate	●		●		●	
Installed on composite wood boarding/sheathing	●		●		●	
Sheathing on masonry substrates	●				●	
Uses as per DIN V 4108-10	Dlzg, DEODs, WABds, WAPzh					
Length (mm)	1800		2600/2800		1300 1800	
Width (mm)	600		1250		600 600	
Nominal thickness (mm)	60		40 60		40 60 60	
Actual coverage, length x width (mm)	1780/580				1276/576 1776/576	
Square metres per sheet (m ²)	1.08		3.25/3.5		0.78 1.08	
Weight per sheet (kg)	10.4		24.1/25.9 36.1/38.9		5.7 8.7 12.0	
Weight per m ² (kg)	9.6		7.4 11.1		7.4 11.1 11.1	
Boards per pallet	34		24 15		108 72 34	
Weight per pallet (kg)	370.0		610.0/650.0 570.0/610.0		650.0 460.0	
Density (kg/m ³)	~160		~185.0			
Thermal conductivity λ (W/mK) as per German reg.	0.042		0.045			
Thermal resistance R (m ² K/W)	1.40		0.85 1.30		0.85 1.30 1.30	
sd-value (m)	0.24		0.12 0.18		0.12 0.18 0.18	
Compressive stress/ strength (kPa)	100		≤ 150			
Tensile strength perpendicular to board surface (kPa)	10		20			
Short-term water absorption (kg/m ²)	≤ 1.0		≤ 1.0			
Air flow resistivity (kPa·s/m ²)	100		100			
Specific heat capacity (J/kgK)	2100		2100			
Fire reaction Euro Class as per DIN EN 1350-1	Euro Class E					

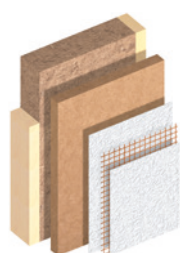
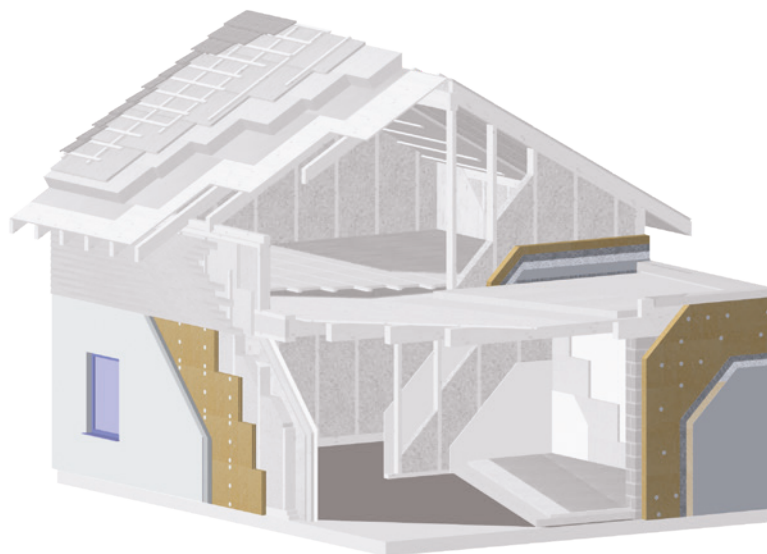
1) Suitable for REI 90 compliance-tested structures.



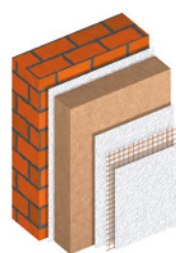
	GUTEX Thermowall®-L*	GUTEX Thermowall® Durio ²⁾
Joint Type	Butt	Tongue and Groove
Installed on timber studs		●
Installed on solid wood substrate	●	●
Installed on composite wood boarding/sheathing	●	●
Sheathing on masonry substrates	●	●
Uses as per DIN V 4108-10	Dlzg, DEOdm, WABdm, WAPzh	Dlzg, DEODs, WABds, WAPzh
Length (mm)	1250	1800
Width (mm)	590	600
Nominal thickness (mm)	120/140/160/180/200	70
Actual coverage, length x width (mm)		1780/580
Square metres per sheet (m ²)	0.738	1.08
Weight per sheet (kg)	9.7/11.4/13.0/14.6/16.2	12.1
Weight per m ² (kg)	13.2/15.4/17.6/19.8/22.0	11.2
Boards per pallet	36/32/28/24/22	32
Weight per pallet (kg)	370.0	410.0
Density (kg/m ³)	~110.0	~160.0
Thermal conductivity λ (W/mK) as per German reg.	0.040	0.042
Thermal resistance R (m ² K/W)	3.00/3.50/4.00/4.50/5.00	1.65
sd-value (m)	0.36/0.42/0.48/0.54/0.60	0.28
Compressive stress/ strength (kPa)	50	100
Tensile strength perpendicular to board surface (kPa)	7.5	10
Short-term water absorption (kg/m ²)		≤ 1.0
Air flow resistivity (kPa·s/m ²)		100
Specific heat capacity (J/kgK)		2100
Fire reaction Euro Class as per DIN EN 1350-1		Euro Class E

2) Intended for Durio®, the GUTEX system for unique facade design

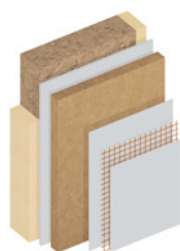
1.2 Applications and standard assembly



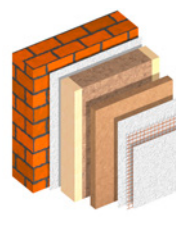
1. Directly over timber framed structures
 - › Timber framed construction, cavities insulated with GUTEX Thermofibre®/GUTEX Thermoflex®
 - › GUTEX Thermowall®
 - › GUTEX Thermowall®-gf
 - › GUTEX Thermowall® NF
 - › GUTEX Thermowall® Durio
 - › Certified render system



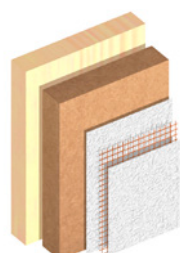
4. Over masonry substrates
 - › Mineral substrates, such as masonry
 - › Adhesive coat
 - › GUTEX Thermowall®
 - › GUTEX Thermowall®-L*
 - › GUTEX Thermowall®-gf
 - › GUTEX Thermowall® NF
 - › GUTEX Thermowall® Durio
 - › GUTEX render system



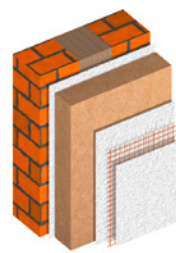
2. Over wall boards, wood composite or solid wood
 - › Timber framed construction, cavities insulated with GUTEX Thermofibre®/GUTEX Thermoflex®
 - › Boarding/ sheathing
 - › GUTEX Thermowall®
 - › GUTEX Thermowall®-gf
 - › GUTEX Thermowall®-L*
 - › GUTEX Thermowall® NF
 - › GUTEX Thermowall® Durio
 - › Certified render system



5. Over masonry substrates covered by wood frame
 - › Mineral substrates, such as masonry
 - › Timber framed construction, cavities insulated with GUTEX Thermofibre®/GUTEX Thermoflex®
 - › GUTEX Thermowall®
 - › GUTEX Thermowall®-gf
 - › GUTEX Thermowall® NF
 - › GUTEX Thermowall® Durio
 - › Certified render system



3. Over solid wood
 - › Solid wood wall with render finish
 - › GUTEX Thermowall®
 - › GUTEX Thermowall®-L*
 - › GUTEX Thermowall®-gf
 - › GUTEX Thermowall® NF
 - › GUTEX Thermowall® Durio
 - › Certified render system



6. Over half-timbered walls
 - › Half-timbered walls
 - › Adhesive coat
 - › GUTEX Thermowall®
 - › GUTEX Thermowall®-L*
 - › GUTEX Thermowall®-gf
 - › GUTEX Thermowall® NF
 - › GUTEX Thermowall® Durio
 - › Certified render system



2. INSTALLATION STEPS

2.1 General guidelines

Store and install boards dry

- › Minimum size of cut board pieces is 20 x 40 cm
- › Minimum board thickness for exterior walls is 60 mm.
- › Minimum board thickness for exterior walls is 40 mm with GUTEX Thermowall®-gf
- › Minimum board thickness for casings/reveals is 20 mm

2.1.1 Bottom edges adjacent to foundation

Install GUTEX Sockelabschlußleiste (stop beads) and GUTEX Sockelaufsteckprofil (drip beads) or a comparable system at the bottom of the GUTEX Thermowall®/-gf/-L*/NF/Durio boards adjacent to the foundation. Cut the tongue off the bottom of the board or use GUTEX® Starterplatte (starter boards). Use GUTEX® Sockelabschlussleistenverbinder (bead connectors) to join stop beads together. Make sure there are connectors between the beads where there are expansion joints. Do not press the connectors on tightly, as they will need to have play in order to accommodate movement.

- › GUTEX Thermowall®/-gf/-L*/NF/Durio is not intended for use near the ground.
- › Foundation minimum height above grade is 30 cm

NOTE

In certain foothill regions (ask GUTEX for specifics), when covering unbroken wood substrates, the insulation thickness should not be less than 80 mm.

National, municipal or other regulations may apply and specify specific thermal insulation requirements!

NOTE

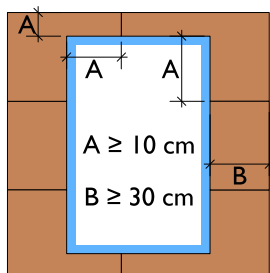
There are potential product and accessory configurations that may allow you in certain situations to bring the render down to 5 cm above grade.

➔ [Render P. 27](#)

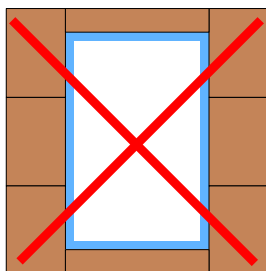
➔ [Foundation-wall junction P. 36](#)

2.1.2 Wall openings

Avoid joints at the corners of openings

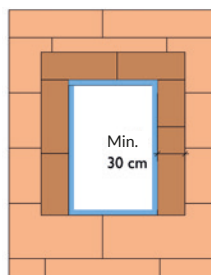


Correct

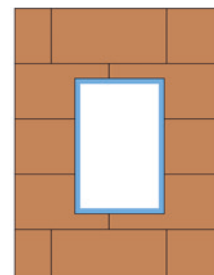


Incorrect

Install two layers of insulation around windows as shown below:



1st Course



2nd Course

GUTEX Thermosafe-homogen® is not a suitable substrate for render! For this reason, install GUTEX Thermowall® in the first course around openings.

NOTE

If you're using GUTEX Implio® P Laibungsplatten casing/reveal insulation, you can eliminate the first course of GUTEX Thermowall® around the window.

2.1.3 Junctions and sealing

Install pre-compressed sealing tape to make the structure airtight. Permanently seal all joints and penetrations through and with other building elements against wind-driven rain and wind.

GUTEX suggests for foundation-sill junction:

- › Apply a water-based, capillary-interrupting, diffusion-capable coating to the bottom edge and lower face of the wood fibre board to prevent the absorption and ingress of water.
- › Weather and UV resistant
- › Unit: 2.5-l tub
- › Required quantity: for two coats, figure 0.8l/m² on the face and approx.. 2.0l/m² for the edge, Minimum of 2 coats are necessary
- › Dry: approx. 3-4h, visual inspection possible





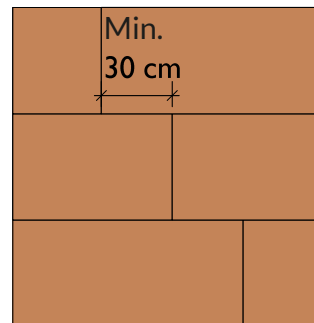
2.1.4 Board joints

- › Install the boards so the joints are tight.
- › Board joints of 2 mm or less are acceptable; joints of 2-5 mm are to be filled with a suitable material, such as GUTEX joint sealer. Fill joints exceeding 5 mm with GUTEX Thermowall®/-gf/-L*/NF/Durio. Always fill the entire depth of the joint.

2.1.4.1 Vertical joint stagger

- › Install the boards, staggering them by a min. of 30 cm between parallel joints. Avoid cross joints.

➔ You'll find further information about joints in Timber frame structures P. 17 and P. 18



2.1.5 Expansion joints

- › If installing over vertically or horizontally changing substrates, it is necessary to use expansion/movement joints.

➔ For further details visit www.gutex.de

- › GUTEX suggests installing expansion/movement joints (beads) if facade is 15 m or longer.

2.1.6 Kicker

Around the perimeter of the building's second and every higher storey, it is important to compensate for horizontal shear in the first course of insulation. Use a minimum of 10 GUTEX

WDVS-Thermoschraubdübel screws in a belt of GUTEX Thermosafe-homogen® or 8 x 10 cm wood board around the building.

➔ For specifics, refer to GUTEX Construction Details at www.gutex.de

2.1.7 Fastening of objects to exterior walls

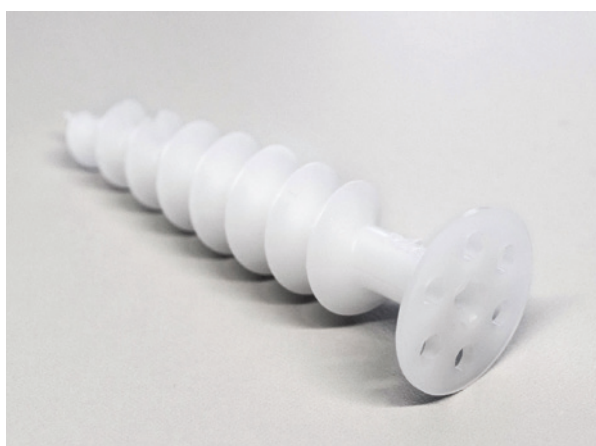
Suggested fasteners for installation in GUTEX Thermowall®/-gf/NF/Durio. The following table contains suggestions, based on load and required lengths, for the fastening of lightweight signage, etc:

Fibreboard	Fastener Fastener	Screw Ø	Nominal Ø (mm) of Pilot Hole	Max. Penetration Depth (mm)	Rec. Load Frec. (kN)
GUTEX Thermowall®/ NF/Durio	Thermo 50	4.5	6	30	0.05
GUTEX Thermowall®/ NF/Durio	Thermo Plus 85	10	12	50	0.08
GUTEX Thermowall®/ NF/Durio	Thermo 85	4.5	10	40	0.05
GUTEX Thermowall®-gf	Thermo Plus 55	10	12	50	0.13
GUTEX Thermowall®-gf	Thermo 50	4.5	6	30	0.11

NOTE

Be sure to match the length of the screw and depth of drilled hole to the thickness of the object you are fastening.

➔ For further information, refer to www.tox.de



NOTE

We suggest TOX's Thermo Vario downpipe fixation system, which is a complete kit with straps and hanger bolts.

NOTE

Make sure you seal any penetrations through the render you make for fixation with a suitable sealant, such as GUTEX Fugendicht or GUTEX Implio® Dichtkleber.



Fasten heavier objects through the insulation board and into the substructure framing, or masonry.



Fixation examples using fischer products

Thermax 8 and 10 fixation systems

Highest recommended loads¹⁾ for an individual fastener:

Type			UX10/Thermax 8	UX12/Thermax 10
Recommended tensile strength in specified building material $N_{rec}^{2)}$				
Concrete ³⁾⁴⁾	≥ C20/25	[kN]	1.00	1.00
Solid brick ³⁾⁴⁾	≥ Mz 12	[kN]	0.50	0.70
Hollow sand-lime block ³⁾⁴⁾	≥ KSL 12	[kN]	0.60	0.80
Vertically hollow brick ⁴⁾	≥ Hlz 12	[kN]	0.20	0.30
Porous concrete ³⁾⁴⁾	≥ P4	[kN]	0.40	0.60

1) Incorporates safety factor 7

2) Install UX anchors their full length into the solid substrate. Use drill equipment and techniques that are suitable for the insulation material. Due to the possibility of varying joint quality, the values apply only for installation in masonry.

3) The recommended loads apply for the use of metric screws. If you are using 6.0-mm chipboard screws they are limited to 0.35 kN.

4) The recommended loads apply for the use of metric screws. If you are using the SX5 with 4.5-5.5-mm chipboard screws they are limited to 0.1 kN.

Thermax 8 and 10 fixation systems

Highest recommended transverse loads¹⁾ for an individual fastener:

Type			UX10/Thermax 8	UX12/Thermax 10
Recommended transversal load $V_{rec}^{1)}$				
External thermal insulation composite system ²⁾	≤ 180mm	[kN]	0.15	0.20

1) Required safety factor has been incorporated.

2) Values apply for ETICS with PS- or PU rigid foam insulation.

NOTE

Further, more specific information about fixation loads and fasteners is available from the fischer company.

➔ Visit www.fischer.de

2.1.8 Exposure to weather

- › Install the render system no later than 4 weeks after you have installed the GUTEX Thermowall®/-gf/-L*/NF/Durio. If this is not possible, cover the exposed wall with a tarpaulin, making sure air can circulate under the tarpaulin.
- › Design and actual installation of insulation boards and adjacent elements (window sill, etc.) should be such that they prevent water accumulation.
- › Depending on the project specifics, with the right measures you can extend the time by up to five months. However, the plans must already include these measures before work begins on the project.
 - › Apply GUTEX® Streichdichtung (brush-on sealant) to the board ends.
 - › Protect areas around and below windows and joints against water with suitable means, including those that may redirect water.
 - › Protect areas prone to splashed water and dirt.
 - › Upgrade of all defective areas with suitable, system-conforming insulation boards.
 - › Sand and dust off weathered surfaces (Flex Giraffe grain 16 paper)

GUTEX®
UNTERBREMSTES AUSWEICHEN

WDVS - Checkliste Gewerkebrunnung

Anlage 1: Checkliste „Längere Freibewitterbarkeit“

1. Liegt eine Objektlage mit planmäßig hoher Luftfeuchtigkeit (>80 % r. L. über mehrere Wochen, z. B. in unmittelbarer Nähe von Gewässern) vor?
ja nein
2. Holzbau: Wurde die Tragkonstruktion für die Befestigung der Platten auf Trockenheit geprüft?
ja Materialfeuchte: _____
nein
3. Sanierung: Ist ein Feuchtpotenzial infolge „aufsteigender Feuchtigkeit“ zu beachten?
ja nein
4. Wurden horizontale Plattenrinnenseiten, die planmäßig unverputzt bleiben, mit dem kapillarbrechenden Dichtanstrich „GUTEX Streichdichtung“ versehen?
ja nein
5. Wurden Brüstungsbereiche von Bauteilöffnungen bzw. horizontale obere Systemabschlüsse über die gesamte Bauteiltiefe durch geeignete Maßnahmen (lagefixierte Folien, Bleche, Beschichtungen) vor Feuchteleastungen geschützt?
ja nein
6. Wurde die stumpfe Stirnseite der unteren Plattenreihe (ggfs. sind die Nutwangen zurückzuschneiden) vor dem Einsetzen in eine Sockelschiene mit GUTEX Streichdichtung beschichtet (jeweils 1 cm hoch auf vordere und hintere Plattenoberfläche weitergeführt)?
ja nein
7. Wurden spritzwassergefährdete Bereiche vor Feuchtigkeit und Schmutz mit geeigneten Maßnahmen geschützt (z. B. Gerüst abgeplant, temporäre Holzwerkstoffplatte hinterlüftet vor der Konstruktion angeordnet)?
ja nein
8. Ist der Kontakt mit aufgestautem Wasser sicher verhindert?
ja nein
9. Sind Wasserableitungen (Rinnen- und Flächenentwässerung) planmäßig und mit Abstand vor der Fassade angeordnet (Reduzierung von Spritzwasserquellen)?
ja nein
10. Sind die Bauteilanschlüsse planmäßig vor der Freibewitterung funktionsstauglich ausgebildet?
ja nein falls nein, Nachbesserungen/Anschluss beschreiben _____
11. Wurde die Vorderkante sowie die noch sichtbaren Stirnflächen der Kellplatte des Fensteranschlusssystems GUTEX Impulz® mit GUTEX Streichdichtung geschützt?
ja nein

Hinweis: Alle fett hinterlegten Antworten müssen für die längere Freibewitterung erfüllt sein.

Bei Gewerkeübergabe mit Putzer/Stukkateur zu klären

12. Werden die bewitterten Oberflächen planmäßig unmittelbar vor der späteren Putzbeschichtung mit geeigneten Werkzeugen (z. B. Schiefelrett, Körnung 16) bis auf den tragfähigen Untergrund angeschliffen und anschließend lose Holzfasern planmäßig vor der Beschichtung durch z. B. Ablegen entfernt?
ja nein wenn ja, durch wen: _____

NOTE

Your GUTEX agent will assist you with further details.

2.2 Installation

- › Install GUTEX Thermowall® wood screws, GUTEX® WDVS thermally decoupled screw-in expansion fasteners or hammer fasteners flush with the boards' surfaces. The plastic shanks that accommodate the wood screws and screw-in expansion fasteners must be sealed with plugs prior to applying the render in order to ensure the thermal decoupling of the screw and prevent the ingress of the reinforcement coat.
- › If you're using staples, countersink them slightly into the board.
- › Install the GUTEX Thermowall®/-gf/-L*/NF/Durio, so the side with the writing (logo, etc.) receives the render. To minimise waste, you may face the other side of the board outwards.

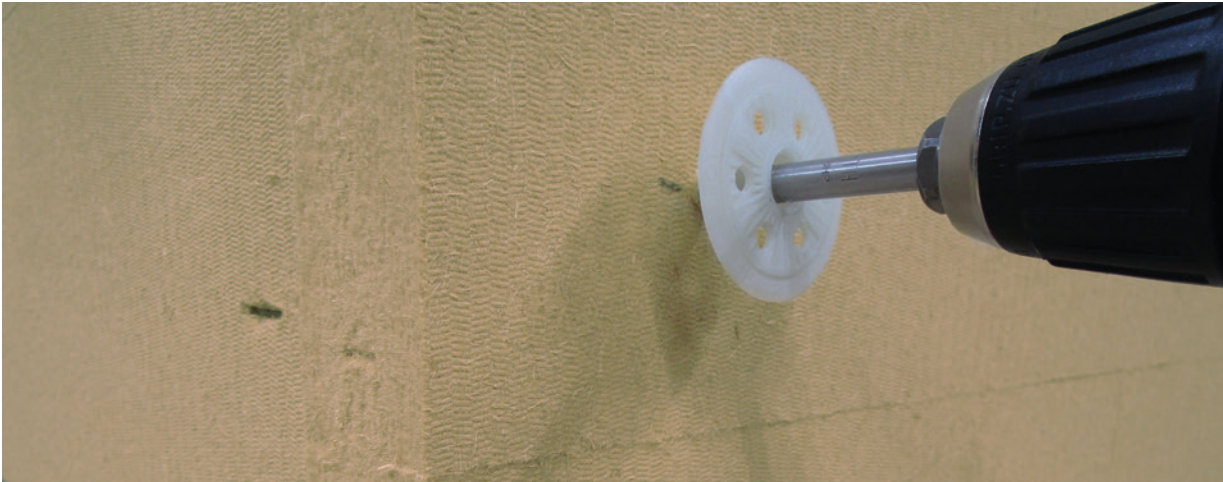




2.2.2 Timber framed constructions

NOTE

German certification/approval Z-33.47-660 applies if you use Thermowall® in timber frame structures.



2.2.2.1 Wall construction

- › GUTEX Thermowall®/-gf/NF/Durio fastens directly to the wood studs or sheathing in wood framed constructions.
- › If you are installing the insulation over sheathing, you may also use GUTEX Thermowall®-L*.
- › Whenever you install the insulation over sheathing, you must always fasten the insulation through the sheathing and into the wood studs. This applies to the installation of GUTEX Thermowall®-L* as well. Every fastener must be secured to a stud. The certification requires you to install approved fasteners in the butted joints of boards with butt joints for additional hold and tightness.

2.2.2.2 Fasteners

- › Fasten with wide-back, stainless steel staples (from Haubold, Poppers, Senco, Bea or Prebena) or GUTEX Thermowall® wood screws.
- › Minimum fastener length = board thickness + sheathing or boarding + min. penetration depth
 - › Minimum penetration depth of wide-back staples is ≥ 30 mm
 - › Minimum penetration depth of GUTEX Thermowall® Holzschraube (wood screws) is ≥ 31 mm
- › Only fasteners installed in a solid substrate will hold effectively, which does not include already existing sheathing.
- › The insulation of horizontally projecting building structures is only possible with GUTEX Thermowall®-gf boards that are ≥ 60 mm and GUTEX Thermowall® Holzschraube (wood screws), with the boards installing on the underside of the substructure. The on-centre distance of the bearing substructure (min. 60 x 40 mm) may not exceed 40 cm.



GUTEX Thermowall® Holzschraube
(GUTEX Thermowall® wood screws)



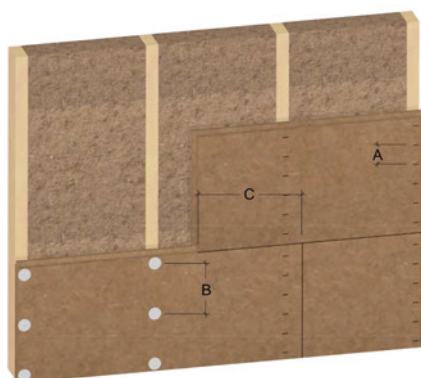
Wide-back stainless steel staples

2.2.2.3 Fastener placement

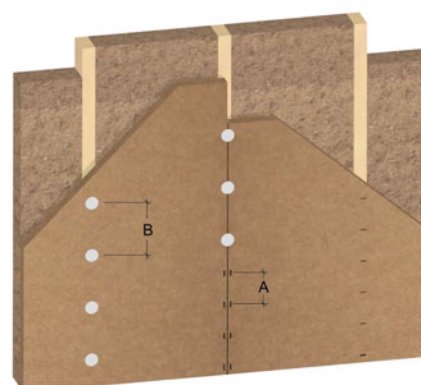
Single course insulation

Minimum requirements as per material

- › Stainless steel wide-back staples:
 - A ≤ 100 mm for GUTEX Thermowall®/NF/-L*/Durio
 - A ≤ 125 mm for GUTEX Thermowall®-gf
- › GUTEX Thermowall® Holzschraube (wood screws): B ≤ 250 mm
- › Minimum of 3 fasteners per board and per stud



Smaller boards



Larger boards

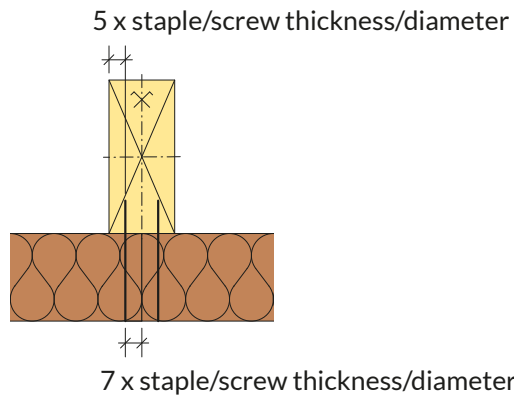
Quantity and spacing of fasteners relative to wind load

	Timber Stud Spacing [mm]	Minimum Quantity of Fasteners Per Stud and Board (Board width 600 mm)		Approved Vertical Max. Spacing Fasteners [mm]	
Wind load w_e as per DIN 1055-4 [kN/m ²]		-1.00	-1.60	-1.00	-1.60
GUTEX Thermowall® Holzschraube (GUTEX Thermowall® wood screws)	625	3	4	B ≤ 250	B ≤ 150
	833***	3	5	B ≤ 250	B ≤ 120
Stainless steel wide-back staples	≤ 521	5		A ≤ 125	
	625	6		A ≤ 100	
	≤ 729**	7		A ≤ 85	
	833***	8		A ≤ 75	

** On-centre distance 750 mm only with GUTEX Thermowall® Durio 600x1,800x70 mm

*** On-centre distance 833 mm only with GUTEX Thermowall®-gf 600x1,800x60 mm

- › Maintain the following distances from the edges to staple/screw: solid wood = 5 times fastener diameter/thickness
GUTEX Thermowall®/-gf = 7 times fastener diameter/thickness
- › The minimum width of timber studs when the boards' joints are off the studs (small T&G boards) is 40 mm, for butted joints 50 mm
- › Fasten every board to at least two studs.



Butted board joints with required distances from board edges

Two-course insulation, configurations

When used together with GUTEXThermosafe-homogen®, GUTEX Thermowall® may be installed over framed timber constructions that are sheathed with composite wood boards (refer to Certification/Approval).

- › GUTEX Thermosafe-homogen®
 $\lambda = 0.040 \text{ W/mK}$

Here are suggested, proven combination guidelines that you should follow closely:

NOTE

If you require different or further information about insulation thickness and combinations, ask GUTEX Technical Assistance. They'll gladly speak to you!

GUTEX Thermosafe-homogen®	
Butt	
Thickness (mm)	60, 80, 100, 120
Length x width: (cm)	120 x 62.5
Rebate	
Thickness (mm)	140, 160, 180, 200, 220, 240
Length x width: (cm)	120 x 62.5

Recommended Configurations		
Total Thickness (mm)	Max. Thickness 1st Course GUTEX Thermosafe-homogen® (mm)	Min. Thickness 2nd Course GUTEX Thermowall® (mm)
120	60 butt	60 T+G/butt
140	80 butt	60 T+G/butt
160	100 butt	60 T+G/butt
180	120 butt	60 T+G/butt
200	140 rebate	60 T+G/butt
220	160 rebate	60 T+G/butt
240	180 rebate	60 T+G/butt
260	200 rebate	60 T+G/butt

You require less fasteners to install the first course on the wall.

Fasten the second course with the full number of fasteners, which must penetrate through the first course and into the studs.

Required number of fasteners for the first course

- › Minimum of 1 GUTEX Thermowall® Holzschraube (wood screw) per timber stud and board or at least four wide-back staples per timber stud and board.

Required number of fasteners for the second course

- › Applicable in Wind Zone 1 (Germany): Minimum of three GUTEX Thermowall® Holzschrauben (wood screws) per stud and board (600 mm board width)
- › Applicable in Wind Zone 2 (Germany) and 88.3 on-centre stud spacing: Minimum of four GUTEX Thermowall® Holzschrauben (wood screws) per stud and board (600 mm board width)
- › Use only GUTEX Thermowall® Holzschraube (wood screws) to fasten the second course!
- › Placement of fasteners in the board joints when fastening the second course is prohibited.

2.2.2.4 Max. on-centre distance between timber studs

Smaller boards		
GUTEX Thermowall®	≥ 80mm	62.5 cm (board length 1300 mm)
GUTEX Thermowall®-gf	≥ 40 mm	62.5 cm
GUTEX Thermowall®-gf	60 mm	83.3 cm (only board length 1800 mm)
GUTEX Thermowall® NF	60 mm	62.5 cm
GUTEX Thermowall® Durio	70 mm	75.0 cm
GUTEX Thermowall®-L*	≥ 120mm	62.5 cm (over sheathing)

Larger boards (butted joints)		
GUTEX Thermowall®-gf	≥ 40 mm	62.5 cm
GUTEX Thermowall®	≥ 80mm	62.5 cm

2.2.2.5 Joints

- › Overshoot of small boards must be (C) ≥ 30 cm.
- › Do not install the boards so there are more than 2 consecutive joints between the same studs.
- › If installing butted boards, the joints must fall on the timber studs or cross members.
- › For larger boards, the staples should be placed so they straddle the joint and are vertically perpendicular.
- › For single-course insulation installation, install GUTEX Holzschraube (wood screws) directly in the butted joints. To keep the boards from moving while you're fastening them, start in the middle of the board.

2.2.2.6 Blow-in Insulation (optional)

- › Install the blow-in insulation prior to render



2.2.3 Wood substrates

NOTE

German certification/approval Z-33.47-660 applies if you use Thermowall® in timber frame structures.

2.2.3.1 Fasteners

- › Fasten with wide-back, stainless steel staples (from Haubold, Poppers, Senco, Bea or Prebena) or GUTEX Thermowall® wood screws.
- › Minimum fastener length = board thickness + sheathing or boarding + min. penetration depth
 - › Minimum penetration depth of wide-back staples is ≥ 30 mm
 - › Minimum penetration depth of GUTEX Thermowall® Holzschraube (wood screws) is ≥ 31 mm
- › The insulation of horizontally projecting building structures is only possible with GUTEX Thermowall®-gf boards that are ≥ 40 mm or GUTEX Thermowall® that are ≥ 60 mm GUTEX using Thermowall® Holzschraube (wood screws). A minimum of 8 screws/m² are required.



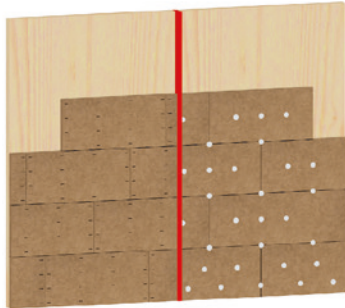
GUTEX Thermowall® Holzschraube
(GUTEX Thermowall® wood screws)



Wide-back stainless steel staples

2.2.3.2 Placement of fasteners

Single course insulation



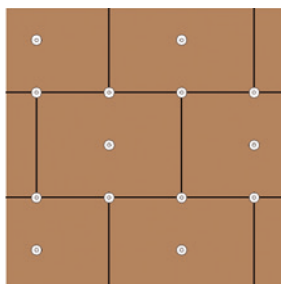
Single-course installation over solid wood

Minimum quantity of fasteners per square metre on solid wood substrates

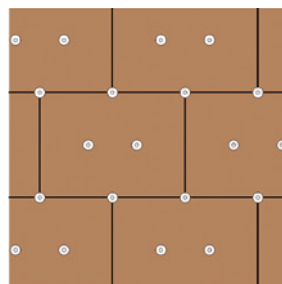
Wind load w_e as per DIN 1055-4 [kN/m ²]	- 1.00	- 1.60	
Minimum quantity of GUTEX Thermowall® Holzschrauben for single-course installation	6	10	-
Minimum quantity of wide-back staples for single-course installation of GUTEX Thermowall®/-gf		16	125 mm (max. allowed vertical distance between fasteners)

- › Suggested placement of fasteners as per board size for boards installed in a single course over uninterrupted substrates

Length x width: 83 x 60 cm

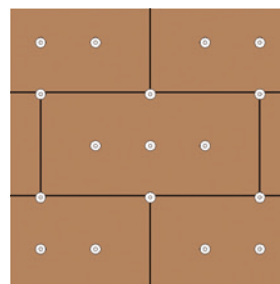


6 Fasteners/m²

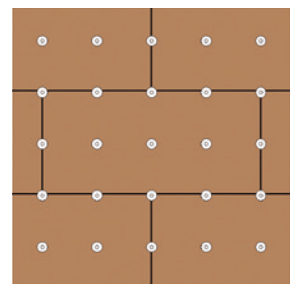


10 Fasteners/m²

Length x width: 125 x 59 cm



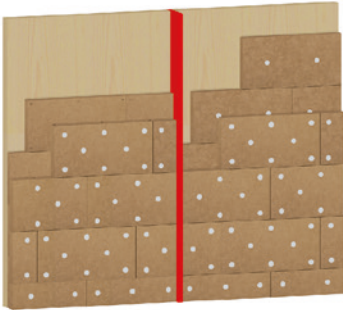
6 Fasteners/m²



10 Fasteners/m²



Two-course insulation, configurations



Double-course installation over solid wood

You may cover uninterrupted substrates, such as those constructed from solid wood, with GUTEX Thermowall® combined with GUTEX Thermosafe-homogen® to yield a two-course assembly.

- › GUTEX Thermosafe-homogen®
 $\lambda = 0.040 \text{ W/mK}$

Here are suggested, proven combination guidelines that you should follow closely:

NOTE

If you require different or further information about insulation thickness and combinations, ask GUTEX Technical Assistance. They'll gladly speak to you!

GUTEX Thermosafe-homogen®

Butt

Thickness (mm)	60, 80, 100, 120
Length x width: (cm)	120 x 62.5

Rebate

Thickness (mm)	140, 160, 180, 200, 220, 240
Length x width: (cm)	120 x 62.5

Recommended Configurations

Total Thickness (mm)	Max. Thickness 1st Course GUTEX Thermosafe-homogen® (mm)	Min. Thickness 2nd Course GUTEX Thermowall® (mm)
120	60 butt	60 T+G/butt
140	80 butt	60 T+G/butt
160	100 butt	60 T+G/butt
180	120 butt	60 T+G/butt
200	140 rebate	60 T+G/butt
220	160 rebate	60 T+G/butt
240	180 rebate	60 T+G/butt
260	200 rebate	60 T+G/butt

You require fewer fasteners to install the first course on the wall. Fasten the second course with the full number of fasteners as indicated in the table below. The fasteners must penetrate through the first course into the solid wood wall.

Required number of fasteners for the first course

- › Minimum of four GUTEX Thermowall® Holzschraube (wood screw) per m² or at least eight wide-back staples per m²

Required number of fasteners for the second course

- › Minimum quantity of fasteners per square metre on solid wood substrates as per table
- › Use only GUTEX Thermowall® Holzschraube (wood screws) to fasten the second course!
- › Placement of fasteners in the board joints when fastening the second course is prohibited.

Minimum quantity of fasteners per square metre in two-course installation on solid wood substrates

Wind load w_e as per DIN 1055-4 [kN/m ²]	- 0.77	- 1.00	- 1.60
Minimum number of GUTEX Thermowall® Holzschrauben (wood screws) in double-course installation of GUTEX Thermowall® over GUTEX Thermosafe-homogen®	4	5	8

Building authorities' specifications apply for the spacing of fasteners from edges.

2.2.4 Mineral substrates

NOTE

Certification/Approval Z-33.43-942 applies for the installation of Gutex Thermowall® over mineral substrates.



2.2.4.1 Preparation and inspection of substrates

- › The placement of the fasteners as per schematic in ETICS Z-33.43-942 approval will produce ≤ 0.16 kN/anchor (to -1.60 kN/m² wind load W_e as per DIN 1055-4).
- › The ETICS Thermoschraubdübel (thermally-decoupled screw fastener) approval specifies the following fastener shear strengths:

Use Category	Anchor Substrate	Specified Shear Strength [kN/Fastener]
A	Normal concrete C12/15 as per EN 206-1	1.5
A	Normal concrete C16/20 – C50/60 as per EN 206-1	1.5
A	Concrete wall facing C16/20-C50/60	1.5
B	Masonry brick (German abbr.: Mz) as per DIN 105	1.5
B	Solid sand-lime brick (German abbr.: KS) as per DIN EN 106	1.5
D	Light-weight solid concrete block (German abbr.:V) as per DIN 18152	0.6
C	Vertically hollow brick (German abbr.: Hlz) as per DIN 105	1.2
C	Vertically hollow brick (German abbr.: Hlz) Reference masonry as per ÖNORM B 6124	0.75
C	Hollow sand-lime block (German abbr.: KSL) as per DIN EN 106	1.5
C	Light-weight hollow concrete block (German abbr.:HbL) as per DIN 18151	0.6
D	Porous concrete (German abbr.: LAC)	0.9
E	Porous concrete P2 - P7	0.75

Make sure you comply with the approved, specified and applicable national safety factors (e.g. Germany: 3).

- › Subsequently, loads between 0.2 and 0.5 kN/fastener are within the scope of approval and may be applied for common substrates.
- › In the event of unspecified or alternative substrates, fastener tests for the specific application are necessary.
- › In this case and for instances where wind loads > 1.60 kN/m², performance of additional and more extensive fixation calculations is required.

NOTE

For more specific, detailed information, see the approval for the specific fastener.

2.2.4.2 Fasteners

When installing GUTEX plasterboard, you must use adhesive and fasteners. Always! Just one of either is NOT sufficient. Wait until the mortar has fully set before you install the fasteners.

Fastener

- › Use for fixation:
 - › GUTEX® WDVS Thermoschraubdübel (thermally decoupled screw fasteners) for the walls
 - › GUTEX® WDVS Thermoschlagdübel (thermally decoupled screw fasteners) for 20 mm and 40 mm board thickness only in window and door casings, etc.
- › Minimum fastener length = board thickness + mortar + old render (if present) + min. penetration depth
- › Min. penetration depth of thermally decoupled fastener ≥ 25 mm in Category A-D
- › Min. penetration depth of thermally decoupled fastener ≥ 65 mm in Category E (porous concrete)
- › Minimum penetration depth of thermally decoupled hammer fastener is ≥ 35 mm
- › Only fasteners installed in a solid substrate will hold effectively. Existing old render is not a solid substrate.
- › The insulation of horizontally projecting building structures is only possible with GUTEX Thermowall®-gf boards that are ≥ 40 mm or GUTEX Thermowall® that are ≥ 60 mm GUTEX, using Thermowall® Thermoschraub-dübeln (thermally decoupled fasteners). A minimum of 8 fasteners/ m² are required.

Adhesion

- › Adhere GUTEX Thermowall® boards to the mineral masonry, using GUTEX Klebe- und Spachtelputz.
- › We recommend you apply the mortar adhesive to the entire surface (required quantity approx. 6-7 kg/m², depending on substrate condition), using a serrated trowel (serration will depend on evenness of substrate). Always apply the mortar to the board, even if you are applying it to the substrate as well.
- › Another possible option is to apply two large dabs to the middle of the board and a large bead of GUTEX Klebe- und Spachtelputz around the board's perimeter (min. 40% of the board's area). However, the position of the dabs must accordingly correspond to the later placement of the fasteners.



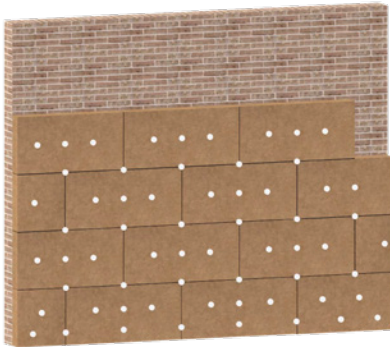
GUTEX® WDVS Thermoschraubdübel
(thermally decoupled screw fasteners) for GUTEX ETICS



GUTEX® WDVS Thermoschlagdübel
(thermally decoupled hammer fasteners) for GUTEX ETICS



2.2.4.3 Placement of fasteners



Single-course installation over masonry

You may install over mineral substrates (masonry, etc.) a single course of GUTEX Thermowall® up to 160 mm or GUTEX Thermowall®-L* up to 200 mm.

NOTE

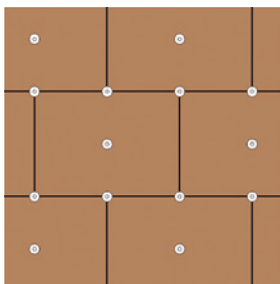
If you require different or further information about insulation thickness and combinations, ask GUTEX Technical Assistance. They'll gladly speak to you!

Min. quantity of required fasteners per m² over mineral substrates

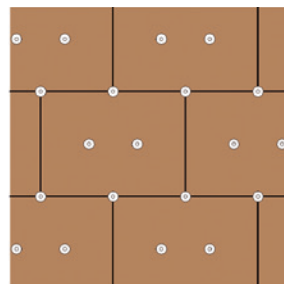
Wind load w_e as per DIN 1055-4 [kN/m ²]	- 0.55	- 1.00	- 1.60
GUTEX® WDVS Thermoschraubdübel (thermally decoupled screw fasteners) or thermally decoupled hammer fasteners	6	8	10

› Suggested placement of fasteners for boards installed over uninterrupted substrates

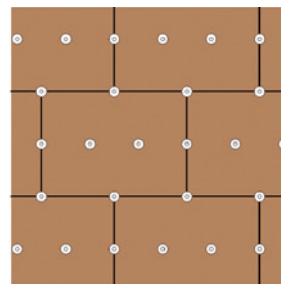
Length x width: 83 x 60 cm



6 Fasteners/m²

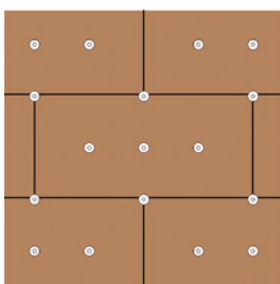


8 Fasteners/m²

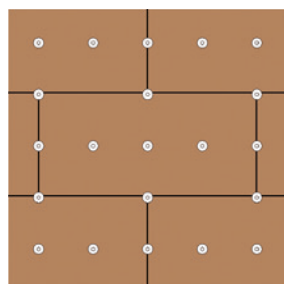


10 Fasteners/m²

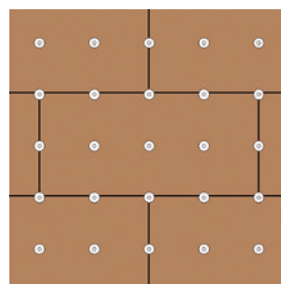
Length x width: 125 x 59 cm



6 Fasteners/m²



8 Fasteners/m²



10 Fasteners/m²

2.3 Prepping for render and trade transfer

- › Smooth out hollows or buckles in the substrate surface via sanding, etc.

➔ Refer as well to Exposure to weather P. 14

- › Prior to application of the render, have the exterior wall substrate inspected by the plasterer (trade transfer)!

NOTE

Ask your GUTEX agent for the GUTEX Thermowall® ETICS checklist.

WDVS - Checkliste Gewerkeübergabe		GUTEX® <small>GEWERKELISTE FÜR SUBSTRATBEREITUNG</small>	
Checkliste GUTEX Thermowall® WDVS Übergabe des putzfähigen Untergrundes			
Objektkennndaten			
1. Anschrift:	_____		
2. Planer:	_____		
3. Bauherr:	_____		
4. Holzbauarbeiter:	_____		
5. Putzbetrieb:	_____		
6. Datum/Zeitraum	_____		
Objektnummer:	_____		
7. Datum geplante Putzbeschichtung:	_____		
	Freibewitterungszeit von max. vier Wochen beachten, ggfs. Zusatzmaßnahmen veranlassen (z.B. Abplanen)!		
	Längere Freibewitterung (bis zu fünf Monaten) geplant (Anlage 1 beachten)		
8. Anmerkungen:	_____		

Plattenmaterial GUTEX Thermowall®			
1. Plattentyp:	Thermowall®	Thermowall®-gf	Thermowall®-L
2. Plattendicke:	_____		
3. Plattenformat:	_____		
4. Paletteneinleger dokumentiert:	stumpf	N/F	
5. Datum Plattenmontage:	ja	nein	

Konstruktionsbeschreibung			
1. Innenbeplankung:	_____		
2. ggfs. Installations-ebene:	_____		
3. Luftdichtungsebene:	_____	_____	luftdicht abgeklebt:

2.4 Render

2.4.1 Approved render systems

Tinted render and paints should have a Light Reflectance Value of > 20 (see GUTEX colour chart)
Darker colours are possible, in which case, you'll need to consider the Total Solar Reflectance (TSR).





GUTEX's Z-33.47-660 certification for GUTEX Thermowall® wood fibre based ETICS allows you to use render components from thirteen different manufacturers on timber walls, which provides everyone with enormous advantages. Tradespersons – whether carpenter or plasterer – can obtain their render system components from their usual sources.

2.4.2 Render system partners



Baumit GmbH
www.baumit.de



Brillux GmbH & Co. KG
www.brillux.de



DRACHOLIN GmbH
www.dracholin.de



Greutol AG
www.greutol.ch



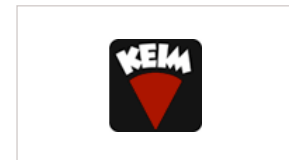
Wolfgang Endress Kalk- und
Schotterwerk GmbH & Co. KG
www.graefix.de



GUTEX Holzfaserplattenwerk
www.gutex.de



HASIT Trockenmörtel GmbH
www.hasit.de



KEIMFARBEN GmbH
www.keim.com



KNAUF Gips KG
www.knauf.de



quick-mix Gruppe GmbH &
Co. KG
www.quick-mix.de



SCHWENK Putztechnik AG
www.schwenk-putztechnik.ch



Saint-Gobain Weber GmbH
www.sg-weber.de



Tröndle Edelputz GmbH
www.troendleputz.de

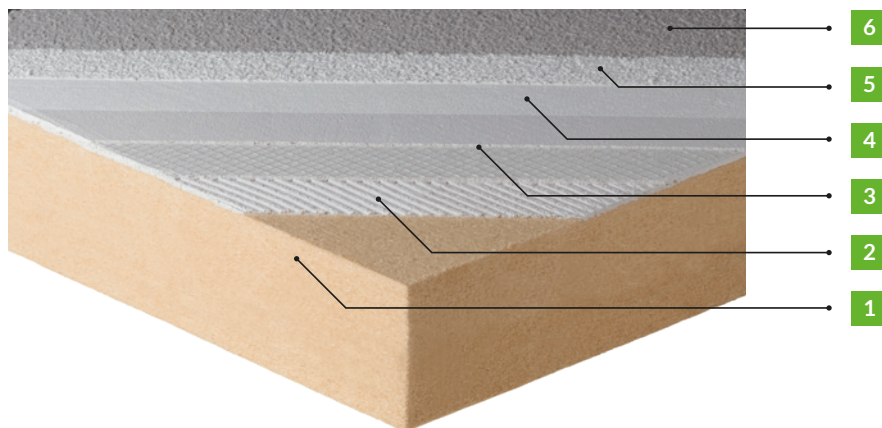
NOTE

The coverage amounts specified in the certification/approval are the amounts necessary to ensure the system performs (weather protection) as required. To avoid optical blemishes (visible board joints), we strongly recommend a base coat thickness of at least 5-8 mm (in one coat). If you're applying light reinforcement mortar, the base coat should be a minimum of 6-7 mm.

➔ For components and system descriptions of the certified render systems, refer to the approval and system flyer.

2.4.3 Components and their attributes

Render protects buildings against moisture and other environmental influences. We have designed GUTEX' render system to meet this requirement to the highest degree, as tests and certification indicate. Essential to the functional reliability of the render system is the compatibility of the render and the plasterboard. With GUTEX' render system, you have the choice of mineral or silicone render top coat.



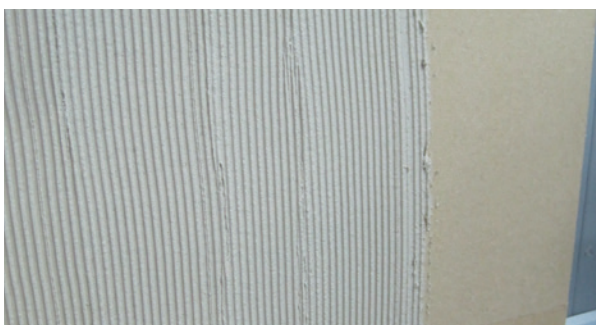
GUTEX ETICS system product configuration

System configuration	GUTEX ETICS Products
1 Plaster baseboard	GUTEX Thermowall®/-gf/L*/NF/Durio
2 Base (scratch) coat	GUTEX® Klebe- und Spachtelputz (cementitious dry base coat mortar)
3 Reinforcement	GUTEX® Universal-Armierungsgewebe (fibre reinforcement mesh)
Splash water protective coat (if required)	GUTEX® Sockelanstrich (foundation paint)
4 Primer	GUTEX® Isoliergrund (isolating primer)
5 Final coat	GUTEX® Combiputz (render), GUTEX® Combi-Silikonharzputz (silicone render), GUTEX Durio® Silikonharz-Oberputz (silicone render)
6 Paint coat	GUTEX® Combi-Mineralfarbe-PV (silicate paint w. fungicide) GUTEX Durio® Fassadenfarbe (exterior paint)



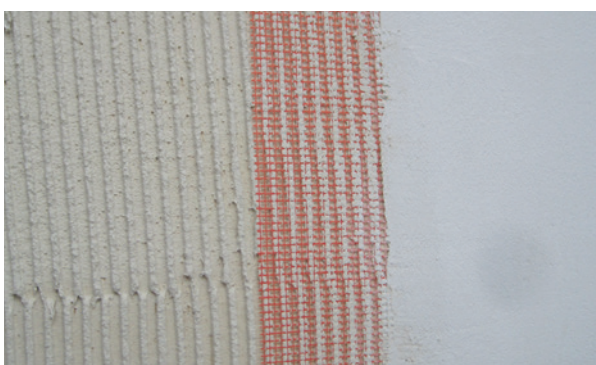
1. Plaster baseboard

The system contains an improved high-grade plaster wood fibre baseboard, which features a small percentage of wax emulsion to endow the board with effective hydrophobic protection. We specifically designed the board to reduce tension and stress and thus minimise cracking in applications where it installs directly over timber framing.



2. Base coat

You can apply the base coat wet on wet or in two steps (scratch coat and then reinforcement coat). In order to achieve a base coat of minimum 5 mm (maximum 8 mm), as well as install the reinforcement in the outer third of the base coat, we recommend applying the base coat in two stages.



3. Reinforcement

Reinforcement helps prevent cracks in the render structure. For the greatest effectiveness in compensation of ground and structural movement as well as stress originating from thermal influences, cover substrates completely with the reinforcement mesh, overlapping them by a minimum of 10 cm.

Splash water protection

If you use splash water protection, you can install GUTEX Thermowall®/-gf/-L*/NF/Durio down to 5 cm above grade.



4. Primer (optional³⁾)

The primer regulates the absorption capacity of the substrate and prevents the final render coat from drying too quickly. It also facilitates adhesion and gives the base coat its first protection against the weather. Equipped with a primer, the base coat can last longer until you can apply the final render, even over winter.

³⁾ If you're installing splash water protection, you need to apply primer.



5. Final render

Choose either GUTEX® Combiputz (render), GUTEX® Combi-Silikonharzputz (silicone render) or GUTEX Durio® Silikonharz-Oberputz (silicone render). These renders give the system its actual weather protection. In terms of decorative freedom, the potential is virtually unlimited due to the availability of various surface textures, grain sizes and colours.



6. Paint

Choose either GUTEX® Combi-Mineralfarbe (silicate mineral), GUTEX® Combi-Mineralfarbe-PV (silicate mineral w. fungicide) or GUTEX Durio® Fassadenfarbe (exterior) paints. Finishing off the render with a coat of quality paint adds greater protection against the elements, while making the appearance more consistent. And if you use GUTEX® Combi-Mineralfarbe-PV or GUTEX Durio® Fassadenfarbe, you increase protection against mould and algae.



2.4.4 Prerequisites for successful render application

- › Before applying the coats, always make sure the surface is free of dust, dirt, etc.
- › During application, the moisture content of the boards must not exceed 16%. The moisture content in adjacent areas may not exceed 2%. Use a moisture metre that is suitable for wood fibre insulation boards, such as the GANN Hydromette BL H 41 device.
- › Do not apply render in temperatures below 5° C (includes night temperature!).



GANN Hydromette BL H 41

2.4.5 Installation

You can apply the base coat wet on wet or in two steps (scratch coat and then reinforcement coat). In order to install the reinforcement in the outer third of the base coat, we recommend applying the base coat in two stages. If you elect to use just a single application, you must exercise greater effort!

2.4.5.1 Application of the base coat

In two steps

- › **Scratch coat**
Use GUTEX® Klebe- und Spachtelputz, which covers approx. 3-4 kg/m². It comes in a 25 kg-bag. Mix 25 kg GUTEX® Klebe- und Spachtelputz with 6.3 litres of clean water, making sure there are no lumps. Apply with a 6-mm serrated trowel or a machine. Then scratch with a 6-mm serrated trowel. Allow approx. 1 day/mm of coat thickness, depending on weather conditions.
- › **Reinforcement coat**
Use GUTEX® Klebe- und Spachtelputz mortar as well as GUTEX® Universal-Armierungsgewebe (fibre reinforcement mesh). You need approx. 3-4 kg compound per m² and 1 lm mesh per m². The mortar comes in a 25-kg bag, the mesh in 1.1 m x 50 m rolls. Mix 25 kg GUTEX® Klebe- und Spachtelputz with 6.3 litres of water. Apply evenly with a serrated trowel. Embed the GUTEX® Universal-Armierungsgewebe mesh in the compound and smooth the surface. Apply wet on wet. Position the mesh in the outer third of the coat (mandatory!), overlapping the mesh section by 10 cm at the joints. Install additional sections diagonally to the corners of openings in the walls, such as windows, etc.

Allow to dry for approx. 1 day/mm of coat thickness, depending on the weather conditions. The base coat thickness must have a minimum thickness of 5 mm and a maximum thickness of 8 mm.

Alternative: Application of the base coat in a single step

› Base coat

Use GUTEX® Klebe- und Spachtelputz mortar as well as GUTEX® Universal-Armierungsgewebe (fibre reinforcement mesh). You need approx. 3-4 kg compound per m² and 1 lm mesh per m². The mortar comes in a 25-kg bag, the mesh in 1.1 m x 50 m rolls.

Mix 25 kg GUTEX® Klebe- und Spachtelputz with 6.3 litres of water, making sure there are no lumps. Apply with a 10-mm serrated trowel or a machine. Embed the GUTEX® Universal-Armierungsgewebe mesh in the compound and smooth the surface. Make sure that there are no air pockets! Position the mesh in the outer third of the coat (mandatory!), overlapping the mesh section by 10 cm at the joints. Install additional sections diagonally to the corners of openings in the walls, such as windows, etc.

Allow to dry for approx. 1 day/mm of coat thickness, depending on the weather conditions. The base coat thickness must have a minimum thickness of 5 mm and a maximum thickness of 8 mm.

Splash water protective coat

› Splash water protective coat

Use GUTEX® Sockelanstrich protective primer. You need approx. 0.5 kg/m², depending on the substrate. It comes in an 18-kg tub. Mix the GUTEX® Sockelanstrich 1:1 with Portland cement and thin with water so it applies well with a brush. Apply to the base coat in the splash water area 30-50 cm above grade with a paintbrush or brush. Afterwards coat with GUTEX® Isoliergrund (isolating primer). The splash water protection takes 1-2 days to dry before you can continue.

2.4.5.2 Application of the final render coat

Primer (optional)

- › Use GUTEX® Isoliergrund (isolating primer). You need approx. 0.35 kg/m², depending on the substrate. It comes in an 25-kg tub. Thin the isolating primer with maximum 10% water and apply with a roller or brush. This product is not suitable for airless application. Protect adjacent surfaces. GUTEX® Isoliergrund usually dries overnight. You may apply the next coat over the splash water protective coat in 1-2 days.



Final render coat (mineral)

› Final render

If using GUTEX® Combiputz, depending on the surface character, you can figure on requiring the following quantities:

Grain 1.5 mm	1.7 kg/m ²
Grain 2.0 mm	2.3 kg/m ²
Grain 3.0 mm	2.7 kg/m ²

Comes in 25- kg bag

Mix 25 kg of GUTEX® Combiputz with 7 litres of clean water, making sure there are no lumps. Next, apply the mortar with a stainless steel trowel to grain thickness. Use a plastic trowel, foam rubber disc or PS float to texture the surface. Suitable for all common final coat plaster machines. Allow approx. 1 day/mm coat thickness to dry, depending on weather conditions.

› Paint (mandatory)

One coat is mandatory, but GUTEX recommends two coats.

Use GUTEX® Combi-Mineralfarbe/-PV/ or GUTEX Durio® Fassadenfarbe paint. You need approx. 0.3 l/m² per coat. Both products come in 15-l tubs.

Apply evenly over the entire surface wet on wet, with a brush roller or airless sprayer. We suggest you use GUTEX® Combi-Mineralfarbe-PV (prevents mould and algae) or GUTEX Durio® Fassadenfarbe for areas especially exposed to the negative effects of weather. The undercoat is ready after approx. 8 hours for the final coat.

NOTE

A paint system as per DIN 18163, consisting of under and top coat of GUTEX® Combi-Mineralfarbe-PV or GUTEX Durio® Fassadenfarbe paints, provides sufficient protection against mould and algae. An equalization (levelling) coat does not furnish protection.

Silicone resin final render

› Final render

Use GUTEX® Combi-Silikonharzputz or GUTEX Durio® Silikonharz-Oberputz. Depending on the specific surface conditions, you will need the following quantities:

Grain 1.5 mm	Scraped: approx. 2.3 kg/m ²
Grain 2.0 mm	Scraped: approx. 3.0 kg/m ²
Grain 3.0 mm	Scraped: approx. 4.3 kg/m ²

Comes in 25-kg tub

Add as little water as possible to obtain the ideal workability. Mix thoroughly. If you're using a spray machine or pump, you'll have to determine the specific amount of water for best operation. Allow 14 days for the compound to cure sufficiently.

› Paint (recommended)

GUTEX recommends painting the render. Use GUTEX® Combi-Mineralfarbe/-PV or GUTEX Durio® Fassadenfarbe paint. You need approx. 0.3 l/m². These products come in 15-l tubs. Apply the equalisation (levelling) coat evenly over the entire surface wet over wet, using a brush, roller or airless sprayer. We suggest you use GUTEX® Combi-Mineralfarbe-PV (prevents mould and algae) or GUTEX Durio® Fassadenfarbe for areas especially exposed to the negative effects of weather.

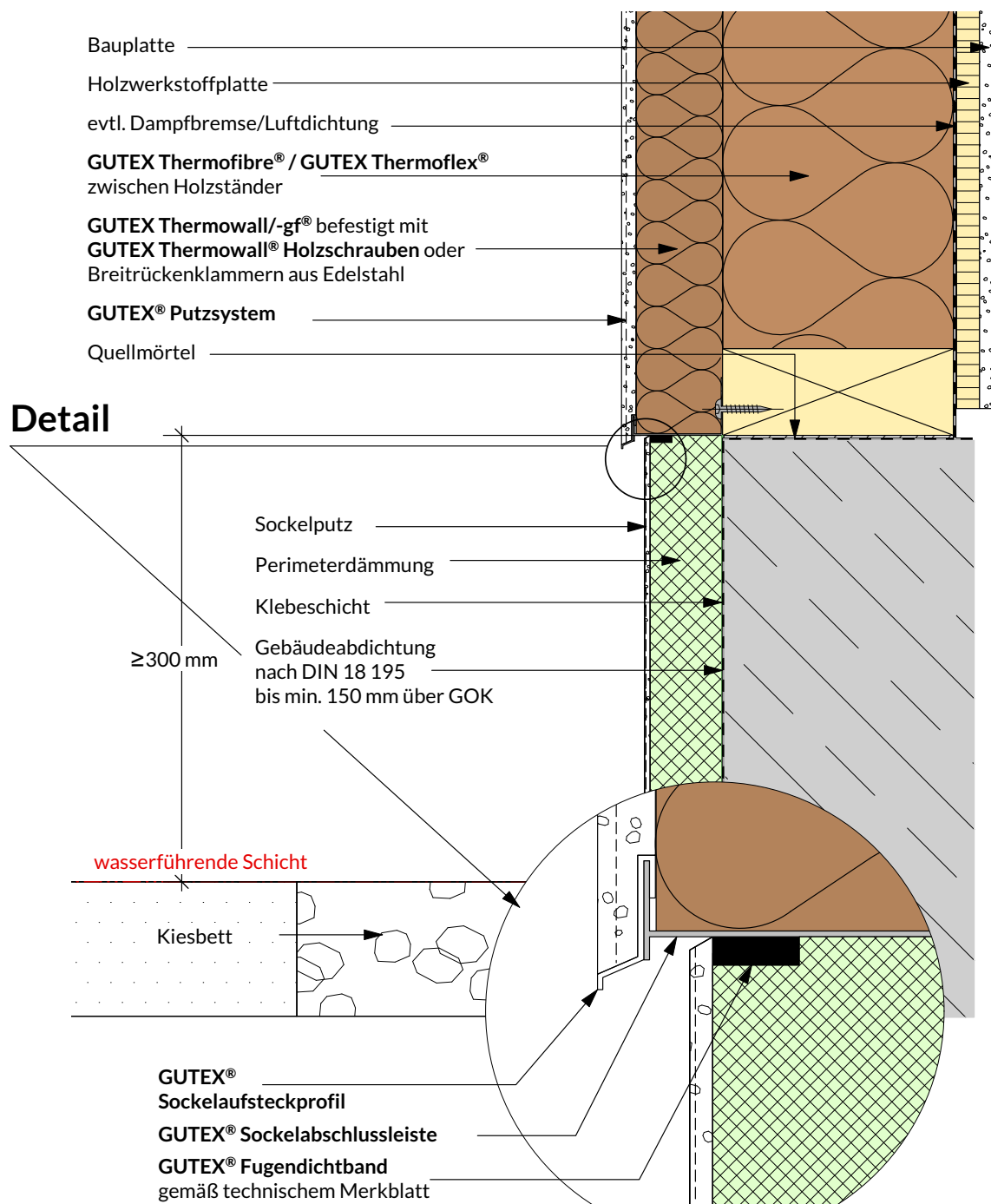
3. DESIGN DETAILS

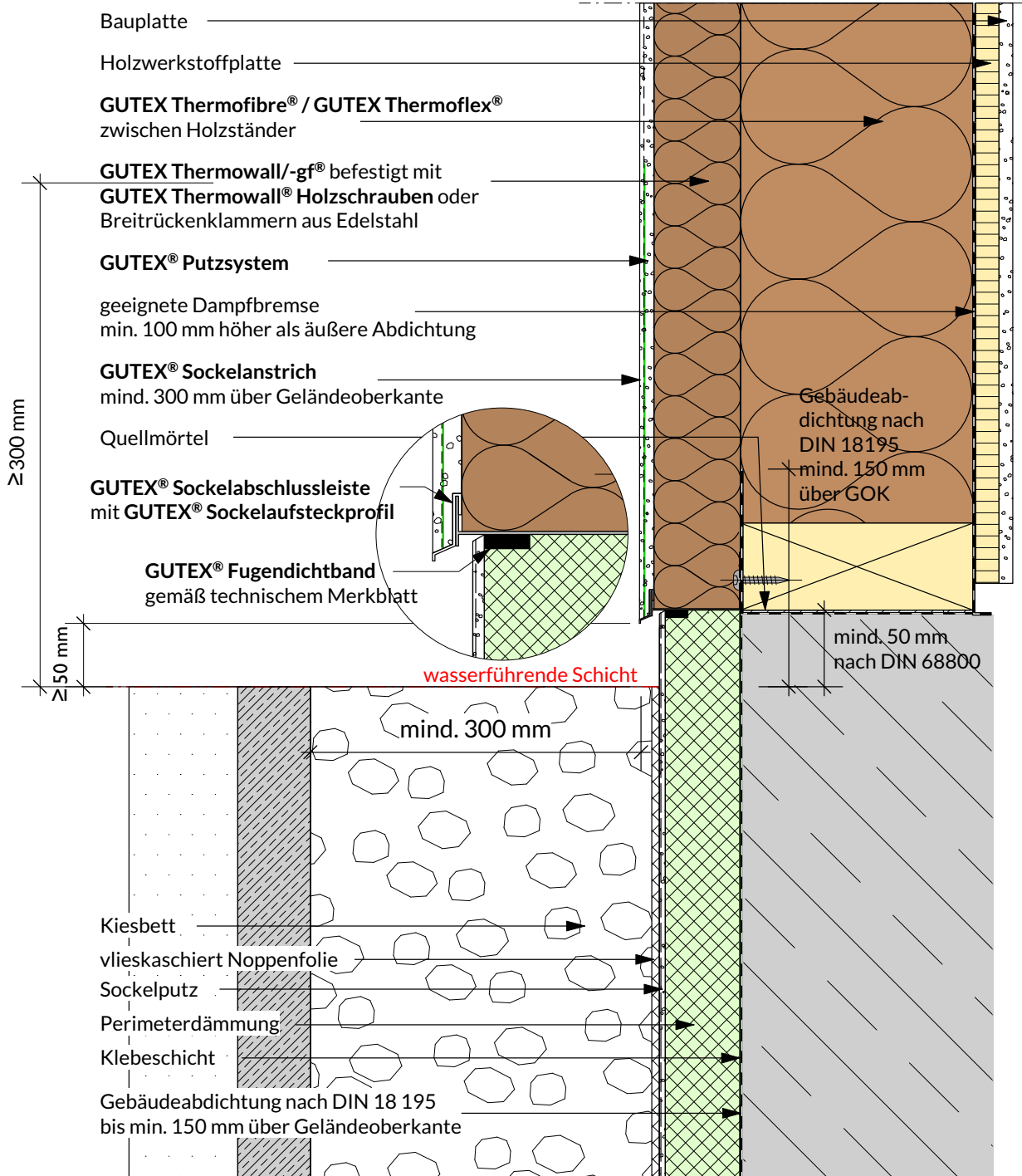
In the following, you find several important design details.

NOTE

You will find many design details at www.gutex.de or you may request them from GUTEX' technical assistance department.

3.1 Foundation-wall junction





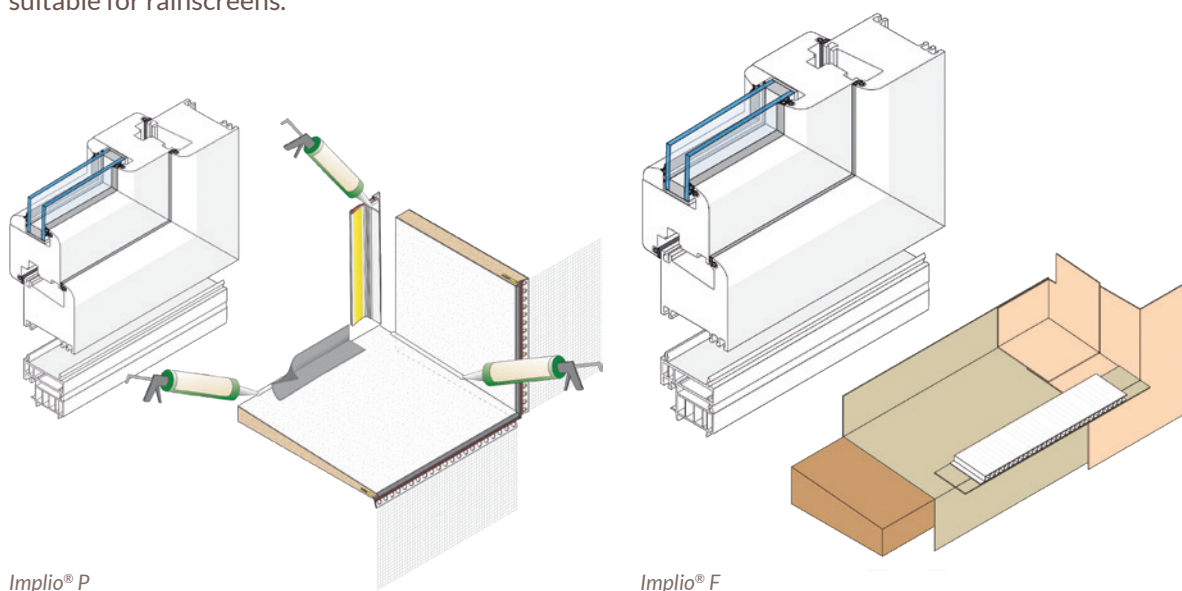
3.2 Window integration

➔ Refer to GUTEX Implio® for additional information

GUTEX Implio® P

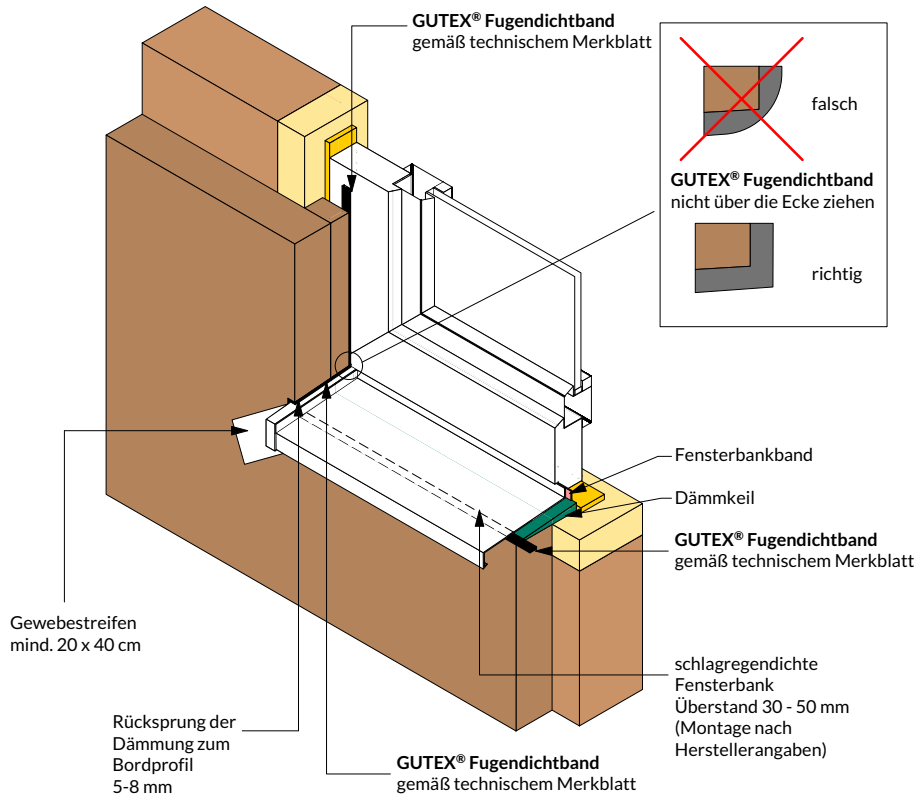
Obtaining reliably tight joints in ETIC systems usually is a formidable challenge. The performance of the entire system depends on the tightness of the joints. Window joints are particularly complex and critical. Typically, they are a building element where up to four different trades play a role, including window contractors, architectural blinds installers, plasterers, tinsmiths or masons.

Implio® P, a wood-fibre based system that may include architectural blinds, their housings, and reveal/casing and ledge insulation, provides a dependable, effective doubled layer of weather protection. If you want an intricately integrating complete system that performs optimally, GUTEX Implio® P is your choice. The casing/reveal liner insulation receives only a finish render coat, eliminating the need to install corner beads and reinforce the casings. In some cases, GUTEX Implio® P is also suitable for rainscreens.

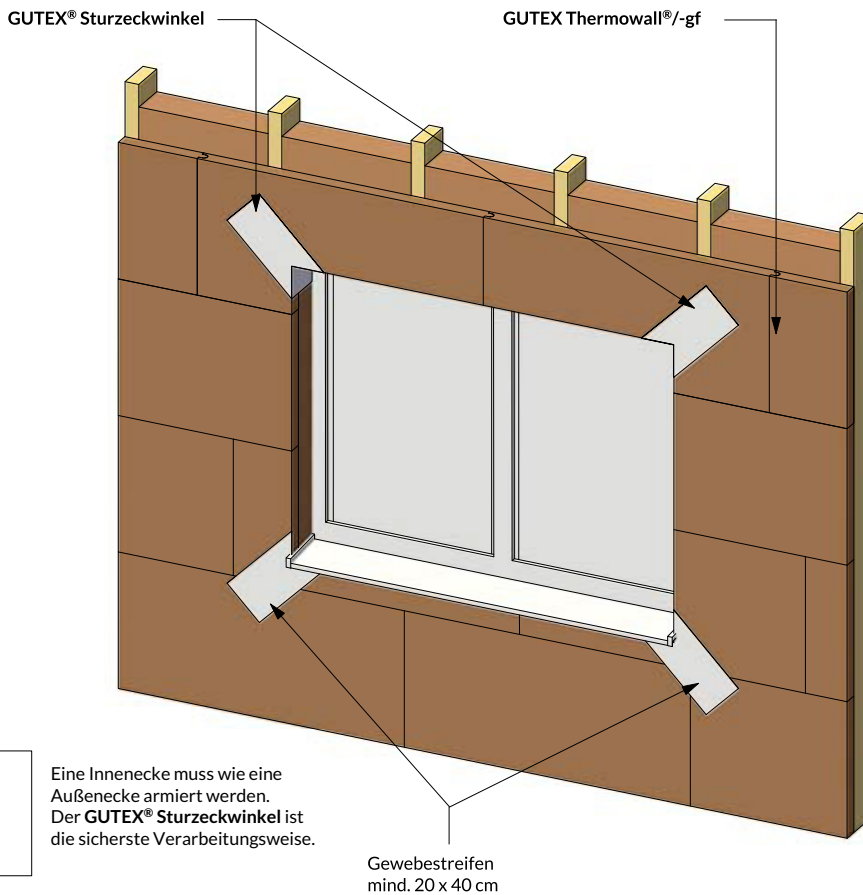


GUTEX Implio® F

GUTEX Implio-F® provides a second layer of protective sealing for doors and windows. The self-adhesive makes installation incredibly simple. Implio®-F is suitable for all insulated rainscreens (vented facades) and especially facades with minimum window and door casing/reveal depths. GUTEX Implio® F is also suitable for some render coated walls.

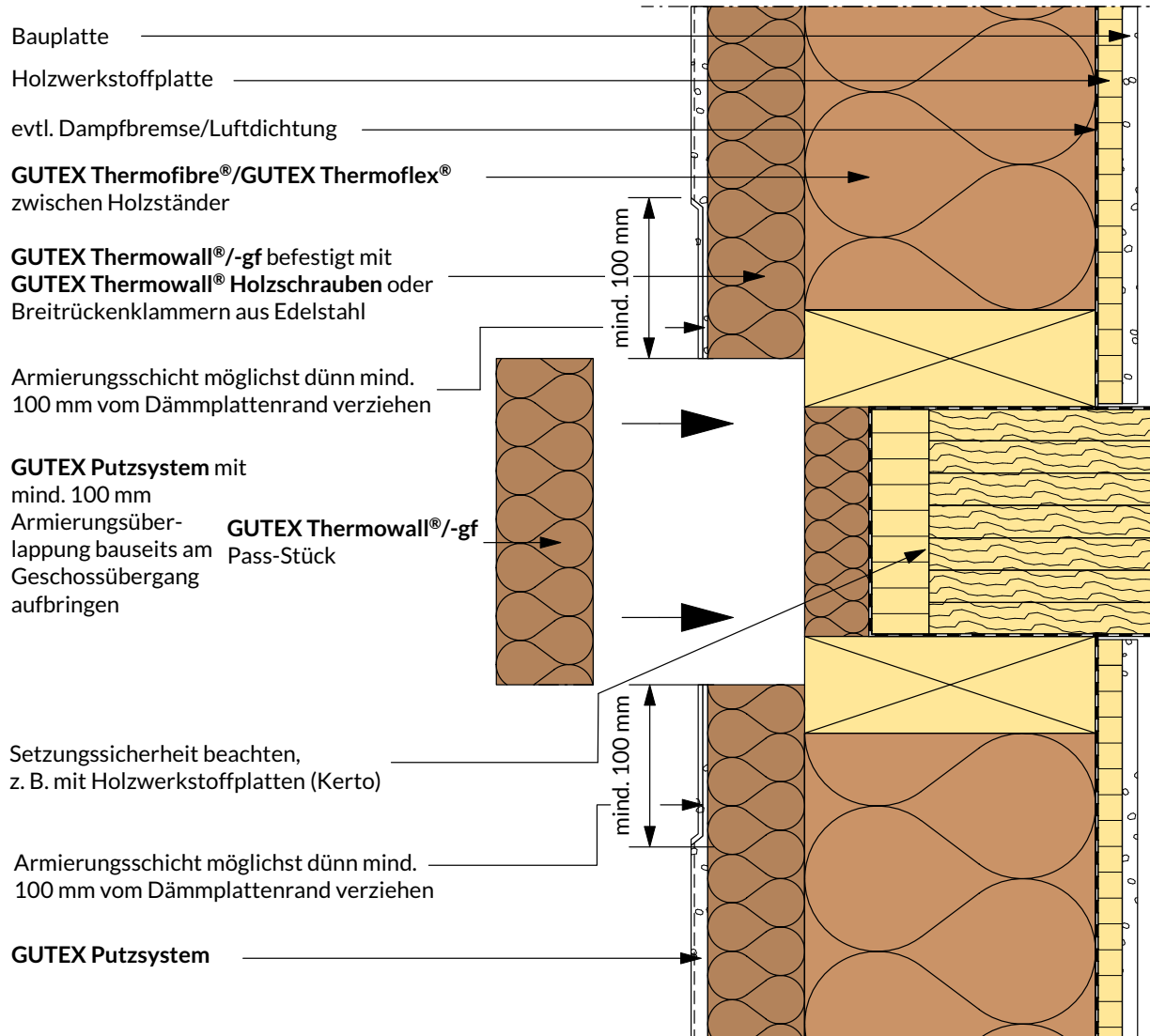


Window ledge junction perspective



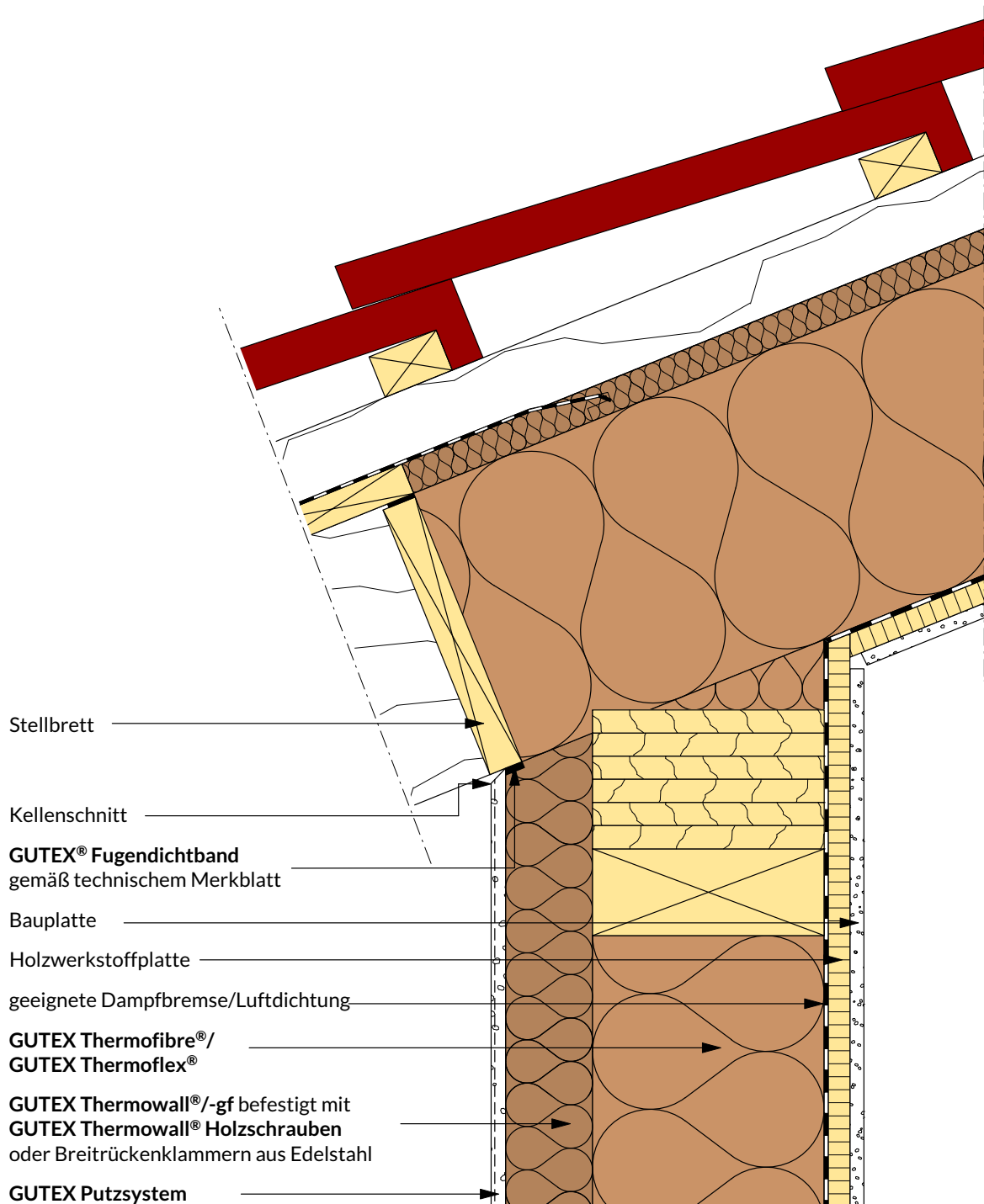
Window and door openings with diagonal reinforcement

3.3 Storey transitions (timber frame construction)

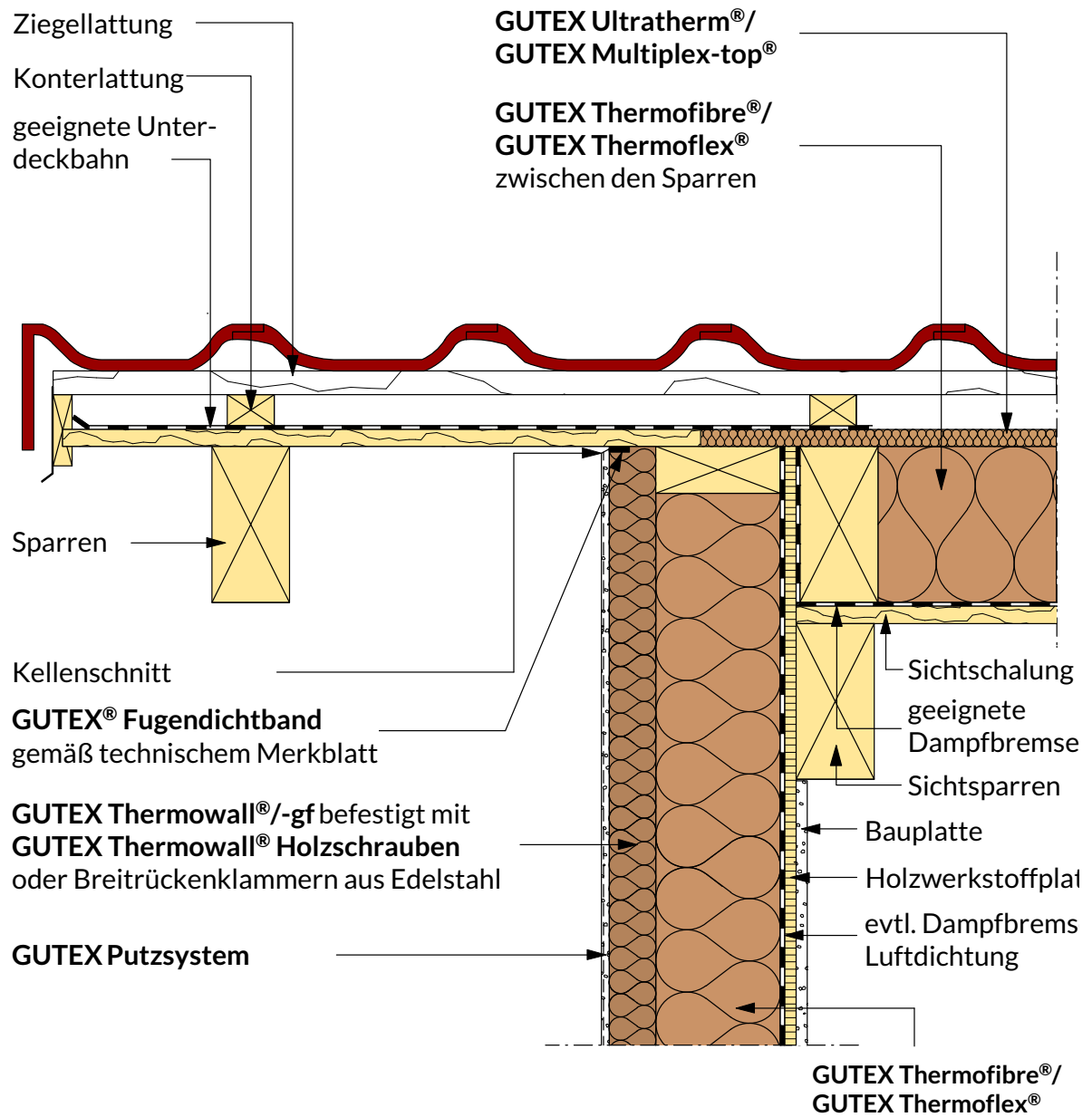




3.4 Eave junctions

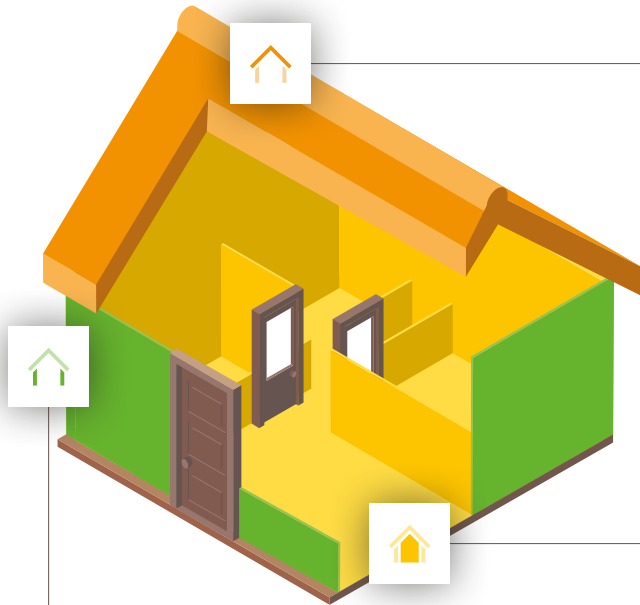


3.5 Verge junctions





5. APPLICATIONS AND SOLUTIONS



Roofs

- › Tecadio® GUTEX roof refurbishment system
- › Above-rafter insulation
- › Sarking boards
- › Flat roof insulation
- › Cavity insulation (GUTEX Thermoflex®)
- › Cavity insulation (GUTEX Thermofibre® blow-in insulation)

Interior

- › Intevio® GUTEX interior insulation system
- › Vapour permeable underlay installed from interior between rafters
- › Rafter underside insulation boards
- › Insulation under screed (dry / wet)
- › Top storey ceiling
- › Suspended ceiling
- › Solid wood flooring / Solid wood plank flooring
- › Service cavity insulation course
- › Partition walls
- › Cavity insulation (GUTEX Thermoflex® batts)
- › Cavity insulation (GUTEX Thermofibre® blow-in insulation)

Exterior Walls

- › Thermowall® ETICS
External Thermal Insulation Composite System
- › Render
- › Rainscreen
- › Brick facing
- › Durio® GUTEX system for unique facade design
- › Implio® GUTEX window integration system
- › Cavity insulation (GUTEX Thermoflex® batts)
- › Cavity insulation (GUTEX Thermofibre® blow-in insulation)

ADVANTAGES



Wholesome indoor environment

Ideal acoustic insulation

Durable exterior walls

Lasting value

Systems deliver greater dependability

Sustainability

Service

Render GUTEX Thermowall® with the render of your preferred manufacturer

A good external thermal insulation-render system should do more than just protect against the cold in winter, the heat in summer and exterior noise. If it's good, it will provide a wholesome indoor environment, like ours does. In addition, GUTEX Thermowall® helps relieve tension and stress caused by the movement of buildings' different elements and materials. And because the surfaces of exterior walls built with GUTEX Thermowall® stay longer warm and dry than those of non-wood-fibre walls, you have another advantage: Often, you can skip the fungicide or algacide paint! Finally, GUTEX Thermowall® has expanded certifications/approvals Z-33.47-660 and Z-33.43-942, which means you can choose from 13 render manufacturers.

OUR PRODUCT AND SERVICE DESIGNATIONS



Roof



Wall



Interior

Hotline

GUTEX Anwendungstechnik

Phone: +49 7721 920-0

anwendungstechnik@gutex.de

 **GUTEX**[®]
NATURALLY MADE FROM WOOD

GUTEX Holzfaserplattenwerk

Gutenberg 5 | D-79761 Waldshut-Tiengen, Germany

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*Knowing you've
done the right thing.
That's the
GUTEX effect.*



THE
GUTEX
EFFECT