THE ECOLOGICAL EXTERNAL THERMAL INSULATION COMPOSITE SYSTEM

No ETICS offers more freedom in the choice of render manufacturer
## TABLE OF CONTENTS

1. **System Solution** ................................................................. P.4
   1.1 Main components ......................................................... P.4
   1.1.1 Plasterboard technical data ........................................ P.5
   1.2 Applications and standard assembly ................................ P.8

2. **Installation Steps** ............................................................ P.9
   2.1 General guidelines .................................................... P.9
   2.1.1 Bottom edges adjacent to foundation ....................... P.9
   2.1.2 Wall openings ..................................................... P.10
   2.1.3 Junctions and sealing ........................................... P.10
   2.1.4 Board joints ...................................................... P.11
   2.1.5 Expansion joints ............................................... P.11
   2.1.6 Kicker ............................................................ P.11
   2.1.7 Fastening of objects to exterior walls ..................... P.12
   2.1.8 Exposure to weather ........................................... P.14
   2.2 Installation .......................................................... P.14
   2.2.2 Timber framed constructions ................................ P.15
   2.2.3 Wood substrates ............................................... P.19
   2.2.4 Mineral substrates ............................................ P.23
   2.3 Prepping for render and trade transfer ....................... P.26

2.4 Render .............................................................. P.26
   2.4.1 Approved render systems .................................... P.26
   2.4.2 Render system partners .................................... P.27
   2.4.3 Components and their attributes .......................... P.28
   2.4.4 Prerequisites for successful render application .... P.31
   2.4.5 Installation .................................................... P.31

3. **Design Details** ............................................................... P.34
   3.1 Foundation-wall junction ....................................... P.34
   3.2 Window integration ............................................... P.36
   3.3 Storey transitions (timber frame construction) .......... P.38
   3.4 Eave junctions .................................................... P.39
   3.5 Verge junctions ..................................................... P.40

4. **Product Range and Accessories** ........................................ P.41
5. **Applications and Solutions** ........................................... P.43
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)

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

<table>
<thead>
<tr>
<th>Joint Type</th>
<th>Butt</th>
<th>Tongue and Groove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed on timber studs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installed on solid wood substrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installed on composite wood boarding/sheathing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheathing on masonry substrates</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Uses as per DIN V 4108-10**

<table>
<thead>
<tr>
<th>Length (mm)</th>
<th>1250</th>
<th>830</th>
<th>2600</th>
<th>2800</th>
<th>1300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width (mm)</td>
<td>590</td>
<td>600</td>
<td>1250</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Nominal thickness (mm)</td>
<td>20/40/60/80</td>
<td>100/120/140/160</td>
<td>80/100/120</td>
<td>80/100/120/140</td>
<td></td>
</tr>
<tr>
<td>Actual coverage, length x width (mm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1276/576</td>
</tr>
<tr>
<td>Square metres per sheet (m²)</td>
<td>0.738</td>
<td>0.498</td>
<td>3.25</td>
<td>3.5</td>
<td>0.78</td>
</tr>
<tr>
<td>Weight per sheet (kg)</td>
<td>2.4/4.7/7.1/9.4</td>
<td>8.0/9.6/11.2/12.7</td>
<td>41.6/52.0/62.4</td>
<td>44.8/56.0/67.2</td>
<td>10.0/12.5/15.0/17.5/20.0</td>
</tr>
<tr>
<td>Weight per m² (kg)</td>
<td>3.2/6.4/9.6/12.8</td>
<td>16.0/19.2/22.4/25.6</td>
<td>12.8/16.0/19.2</td>
<td>12.8/16.0/19.2/22.4/25.6</td>
<td></td>
</tr>
<tr>
<td>Boards per pallet</td>
<td>224/112/70/56</td>
<td>42/32/28/24</td>
<td>12/9/8</td>
<td>54/44/36/32/28</td>
<td></td>
</tr>
<tr>
<td>Weight per pallet (kg)</td>
<td>540.0</td>
<td>320.0</td>
<td>520.0</td>
<td>560.0</td>
<td>560.0</td>
</tr>
<tr>
<td>Density (kg/m³)</td>
<td>~160.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal conductivity λ (W/mK) as per German reg.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.042</td>
</tr>
<tr>
<td>Thermal resistance R (m²K/W)</td>
<td>0.45/0.95/1.40/1.90</td>
<td>2.35/2.85/3.30/3.80</td>
<td>1.90/2.35/2.85</td>
<td>1.90/2.35/2.85/3.30/3.80</td>
<td></td>
</tr>
<tr>
<td>sd-value (m)</td>
<td>0.08/0.16/0.24/0.32</td>
<td>0.40/0.48/0.56/0.64</td>
<td>0.32/0.40/0.48</td>
<td>0.32/0.40/0.48/0.48</td>
<td></td>
</tr>
<tr>
<td>Compressive stress/ strength (kPa)</td>
<td></td>
<td></td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tensile strength perpendicular to board surface (kPa)</td>
<td></td>
<td></td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-term water absorption (kg/m²)</td>
<td></td>
<td></td>
<td></td>
<td>≤ 1.0</td>
<td></td>
</tr>
<tr>
<td>Air flow resistivity (kPa·s/m²)</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Specific heat capacity (J/kgK)</td>
<td></td>
<td></td>
<td></td>
<td>2100</td>
<td></td>
</tr>
<tr>
<td>Fire reaction Euro Class as per DIN EN 1350-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Euro Class E</td>
</tr>
</tbody>
</table>
### 1. System Solution

<table>
<thead>
<tr>
<th>Joint Type</th>
<th>GUTEX Thermowall® NF</th>
<th>GUTEX Thermowall®-gf ¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed on timber studs</td>
<td>Tongue and Groove</td>
<td>Butt</td>
</tr>
<tr>
<td>Installed on solid wood substrate</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Installed on composite wood boarding/sheathing</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Sheathing on masonry substrates</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Uses as per DIN V 4108-10

<table>
<thead>
<tr>
<th>Length (mm)</th>
<th>1800</th>
<th>2600/2800</th>
<th>1300</th>
<th>1800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width (mm)</td>
<td>600</td>
<td>1250</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Nominal thickness (mm)</td>
<td>60</td>
<td>40</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Actual coverage, length x width (mm)</td>
<td>1780/580</td>
<td>1276/576</td>
<td>1776/576</td>
<td></td>
</tr>
<tr>
<td>Square metres per sheet (m²)</td>
<td>1.08</td>
<td>3.25/3.5</td>
<td>0.78</td>
<td>1.08</td>
</tr>
<tr>
<td>Weight per sheet (kg)</td>
<td>10.4</td>
<td>24.1/25.9</td>
<td>36.1/38.9</td>
<td>5.7</td>
</tr>
<tr>
<td>Weight per m² (kg)</td>
<td>9.6</td>
<td>7.4</td>
<td>11.1</td>
<td>7.4</td>
</tr>
<tr>
<td>Boards per pallet</td>
<td>34</td>
<td>24</td>
<td>15</td>
<td>108</td>
</tr>
<tr>
<td>Weight per pallet (kg)</td>
<td>370.0</td>
<td>610.0/650.0</td>
<td>570.0/610.0</td>
<td>650.0</td>
</tr>
<tr>
<td>Density (kg/m³)</td>
<td>~160</td>
<td>~185.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal conductivity λ (W/mK) as per German reg.</td>
<td>0.042</td>
<td>0.045</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal resistance R (m²K/W)</td>
<td>1.40</td>
<td>0.85</td>
<td>1.30</td>
<td>0.85</td>
</tr>
<tr>
<td>sd-value (m)</td>
<td>0.24</td>
<td>0.12</td>
<td>0.18</td>
<td>0.12</td>
</tr>
<tr>
<td>Compressive stress/ strength (kPa)</td>
<td>100</td>
<td>≤ 150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tensile strength perpendicular to board surface (kPa)</td>
<td>10</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-term water absorption (kg/m²)</td>
<td>≤ 1.0</td>
<td>≤ 1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air flow resistivity (kPa·s/m²)</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific heat capacity (J/kgK)</td>
<td>2100</td>
<td>2100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire reaction Euro Class as per DIN EN 1350-1</td>
<td>Euro Class E</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹) Suitable for REI 90 compliance-tested structures.
### 1. System Solution

<table>
<thead>
<tr>
<th>Joint Type</th>
<th>GUTEX Thermowall®-L*</th>
<th>GUTEX Thermowall® Durio®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed on timber studs</td>
<td>Butt</td>
<td>Tongue and Groove</td>
</tr>
<tr>
<td>Installed on solid wood substrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installed on composite wood boarding/sheathing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheathing on masonry substrates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses as per DIN V 4108-10</td>
<td>Dlzg, DEOdm, WABdm, WAPzh</td>
<td>Dlzg, DEOds, WABds, WAPzh</td>
</tr>
<tr>
<td>Length (mm)</td>
<td>1250</td>
<td>1800</td>
</tr>
<tr>
<td>Width (mm)</td>
<td>590</td>
<td>600</td>
</tr>
<tr>
<td>Nominal thickness (mm)</td>
<td>120/140/160/180/200</td>
<td>70</td>
</tr>
<tr>
<td>Actual coverage, length x width (mm)</td>
<td>1780/580</td>
<td></td>
</tr>
<tr>
<td>Square metres per sheet (m²)</td>
<td>0.738</td>
<td>1.08</td>
</tr>
<tr>
<td>Weight per sheet (kg)</td>
<td>9.7/11.4/13.0/14.6/16.2</td>
<td>12.1</td>
</tr>
<tr>
<td>Weight per m² (kg)</td>
<td>13.2/15.4/17.6/19.8/22.0</td>
<td>11.2</td>
</tr>
<tr>
<td>Boards per pallet</td>
<td>36/32/28/24/22</td>
<td>32</td>
</tr>
<tr>
<td>Weight per pallet (kg)</td>
<td>370.0</td>
<td>410.0</td>
</tr>
<tr>
<td>Density (kg/m³)</td>
<td>~110.0</td>
<td>~160.0</td>
</tr>
<tr>
<td>Thermal conductivity λ (W/mK) as per German reg.</td>
<td>0.040</td>
<td>0.042</td>
</tr>
<tr>
<td>Thermal resistance R (m²K/W)</td>
<td>3.00/3.50/4.00/4.50/5.00</td>
<td>1.65</td>
</tr>
<tr>
<td>sd-value (m)</td>
<td>0.36/0.42/0.48/0.54/0.60</td>
<td>0.28</td>
</tr>
<tr>
<td>Compressive stress/ strength (kPa)</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Tensile strength perpendicular to board surface (kPa)</td>
<td>7.5</td>
<td>10</td>
</tr>
<tr>
<td>Short-term water absorption (kg/m²)</td>
<td>≤ 1.0</td>
<td></td>
</tr>
<tr>
<td>Air flow resistivity (kPa·s/m²)</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Specific heat capacity (J/kgK)</td>
<td>2100</td>
<td></td>
</tr>
<tr>
<td>Fire reaction Euro Class as per DIN EN 1350-1</td>
<td>Euro Class E</td>
<td></td>
</tr>
</tbody>
</table>

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®-L
     GUTEX Thermowall® NF
     GUTEX Thermowall® Durio
   - Certified render system

2. Over wall boards, wood composite or solid wood
   - Timber framed construction, cavities insulated with
     GUTEX Thermofibre®/GUTEX Thermoflex®
     GUTEX Thermowall®
     GUTEX Thermowall®-gf
     GUTEX Thermowall®-L
     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

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

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®-L
     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

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 0.8 l/m² on the face and approx. 2.0 l/m² for the edge, Minimum of 2 coats are necessary
- Dry: approx. 3-4 h, visual inspection possible

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.
2.1.4 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.

pron 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.

pron 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.

pron 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:

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

**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.
2. Installation Steps

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 loads\(^1\) for an individual fastener:

<table>
<thead>
<tr>
<th>Type</th>
<th>UX10/Thermax 8</th>
<th>UX12/Thermax 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended tensile strength in specified building material (N_{\text{rec}})(^2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete (^3)-(^4)</td>
<td>(\geq C20/25)</td>
<td>1.00</td>
</tr>
<tr>
<td>Solid brick (^3)-(^4)</td>
<td>(\geq Mz 12)</td>
<td>0.50</td>
</tr>
<tr>
<td>Hollow sand-lime block (^3)-(^4)</td>
<td>(\geq KSL 12)</td>
<td>0.60</td>
</tr>
<tr>
<td>Vertically hollow brick (^4)</td>
<td>(\geq Hlz 12)</td>
<td>0.20</td>
</tr>
<tr>
<td>Porous concrete (^3)-(^4)</td>
<td>(\geq P4)</td>
<td>0.40</td>
</tr>
</tbody>
</table>

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 loads\(^1\) for an individual fastener:

<table>
<thead>
<tr>
<th>Type</th>
<th>UX10/Thermax 8</th>
<th>UX12/Thermax 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended transversal load (V_{\text{rec}})(^6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>External thermal insulation composite system(^2)</td>
<td>(\leq 180) mm</td>
<td>0.15</td>
</tr>
</tbody>
</table>

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)

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 ingestion 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

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

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

<table>
<thead>
<tr>
<th>Timber Stud Spacing [mm]</th>
<th>Minimum Quantity of Fasteners Per Stud and Board (Board width 600 mm)</th>
<th>Approved Vertical Max. Spacing Fasteners [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind load w as per DIN 1055-4 [kN/m²]</td>
<td>-1.00</td>
<td>-1.60</td>
</tr>
<tr>
<td>GUTEX Thermowall® Holzschraube (GUTEX Thermowall® wood screws)</td>
<td>625</td>
<td>3</td>
</tr>
<tr>
<td>833***</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Stainless steel wide-back staples</td>
<td>≤ 521</td>
<td>5</td>
</tr>
<tr>
<td>625</td>
<td>6</td>
<td>A ≤ 100</td>
</tr>
<tr>
<td>≤ 729**</td>
<td>7</td>
<td>A ≤ 85</td>
</tr>
<tr>
<td>833***</td>
<td>8</td>
<td>A ≤ 75</td>
</tr>
</tbody>
</table>

** On-centre distance 750 mm only with GUTEX Thermowall® Durio 600 x 1,800 x 70 mm
*** On-centre distance 833 mm only with GUTEX Thermowall®-gf 600 x 1,800 x 60 mm
2. Installation Steps

- 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.

### Two-course insulation, configurations

When used together with GUTEX Thermosafe-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:

#### GUTEX Thermosafe-homogen®

<table>
<thead>
<tr>
<th>Thickness (mm)</th>
<th>Butt</th>
<th>60, 80, 100, 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length x width: (cm)</td>
<td>120 x 62.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thickness (mm)</th>
<th>Rebate</th>
<th>140, 160, 180, 200, 220, 240</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length x width: (cm)</td>
<td>120 x 62.5</td>
<td></td>
</tr>
</tbody>
</table>

#### Recommended Configurations

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

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

<table>
<thead>
<tr>
<th>Smaller boards</th>
<th>GUTEX Thermowall®</th>
<th>≥ 80 mm</th>
<th>62.5 cm (board length 1300 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUTEX Thermowall®-gf</td>
<td>≥ 40 mm</td>
<td>62.5 cm</td>
<td></td>
</tr>
<tr>
<td>GUTEX Thermowall®-gf</td>
<td>60 mm</td>
<td>83.3 cm (only board length 1800 mm)</td>
<td></td>
</tr>
<tr>
<td>GUTEX Thermowall® NF</td>
<td>60 mm</td>
<td>62.5 cm</td>
<td></td>
</tr>
<tr>
<td>GUTEX Thermowall® Durio</td>
<td>70 mm</td>
<td>75.0 cm</td>
<td></td>
</tr>
<tr>
<td>GUTEX Thermowall®-L*</td>
<td>≥ 120 mm</td>
<td>62.5 cm (over sheathing)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Larger boards (butted joints)</th>
<th>GUTEX Thermowall®-gf</th>
<th>≥ 40 mm</th>
<th>62.5 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUTEX Thermowall®</td>
<td>≥ 80 mm</td>
<td>62.5 cm</td>
<td></td>
</tr>
</tbody>
</table>

### 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.
2.2.3.2 Placement of fasteners

Single course insulation

Minimum quantity of fasteners per square metre on solid wood substrates

<table>
<thead>
<tr>
<th>Wind load ( w_e ) as per DIN 1055-4 [kN/m²]</th>
<th>- 1.00</th>
<th>- 1.60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum quantity of GUTEX Thermowall® Holzschrauben for single-course installation</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Minimum quantity of wide-back staples for single-course installation of GUTEX Thermowall®/-gf</td>
<td>16</td>
<td>125 mm (max. allowed vertical distance between fasteners)</td>
</tr>
</tbody>
</table>

› 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

Length x width: 125 x 59 cm

- 6 Fasteners/m²
Two-course insulation, configurations

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!
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**

<table>
<thead>
<tr>
<th>Wind load $w_v$ as per DIN 1055-4 [kN/m²]</th>
<th>0.77</th>
<th>1.00</th>
<th>1.60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum number of GUTEX Thermowall® Holzschrauben (wood screws) in double-course installation of GUTEX Thermowall® over GUTEX Thermosafe-homogen*</td>
<td>4</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>

Building authorities’ specifications apply for the spacing of fasteners from edges.
2.2.4 Mineral substrates

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 We as per DIN 1055-4).
› The ETICS Thermoschraubdübel (thermally-decoupled screw fastener) approval specifies the following fastener sheer strengths:

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

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.
2. Installation Steps

2.2.4.3 Placement of fasteners

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**

<table>
<thead>
<tr>
<th>Wind load $w_\text{a}$ as per DIN 1055-4 [kN/m²]</th>
<th>- 0.55</th>
<th>- 1.00</th>
<th>- 1.60</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUTEX® WDVS Thermoschraubdübel (thermally decoupled screw fasteners) or thermally decoupled hammer fasteners</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

› 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)!

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](image)

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

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.
2. Installation Steps

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® Combi-putz (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 (silicat 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!).

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.
2. Installation Steps

Final render coat (mineral)

› Final render

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

<table>
<thead>
<tr>
<th>Grain</th>
<th>Quantity/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 mm</td>
<td>1.7</td>
</tr>
<tr>
<td>2.0 mm</td>
<td>2.3</td>
</tr>
<tr>
<td>3.0 mm</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Comes in 25-kg bag

Mix 25 kg of GUTEX® Combiutz 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-Silikoharzputz or GUTEX Durio® Silikonharz-Oberputz. Depending on the specific surface conditions, you will need the following quantities:

<table>
<thead>
<tr>
<th>Grain</th>
<th>Quantity/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 mm</td>
<td>Scraped: approx. 2.3</td>
</tr>
<tr>
<td>2.0 mm</td>
<td>Scraped: approx. 3.0</td>
</tr>
<tr>
<td>3.0 mm</td>
<td>Scraped: approx. 4.3</td>
</tr>
</tbody>
</table>

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. Design Details


Detail WDVS GUTEX Thermowall®

Anschluss Erd- und Spritzwasserbereich

Schwellenabstand zu GOK ≥ 50 mm

Wasserführende Schicht

mind. 50 mm

nach DIN 68800

Gebäudeabdichtung nach DIN 18195

mind. 150 mm

über GOK

mind. 300 mm

Gebäudeabdichtung nach DIN 18 195

bis min. 150 mm über Geländeoberkante

Sockelputz

Perimeterdämmung

Klebeschicht

geeignete Dampfbremse

mind. 100 mm höher als äußere Abdichtung

GUTEX® Sockelanstrich

mind. 300 mm über Geländeoberkante

Quellmörtel

GUTEX® Sockelabschlussleiste

mit GUTEX® Sockelaufsteckprofil

GUTEX® Fugendichtband

gemäß technischem Merkblatt

≥300 mm

50 mm

≥

GUTEX® Fugendichtband

gemäß technischem Merkblatt

Mind. 300 mm

wasserführende Schicht

mind. 300 mm

Kiesbett

vlieskaschiert Noppenfolie

Sockelputz

Perimeterdämmung

Klebeschicht

Gebäudeabdichtung nach DIN 18 195

bis min. 150 mm über Geländeoberkante

mind. 50 mm

nach DIN 68800

mind. 150 mm

über GOK

GUTEX® Sockelanstrich

mind. 300 mm über Geländeoberkante

Quellmörtel

GUTEX® Sockelabschlussleiste

mit GUTEX® Sockelaufsteckprofil

GUTEX® Fugendichtband

gemäß technischem Merkblatt

≥300 mm

50 mm

≥
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 ledger 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)


Detail WDVS GUTEX Thermowall®

Anschluss Geschossübergang bei werkseitiger Vorfertigung

GUTEX Thermofibre®/GUTEX Thermoflex® zwischen Holzständer

GUTEX Thermowall®/gf befestigt mit GUTEX Thermowall® Holzschrauben oder Breitrückenklammern aus Edelstahl

Armierungsschicht möglichst dünn mind. 100 mm vom Dämmplattenrand verziehen

GUTEX Putzsystem mit mind. 100 mm Armierungsüberlappung bauseits am Geschossübergang aufbringen

Setzungssicherheit beachten, z. B. mit Holzwerkstoffplatten (Kerto)

Armierungsschicht möglichst dünn mind. 100 mm vom Dämmplattenrand verziehen

GUTEX Putzsystem
3.4 Eave junctions


GUTEX® Fugendichtband
gemäß technischem Merkblatt

GUTEX Thermofibre®/
GUTEX Thermoflex®

Stellbrett
Kellenschnitt

GUTEX® Holzschrauben
oder Breitrückenklammern aus Edelstahl

GUTEX Putzsystem

geeignete Dampfbremse/Luftdichtung

GUTEX® Putzsystem

GUTEX® Holzschrauben
oder Breitrückenklammern aus Edelstahl

GUTEX Putzsystem

GUTEX® Putzsystem
3.5 Verge junctions

- Ziegellattung
- Konterlattung
- geeignete Unterdeckbahn

- Sparren

- Kellenschnitt

- GUTEX Fugendichtband gemäß technischem Merkblatt

- GUTEX Thermowall®/GUTEX Multiplex-top® befestigt mit GUTEX Thermowall® Holzschrauben oder Breitrückenklammern aus Edelstahl

- GUTEX Putzsystem

- GUTEX Ultratherm®/GUTEX Thermofibre®, GUTEX Thermoflex® zwischen den Sparren

- Bauplatte
- Holzwerkstoffplatte
- evtl. Dampfbrems-Luftpunktion
- Sichtsparren

- Sichtschalung geeignete Dampfbremse

- geeignete Unterdeckbahn
4. PRODUCT RANGE AND ACCESSORIES

NOTE

For a complete list of our products and accessories, please view our price list at:

www.gutex.de
4. PRODUCT RANGE AND ACCESSORIES

**NOTE**
For a complete list of our products and accessories, please view our price list at:

www.gutex.de
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)

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)

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)
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 algaecide 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.

**ADVANTAGES**

- Wholesome indoor environment
- Ideal acoustic insulation
- Durable exterior walls
- Lasting value
- Systems deliver greater dependability
- Sustainability
- Service

**OUR PRODUCT AND SERVICE DESIGNATIONS**

- Roof
- Wall
- Interior

**Hotline**

GUTEX Anwendungstechnik
Phone: +49 7721 920-0
anwendungstechnik@gutex.de

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