ISOMUR® PLUS

The wall base element for providing efficient insulation for the base of buildings

Sealing ■ Thermal insulation ■ Formwork ■ Sound insulation ■ Reinforcement ■ Connection ■ Accessories

Forward Constructing.

OUR CONVICTION:
FORWARD CONSTRUCTING.

Not just to reflect the current state of building technology, but always to be a decisive step ahead – this is our promise. This is why we constantly achieve pioneering work in all product areas. Our employees consistently use their extensive practical experience and creativity to benefit our customers. Through regular collaborative dialogue with our target groups, we develop today the products which are needed tomorrow. With our dynamics we set consistently milestones in building technology – yesterday, today and tomorrow. This is what we mean by Forward Constructing.

CONTENT

04 ISOMUR® Plus
The wall base element for providing efficient insulation for the base of buildings

04 Thermal insulation and moisture protection

08 Fire protection and sound insulation

09 Energy Saving Regulation (EnEV)

10 Thermal parameters

11 Structural dimensioning

12 Wall base design

13 Installation instructions

16 Service & Contact
We are at your service.
Wherever you are, you can count on us.

THERMAL INSULATION AND MOISTURE PROTECTION

SAVING ENERGY – A HEALTH RISK?

THE BETTER THE THERMAL INSULATION OF THE BUILDING ENVELOPE, THE TRICKIER THE ISSUE OF THERMAL BRIDGING BECOMES.

Thermal bridges are becoming increasingly problematic due to continuous improvements to the thermal insulation of building envelopes.
This situation is borne out by the fact that fungal growth is an issue that must be taken seriously even in new buildings, and that building developers and construction specialists are increasingly being confronted by this problem.
The risk of mould growth is increased unless measures to tackle thermal bridging are introduced alongside the actual energy saving measures. This means that energy-saving measures that only concentrate on a single aspect of the problem can become a health risk.

THE BASE OF THE BUILDING – A WEAK POINT

UNINSULATED BASE OF THE BUILDING

If the base of the building is uninsulated, the walls built on top of it will create a gap in the thermal envelope of the building between the exterior wall insulation and the thermal insulation over the cellar roof.

This means:

- Increased risk of mould growth because of a local increase in relative humidity due to the lower surface temperature at the base of the wall
- Loss of heat

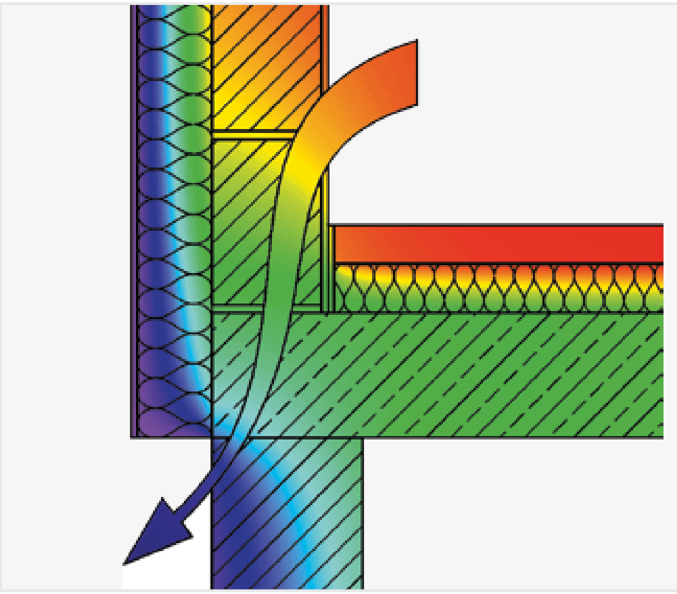
INSULATED BASE OF THE BUILDING

ISOMUR® Plus closes the gap in the thermal insulation between the exterior wall insulation and the insulation over the cellar roof.

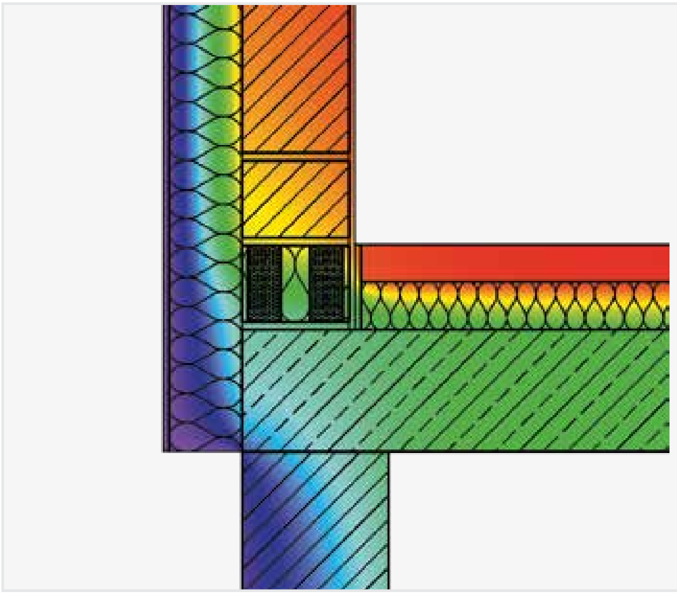
This means:

- Healthy indoor climate
- The risk of mould growth is mitigated
- Loss of heat is minimised

UNINSULATED BASE OF THE BUILDING



INSULATED BASE OF THE BUILDING



NOTE:
Our ISOMUR® Plus elements are approved in accordance with the national technical approval no. Z-17.1-811

THERMAL INSULATION AND MOISTURE PROTECTION

EFFICIENT INSULATION FOR THE BASE OF BUILDINGS

ISOMUR® Plus elements are designed for use with all brick residential structures and correspond to brick compressive strength class 20.
The risk of moisture damage within rooms in the form of discolourations and mould growth can be mitigated by using ISOMUR® Plus. The elements fully meet all requirements for load-bearing capacity and suitability for use under practical conditions.

ISOMUR® PLUS SOLVES THE PROBLEM OF THERMAL BRIDGING AT THE BASE OF THE WALL

These elements do not absorb moisture, which means that thermal insulation is not compromised by the moisture that occurs in the construction phase. ISOMUR® Plus has thermal insulating properties that significantly mitigate thermal bridging.
These elements can be installed easily and without problems, meaning that perfect quality is not dependant on tricky measures during construction.

Elements laid as the bottom layer in brickwork

THERMAL INSULATION AND MOISTURE PROTECTION

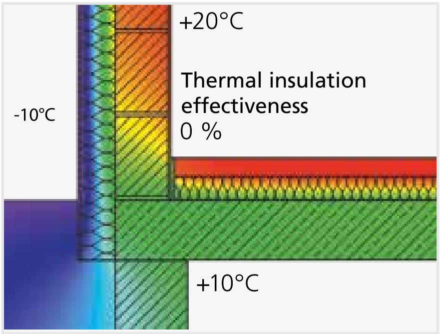
COMPARISON OF INSULATING MEASURES

BASE OF THE BUILDING WITH NO SPECIAL MEASURES

If no special measures are employed at the base of the building, the walls built on top of it will create a gap in the thermal envelope of the building between the exterior wall insulation and the insulation over the cellar roof. In conjunction with the high vertical thermal conductivity of the building bricks ($\lambda \approx 1.0$ W/mK), this causes a massive thermal bridge to form at the base of the building.

This means:

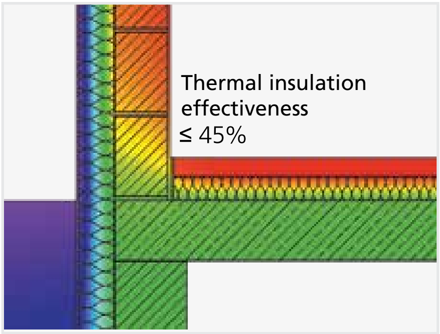
- A reduction in the surface temperature within the room, resulting in a risk of discolouration, mould growth and condensation forming
- Increased heat loss, resulting in higher heating costs



With no special insulation measures

CONSTRUCTIONAL INSULATION MEASURES

The exterior wall insulation often continues into the earth in the form of perimeter insulation in order to mitigate thermal bridging at the base of the building. The costs of this measure are not insignificant and the thermal insulation that it provides is limited. Notably, continuing to extend the perimeter insulation downwards provides no further increase in insulation effectiveness beyond a depth of approx. 0.5 m.

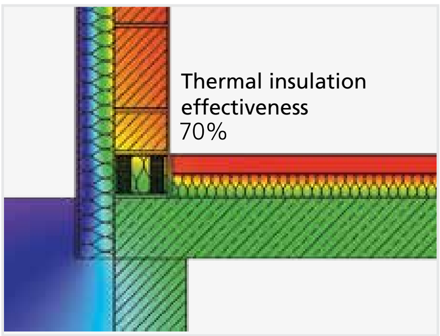


Constructional insulation measures

INSULATION WITH ISOMUR® PLUS

ISOMUR® Plus load-bearing thermal insulation elements close the gap in the thermal insulation between the exterior wall insulation and the insulation over the cellar roof. This provides continuous and highly efficient thermal insulation.
This means:

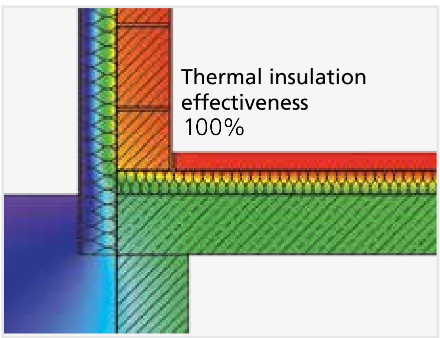
- An increase in the surface temperature in the room to significantly above the critical dew point
- Mitigation of the risk of mould growth and condensation forming and a healthy indoor climate
- Loss of heat is minimised, providing a reduction in heating costs



Insulation with ISOMUR® Plus

THEORETICALLY IDEAL INSULATION FOR THE BASE OF THE BUILDING

The theoretically ideal scenario of a fully enclosed thermal insulation layer is defined as a reference point for the purpose of comparing the thermal insulation effectiveness of the constructions described above.
However, for structural reasons, it is not possible to implement this measure in practice.



Theoretically ideal insulation

THERMAL INSULATION AND MOISTURE PROTECTION

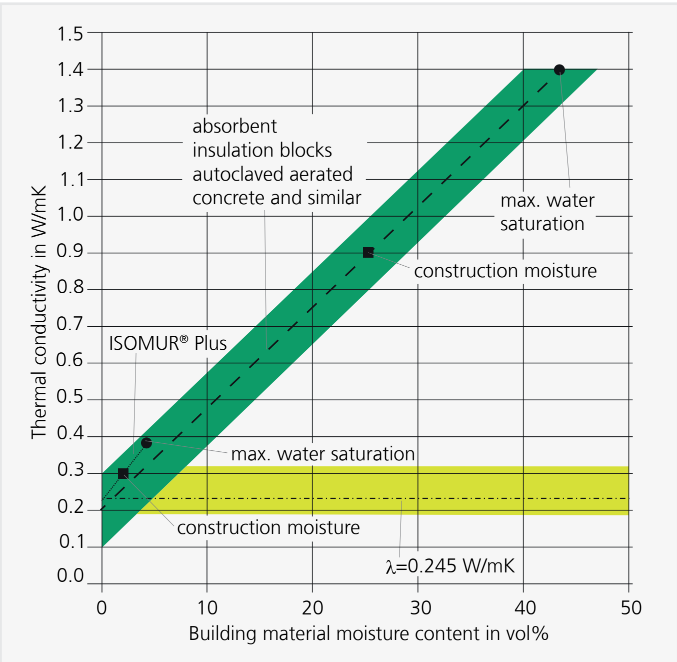
MATERIALS AND THERMAL INSULATION EFFECTIVENESS

THERMAL INSULATION EFFECTIVENESS AND MOISTURE

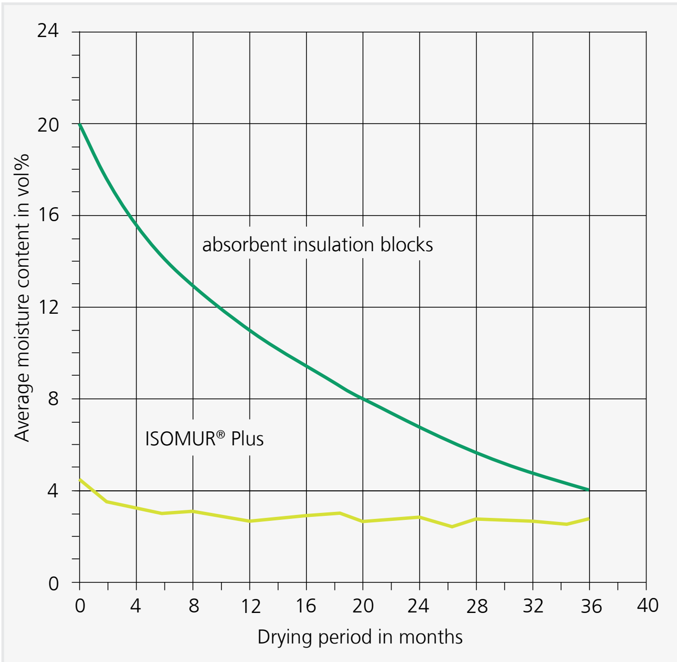
Thermal conductivity is a material parameter that is significantly affected by the moisture content of the material. The greater the absorbency of a material, the greater the negative effect on its thermal insulation effectiveness. This means that the choice of material is of vital importance for applications in damp environments.

DECLARED VALUES AND ACTUAL CONDITIONS

Absorbent building bricks have a significantly higher thermal conductivity than the λ values declared in data sheets when they are saturated with moisture.
Thermal conductivity increases by approx. 0.28 W/mK for every 10 vol% of moisture content. Autoclaved aerated concrete, for example, can absorb water up to 45 vol%. Consequently, it has a thermal conductivity of approx. 0.9 W/mK at a construction moisture level of 25 vol%. It should always be assumed that there will be moisture at the base of a wall, whether in the form of standing water on the ceiling in the shell or as a result of applying floating screed, to name just two of the possible factors.



Relationship between thermal conductivity and moisture in building materials using aerated concrete and ISOMUR® Plus as examples*



Moisture content during the drying period using absorbent insulation blocks and ISOMUR® Plus as examples

PROGRESSION OF THE DRYING OUT OF BUILDINGS OVER TIME

The moisture absorbed during the construction phase can only be drained away again very slowly at the base of the wall due to the "packing" of the first layer of bricks on all sides. The Fraunhofer Institute for Building Physics used FEM simulations to ascertain that the actual thermal conductivity of absorbent bricks is significantly higher than the declared λ value, not only during the construction phase but over the entire drying period of a new building, which lasts for several years.

THE SOLUTION: MOISTURE-RESISTANT COMPONENTS

ISOMUR® Plus elements feature such a low level of water absorption that they practically act as a barrier layer when laid as the first layer of bricks. This ensures that thermal insulation is guaranteed from the beginning without the need for costly measures during construction.

*Source: Martinelli R., Menti K.: "Mauerfusselemente: Trockene (Mauer-) Füsse für behagliche Räume", TZ Bau + Architektur 3/2001 Untersuchungsbericht Nr. 13.17388 zur Wasseraufnahme von ISOMUR® Plus Elementen, FMPA Baden-Württemberg, Stuttgart

FIRE PROTECTION AND SOUND INSULATION

FIRE PROTECTION

FIRE PROTECTION REQUIREMENTS

The fire protection requirements for building walls in Germany are determined by the state building regulations (Landesbauordnungen) specific to each federal state.
In accordance with the fire protection requirements of the standard building regulations (Musterbauordnung), load-bearing walls in buildings that have a low height (meaning that the uppermost floor level is no higher than 7 m above ground level at any point) and are not free-standing require a fire resistance class of at least F30-B. The provisions in the valid state building regulations must be complied with in each specific case.

FIRE RESISTANCE CLASSES F30 AND F90*

The installation of ISOMUR® elements does not cause the loss of F30 - F90 classification for enclosing walls in accordance with DIN 4102-2:1977-09 – Fire Behaviour of Building Materials and Building Components; Building Components; Definitions, Requirements and Tests – or DIN 4102-4 as long as the following fire protection measures have been carried out:

- Installation of the elements within the ceiling structure so that the upper edge of the element ≤ the upper edge of the screed (fire behaviour class A), or
- Elements plastered on both sides with a minimum plaster thickness of 15 mm in accordance with DIN 4102-4, section 4.5.2.10

Alternatively, the plaster on the outside of exterior walls can be replaced with mineral wool with a melting point of ≥ 1000 °C as thermal insulation or with faced brickwork.

F90 classification in accordance with DIN 4102:1977-09 for enclosing exterior walls with a thickness of at least 175 mm will likewise not be lost as long as the ISOMUR® Plus elements are only installed at the base of the wall and within the ceiling structure in such a way that the upper edge of the element < the upper edge of the screed (fire behaviour class A) and as long as a thermal insulation composite system with insulating material that is at least flame resistant is applied on the outside.

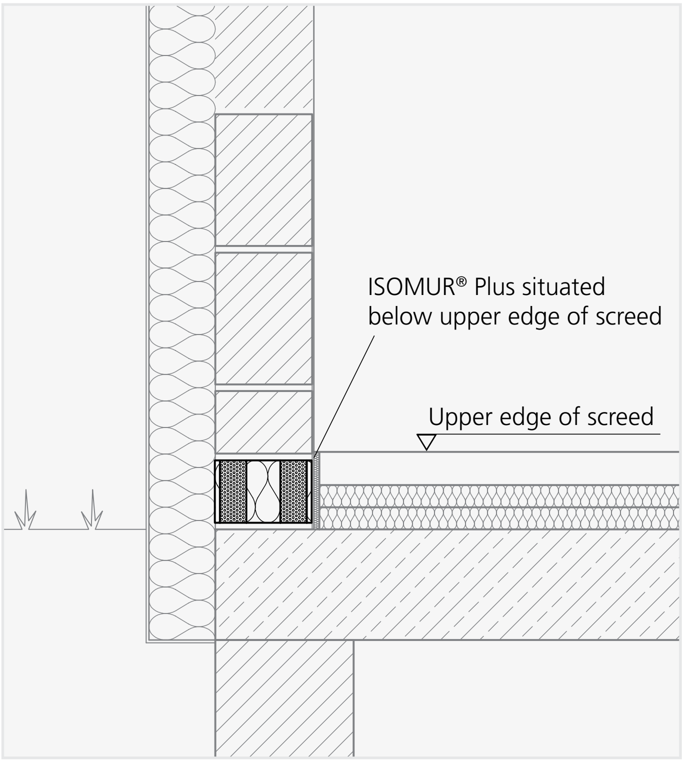
Installation of the thermal insulation elements does not cause the loss of F30 - F90 classification for non-enclosing walls in accordance with DIN 4102-2:1977-09 or DIN 4102-4. Additional fire protection measures are not necessary.

The designation of the walls during installation of ISOMUR® Plus is as follows:
F30-AB, F60-AB or F90-AB in accordance with DIN 4102-2

The fire resistance class for load-bearing columns and load-bearing, non-enclosing wall sections (length < 1 m) has not been established.

FIREWALLS*

The use of ISOMUR® Plus elements in firewalls in accordance with DIN 4102-3:1977-09 – Fire Behaviour of Building Materials and Building Components; Fire Walls and Non-load-bearing External Walls; Definitions, Requirements and Tests – is not permitted.



F30 or F90 for fire protection enclosing walls

SOUND INSULATION

Installing ISOMUR® Plus does not compromise the sound insulation characteristics of the wall.

*Source: Deutsches Institut für Bautechnik DIBt | National technical approval no. Z-17.1-811 | Section 3.6.2

ENERGY SAVING REGULATION (EnEV)

The German Energy Saving Regulation came into force on 01.02.2002 and provides a binding specification for the energy standard for new buildings.
The calculation methods in accordance with the EnEV numerically factor in the effects of thermal bridging when calculating heat loss due to transmission. The effects of thermal bridging play a particularly significant role in buildings that have a high thermal standard.

THREE OPTIONS FOR QUANTITATIVELY RECORDING THE EFFECTS OF THERMAL BRIDGING:

1. No verification of thermal bridging: The thermal transmittance is increased by an increment of ΔU_{WB}= 0.10 W/(m²K) for the entire thermal transmission surface area.
2. Verification of thermal bridging in accordance with DIN 4108, supplementary sheet 2: For construction details in accordance with the planning examples as per DIN 4108, supplementary sheet 2, an increase in the heat transmittance by ΔU_{WB} = 0.05 W/(m²K) must be expected for the entire thermal transmission surface area.
3. Accurate verification of thermal bridging: With verification of thermal bridging in accordance with DIN 4108-6 in conjunction with DIN EN ISO 10211-1 and DIN EN ISO 12211-2, the effective Ψa heat loss coefficients of the thermal bridges can be taken into account.

	No verification of thermal bridging	Verification of thermal bridging in accordance with DIN 4108, supplementary sheet 2	Accurate verification of thermal bridging*
Description	No verification	Materials and geometry correspond to the planning examples	Thermal bridge details in accordance with thermal bridge catalogue or calculation
Thermal bridge correction factor	0.10	0.05	Cannot be universally specified/individual thermal bridges have been recorded
Heat loss due to transmission H_T (W/K)	$\sum F_i\ U_i\ A_i + 0.10\ A_{total}$	$\sum F_i\ U_i\ A_i + 0.05\ A_{total}$	$\sum F_i\ U_i\ A_i + \sum F_i\ \Psi_i\ l_i$
Moisture protection	Risk of mould due to condensation	Moisture protection implemented in accordance with standard	Precise analysis of the moisture quality
Example calculation of a detached house			
Thermal bridge correction factor ΔU_{WB} (W/m²K) resp. Ψa (W/mK)	0.10	0.05	-0.01
Deterioration of the U value	≥ 31%	≥ 15%	~ 0%
Surface temperature in the inside corner of the exterior wall	No information – risk of mould growth	No information – non-critical in accordance with DIN 4108, supplementary sheet 2	15.9 °C, moisture protection resolved optimally

COMMENT REGARDING HEAT LOSS COEFFICIENTS Ψa

In accordance with the EnEV, the heat lost through the heat-exchanging external components is calculated using the exterior dimensions. However, in the case of outside corners, for example, this causes the product of the heat-exchanging surfaces and their U value to be too high, as these calculation values are significantly too large compared to using the actual heat-exchanging surfaces based on the interior dimensions and additionally taking the thermal bridges into account. For this reason, it is possible to arrive at negative values when calculating the Ψa values, which causes the overall losses calculated using the exterior dimensions to be reduced.

* The calculated Ψ values for common exterior wall and interior wall constructions are listed on page 10 in this brochure. These values can be used to provide accurate verification of the thermal bridging (variant 3).

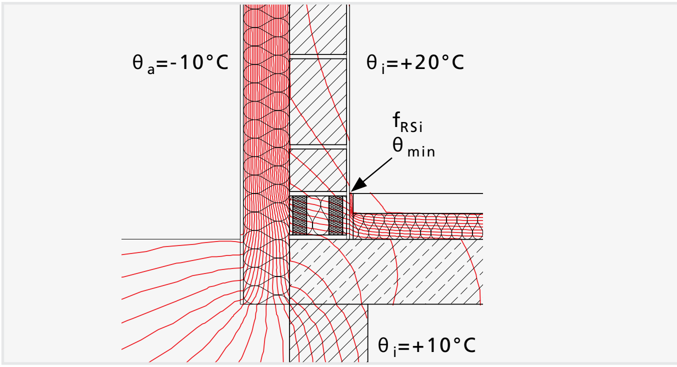
THERMAL PARAMETERS

The thermal parameters of ISOMUR® Plus and sand-lime brickwork result in the following thermal bridge heat loss coefficients, temperature factors and minimum surface temperatures.

ISOMUR® Plus Type	Thermal conductivity [W/mK][4]
20-11.5	0.245
20-15.0	
20-17.5	
20-20.0	
20-24.0	

THERMAL INSULATION COMPOSITE SYSTEM

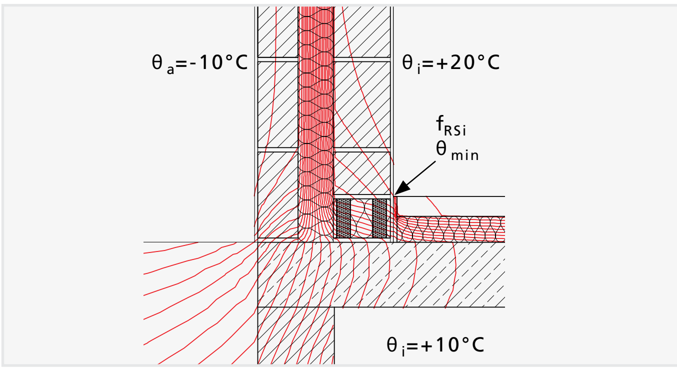
Insulation [cm]	ISOMUR® Plus type	Ψa[1] [W/mK]	f_{Rsi}[2] –	θ_{min}[3] [°C]
16	20-15.0	-0.01	0.867	16.0
14	20-17.5	-0.01	0.860	15.8
12	20-20.0	-0.01	0.853	15.6
10	20-24.0	-0.03	0.844	15.3



Isotherms with thermal composite system

EXTERIOR CAVITY WALL

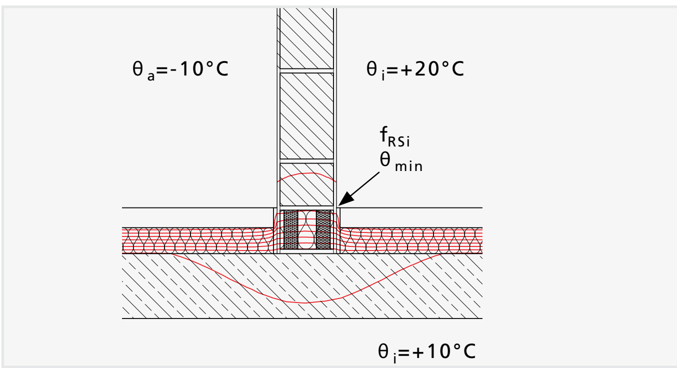
Insulation [cm]	ISOMUR® Plus type	Ψa[1] [W/mK]	f_{Rsi}[2] –	θ_{min}[3] [°C]
16	20-15.0	-0.02	0.863	15.9
14	20-17.5	-0.03	0.846	15.4
12	20-20.0	-0.03	0.836	15.1
10	20-24.0	-0.04	0.825	14.8



Isotherms with exterior cavity wall

INTERIOR WALL

ISOMUR® Plus Type	Ψa[1] [W/mK]	f_{Rsi}[2] –	θ_{min}[3] [°C]
20-15.0	0.14	0.857	18.6
20-17.5	0.17	0.843	18.4
20-20.0	0.19	0.834	18.3
20-24.0	0.21	0.827	18.3

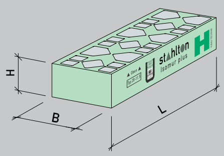


Isotherms with interior wall above unheated cellar

1) Exterior thermal bridge heat loss coefficient Ψa at R_{se} = 0.04 and R_{si} = 0.13 (m^2K/W)
2) Temperature factor $f_{RSi} = (\theta_{min}-\theta_a)/(\theta_i-\theta_a)$ at R_{se} = 0.04 and R_{si} = 0.25 (m^2K/W)
3) Minimum surface temperature θ_{min}
4) Design value for thermal conductivity in accordance with approval, equivalent λ value on a homogeneous body

STRUCTURAL DIMENSIONING

BRICK COMPRESSIVE STRENGTH CLASS 20

ISOMUR® Plus elements perspective	ISOMUR® Plus type	Width W [mm]	Height H [mm]	Length L [mm]	Load-bearing capacity kN/m	Thermal conductivity[1] [W/mK]
	20-11.5	115	113	600	In accordance with approval	0.245
	20-15.0	150				
	20-17.5	175				
	20-20.0	200				
☐ High-strength lightweight concrete	20-24.0	240				
☐ Rigid polystyrene foam	20-30.0*	300				

* without approval

Dimensioning of brick walls using ISOMUR® Plus is carried out in accordance with DIN 1053, part 1. All regulations that deviate from this standard are listed in the approval Z-17.1-811.
These concern:

- **Lateral earth pressure:** ISOMUR® Plus is only used in walls that are not subject to long-term lateral earth pressure loads
- **Spatial rigidity:** Brick walls with ISOMUR® Plus do not require mathematical verification for multi-storey buildings up to two full stories plus loft conversion if the conditions stated in DIN 1053 part 1, section 6.4 have been met
- **Earthquake zones 3 and 4:** Verification that buildings are sufficiently braced is performed on the basis of interior walls, as walls with ISOMUR® Plus are not taken into account for calculations in the stated zones

BASIC VALUES σ_o FOR THE PERMITTED COMPRESSIVE STRESS IN ACCORDANCE WITH APPROVAL [2)]

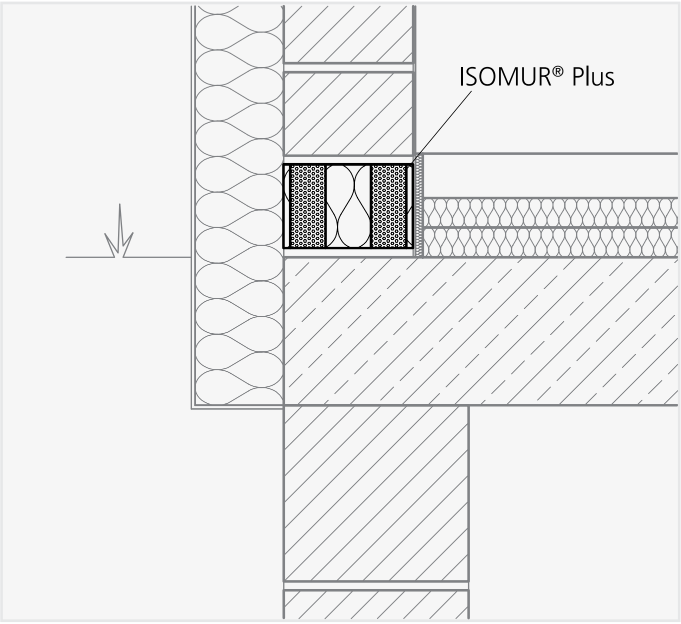
ISOMUR® Plus type	Compressive strength class of sand-lime bricks	Basic values σ_o for the permitted compressive stresses in N[mm²] Brickwork with mortar in accordance with DIN 1053-1		
		Standard mortar from mortar group IIa	Standard mortar from mortar group III	Thin bed mortar
20-11.5	12 ≥ 20	1.6 1.9	1.6 1.9	1.8 2.4
20-15.0				
20-17.5				
20-20.0				
20-24.0				

1) Design value for thermal conductivity, equivalent λ value on a homogeneous body
2) Brickwork: Sand-lime bricks or sand-lime blocks in accordance with DIN 106, part 1; solid brick in accordance with DIN 105, part 1 or 2 (proportion of holes ≤ 15%)

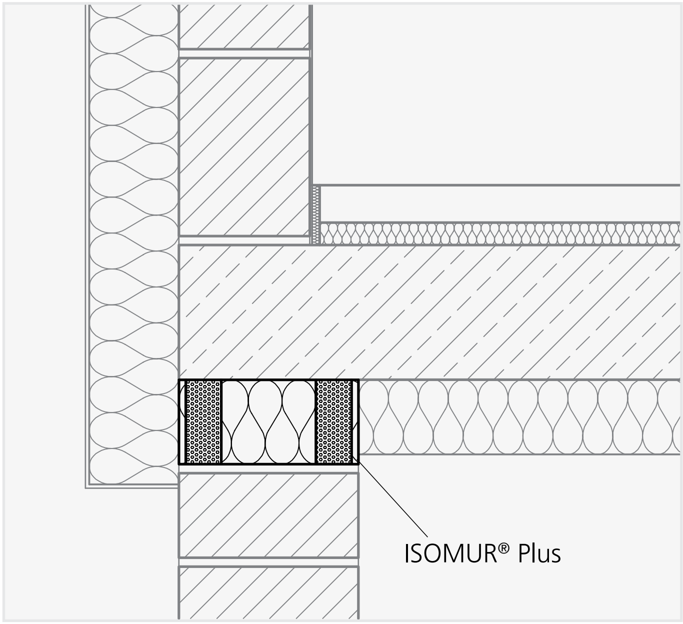
WALL BASE DESIGN

THERMAL INSULATION COMPOSITE SYSTEM

Thermal insulation element on the ceiling

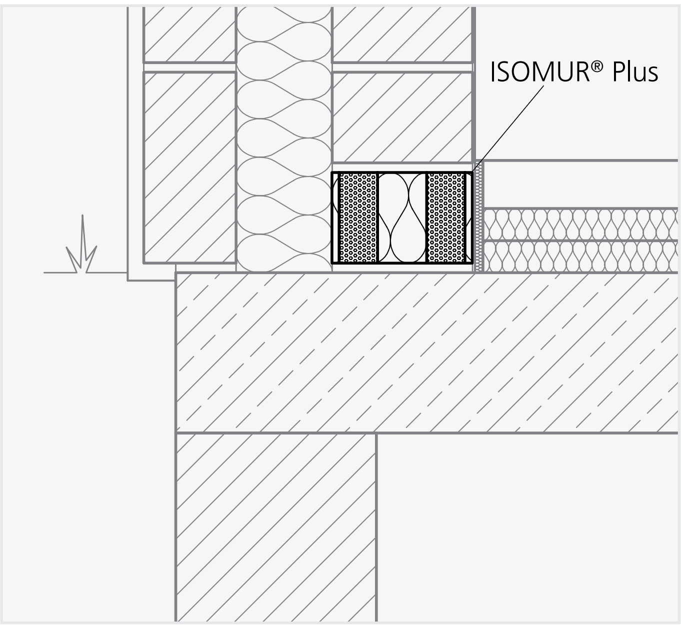


Thermal insulation element under the ceiling

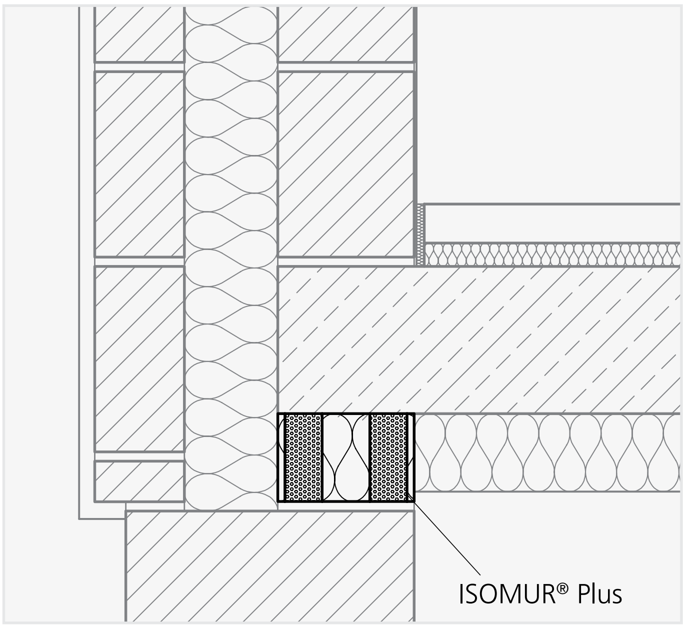


CAVITY WALLS

Thermal insulation element on the ceiling



Thermal insulation element under the ceiling



INSTALLATION INSTRUCTIONS

INSTALLATION ABOVE THE CELLAR ROOF

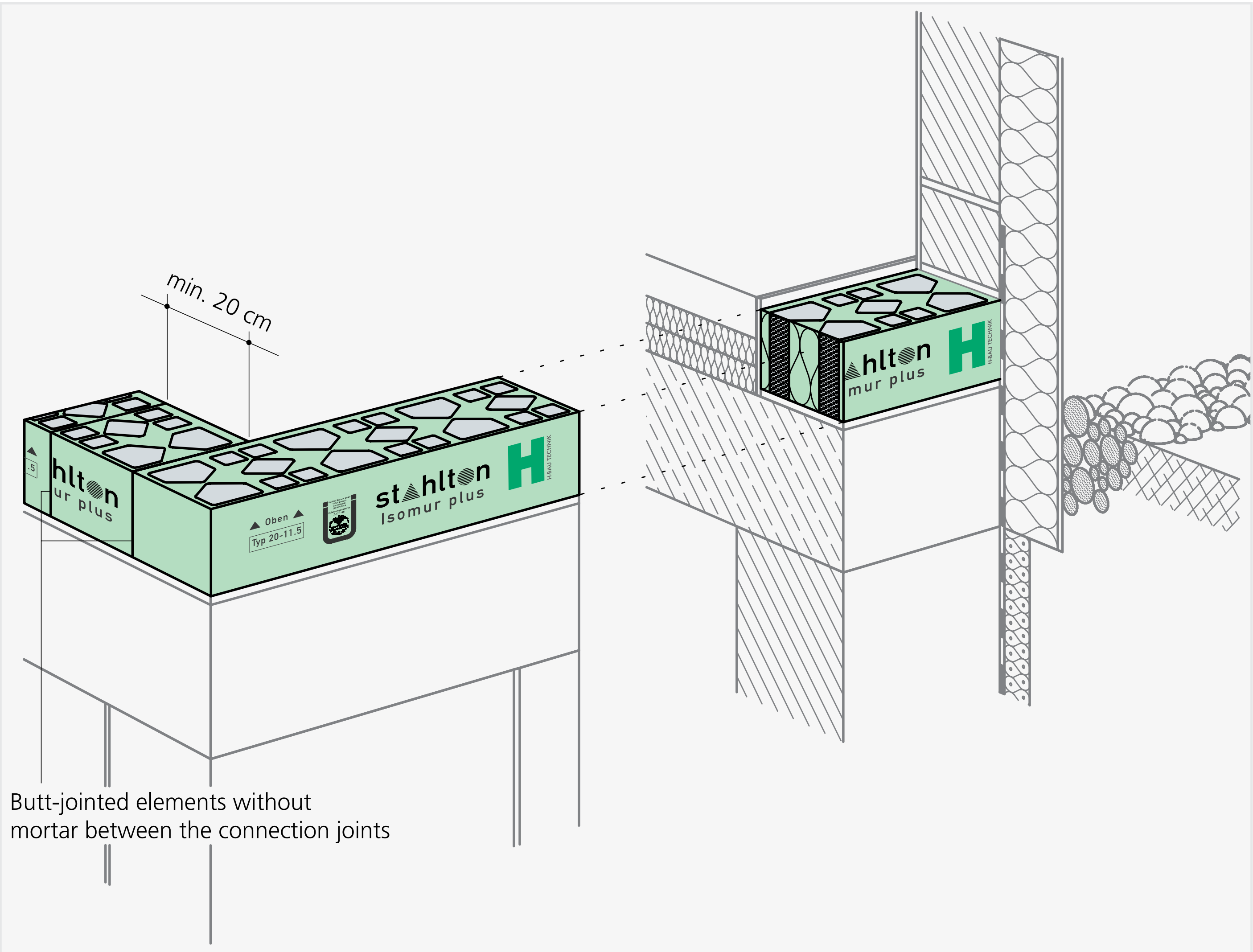
- Use ISOMUR® Plus bricks to lay the first row of brickwork, laying them in the mortar layer directly next to each other without applying mortar in the connection joints across the entire surface.
  The position of the elements is determined by the marking
- The position of the elements must be carefully adjusted, taking particular care to ensure that an even, horizontal surface is provided for laying blocks
- Bricks are laid on top of the ISOMUR® Plus elements once the mortar has dried and stability is ensured
- If thin bed mortar is used for sand-lime block walls, it must be applied to ensure that a joint with a thickness of at least 1 mm and at most 3 mm is formed on the rigid polystyrene foam and any negative tolerances in the lightweight concrete load-bearing structure are compensated for

INSTALLATION UNDERNEATH THE CELLAR ROOF

- Use ISOMUR® Plus bricks to lay the last row of brickwork, laying them in the mortar layer directly next to each other without applying mortar in the connection joints across the entire surface. The position of the elements is determined by the marking

GENERAL INFORMATION

- Protect rigid polystyrene foam against solvents and high temperatures
- ISOMUR® Plus elements can be shortened using standard construction tools. All shortened sections used must be at least 20 cm long. Shortened sections must not be laid next to each other
- ISOMUR® Plus elements must not be laid on top of each other
- Slots and recesses that weaken the load-bearing cross-section are not permitted



A SERVICE FOR BUILDING THE FUTURE: WE ARE ALWAYS THERE FOR YOU.

You can rely on our excellent service: We accompany you through every phase of the project – either over the phone, online or in person, directly at your site. As a true partner, we place special value on offering our customers added value – allow yourself to be convinced by our comprehensive range of services.

READY TO GO: OUR TENDER DOCUMENTS.
Our ready-made tender documents can be quickly and easily embedded in your tender program, e.g. with the tender managers at **www.ausschreiben.de** or **www.heinze.de**

EVERYTHING ONLINE: OUR DOWNLOAD CENTRE.
All brochures, test reports, approvals, our latest price list and much more are available for download at **www.h-bau.de/download**

FOR PLANNING AND APPLICATION: OUR VIDEOS AND SOFTWARE.
In addition to our installation and reference films, we also provide you with various software solutions, such as calculation programs, free of charge on our website.

HOTLINES

Individual support in the planning and implementation of projects:

APPLICATION TECHNOLOGY

Hotline: +49 7742 9215-300
Email: technik@h-bau.de

Answers to any questions regarding delivery times, shipping, sales prices and the complete processing of your orders:

DISTRIBUTION GERMANY

Hotline: +49 7742 9215-200
Email: vertrieb@h-bau.de

INDIVIDUAL:
OUR SPECIAL CONSTRUCTIONS.
Were you unable to find what you were looking for in our wide range of products and services? Our engineers and applications engineers will develop individual product solutions on request to meet your needs.

FROM PERSON TO PERSON:
OUR NETWORK OF CONSULTANTS.
Get the answers to your technical questions face-to-face at your site: Our consultant engineers will be happy to come to your site.

CUTTING EDGE:
OUR NEWSLETTER.
Subscribe to our newsletter and you will always be kept up-to-date: Find out more about our product innovations, trade shows and current trends in the sector.

Answers to any questions regarding delivery times, shipping, sales prices and the complete processing of your orders at an international level:

DISTRIBUTION INTERNATIONAL

Hotline: +49 7742 9215-250
Email: export@h-bau.de

We will be happy to send you our technical brochures and planning documents:

HEAD OFFICE

Hotline: +49 7742 9215-0
Email: info@h-bau.de

CONTACTS TO HELP BUILD THE FUTURE:
WE WILL BE WHEREVER YOU ARE.

Thanks to our global sales network, expert specialist advisors are available to you on a national level and on an international level. If no contact partner is listed for your country, contact our Head Office in Klettgau – we will be happy to provide you with further assistance.

HEADQUARTER

H-BAU TECHNIK GMBH
Am Güterbahnhof 20
D-79771 Klettgau
Phone: +49 7742 9215-0
Fax: +49 7742 9215-129
Email: info@h-bau.de
www.h-bau.de

PRODUCTION NORTH-EAST
Brandenburger Allee 30
D-14641 Nauen OT Wachow
Phone: +49 33239 775-0
Fax: +49 33239 775-90
Email: info.berlin@h-bau.de

PRODUCTION CHEMNITZ
Beyerstraße 21
D-09113 Chemnitz
Phone: +49 371 40041-0
Fax: +49 371 40041-99
Email: info.chemnitz@h-bau.de

J&P-BUILDING SYSTEM

Our products are sold in Germany exclusively through the following subsidiaries of J&P-Bautechnik Vertriebs GmbH:

ESSEN
J&P-Bautechnik Vertriebs GmbH
Fundlandstraße 29
D-45326 Essen
Phone: +49 201 289660
Fax: +49 201 2896620
Email: essen@jp-bautechnik.de

NÜRNBERG
J&P-Bautechnik Vertriebs GmbH
Lechstraße 21
D-90451 Nürnberg
Phone: +49 911 6427808
Fax: +49 911 6428472
Email: nuernberg@jp-bautechnik.de

MANNHEIM
J&P-Bautechnik Vertriebs GmbH
Markircher Straße 14
D-68229 Mannheim
Phone: +49 621 4840340
Fax: +49 621 4840344
Email: mannheim@jp-bautechnik.de

You are also welcome to directly contact our Head Office in Klettgau. You can find further information about J&P-Bautechnik Vertriebs GmbH at **www.jp-bautechnik.de**

PARTNERS WORLDWIDE

SWITZERLAND
JORDAHL H-BAU AG
Zürichstrasse 38a
CH-8306 Brüttisellen / Zürich
Phone: +41 44 8071717
Fax: +41 44 8071718
Email: info@jordahl-hbau.ch
www.jordahl-hbau.ch

AUSTRIA
JORDAHL H-BAU
Österreich GmbH
Straubingstrasse 19
A-4030 Linz, Österreich
Phone: +43 732 321900
Fax: +43 732 321900-99
Email: office@jordahl-hbau.at
www.jordahl-hbau.at

FRANCE
JORDAHL H-BAU France SARL
Siège
7 rue des Vallières Sud
F-25220 Chalezeule
Phone: +33 381 250465
Fax: +33 381 250796
Email: info@jordahl-hbau.fr
www.jordahl-hbau.fr

NETHERLANDS
JORDAHL H-BAU
Bezoekadres
Jan Tinbergenstraat 221
NL-7559 SP Hengelo
Phone: +31 74 2505737
Fax: +31 74 2503321
Email: info@jordahl-hbau.nl
www.jordahl-hbau.nl

DENMARK
Jordahl & Pfeifer Byggeteknik A/S
Risgårdevej 66
DK-9640 Farsø
Phone: +45 98 631900
Phone: +45 98 631939
Email: info@jordahl-pfeifer.dk
www.jordahl-pfeifer.dk

HUNGARY
PFEIFER Garant Kft.
Gyömröi út 128
HU-1103 Budapest
Phone: +36 1 2601014
Fax: +36 1 2620927
Email: info@pfeifer-garant.hu
www.pfeifer-garant.hu

UNITED KINGDOM
J&P Building Systems Ltd.
Unit 5
Thame Forty
Jane Morbey Road
GB-THAME, OXON OX9 3RR
Phone: +44 1844 215200
Fax: +44 1844 263257
Email: enquiries@jandpbuildingsystems.com
www.jp-uk.com

UKRAINE
JORDAHL & PFEIFER
Technika Budowlana
ul. Pawlyka 17a
UA-76-018 Ivano-Frankivsk
Phone Reg. Ost: +380 67442 8578
Phone Reg. West: +380 67442 8579
Email: info@j-p.com.ua

CZECH REPUBLIC
Jordahl & Pfeifer
Stavební technika s.r.o.
Bavorská 856/14
CZ-15500 Praha 5
Phone: +420 272 700701
Fax: +420 272 700704
Email: info@jpcz.cz
www.jpcz.cz

SPAIN
PFEIFER Cables y Equipos de Elevación, S.L.
Avda.de Los Pirineos, 25 – Nave 20
San Sebastian de los Reyes
ES-28700 Madrid
Phone: +34 91 659 3185
Fax: +34 91 659 3139
Email: p-es@pfeifer.de
www.pfeifer.es

SINGAPORE
J&P Building Systems Pte Ltd.
No. 48 Toh Guan Road East
#08-104 Enterprise Hub
SG-SINGAPORE 608586
Phone: +65 6569 6131
Fax: +65 6569 5286
Email: info@jnp.com.sg
www.jnp.com.sg

ROMANIA
S.C. JORDAHL & PFEIFER TEHNICĂ DE ANCORARE S.R.L
Str. Malului Nr. 7, et. 1
RO-550197 Sibiu jud. Sibiu
Phone: +40 269 246098
Fax: +40 269 246099
Email: info@jordahl-pfeifer.ro
www.jordahl-pfeifer.ro

POLAND
JORDAHL & PFEIFER TECHNIKA BUDOWLANA SP. Z O. O.
ul. Wrocławska 68
PL-55-330 Krępice k/Wrocławia
Phone: +48 71 3968264
Fax: +48 71 3968105
Email: biuro@jordahl-pfeifer.pl
www.j-p.pl

www.h-bau.com

Forward constructing.

12/2015

H-BAU TECHNIK GMBH
Am Güterbahnhof 20
79771 Klettgau, Germany
Phone: +49 (0) 7742 9215-0
Fax: +49 (0) 7742 9215-129
E-mail: info@h-bau.de