

Building owner brochure

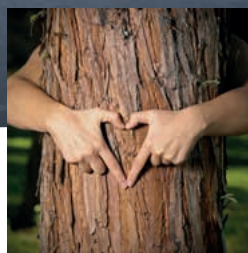
Old building modernisation

Environmentally friendly building products
made from renewable raw materials



Contents

Old houses, new insulation.....	2
Well-being and health	3
Building and insulating with wood.....	4
From wood to insulation	6
Roof insulation	8
Insulation of attic floors	10
Insulation of the exterior wall from the outside ..	12
Insulation of the exterior wall from the inside.....	16
Everything from a single source.....	18



STEICO
engineered by nature



Old houses, new insulation Sustainable feel-good factor

Climate protection through insulation? Yes, because even houses from the 1980s are now considered “old buildings” in need of modernisation. No wonder, because in terms of energy they no longer meet current requirements.

You own an old house – inherited or bought? Then you know the weak points of aging buildings. Poorly insulated walls, roofs and windows allow most of the heat to escape during the heating season. In the summer months, which are getting hotter and hotter, you feel like you’re in an oven, especially in the attic ... Freezing in your own four walls in winter and sweating in summer? It doesn’t have to be like that.

With targeted renovation measures, most old buildings can be significantly improved in terms of design and energy efficiency. Optimum insulation of the building envelope enables an energy level that corresponds to that of new buildings. The choice today is not only conventional insulation materials, but also ecological and sustainable alternatives.





Wellbeing and health

Modernisation with natural STEICO wood fibre insulating materials can be “felt and experienced” by the whole family

- ✓ Healthy all-round feel-good factor thanks to a balanced room climate
- ✓ Healthy living, biologically safe building material
- ✓ CO₂ storage to improve the environmental footprint
- ✓ Cosy warmth: Heat stays in the house
- ✓ “Cool” thermal storage: helps to keep summer heat out
- ✓ Effective all-round protection against weather and moisture
- ✓ Effective sound and fire protection
- ✓ Robust, durable protection of the building structure
- ✓ Future-oriented upgrading of the property through an extended service life
- ✓ Economic investment by increasing resale value



How many items from your wish list can you check off?

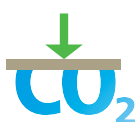
All these expectations of a forward-looking modernisation measure are met by insulation of the building envelope with STEICO wood fibre.

The healthy wood fibre insulation material saves energy and increases the value of a building.



Building and insulating with wood ...

... a simple but very effective
measure for climate protection



STEICO ecology begins with the growth of our renewable raw material: Trees split CO₂ during photosynthesis, they release oxygen into the atmosphere and carbon is bound in the wood. One cubic meter of wood stores around one ton of the climate-damaging gas. The use of wood or wood-based materials in building structures helps to reduce the CO₂ concentration in the atmosphere.

Production in harmony with nature

The wood used for the manufacture of STEICO products comes from the densely forested regions around the STEICO production plants. This results in short transport routes, which not only protect the environment, but are also essential for the quality of the products. Only fresh, untreated wood can be processed into high-quality insulation and building material. The result is a healthy living space in harmony with nature.



The wood used to insulate an average single-family home binds about as much CO₂, which is as much as a small car releases over 200,000km.



Pro Environment – Pro Humans

STEICO only uses wood from responsible forestry. The sustainable and environmentally friendly use is certified by PEFC®. In addition, the STEICO products carry the quality mark of IBR, which certifies the building biology harmlessness of STEICO products.



Sustainable living comfort



Long-lasting, ecological building is more than just a buzzword for STEICO – it is our philosophy. Today's buildings should meet the demands of tomorrow's generations. STEICO products are innovative building materials that offer long-term safety, increase living comfort and help to significantly improve the energy balance of buildings. Wood products are future-proof, recyclable and therefore a valuable part of the recyclable materials cycle.

If you build with wood, you can expect more. The use of the renewable raw material as a building and insulating material ensures sustainable, healthy and environmentally friendly living for generations.

Wood – building material with history

Humans have always used wood to build shelters. There have been entire wooden houses in Germany since the 12th century. To this day, wood is unbeatable, especially in load-bearing areas; hardly any roof truss can do without structural timber.



Strict quality control

Internal and external quality assurance measures in material selection, production and processes ensure that we at STEICO continue to impress with quality, service and performance.



From wood to insulation

We use fresh, untreated softwood, e.g. from forest maintenance or by-products from sawmills, and process it into ecologically exemplary building materials. To do this, we shred natural wood into high-quality wood chips. These are defibred with the help of heat and steam and processed into wood fibre insulation materials.

STEICO is the European market leader for wood fibre insulating materials.

As a manufacturer of building products, we are aware of our responsibility. To us it is particularly important that STEICO products are manufactured without harmful additives and make a contribution to forward-looking, sustainable construction.

Quality management

We guarantee high product quality through external certification measures, e.g. quality management according to ISO 9001 or environmental management according to ISO 14001. Internally, our modern testing laboratory guarantees consistently the highest quality through ongoing sampling and testing.



Wood fibre is *the* high-performance insulating material from nature

STEICO products are made from renewable raw materials without any questionable additives. With natural STEICO wood fibre insulating materials, you as a builder are choosing ecological building material with very good performance:



Top heat protection – hot summer temperatures stay outside



With STEICO wood fibre insulating materials, your home is well protected from the cold – the heat stays in the house



Very good sound insulation



Top protection against rain, wind and weather



Top property diffusion openness – STEICO wood fibre insulating materials have a moisture-regulating effect



Healthy living – wood fibre supports a healthy room climate and increases your well-being

Lightweight and pleasant finish

Overview

On the following pages we would like to present different modernisation options to you:



Roof insulation
Page 8



Insulation for
attic floors
Page 10



Insulation of the
exterior wall from the outside
Page 12



Insulation of the
exterior wall from the inside
Page 16

STEICO Expert tip

on the course of modernisation measures:

First the roof, then the wall.

λ_D 0.036 = lowest thermal conductivity of all known natural insulation materials

STEICOflex 036

Flexible insulation mats between the rafters with a particularly high clamping force



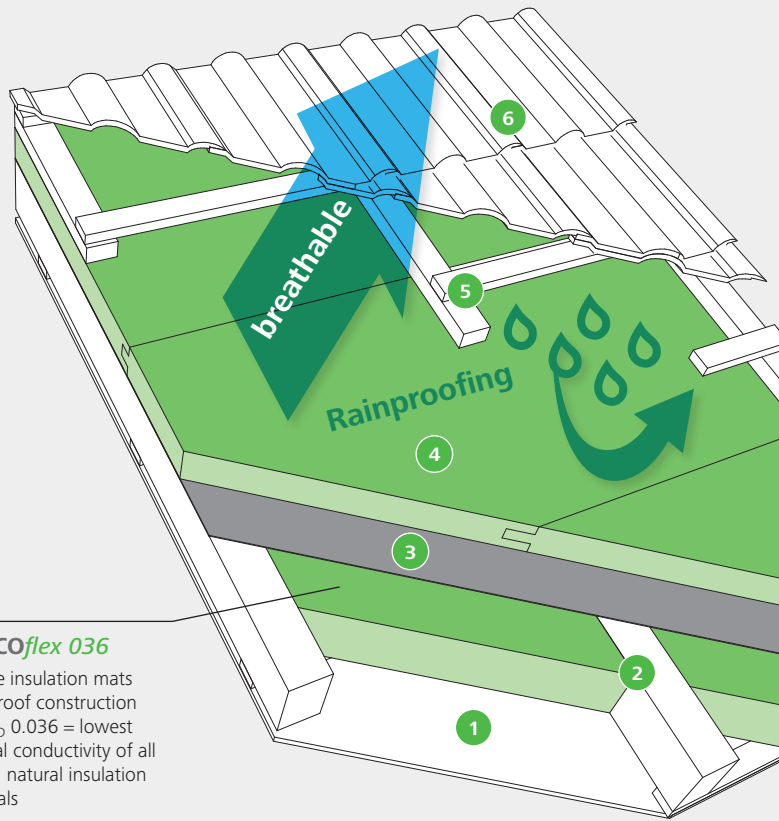
Roof insulation

No more heating “through the roof”.

In relation to the actual room volume, the attic rooms offer a particularly large outdoor area. Houses lose the most energy through poorly insulated roof surfaces. The potential for energy modernisation measures is correspondingly high here.

Refurbishment from the outside – the solution for developed, inhabited attics

- The old roofing and insulation are removed. Subsequently, the roof is insulated and roofed in a future-proof manner.
- The interior of the building is not affected by the modernisation measure, the residents do not have to move out.
- Room height, interior view and surface remain the same.
- The measure is particularly useful if the roof is to be re-covered.
- With a coordinated insulation and sealing system, modernisation can be carried out very economically from the outside.



Structure

Modernisation pitched roof

1. Interior cladding (existing)
2. Supporting structure rafters with STEICOflex 036 flexible insulation mat (roof construction)
3. STEICOMulti UDB airtight membrane
4. STEICOSpecial/STEICOSpecial dry / STEICOuniversal dry Wood fibre sheathing board
5. Supporting battens and counter-battens
6. Roof covering

STEICOflex 036

Flexible insulation mats in the roof construction with λ_D 0.036 = lowest thermal conductivity of all known natural insulation materials

STEICOSpecial dry / STEICOuniversal dry

Stable insulating board above the rafters

STEICOMulti UDB

Highly vapour-permeable airtight membrane

Modernisation pitched roof

Product recommendation STEICOflex 036, STEICOMulti UDB and STEICO sheathing boards

Between the rafters is completely insulated with the flexible wood fibre insulation mat STEICOflex 036. Then, above the rafters, insulate with STEICO sheathing boards, e.g. STEICOSpecial dry/STEICOuniversal dry. This achieves an additional insulating effect and reduces thermal bridges. This way you can insulate your roof up to the desired U-value.

Other advantages of the STEICO system solution

- Safe moisture management with airtight membrane STEICOMulti UDB
- Reliable protection against rain and wind with water-repellent STEICO sheathing boards; as soon as the insulation boards are laid, the roof is protected from weather – during the construction phase and for many years to come.
- Structure open to diffusion on the outside made of STEICO insulation materials and sheathing boards
- Short assembly time
- 1m³ of STEICOflex 036 stores 85.1kg of CO₂
- 1m³ of STEICOSpecial dry stores 202.6kg of CO₂

Insulation, wind proofing and weather protection

STEICOSpecial/STEICOSpecial dry/ STEICOuniversal dry

Stable wood fibre insulation boards for insulating the rafters with triple function: strong insulation, rainproof, windproof



breathable openness

STEICOMulti UDB

Airtight membrane prevents air movement in the insulation layer



STEICOtop

- Insulation boards can be walked on directly
- Save a lot of energy with little effort
- Handy formats for quick and easy processing with high structural safety



Stable and directly accessible

STEICOtop

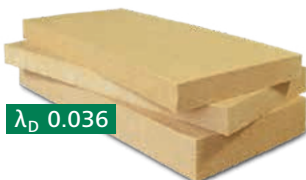
Stable wood fibre insulation board with compacted, specially textured surface for increased stability



The lowest thermal conductivity of all known natural insulating materials

STEICOflex 036

Flexible insulation mats between the rafters



λ_D 0.036

Insulation for attic floors

Energetic refurbishment the easy way

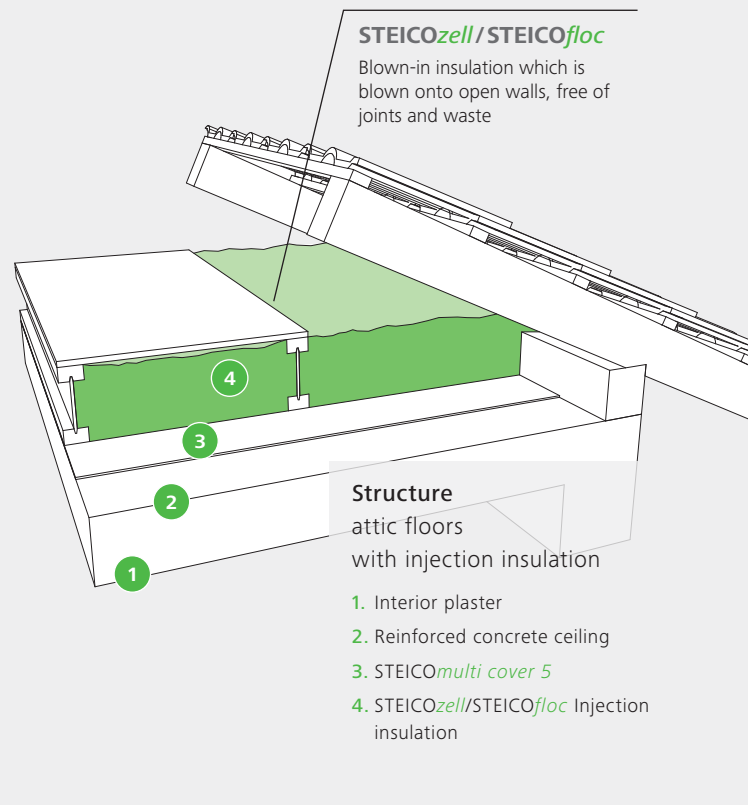
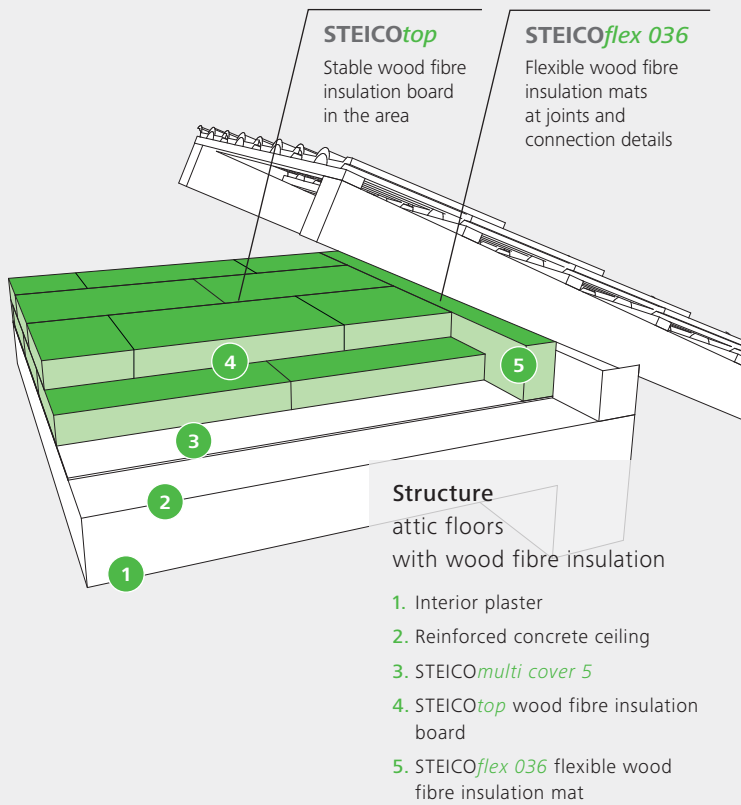
Many old buildings have a typical uninsulated attic, accessible and not used for living purposes. As the attic floor of the rooms below, it forms the end of the heated building volume and can be insulated particularly easily and inexpensively.

During modernisation, either insulating panels are laid densely on the ceiling surface or the insulation is blown in evenly.

The first 10cm of insulation measure contribute the most to energy savings. With just 8cm of STEICOtop on a 160mm concrete ceiling, the key figure for heat transfer (U-value) improves by more than 80%.

Other benefits

- The living quarters below are not affected by the modernisation measure
- The roof area remains untouched



More than 80% U-value improvement possible with just 8cm of insulation

Particularly suitable for joint-free insulation of uneven structures

Attic floors with STEICOTop and STEICOflex 036

Product recommendation STEICOTop

STEICOTop wood fibre insulation boards are particularly easy to lay flat. The panel structure allows the attic floor to be walked on by the chimney sweeper, for example. For a joint-free connection, e.g. to supports or beams, the flexible insulation mat STEICOflex 036 is used. An additional cover plate is not necessary.

Attic floors with STEICOzell/STEICOfloc

Product recommendation STEICOzell/STEICOfloc

The injection insulation with STEICOzell or STEICOfloc is installed by a certified specialist company, scores points in terms of quick processing, can be variably adapted to any format and can therefore be installed evenly and without cavities.



Product recommendation STEICOjoist

As a spacer for the injection insulation, the STEICOjoist I-Joist is recommended. Cover plates can be laid on it to make the area or individual "paths" accessible.



Other advantages of the STEICO system solution

- Protection against heat in summer
- Protection against cold in winter
- Particularly economical: insulating only the ceiling, not the entire roof area
- Particularly open to diffusion

- Excellent insulating properties easily achieve the required U-values,
- Prevents the formation of condensate without additional vapour barrier cover plates
- Ecological and environmentally friendly

λ_D 0.037

Lowest thermal conductivity of all natural facade insulation materials



Plaster coatable wood fibre
insulation board for ETICS,
directly on masonry

STEICOprotect 037

Combines energy efficiency and well-being with its permeable structure



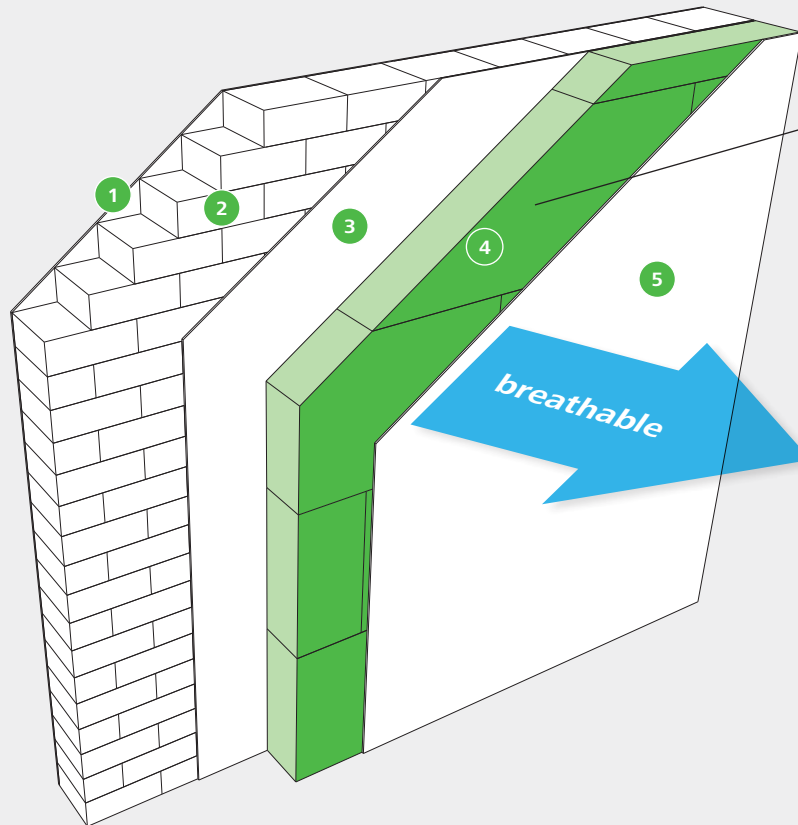
Insulation of the outer wall from the outside

Future-proof façade “lifting”

The walls are cold in poorly insulated houses, and as residents we shiver even in overheated rooms. How comfortable we feel in our home depends not only on the room air temperature, but also crucially on the surface temperature of the walls. A well-insulated façade ensures warm walls – we feel more comfortable. The heat stays where it belongs: within our own four walls.

Even if every façade is different, a few arguments are convincing for every measure:

- Living spaces are not affected by the modernisation measure
- No loss of living space
- Cost savings by combining work steps, e.g. use of assembled scaffolding by different trades
- Warm surface temperature of the walls inside the room
- Construction physics argument: Over-insulation of thermal bridges prevents the risk of mould on the inside and corners of walls

**STEICOprotect 037**

Perfect structural physical complement to the natural building material brick

Structure

Façade insulation on masonry

1. Interior plaster
2. Brick wall
3. Adhesive mortar STEICOsecure Base
4. STEICOprotect 037 wood fibre insulation board that can be plaster coated
5. Approved plaster system, e.g. STEICOsecure

Optimised for modernisation directly on masonry, e.g. brick walls

Façade insulation on masonry

Product recommendation STEICOprotect 037

For masonry modernisation, the plaster coatable wood fibre insulation boards STEICOprotect 037 are particularly suitable:

- Water-repellent and open to diffusion for protection against weathering and moisture
- Robust for protection against damage
- Structural physical values match brick walls perfectly
- Summer heat protection and cold protection in winter
- Excellent insulation properties easily achieve the required U-values, e.g. according to GEG or BEG
- Wood fibre insulation boards in handy formats, 100 to 240mm thick

Other advantages of the STEICO system solution

- Construction physics argument: Significant reduction of thermal bridges
- Durable protection of the building substance
- Contributes naturally to the protection of the façade against algae and moss
- Design diversity with STEICOsecure External Thermal Insulation Composite System (ETICS)

Recommended plaster system

STEICOsecure Plaster system

- 2 plaster variants (mineral and silicone resin modified)
- Various plaster structures
- Wide range of colours

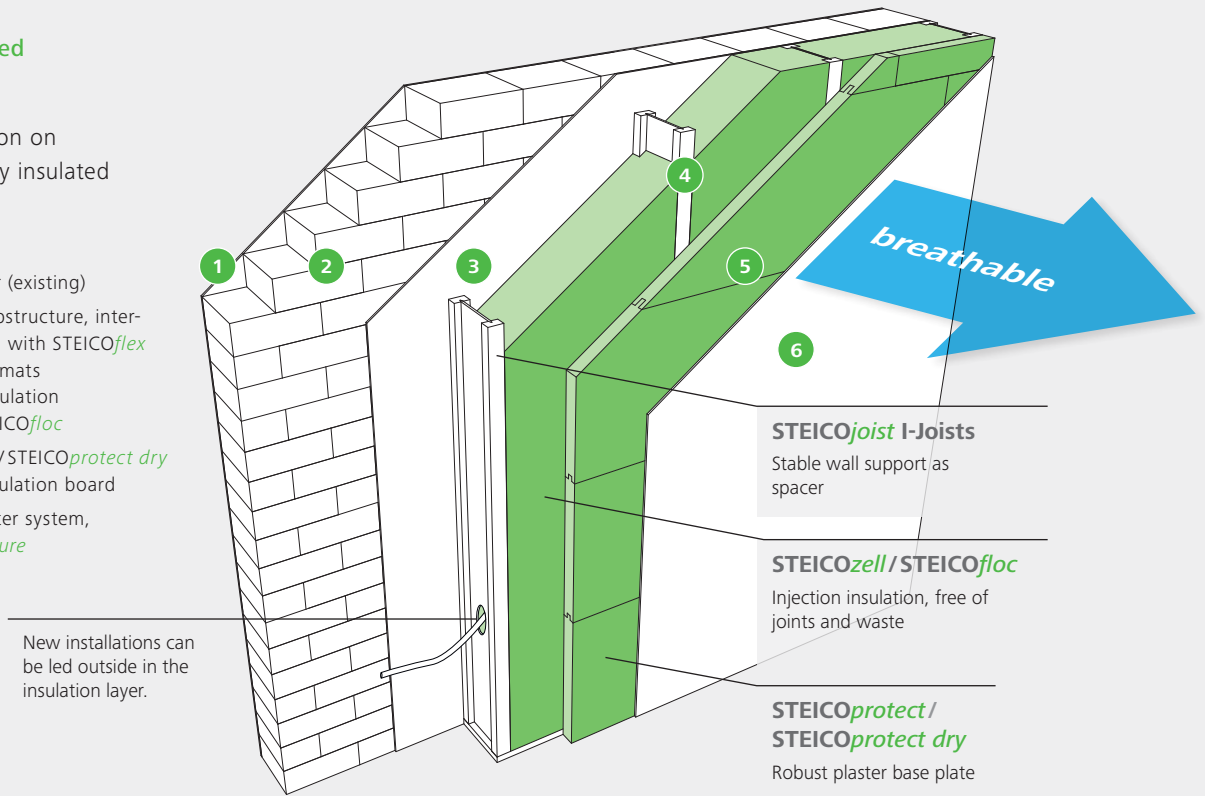


Highly insulated

Structure

façade insulation on masonry, highly insulated

1. Interior plaster
2. Brick wall
3. Exterior plaster (existing)
4. STEICOjoist substructure, interstices insulated with STEICOflex 036 insulation mats or injection insulation STEICOzell/STEICOfloc
5. STEICOprotect/STEICOprotect dry Wood fibre insulation board
6. Approved plaster system, e.g. STEICOsecure



STEICO I-Joists can be used to compensate for wall unevenness.

Plaster coatable wood fibre insulation board for ETICS

STEICOprotect/STEICOprotect dry

Robust plaster baseboards for composite thermal insulation systems



Shear resistant spacer

STEICOjoist I-Joists

Innovative construction product with outstanding dimensional stability as an alternative to solid wood; no turning, no shrinking



Façade insulation on masonry, highly insulated

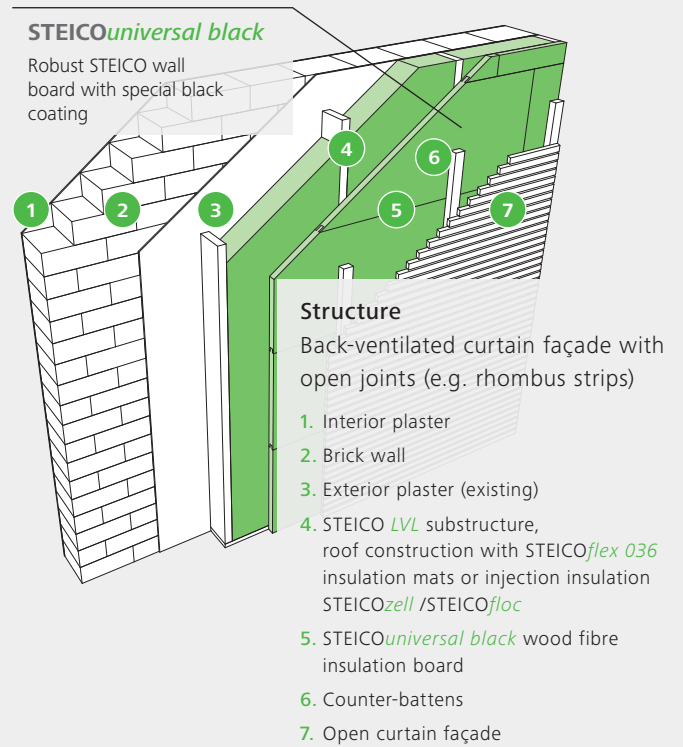
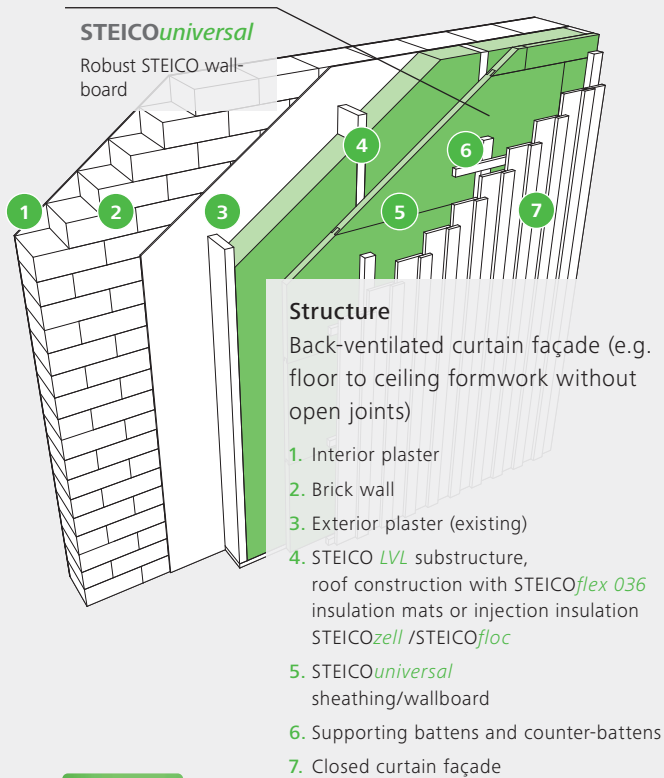
Product recommendation STEICOjoist, injection insulation materials and STEICOprotect/STEICOprotect dry

The operator attaches a load-bearing substructure made of STEICOjoist I-Joists to the existing wall, which are very light and dimensionally stable, but are highly resilient. The resulting roof construction is filled with insulation material, e.g. injection insulation STEICOzell/STEICOfloc or STEICOflex 036. STEICOprotect/STEICOprotect dry insulating boards that can be plastered directly are mounted on the supporting structure.

Other advantages of the STEICO system solution

- Variant is particularly suitable for modernisation of masonry with large insulation thicknesses and subsequent plastering of the façade
- Levelling of uneven substrates, sloping walls and small protrusions between parts of the building without costly additional work

The insulation layer with injection insulation can be used as an external installation level. For example, additional electrical cables, but also waste water or ventilation pipes, can be easily laid in the insulation layer. The installations are enclosed by STEICO injection insulation without joints.



Particularly open to diffusion for increased construction safety

Façade insulation on masonry, back-ventilated curtain façade (e.g. floor to ceiling boarding without open joints)

Product recommendation STEICOuniversal

A wooden substructure is mounted on the existing wall, e.g. made of STEICO LVL laminated veneer lumber. The resulting roof construction is filled with, for example, STEICOflex 036 or injection insulation STEICOzell/STEICOfloc.



The construction is closed with sheathing and wall boards such as STEICOuniversal and then clad with a back-ventilated facade.



Façade insulation on masonry, back-ventilated curtain façade with open joints (e.g. rhombus strips)

Product recommendation STEICOuniversal black

A wooden substructure is mounted on the existing wall, e.g. made of STEICO LVL laminated veneer lumber. The resulting roof construction is filled with, for example, STEICOflex 036 or injection insulation STEICOzell/STEICOfloc.

The STEICOuniversal black is a robust wallboard with a solid black colour – a ready substructure for curtain façades with open joints. It combines maximum weather protection with a permanently beautiful appearance behind the actual façade.



Other advantages of the STEICO system solution

- Secure weather protection without additional facade membrane
- Water-repellent wallboard for protection against rain and moisture
- Beautiful appearance, especially in the variant with open joints and STEICOuniversal black

The interior insulation with the diffusion-open STEICO*internal* plaster base board increases the room-side surface temperature of the wall – important protection against the formation of mould.



Plaster base plate for lime and clay plaster

STEICO*internal*

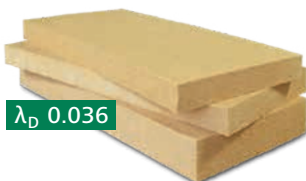
Can be used without additional vapour barrier membrane



The lowest thermal conductivity of all known natural insulating materials

STEICO*flex 036*

Flexible insulation mats in the post frame



λ_D 0.036

Insulation of the outer wall from the inside

If the façade cannot be insulated from the outside

If façade modernisation is not possible, for example in the case of listed old building façades or if only individual walls in apartment buildings are to be insulated, it is advisable to insulate the exterior wall from the inside. In addition, the installation of interior insulation is often easier, there are no scaffolding costs and the work can be carried out regardless of weather.

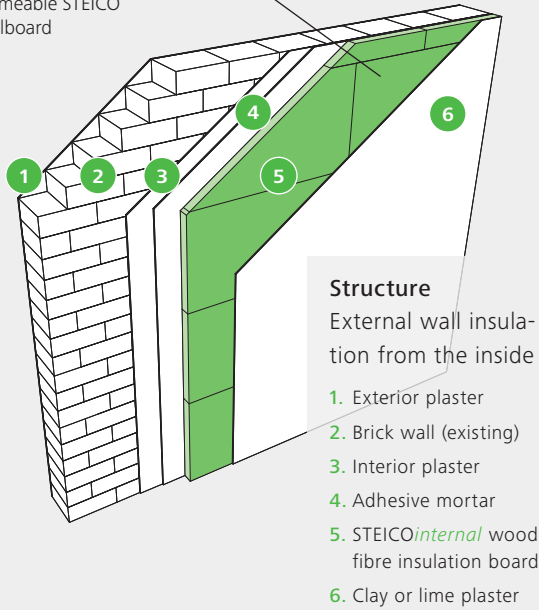
Modernisation increases the room-side surface temperature of the wall – another important protection against mould growth. The perceived temperature increases, so the room air temperature can even be reduced with the same level of well-being.

Other advantages of the STEICO system solution

- Structurally safe construction
- Heating cost savings

STEICO*internal*

Especially vapour-permeable STEICO wallboard



With healthy-living clay or lime plaster

Exterior wall with diffusion-open inside insulation

Product recommendation STEICO*internal*

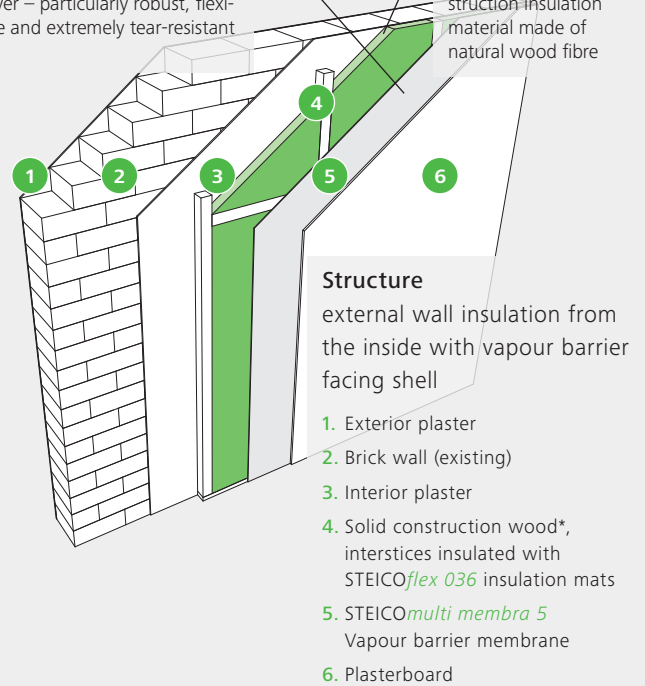
The handy wood fibre insulation board STEICO*internal* buffers moisture and regulates the indoor climate. It can be attached directly to the inside of the wall and plastered with lime or clay plaster.

Other advantages of the STEICO system solution

- breathable openness
- Excellent moisture management
- Ideal for masonry and timber frame modernisation
- High level of structural safety
- Slim wall construction for low loss of living space
- Compensating the unevenness of the existing wall

STEICO*multi membra 5*

Diffusion-open vapour control layer – particularly robust, flexible and extremely tear-resistant



Especially stable with substructure

Exterior wall with vapour barrier facing shell

Product recommendation STEICO*flex 036*

After mounting the stud frame on the wall, the flexible wood fibre insulation mat STEICO*flex 036* is used for insulation. (* An additional substructure, e.g. for hanging a cupboard, can be planned.) Then the STEICO*multi membra 5* vapour barrier membrane is attached and finally the gypsum plasterboards are installed.

Product recommendation STEICO*base*

The STEICO*flex 036* insulation is closed with an OSB board and STEICO*base* (as a pressure-resistant plaster base board) and plastered with lime or clay plaster.





Perfectly matched insulation and construction system

Whether it's a new building or a modernisation project, your need for information is particularly high. We will be happy to answer your specific questions.

Benefit from expert knowledge

A specialist provides competent advice on the planning and implementation of modernisation. He assesses the existing construction, knows about building physics and plans measures with foresight so that future investments remain economical.

Ask your planner, timber construction company, carpenter, roofer or energy consultant.

Everything from a single source for your successful modernisation

The STEICO system solution

STEICO has tailor-made products for each of your modernisation projects. In the development phase, we focus on the needs of builders and work closely with planners and craftsmen.

Our wood fibre insulating materials

As a renewable natural material, wood boasts positive properties. Thanks to experience and innovative process technology, we gain all the advantages of natural insulation from the raw material.

Construction products

The STEICO construction system is based on nature's model. Our I-Joists have the same positive characteristics as solid wood joists – but less weight, lower heat transfer and therefore increased energy efficiency. Optimised, the components of the STEICO construction system combine maximum load-bearing capacity with a low material input.



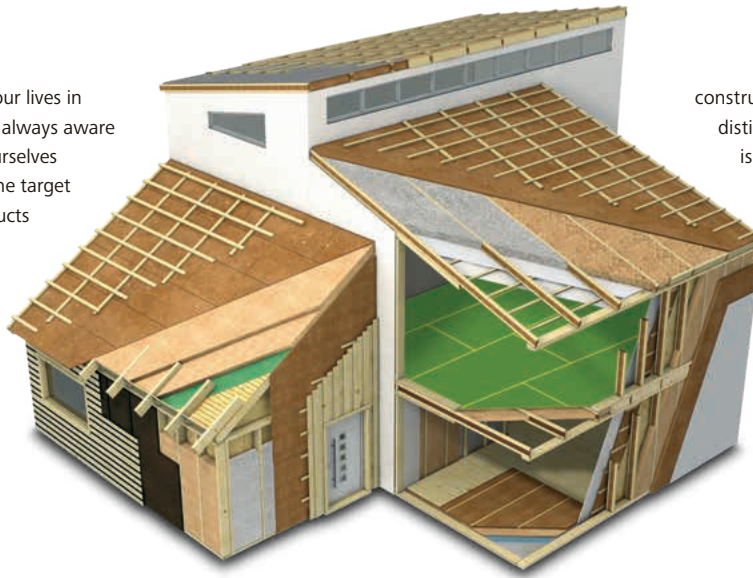
Sealing system

The STEICO sealing system is the ideal supplement for permanently safe constructions as part of a coordinated complete solution – insulation and sealing from a single source.

Building protection due to diffusion permeability

For the feel-good effect at home: STEICO wood fibre insulation materials are open to diffusion. As with good functional clothing, moisture and wind stay outside, moisture from the inside can escape.

We spend approx. 80% of our lives in enclosed rooms. But are we always aware what we are surrounding ourselves with? STEICO has set itself the target of developing building products which consider the needs of both man and nature. Our products are therefore produced using sustainable natural materials. They help reduce energy use and add considerably to a natural healthy internal climate. STEICO insulation and



construction materials, carry a number of distinguished 'seals of approval' which is a sign of high quality, healthy and functional building products. The raw materials used in STEICO products are certified by PEFC (Programme for the Endorsement of Forest Certification), ensuring a traceable and fully sustainable usage of the raw materials. STEICO, the number 1 choice for your sustainable building solutions.

Natural insulation and construction systems for new builds and renovations – roof, ceiling, wall and floor



Renewable raw materials without harmful additives



Excellent cold protection in winter



Excellent summer heat protection



Energy saving and increased property worth



Weather tight and breathable



Excellent fire protection



Excellent sound protection



Environmentally friendly and recyclable



Light and easy to handle



Insulation for healthy living



Strong quality control



Compatible insulation and structural building systems



Your STEICO Partner

www.steico.com

ENGINEERED BY NATURE