Get it done:

Application instructions iQ-Therm 2.0

Digital Brochure

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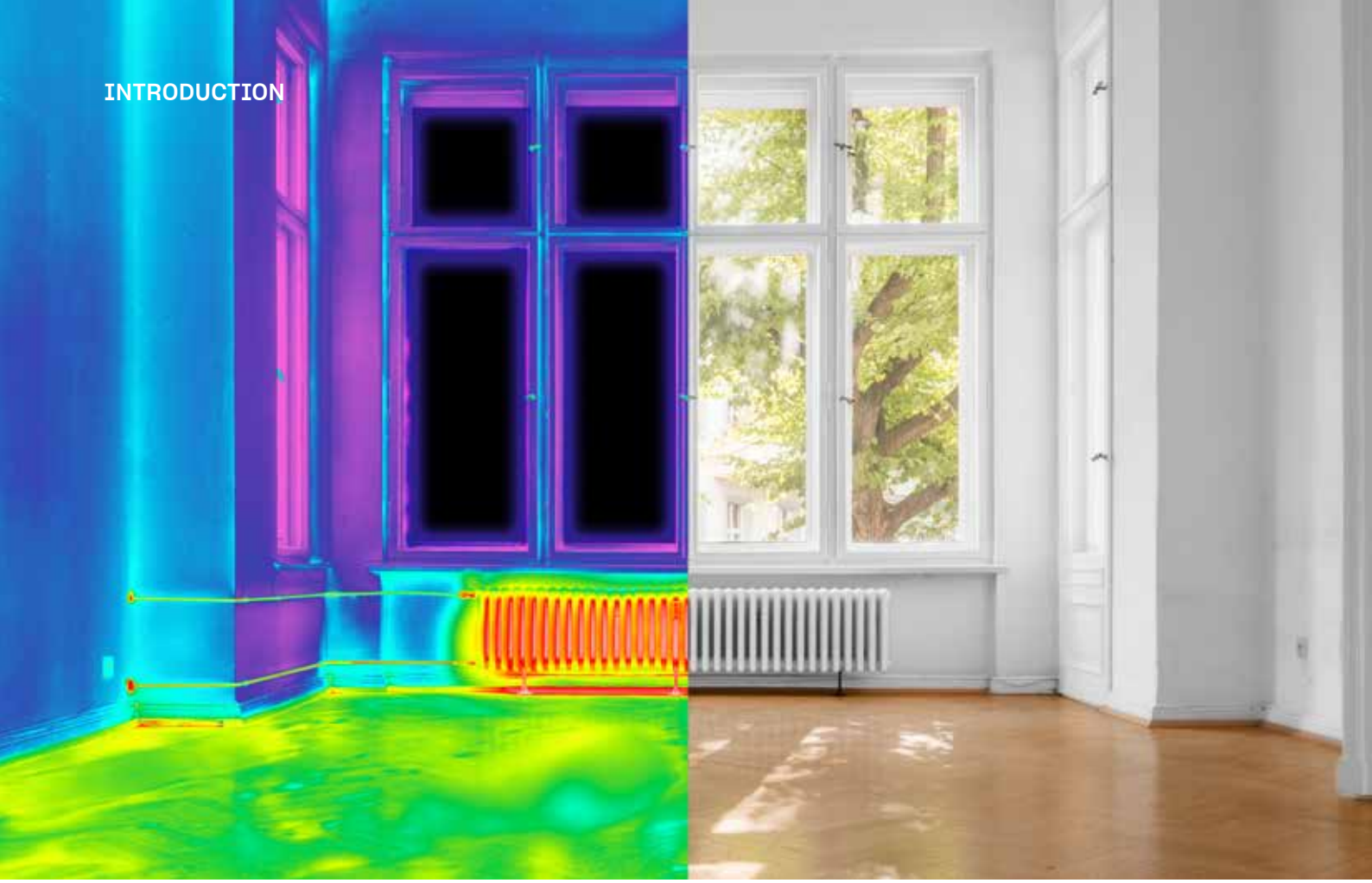
remmers



iQ-Therm 2.0
The new strip technology

iQ-Therm 2.0 is the latest incarnation of the intelligent combination of high-performance insulating material and special mortar with an unrivalled performance on the market.

The flexible application in strip technology provides unbeatably simple and ingenious application, functionality and safety. Installation is simple and efficient. Smart product characteristics combined optimally provide the synergistic effects of high-performance thermal insulation and balanced moisture regulation for practically any building site situation. iQ-Therm 2.0 is the most efficient interior insulation system from Remmers. It not only has a highly insulating effect and leads to a significantly increased quality of living, but is also guaranteed to be mould-resistant.

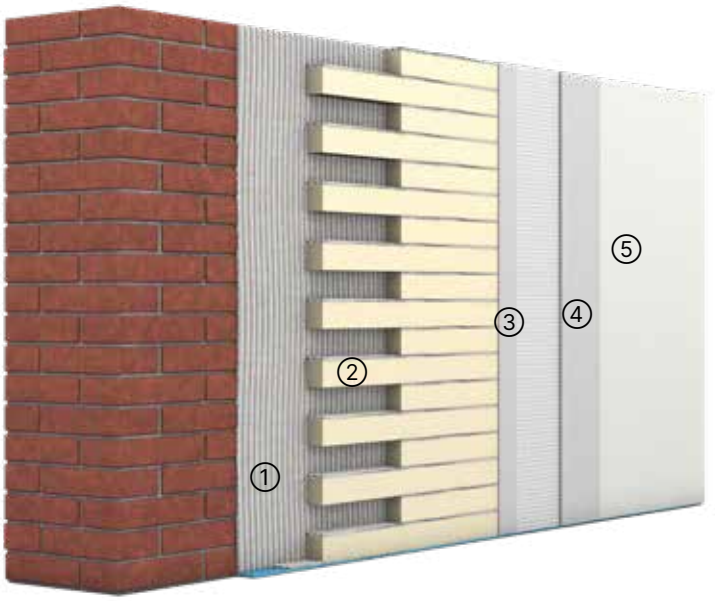
The perfect energetic refurbishment consists of optionally 30, 50, 80 and 120 mm iQ-Therm strips and the adapted diffusion-open adhesive mortar and thin-layer plaster iQ M universal. On request and if there is a need for increased moisture buffering, we recommend optionally using the climate-regulating plaster iQ Top with system heights from 10 to 15 mm. The result is a streamlined wall construction with safe, hygienic thermal insulation and a noticeably improved quality of living.

The benefits at a glance:

- ✓ Flexible strip technology, simple, safe cutting & installation
- ✓ Extremely thin and heat-insulating
- ✓ Meets the minimum requirements for hygienic thermal protection
- ✓ Guaranteed mould-free
- ✓ Virtually free choice of surface design with diffusion-open wall coating systems
- ✓ Saves energy costs and protects the environment
- ✓ Positive life cycle assessment according to EPD standard, thus recognised in Europe

iQ-Therm 2.0 - 30/50/80/120

Capillary-active PUR rigid foam interior insulation system for creating highly insulating, diffusible interior insulation with capillary moisture transport



	Structure	Product / Product details	Application rate
①	**Adhesive bonding**	iQ M universal	approx. 1.3 kg/m²/mm
②	**Strips**	iQ-Therm 2.0 30/50/80/120	approx. 0.85 strips/rm approx. 6.8 strips/m²
③	**Thin-coat plaster**	iQ M universal	approx. 1.3 kg/m²/mm, min. layer thickness 5mm
	+ reinforcement	Tex 4/100	approx. 1.1 m²/m²
	Alternative: Climate-regulating plaster Q2 + reinforcement	iQ Top Tex 6.5/100	approx. 0.6 kg/m²/mm approx. 1.1 m²/m²
④	**Optional: Fine filler Q4**	SL Fill Q4	approx. 1.1 kg/m²/mm
⑤	**Colour finish**	Color SL	approx. 0.15 l/m² per coat
	Alternative: Colour finish	Color CL Historic	approx. 0.2 – 0.25 l/m² per coat

Application

- ✓ Energy modernisation
- ✓ Mould remediation and prevention in existing buildings
- ✓ Establishment of the minimum hygienic thermal protection standard for existing building substance
- ✓ Improvement of the indoor climate thanks to increased wall surface temperature

Properties

- ✓ Strip-shaped
- ✓ Excellent thermal insulation
- ✓ Open to vapour diffusion
- ✓ Capillary-active
- ✓ λ (EU nominal values):
  iQ-Therm 2.0 30: 0.028 W/(m·K)
  iQ-Therm 2.0 50: 0.028 W/(m·K)
  iQ-Therm 2.0 80: 0.026 W/(m·K)
  iQ-Therm 2.0 120: 0.025 W/(m·K)
- ✓ λ once installed:
  approx. 0.004 W/(m·K) higher in each case
- ✓ Building material class B1 flame retardant according to DIN 4102-1
- ✓ Fire behaviour class B-s1, d0 (DIN EN 13501-1)
- ✓ Low construction height, choice of 30, 50, 80 & 120 mm
- ✓ Easy to apply
- ✓ Thermal insulation material according to DIN 4108-10

APPLICATION STEPS

Internal insulation with the iQ-Therm 2.0 system

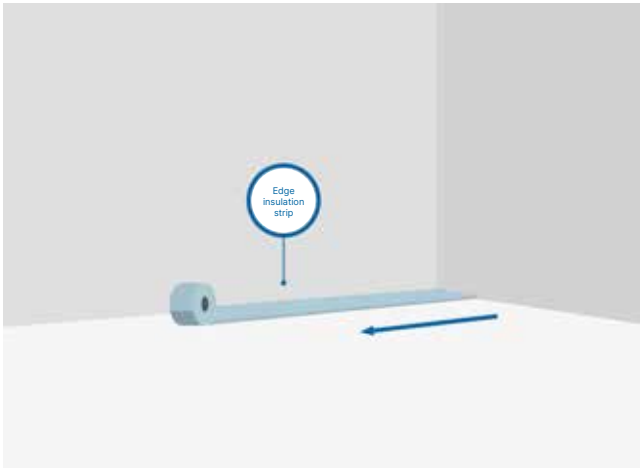
SUBSTRATE PREPARATION

Cover windows, doors and floors and protect from dirt. Remove wallpaper and dispersion paint coats. The substrate must be dry and dust-free, and free from elements that impair adhesion.

① PRELIMINARY WORK

If necessary, level and even out highly uneven substrates, seal joints and level surfaces with pore undercoat render SP Levell.

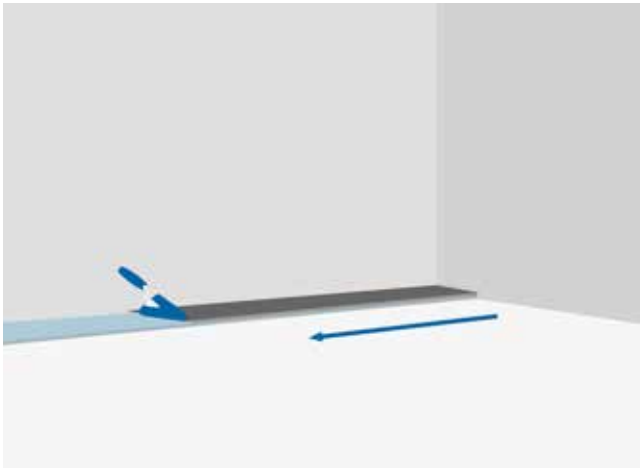
Application rate:
Approx. 9.5 kg/m²/cm Remmers SP Levell (0401)



② APPLYING THE PARTITION WALL STRIP

For thermal, hygric and acoustic decoupling, apply the partition wall strip made of closed-cell polyurethane foam to wall/floor and wall/wall joining areas.

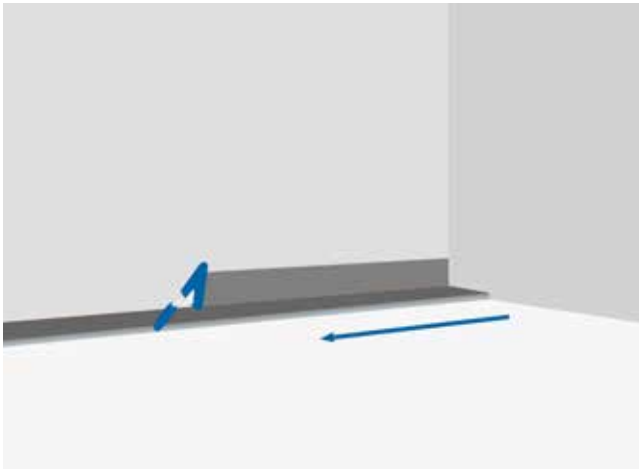
Application rate:
Approx. 1 m/m Remmers partition wall strips (4258)



③ APPLYING THE FIRST HORIZONTAL BONDING LAYER

Apply Remmers iQ M universal as first mortar layer on the horizontally laid partition wall strips, thickness approx. 1 mm.

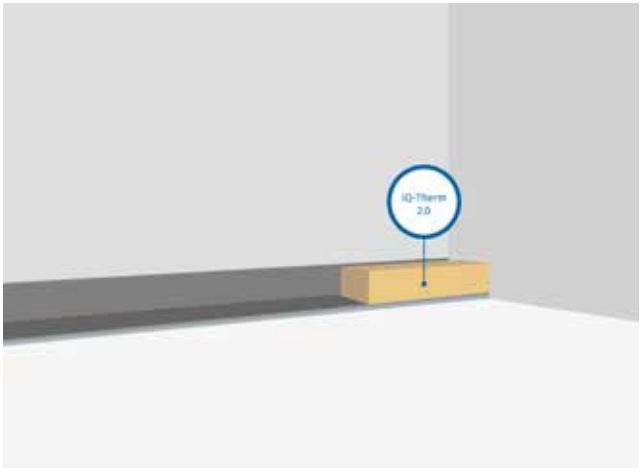
Application rate:
Approx. 1.3 kg/m²/mm Remmers iQ M universal (0211)



④ APPLYING A VERTICAL BONDING LAYER

Pre-wet absorbent substrates.
Apply iQ M universal as scratch coat, then use notched trowel to spread vertically on the substrate, thickness approx. 3 mm.

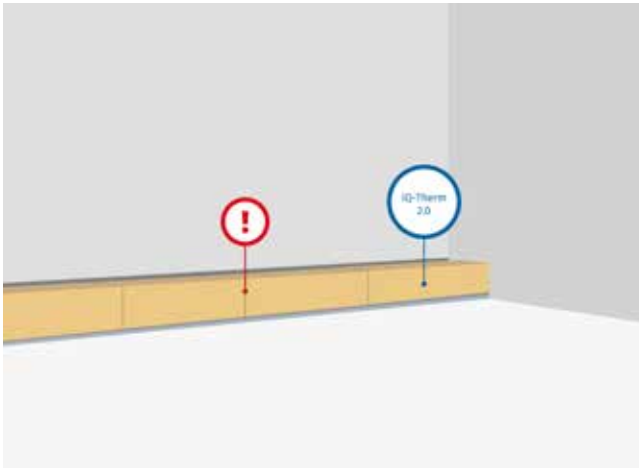
Application rate:
Approx. 1.3 kg/m²/mm Remmers iQ M universal (0211)



⑤ USING IQ-THERM 2.0 STRIPS IN THE ADHESIVE BED

Apply the base layer of iQ-Therm 2.0 to the fresh adhesive bed of iQ M universal.
Position and push down the iQ-Therm 2.0 strips in the adhesive bed.
Install the interior insulation in strips.

Application rate:
Approx. 0.85 strips/running metre Remmers iQ-Therm 2.0

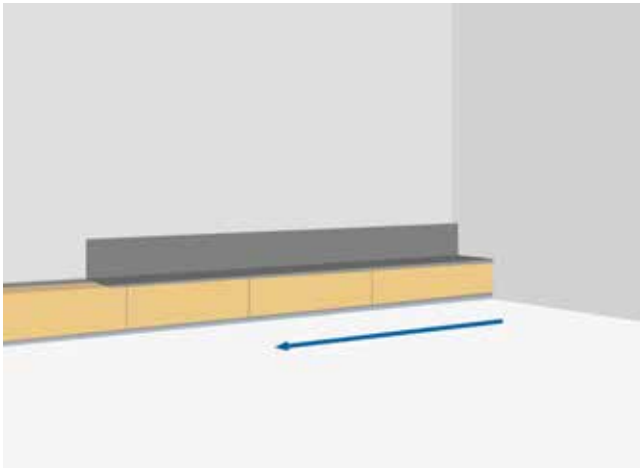


Leave joints clear between the strips.
Avoid creating cross joints.
Align using a straightedge.

If necessary, use Gun Foam 1K to fill any defective areas between the iQ-Therm 2.0 and the lowest horizontal joint due to unevenness of the floor.

Application rate:
Depending on the situation and use of Remmers Gun Foam 1K (1542).

Internal insulation with the iQ-Therm 2.0 system

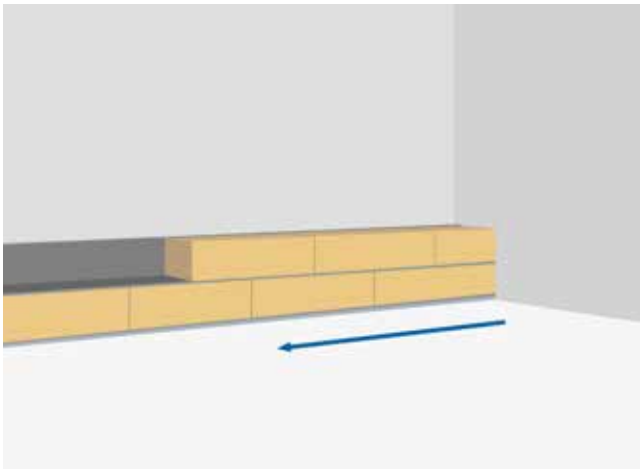


⑥ APPLYING VERTICAL AND HORIZONTAL BONDING LAYERS

Create a bonding layer of iQ M universal on the wall, thickness approx. 3 mm.

Create a horizontal joint of iQ M universal (slurry consistency) using a paintbrush or wide brush for subsequent iQ-Therm strips, thickness approx. 1 mm.

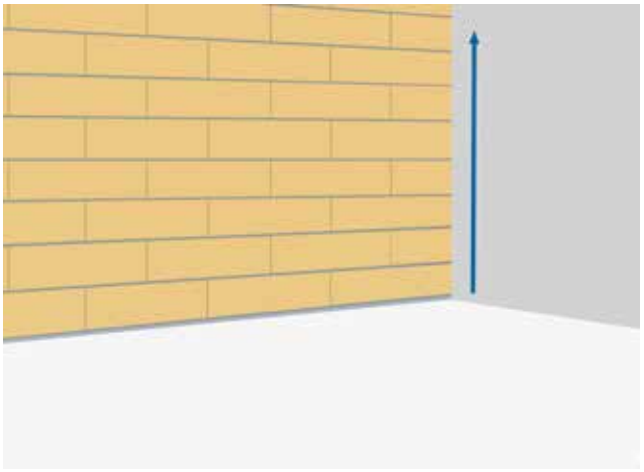
Application rate:
Approx. 1.3 kg/m²/mm Remmers iQ M universal



⑦ INSTALLING THE INTERIOR INSULATION IN STRIPS

Position and push down second and all subsequent rows of iQ-Therm 2.0 strips in the adhesive bed. To do this, continuously prepare the bearing joints and rear bonding layer with iQ M universal. Leave joints clear between the strips. Avoid creating cross joints, see illustration. Align using a straightedge.

Application rate:
Approx. 0.85 strips per running metre,
or approx. 6.8 strips/m² Remmers iQ-Therm 2.0
Approx. 1.3 kg/m²/mm Remmers iQ M universal (0211)

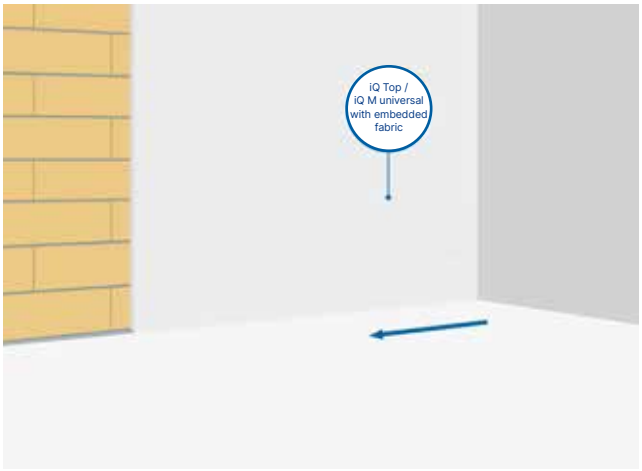


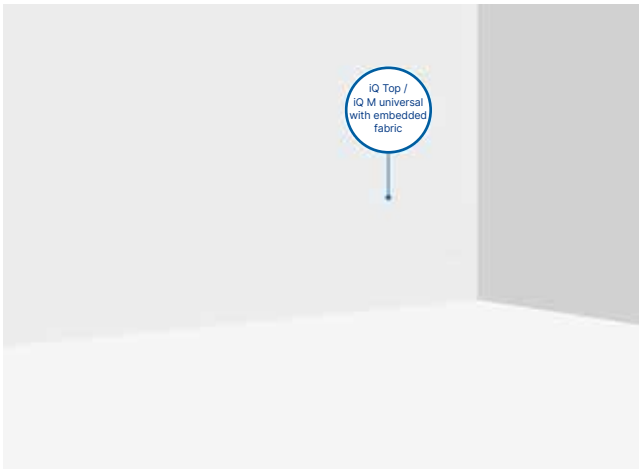
Adjacent building elements such as ceilings, wooden beams or windows should be prepared and masked off with airtight, pre-compressed PU soft foam sealing tape, Compriband 15/5-10, for subsequent decompression. Use the tear-off foil to control the activation time.

Application rate: Approx. 1 m/m
Remmers Compriband 15/5-10 (4272)

If necessary, ceiling and wall connection areas should be insulated with reveal boards and/or wedges in the iQ-Therm 2.0 system to compensate for heat bridge effects.

Application rate:
Approx. 2.8 panels/m² Remmers iQ-Therm 2.0 L15 (0165)
Approx. 1.4 panels/m² Remmers iQ-Therm 2.0 K50 (0164)





⑧ CREATING THE INSTALLATION LAYER FOR SUBSEQUENT SURFACE DECORATION

To create fine, closed and coatable plaster surfaces in Q3 quality, cover the entire surface of the areas insulated with iQ-Therm 2.0 with two layers of the adhesive mortar and thin-coat plaster iQ M universal with fabric reinforcement Tex 4/100.

Application rate:
Approx. 1.3 kg/m²/mm Remmers iQ M universal (0211)
Approx. 1.1 m²/m² Remmers Tex 4/100 (3880)

Alternatively, the surface can be finished to a maximum total thickness of 15 mm with the climate-regulating plaster iQ-Top and reinforcement fabric Tex 6.5/100. Both iQ M universal and iQ-Top are humidity-regulating and noticeably improve the room climate.

Application rate:
Approx. 6 kg/m²/cm Remmers iQ-Top (0228)
Approx. 1.1 m²/m² Remmers Tex 6.5/100 (0236)

FINE FILLER IN Q4 QUALITY (OPTIONAL)

To create fine, closed, coatable plaster surfaces of quality grade Q4, finish surfaces with SL Fill Q4.

Application rate:
Approx. 2.2 kg/m² for 2 mm Remmers SL Fill Q4 (0210)

⑨ COLOUR FINISH

To create surfaces with a colour finish, use the washproof, solvent-free and plasticiser-free silicate interior wall paint Color SL.

Application rate:
Approx. 0.15 l/m² per coat Remmers Color SL (0237)

Alternatively, a colour finish can be created using Color CL Historic, a lime paint without organic binders.

Application rate:
Approx. 0.2 - 0.25 kg/m² per coat
Remmers Color CL Historic (6569)

Products used

SOFTWARE

iQ-Lator 2.0
Software for evaluating the building physics of one-dimensional wall and ceiling constructions
Art. no. 0252

BONDING

iQ M universal
Universal fixing adhesive and thin plaster in the iQ-Therm 2.0 system
Art. no. 0211

iQ-THERM 2.0

iQ-Therm 2.0
Capillary-active PUR rigid foam strips
Art. no. 0160

iQ-Therm 2.0 L15
Reveal panel in the iQ-Therm 2.0 system
Art. no. 0165

iQ-Therm 2.0 K50
Wedge-shaped interior insulation panel in the iQ-Therm 2.0 system
Art. no. 0164

FILLERS / PLASTERS

iQ M universal
Universal fixing adhesive and thin plaster in the iQ-Therm 2.0 system
Art. no. 0211

iQ-Top
Climate-regulating plaster
Art. no. 0228

SL Fill Q4
Fine filler
Art. no. 0210

REINFORCEMENT FABRIC

Tex 4/100
Reinforcement fabric made of E-glass with polymer sheathing
Art. no. 3880

Tex 6.5/100
Reinforcement fabric made of E-glass
Art. no. 0236

Products used

SURFACE FINISH

Color SL
Washproof, solvent-free and plasticiser-free silicate interior wall paint
Art. no. 0237

ADHESIVE

Color CL Historic
Lime paint without organic binders
Art. no. 6569

ACCESSORIES

Compriband 15/5-10
Pre-compressed PU soft foam sealing tape in PP films for subsequent decompression
Art. no. 4272

Gun Foam 1K
Moisture-curing 1K PU foam for window and door assembly
Art. no. 1542

Partition wall strips
Closed-cell polyurethane foam for thermal, hygric and acoustic decoupling in wall/floor connection areas
Art. no. 4258

Assembly cylinder
Fixing of larger loads
Art. no. 4257

ACCESSORIES

Cutting tool for installation cylinder
Tool kit
Art. no. 4255

MultiBond Express
Clear, universal, high-strength PUR adhesive
Art. no. 1571

Smoothing trowel, notched
Medium-bed trowel
Art. no. 4560

Grated scraper
Art. no. 4231

Frequently asked questions
iQ-Therm 2.0

How are sockets, light switches, etc. installed?

It is recommended to provide the sockets with back insulation. For this purpose, a piece of iQ-Therm 2.0 30 is embedded in the wall. This piece should overlap the dimensions of the boxes by at least 4 cm.
In the case of a wall forming element that is difficult to remove, the insulation piece can be made of an iQ-Therm 2.0 L15 panel as an alternative to iQ-Therm 2.0 30.
Cavity wall boxes (orange) are used, which are foamed into the insulation level with Remmers Gun Foam 1K.

How should electrical cables be installed?

Old pipes can be retained. If new pipes are laid, they can be laid above the insulation level as well as underneath.

How are heating and hot water pipes installed?

It is always recommended to lay heating and water pipes on the "warm side", i.e. on the room side of the system. To do this, slit the strips and plaster over the slits later with iQ-Top.

How are pictures or the like mounted?

Insulation screw anchors, e.g. Tox Insulation Anchor Thermo, should be used to support medium loads such as pictures, smaller wall lights, etc.
Short nails, length ≤ 2.5 cm, to hold smaller loads are no problem.

What means can be used to fix wall cupboards, for example?

As far as possible, wall cupboards should be avoided in the area of interior insulation systems.
For precise, thermal bridge-free fastening of larger loads (e.g. kitchen wall units, stair railings, etc.), Remmers mounting cylinders made of PU rigid foam can be cut to size. For installation, cut a precisely fitting cavity in the insulation level down to the load-bearing substrate using the Remmers Cutting Tool for Installation Cylinder and glue in the appropriately cut-to-length installation cylinder with Remmers MultiBond Express.

Does the system work for bathrooms too?

In principle, iQ-Therm also works in damp rooms as long as sufficient drying times are ensured. If possible, a tile covering should be avoided in these areas, as the tile covering represents a vapour barrier and the iQ-Therm system will no longer be effective in these areas.

Can the system be tiled over?

In principle, yes!
However, since tiles are essentially impermeable, the system basically no longer serves a function under tiles. Narrow tile surfaces can be seen as an exception.

Which tools are used to cut the insulation strips?

The iQ-Therm 2.0 strips can be cut with standard cutter/insulation knives. All standard woodworking tools such as manual and table circular saws with dust extraction as well as manual and machine-operated crosscut saws (foxtail) can also be used.

Can the system be wallpapered?

The system can but should not be wallpapered, but painted with a capillary-open system paint such as Color SL or Color CL Historic.

What are the options for surface design?

The surface can be smoothed in the system with SL Fill Q4 and then painted with Color SL or Color CL Historic.

Can iQ-Therm 2.0 be used in cellars and basement apartments?

iQ-Therm 2.0 is excellently suited for the energy-efficient basement refurbishment. A wall former sealed with Remmers systems, even in contact with the ground, remains permanently dry and waterproof and provides a perfect installation level for intelligent interior insulation. By increasing the wall temperatures, the "perceived comfort" is significantly increased. The result is a noticeable improvement in the energy standard as well as the compliance with the hygienic minimum thermal protection and thus guaranteed freedom from mould.

Can iQ-Therm 2.0 be used in timber framing?

iQ-Therm 2.0 30 may be used for exposed timber framing façades!
This recommendation is due to the fact that with exposed timber framing, cracks between the frame

and the wood are always to be expected. These cracks can lead to a high water absorption when the façade is exposed to rain, especially on the sides of a building exposed to driving rain. The amounts of water absorbed here can exceed the condensation caused by capillary-active interior insulation many times over. This water must be able to dry off again, for which a corresponding energy input is necessary. If the framework is insulated with iQ-Therm 2.0 insulation with a thickness of more than 30 mm, the energy input is reduced so much (after all, it is excellent insulation!) that drying can no longer be guaranteed.

For this reason, the corresponding WTA leaflet (8-5-00/D Framework repair as per WTA V: internal insulation systems) states: "The additional internal thermal insulation should not exceed the value of $\Delta R_i = 0.8\ m^2K/W$" Converted, this means that the insulation thickness d_{max} must not be greater than λ x 0.8.

➤ for iQ-Therm 2.0: 0.031 W/(m·K) x 0.8 m²K/W = 0.0248 m = 24.8 mm

In the case of cladded timber framework, e.g. with boarding, shingling or plaster, iQ-Therm 2.0 can also be used in higher insulation thicknesses, as in the case of cladded timber framework no or only a very small amount of moisture can penetrate into the construction from the outside.

Do iQ-Therm 2.0 strips have to be fitted with dowels?

On all solid constructions that are not subject to dynamic loads, iQ-Therm 2.0 does not need to be anchored in the wall or ceiling area. For constructions subjected to dynamic loads (e.g. timber framework), the use of dowels is recommended, as they are also used for WDVS. Usually, the dowels are not placed in the wood but in the frame.

Can iQ-Therm 2.0 be used as ceiling insulation?

Yes! To simplify the work, the strips should only be filled with iQ M universal. iQ Top is not suitable here.

Is the capillary conductivity of the bearing joints sufficient? Calcium silicate is much more absorbent, isn't it?

The capillary conductivity of iQ-Therm 2.0 is optimised for a maximum moisture transport of significantly more than 3 kg water/m² and year. This corresponds to the maximum amount of moisture that can dry off in the direction of the room under our (Central European) climatic boundary conditions. Highly absorbent boards, such as calcium silicate, are oversized in this respect and do not transport more moisture under local climatic conditions. In addition, the maximum permissible amount of condensation water according to DIN 4108 - 3, section 4.2.1.c is only 1 kg/m²/year, so that the iQ-Therm 2.0 system offers maximum safety with regard to absorbency.

Why are the reveal panels not installed in strips?

The use of iQ-Therm 2.0 strips with capillary-active bearing joints is not absolutely necessary in reveal areas.

- ✓ The boards do not need to be plastered over due to the bearing joints, but only filled over, which allows for a lower installation height.
- ✓ The boards are significantly more vapour retardant without bearing joints, which means less condensation.
- ✓ The boards have a higher insulating effect (λ = 0.027 W/m·K) without bearing joints.

How deep must ceilings and integrating walls be insulated?

In order to determine the exact insulation depth, a calculation would have to be carried out in each individual case with regard to the thermal bridge coefficient according to DIN 4108-2. With the use of an iQ-Therm 2.0 wedge (width 60 cm) you are on the safe side in practically every case.

What do you do with the beam heads in critical wooden beam ceilings?

Floor slabs should - if possible - be insulated throughout. For this purpose, connecting building components are exposed and wrapped with Remmers Compriband 15/5-10 to prevent convection in the area of the respective beam head. The iQ-Therm 2.0 system is then applied. Cracks within the beams are filled in the manner of a carpenter.

If possible, there should be an air space around the beam head itself. Only in particularly critical cases (usually associated

with moisture penetration via the façade) the timber beam heads must be heated. This can be done by "looping through" the normal heating pipe or by laying special heating pipes above the timber beam heads. Supporting this, a bevelled perforated plate can be introduced above the beam heads, which transports the heat from the heater to the face of the beam and allows some air circulation. These solutions require far less energy than might appear at first glance.

As an additional measure to protect the beam heads, a depot application of an inorganic bore acid dowel, such as Remmers Adolit drilling cartridges, can be used as a fungicide. Should the driving rain protection weaken, this provides additional security.

What must the substrate be like for the iQ-Therm 2.0 system?

The substrate must be level so that a full-surface connection of the system can be guaranteed.
Batted or point/bead bonding is not permissible.
Crumbly lime or gypsum plasters must be removed!

What about fire protection?

The iQ-Therm 2.0 strips are a building material of class B2 (DIN 4102-1) or fire behaviour E (EN 13501-1). In the system, iQ-Therm 2.0 meets the requirements of building material class B1 (currently being tested). Within dwellings, regardless of the floor or building height, iQ-Therm is therefore approved.
Polyurethane insulation materials have neither "burning" nor "non-burning" dripping behaviour in case of fire. The danger of glowing fires spreading unnoticed in the insulation layer does not exist with polyurethane insulation materials. A building authority certificate on the glowing fire behaviour is therefore not required.
Restrictions for the use of iQ-Therm 2.0 only exist in escape and rescue routes, as only building materials of Class A1, e.g. Remmers Mould Remediation Boards (SLP CS), are permitted here.
Deviations are possible within the scope of fire protection engineering.

Favourable living and ventilation behaviour

Furniture should not be in direct contact with the wall to ensure convection between the wall forming element and the furniture.

To ensure the full functionality of an iQ-Therm 2.0 system, adapted ventilation behaviour is necessary. This can be done, for example, via automated ventilation cycles or manually as follows:

Kitchen/bathroom:
High levels of moisture can occur in these rooms for short periods, e.g. when showering, bathing, cooking and also when mopping tiled floors. Ventilate these "moisture peaks" immediately. Open a window during or after cooking or showering to ventilate intensively (shock ventilation).

Living spaces:
Here you can ventilate by "nose". If the air quality is poor ("it smells"), shock ventilation is recommended. If there are a lot of plants or other sources of humidity in the living room (aquarium, indoor fountain, etc.), you should check the air humidity regularly, e.g. with a hygrometer (the values should usually be below 60% rel. humidity).

Bedrooms:
If you sleep with the window open, the moist air you breathe can escape immediately. If the window stays closed at night, you should ventilate with the window wide open after getting up (shock ventilation). In winter, 5 to 10 minutes are sufficient; in spring and autumn, you can ventilate for longer. You can use a hygrometer to determine whether the "relative humidity" is lower than 60%. If this guideline value is exceeded, you should ventilate longer or more often (e.g. additionally in the evening).

08/2023

1122/04.25

We are there for you with a fast and personal response.

Find your local contact

Find out what we can get done for you:

Subject to changes. The current version of the applicable Technical Data Sheet is relevant for legal matters.
Colour variations are possible.
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