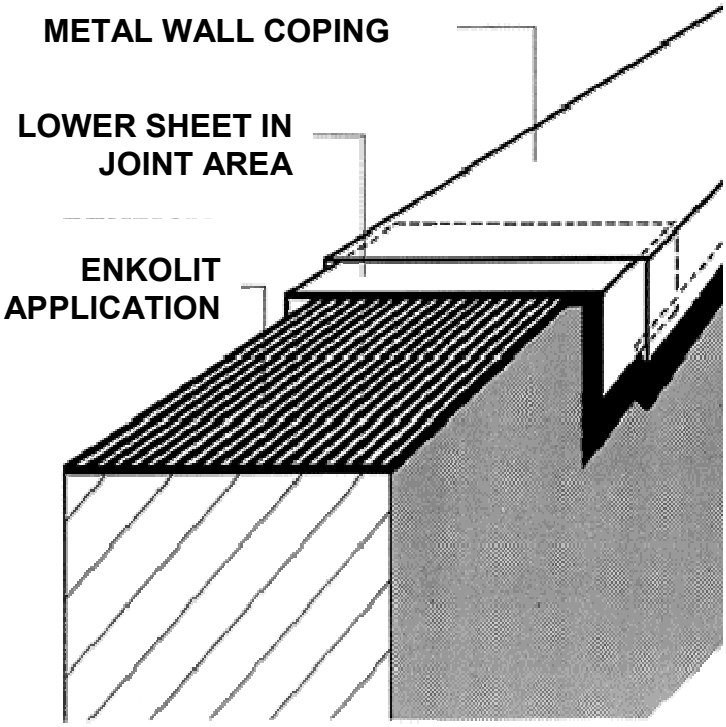
Application instructions for bonding using Enkolit®



Summary of workflow:

1. Clean the substrate. Application of Universal Primer 933 is required only in the event of dusting or porous surfaces.

2. Apply **Enkolit** over the entire surface, in one direction, using Enke's grooved spreader.

3. Firmly press the metal sheet to be bonded into place.

ENKE-WERK Johannes Enke GmbH & Co. KG, Hamburger Str. 16, 40221 Düsseldorf
Entered in the commercial register of Düsseldorf under HR A 4683

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Table of contents

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Designated use
Range of application

Enkolit is a non-hardening, bituminous adhesive and sealing compound, allowing window sill and wall copings to be bonded simply and easily. Likewise verge and eaves flashings as well as metal claddings can be bonded with **Enkolit.**

Enkolit is used for bonding metal profiles and sheets, e.g. of titanium zinc, copper, aluminium, stainless steel, lead, etc., to other building materials. The strengths achieved comply with DIN 1055 “Design loads for buildings (wind loads)”, which can be proved by neutral certificates for tests conducted on bonds that are up to 45 years old. When laying the courses of facades, roofs, etc. over a large area, level fixation in the visible area can be improved by applying **Enkolit** in strips or partial areas in addition to mechanical securing.

Thanks to saturated full-surface bonding with **Enkolit** no cavities can form. In addition, the bonding has a noise-attenuation effect, preventing drumming noises caused by rainfall. **Enkolit** bonding makes it impossible for insects to build their nests and prevents corrosion damage caused by moisture forming on the underside of the metal sheets.
Even when freshly applied, **Enkolit** will not run down vertical surfaces, provided that the application instructions have been followed. Laboratory tests have shown that **Enkolit** will not run out of the bonding joint at temperatures up to +110 °C. **Enkolit** is resistant to industrial pollution, salt water, seawater and red algae as well as being fungicidal.

Substrate

Suitable substrates include concrete, masonry, natural and synthetic stone, approved building veneer plywood or other wood-based materials, fibre cement, slate and synthetic-resin-bonded chipboard. Important: The substrate must be firm, dry and clean and have no significant irregularities. Level uneven substrates prior to application. Clean, non-porous and non-dusting substrates do not require a prime coat. Prime dusting surfaces, such as older cement screeds and generally sandstone or other natural stones, with Universal Primer 933. Replace loose and crumbling plaster or levelling layers. In the event of perforated bricks take suitable measures to ensure a full contact surface. **Enkolit** is not suitable as a levelling compound.
Prior to using **Enkolit** on any plastic-coated or painted metal sheets check its compatibility with the plastic coating or paintwork.
When the substrate is wood, make sure that it is unpainted and storage dry so as to avoid subsequent changes in cross section, which may lead to an uneven bonding surface. Inorganic, saline wood preservatives are compatible.

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Special cases

When using **Enkolit** to bond one metal sheet to another, it is important to also fasten them mechanically. Apply **Enkolit** over the entire surface. The application rate of **Enkolit** must not exceed 1.5 kg/m².
Metal sheet coverings (attics) located in areas with alternating sun and shade need to be fastened on one side.

Substrates that are not suitable for metal sheet bonding with Enkolit:

- Bitumen felt because **Enkolit** will partially dissolve the top layer of the bitumen felt with the result that the bitumen may become fluid. This also applies to other bituminous substrates.
- Plastic sheeting or liquid plastic seals because of the general incompatibility that tends to exist between plastics and bituminous materials.
- Insulating materials, such as polystyrene, because **Enkolit** affects these materials.

Thermal insulation material/TICS

Before bonding metal sheets to plastered thermal insulation materials/TICS or similar substrates, be sure to apply a barrier layer of 2K primer as a protective and wash primer for **Enkolit** (application rate approx. 400 g/m²) and to sand it with dry quartz sand (grain size of 0.7–1.2 mm).

Keep oils, greases and organic solvents away from **Enkolit.** Non-bituminous sealing compounds, such as silicone, butyl, thiokol, acrylic or polyurethane sealants, are incompatible with **Enkolit.** These substrates are unsuitable for bonding with **Enkolit**. Equally unsuitable are all substrates with a loose texture and low inherent strength (e.g. mineral wool, etc.).
Because of the possibility of an offensive smell **Enkolit** is not suitable for indoor use.
Windows leading to inside rooms must have been hermetically sealed by the customer. If this construction specification is not complied with, there is the risk of an offensive smell in the respective inside rooms.

Application temperature

Enkolit should not be applied at temperatures below + 5 °C or above + 50 °C. If **Enkolit** is stored at too low a temperature, it will only slowly reach the required application temperature in the bucket. If the outside temperature falls below + 5 °C, **Enkolit** must be stored in a room where the temperature is higher. If **Enkolit** is too cold to be applied (< + 5 °C), it can be brought up to temperature with our electric heating belt.
The materials to be bonded with **Enkolit** must also be at a temperature above + 5 °C but not higher than + 50 °C. At temperatures below + 5 °C there is a risk of condensation forming on the metal surfaces, which will prevent proper adhesion.

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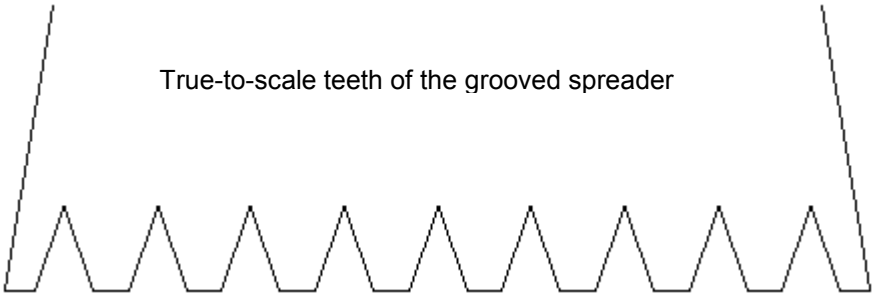
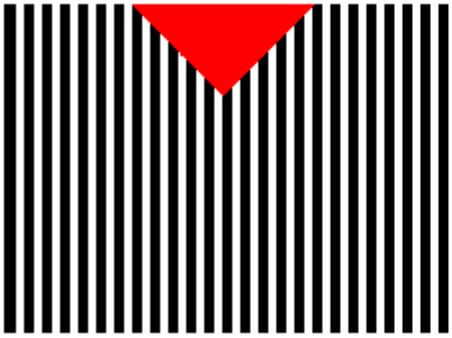
Enkolit application

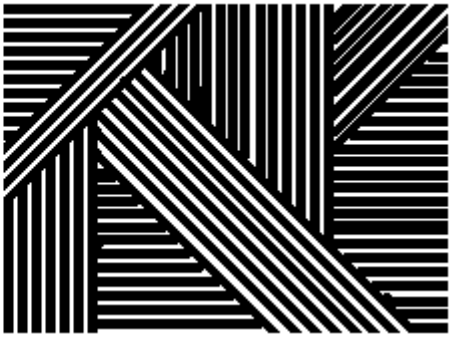
Apply **Enkolit** over the entire surface using Enke's grooved spreader (see figure). Application in one direction allows the air to escape easily while the metal sheets are positioned and pressed into place. In this way full-surface bonding is possible without entrapped air (see figure).



Correct!



Wrong!



Important:

When applying **Enkolit** to both components to be bonded, make sure that the direction of the grooves is the same on either component. **Enkolit** should be applied to both surfaces when the areas to be bonded are more than 30 cm wide. The point is not to double the amount of **Enkolit** but to distribute the prescribed amount evenly on both surfaces.
In the event of large cut widths also comply with the latest technical rules of the plumbing trade.

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Machine application

When metal covers for large-scale projects (> 200 m²) are to be bonded with **Enkolit**, there is the option of applying **Enkolit** with Enke's pneumatically powered Sprayer Filling Machine DS 7.
Additional information is available on request.

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Application rate

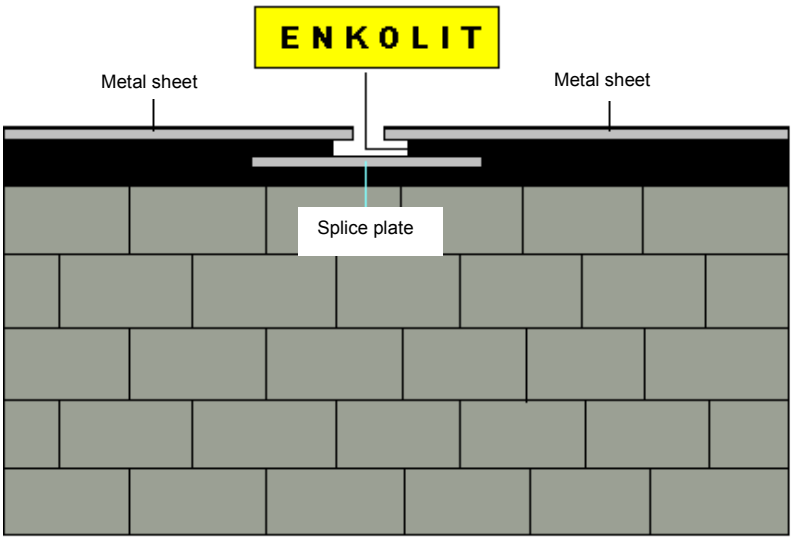
On an even substrate 2.0–3.0 kg/m^2 is required, but on an uneven substrate the application rate may be higher. A maximum of 5.0 kg/m^2 must not be exceeded, however, since otherwise there is a risk that material not yet flashed off will slip due to its own weight at summer temperatures.

Application

Apply pressure when joining the components to be bonded. For small components firm hand pressure is sufficient. In the event of larger cuts the metal sheets can also be firmly and evenly pressed into place using your feet (preferably with the aid of a pressure-distributing layer, e.g. a board).
The components to be bonded can be joined immediately after applying **Enkolit** but no later than 30 minutes after application.

Application on horizontal surfaces

When installing wall copings and fascia or parapet claddings made up of several individual parts, bond a splice plate at least 10 cm wide, corresponding to the metal sheet profile, to the underside of the metal sheet joints to ensure compensation for expansion. Likewise, when using continuous metal profiles more than approx. 6 m in length (recommended length: 3 metres), provide compensation for expansion to allow for temperature-induced changes in length all the while, however, preventing leakage. The space between the metal sheets to be chosen as compensation for expansion depends on the ambient temperature and the expansion coefficient of the metal. This keeps the metal sheets from pushing each other up (see drawing).



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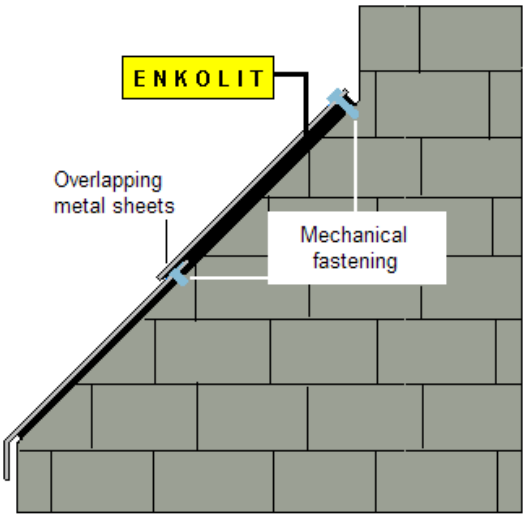
Application on sloping and vertical surfaces

When installing metal sheets to protect sloping or vertical surfaces, secure those metal sheets mechanically in order to prevent slippage. To be precise, all that is required to prevent slippage are mechanical fixing points. In the case of titanium zinc, for example, concealed cleats, continuous cleats or the like are used. This eliminates unsightly screw head caps. Mechanical fastening is necessary even in the event of a low slope.

On vertical substrates **Enkolit** must be applied to both surfaces, i.e. approx. 1.0–1.5 kg/m^2 of **Enkolit** to each surface to be bonded. Increase the number of fixing points using additional expansion cleats, continuous cleats or the like. Use the normal number of cleats for fascia and parapet claddings. The material to be bonded to the substrate must be pressed down very carefully after placing. Because of the overlapping of the metal sheets on sloping wall copings there will be no expansion problems.



Soldered joints

When metal profiles are bonded using **Enkolit**, soldering can normally be dispensed with. If, however, a soldered joint is unavoidable, do not apply **Enkolit** to the area of the intended soldered joint. This area should be at least 10 cm wide. When **Enkolit** comes into contact with a naked flame, it burns up locally like wood or plastic.

Advice on safety

Odour development is possible – not suitable for indoor use!
Please follow the instructions in our safety data sheets!

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Technical data Design of adhesive bonds with **Enkolit**: metal sheet thicknesses, max. metal sheet overhangs for buildings up to 50 m high to the eaves

Plumbing components to be bonded	Material	Min. metal sheet thickness (nominal), mm		Max. metal sheet overhang mm	Additional stopping plate, mechanically secured
Wall copings, fascia claddings and the like (expansion compensators every 6–8 m)	Zn Cu Al SS	0.7 0.7 0.7 0.4		≤ 30	No
	Zn Cu Al SS	0.7 0.7 0.7 0.4		≥ 30	Yes
	Zn Cu Al SS	0.8 [1] 0.8 0.8 0.5		≤ 60	No
	Zn Cu Al	1.0[1] 1.0 1.0		≤ 100	No
Window sill copings	Zn Cu Al SS	0.7 [2] 0.7 [2] 0.7 0.4		≤ 40	No
	Zn Cu Al SS	0.8 [1] 0.8 [1] 0.8 0.5		≤ 60	No

[1] If using mechanically secured stopping plates, you can reduce the metal sheet thicknesses and increase the max. metal sheet overhangs.

[2] If using stopping plates as above, you can increase the max. metal sheet overhangs.

Shelf life: at least 12 months in unopened original packing drum.

Enkolit is frost-proof!

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Notes on disposal

As soon as you have finished using the product, thoroughly scrape out the packing drums using a spatula to allow proper disposal. Tin containers emptied of residue can be recycled using appropriate steel recycling channels. As a certified user of the German recycling logo ENKE can provide a list of collection points. The user shall dispose of larger amounts of product residues in tin packing drums at his costs as this is special waste.

Health and safety at work

Ensure personal health and safety at work. Please also refer to our safety data sheets.

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