Renovation of façades ETICS systems

Reworking variants – Procedural steps – Products

Problem: **the entire surface of the finishing plaster and rendering on EPS insulation is damaged and cannot be repaired**

Solution: **full replacement of the render/plaster coating**

Renovating ETICS system façades

All façades are subject to a wide range of stresses and a natural ageing process, depending on the building type, use, location and maintenance. As such, it is necessary to carry out renovation work at corresponding intervals. Depending on the condition, the reasons for this work and the steps to be taken can vary greatly:

- Visual refresh of aged and dirty façades
- Cleaning and reworking of surfaces affected by algae/fungus
- Remodelling (colours, render/plaster texture)
- Material replacement if areas are weathered or damaged
- Damage repair
- Energetic optimisation with additional insulation layers

Prerequisite

As for all façade renovations, the actual property condition must always be precisely determined beforehand. This analysis involves, for example, the elimination of all construction factors giving rise to damage, such as inadequate measures for channelling water, leaking connections or inadequate roof overhangs. The material of the existing ETICS system must also be professionally checked for load capacity, the type of finishing coat (compatibility) and any possible defects.

A Cinderella transformation
Thanks to the diverse range of options, all old buildings can be given a new lease of life. Regardless of whether the building is designed to house one, two or several families, economical renovations with ETICS systems will add value for all occupants.

External Thermal Insulation Composite Systems (ETICS) have been widely used to insulate façades for more than 50 years. Long-term scientific observations have shown that the service life and necessary renovation intervals are identical to those of conventional rendered masonry if the system has been applied, maintained and repaired correctly.

Type of reworking

Depending on the diagnosed condition, various variants may apply:

Paint coating

- Visual refresh of aged and dirty façades
- Reworking of areas affected by algae
- Elimination of fine cracks in the render/plaster

Partial repair

Elimination of defects or damage in the area of

- The finishing plaster
- The finishing plaster and base rendering
- The coating incl. insulating material

Filler treatment over the entire surface and new plasterwork

for unsightly areas or if new render/plaster texture is desired.

Full replacement of the render/plaster system

if surfaces have been destroyed or if coatings have been applied incorrectly.

Doubling (over-insulating)

if the insulation is inadequate or to be optimised.

The necessary steps and materials to be used are described for typical example cases. A combination of various measures may of course be necessary for a particular structure. The examples refer to ETICS systems with surface coatings of synthetic resin-, silicone resin-, silicate- or lime cement renders/plasters.

Caparol Property Service

Caparol offers technical and design support for the renovation of ETICS façades.
The compulsory precise analyses of the actual property condition form the basis of the overall planning. Without such overall planning, technically and economically viable solutions cannot be developed. The objective of any renovation is a long lasting and durable property.

Caparol supports you by determining the actual condition of the property through inspections, supplemented by on-site analyses and tests if required.

Based on this condition analysis we elaborate together with your planning group an appropriate repair concept, which contains basic advises as well as recommendations for an optimal repair programme.

From this repair programm we develop adequtate specifications containing an individual adapted range of our high quality products. Our experts stand ready for questions of your construction management.

In addition to this technical service, the Caparol ColorDesignStudio offers high-quality design support. This covers the design of not only individual buildings, but also residential complexes and complex housing developments.

Contents

1

Status analysis/condition

- Render/plaster coating free of damage and technically intact
- Uncoated or coated
- Weathered and/or dirty depending on age

Measure

Technical reworking of paint coating

Procedural steps	
Cleaning	Pressurised water jets or high-pressure hot water jets, max. 60 °C, max. 60 bar. Allow to dry thoroughly. Observe the statutory and regulatory regulations on waste water disposal.
Variant 1	Areas with regular absorption properties
Priming coat	ThermoSan, max. 10 % thinned with AmphiSilan Tiefgrund LF
Finishing coat	ThermoSan, max. 5 % thinned with water
Variant 2	Areas with strong absorption properties
Priming coat	AmphiSilan Tiefgrund LF
Intermediate coat	ThermoSan, max. 10 % thinned with water
Finishing coat	ThermoSan, max. 5 % thinned with water

Products

- **AmphiSilan Tiefgrund LF**
  Solvent-free, environmentally friendly and low-odour special primer with a hydrophobic effect.
- **ThermoSan**
  Innovative silicone resin binder combination with integrated nano-quartz particles for clean façades. Optimal moisture regulating properties. ThermoSan is protected against algae and fungal attack.

2

Status analysis/condition

- Render/plaster coating with algae and/or fungal growth

Measure

Removal of algae and fungal growth with subsequent preventative paint coating

Procedural steps

Cleaning	Thoroughly remove algae and/or fungal build-up using high-pressure hot water jets, max. 60 °C, max. 60 bar. Allow to dry thoroughly Observe the statutory and regulatory regulations on waste water disposal.
Variant 1	Areas with regular absorption properties
priming coat	Apply Capatox, unthinned, with a brush. Allow to dry thoroughly
intermediate coat	ThermoSan, max. 10 % thinned with AmphiSilan Tiefgrund LF
Finishing coat	ThermoSan, max. 5 % thinned with water
Variant 2	Areas with strong absorption properties
Priming coat	FungiGrund
Intermediate coat	ThermoSan, max. 10 % thinned with water
Finishing coat	ThermoSan, max. 5 % thinned with water

Products

- **Capatox**
  Biocidal solution* for pre-treating areas affected by algae, moss and fungus.
- **FungiGrund**
  Aqueous microbiocide* for cleaning and priming areas affected by mould and algae.
- **AmphiSilan Tiefgrund LF**
  Solvent-free, environmentally friendly and low-odour special primer with a hydrophobic effect.
- **ThermoSan**
  Innovative silicone resin binder combination with integrated nano-quartz particles for clean façades. Optimal moisture regulating properties. ThermoSan is protected against algae and fungal attack.

* Use biocides safely. Always read the label and product information before use.

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Status analysis/condition

- Irregular cracks in the render/plaster surface
  (see BFS* Data Sheet no. 19, A.1)
  * A German Association for Technical Guidelines for Painters in Germany

Measure

Paint coating to fill or cover hairline cracks

Procedural steps

■ **Cleaning**	Pressurised water jets or high-pressure hot water jets, max. 60 °C, max. 60 bar. Allow to dry thoroughly. Observe the statutory and regulatory regulations on waste water disposal.
Variant 1	Filling cracks
■ **Priming coat**	OptiGrund E.L.F.
■ **Intermediate coat**	FibroSil, max. 5 % thinned with water, applied with a roller as a paint coating to fill cracks.
■ **Finishing coat**	ThermoSan, max. 5 % thinned with water
Variant 2	Elastic coating
■ **Priming coat**	AmphiSilan primer for highly absorbent, sanded surfaces or CapaGrund Universal for regularly absorbent areas.
■ **Intermediate coat**	PermaSilan, unthinned
■ **Finishing coat**	PermaSilan, unthinned
Variant 3	Filling cracks, only on mineral or siliceous finishing plasters
■ **priming coat**	Sylitol Konzentrat 111, thinned 2:1 with water, for strong or irregularly absorbent substrates.
■ **intermediate coat**	Sylitol-Minera, max. 10 % thinned with Sylitol Konzentrat 111
■ **Finishing coat**	Capatect SI Façade Finish 130, max. 3 % thinned with Sylitol Konzentrat 111

Products

- **OptiGrund E.L.F.**
  SilaCryl-based, deeply penetrating, hydrophobic special primer.
- **AmphiSilan primer**
  Solvent-based, odour-free special primer with solidifying effect.
- **CapaGrund Universal**
  White pigmented special primer, highly permeable to water vapour, based on SolSilan technology.
- **Sylitol Minera**
  high-build, crack-filling, silicate-based coating.
- **FibroSil**
  Coating-fleece for covering cracks, diffusible.
- **PermaSilan**
  Silicone resin-based, elastic façade paint, diffusible, with a preservative to protect the coating against algae and fungal attack.
- **ThermoSan**
  Innovative silicone resin binder combination with integrated nano-quartz particles for clean façades. Optimal moisture regulating properties. ThermoSan is protected against algae and fungal attack.
- **Sylitol Konzentrat 111**
  Silicate-based primer and thinner (concentrate) for Sylitol paints and renders/plasters.
- **Capatect-SI Façade Finish 130**
  Dispersion silicate paint for mineral substrates.

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Status analysis/condition

- Unsightly textured render/plaster
- New render/plaster texture desired
- Adhesion is intact

Measure

New reinforcement over the entire surface and new plasterwork

Procedural steps

■ **Preparation measures**	Check the stability and load bearing capacity of the existing system.
■ **Cleaning**	Pressurised water jets or high-pressure hot water jets, max. 60 °C, max. 60 bar. Allow to dry thoroughly. Observe the statutory and regulatory regulations on waste water disposal.
■ **Priming coat** (optional)	Plaster primer 610
Variant 1	Organic-based system
■ **Reinforcement layer**	Apply cement free mortar Capatect-ZF 699 or CarbonSpachtel, (rendering) embed Capatect Mesh 650 and smooth over again with mortar.
■ **Render/plaster**	Apply and structure as desired: _ Capatect Façade Render/Plaster _ AmphiSilan Façade Render/Plaster
Variant 2	Mineral-based system
■ **Reinforcement layer** (rendering)	Apply Capatect Adhesive and Reinforcement Mortar 190 or ArmaReno 700, embed Capatect Mesh 650 and smooth over again with mortar.
■ **Render/plaster**	Apply and structure as desired: _ Sylitol Façade Render/Plaster _ Capatect Mineral Render/Plaster _ Capatect Mineral Lightweight Render/Plaster
■ **Paint coating** (optional)	Capatect SI Façade Finish 130 as a equalising paint coating for colored mineral renders/plasters.
■ **Paint coating** (optional) Priming coat Finishing coat	For algae/fungal build-up ThermoSan, max. 10 % thinned with AmphiSilan Tiefgrund LF ThermoSan, max. 5 % thinned with water

Products

The product to be used must be selected depending on the type (binder) of the existing render/plaster system.

- **Plaster Primer 610**
  Priming coating for subsequent render/plaster finish.
- **Capatect Mortar ZF 699**
  Cement-free reinforcement mortar.
- **CarbonSpachtel**
  Hard-wearing, carbon fibre-reinforced, dispersion-based reinforcement mortar to create heavy-duty reinforced renderings.
- **Capatect Adhesive and Reinforcement Mortar 190 or ArmaReno 700**
  Cement-based reinforcement mortar.
- **Capatect Mesh 650**
  Glass fibre mesh for reinforcement.
- **Capatect Façade Render/Plaster**
  Dispersion-based textured render/plaster.
- **AmphiSilan Façade Render/Plaster**
  Silicone resin-based textured render/plaster.
- **Sylitol Façade Render/Plaster**
  Silicate-based textured render/plaster.
- **Capatect Mineral Render/Plaster,**
- **Capatect Mineral Lightweight Render/Plaster**
  Lime cement-based textured renders/plasters.
- **Capatect-SI Façade Finish 130**
  Dispersion silicate paint for mineral substrates.
- **ThermoSan**
  Innovative silicone resin binder combination with integrated nano-quartz particles for clean façades. Optimal moisture regulating properties. ThermoSan is protected against algae and fungal attack.

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Status analysis/condition

- Partial or complete flaking of the finishing plaster

Measure

Partial or complete replacement of the finishing plaster

Procedural steps

■ **Cleaning**	Mechanically remove all traces of loose or poorly bonded finishing plaster, i.e. using a scraper or other suitable tool. Avoid damaging the reinforcement layer. In case of partitial demaged areas choose an architecturally appropriate demarcation line.
■ **Priming coat** (optional)	Plaster Primer 610
Variant 1	Organic-based render/plaster
■ **Render/plaster**	Apply render/ plaster and match the structure to surraounding areas: _ Capatect Façade Render/Plaster _ AmphiSilan Façade Render/Plaster
Variant 2	Mineral-based render/plaster
■ **Render/plaster**	Apply render/ plaster and match the structure to surraounding areas: _ Sylitol Façade Render/Plaster _ Capatect Mineral Render/Plaster _ Capatect Mineral Lightweight Render/Plaster
■ **Paint coating**	To visually conceal repair spots when reworking partial areas, it is always recommended to coat the entire surface of the affected façade section. See page 8 for the paint coating system.

The render/plaster must be selected depending on the existing reinforcement layer (organic- or mineral-based) and the condition.

- **Plaster Primer 610**
  Priming coating for subsequent render/plaster finish.
- **Capatect Façade Render/Plaster**
  Dispersion-based textured render/plaster.
- **AmphiSilan Façade Render/Plaster**
  Silicone resin-based textured render/plaster.
- **Sylitol Façade Render/Plaster**
  Silicate-based textured render/plaster.
- **Capatect Mineral Render/Plaster,**
- **Capatect Mineral Lightweight Render/Plaster**
  Lime cement-based textured renders/plasters.
- **ThermoSan**
  Innovative silicone resin binder combination with integrated nano-quartz particles for clean façades. Optimal moisture regulating properties. ThermoSan is protected against algae and fungal attack.

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Status analysis/condition

- Finishing plaster and rendering is partially damaged
- Insulating material is intact

Measure

Repair and completion of the reinforcement layer and new plasterwork

Procedural steps

Preparation measures	In case of partitial demaged areas choose an architecturallyappropriate demarcation line. Overlap zones must be created for the new coating to be applied. 1. Cleanly cut out the damaged area of the coating and remove from the insulating material. 2. Scrape off the existing reinforcement layer, approx. 10 cm wide, all round up to the fabric. 3. Scrape off the existing finishing plaster, approx. 5 cm wide, up to the reinforcement layer.
Variant 1	Organic-based system
Reinforcement layer	Apply Capatect cement free reinforcement mortar ZF 699 or CarbonSpachtel with corresponding overlaps, embed Capatect Mesh 650 and smooth over again with mortar.
Render/plaster	Apply render/ plaster and match the structure to surraounding areas: _ Capatect Façade Render/Plaster _ AmphiSilan Façade Render/Plaster
Variant 2	Mineral-based system
Reinforcement layer	Apply Capatect Adhesive and Reinforcement Mortar 190 or ArmaReno 700 with corresponding overlaps, embed Capatect Mesh 650 and smooth over again with filler.
Render/plaster	Apply render/ plaster and match the structure to surraounding areas: _ Sylitol Façade Render/Plaster _ Capatect Mineral Render/Plaster _ Capatect Mineral Lightweight Render/Plaster
Render/plaster	To visually conceal repair spots when reworking partial areas, it is always recommended to coat the entire surface of the affected façade section. See page 4 for the paint coating system.

Products

The material must be selected depending on the existing coating (organic- or mineral-based) and the condition.

- **Capatect Mortar ZF 699**
  Cement-free reinforcement mortar.
- **Capatect Adhesive and Reinforcement Mortar 190 or ArmaReno 700**
  Cement-based reinforcement mortar.
- **Capatect Mesh 650**
  Glass fibre mesh for reinforcement.
- **Capatect Façade Render/Plaster**
  Dispersion-based textured render/plaster.
- **AmphiSilan Façade Render/Plaster**
  Silicone resin-based textured render/plaster.
- **Sylitol Façade Render/Plaster**
  Silicate-based textured render/plaster.
- **Capatect Mineral Render/Plaster,**
- **Capatect Mineral Lightweight Render/Plaster**
  Lime cement-based textured renders/plasters.
- **ThermoSan**
  Innovative silicone resin binder combination with integrated nano-quartz particles for clean façades. Optimal moisture regulating properties. ThermoSan is protected against algae and fungal attack.

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Status analysis / condition

- Partial damage with destroyed insulating boards

Measure

Replacement of damaged insulating board sections and render/plaster repair

Procedural steps

Preparation measures	1. Cleanly cut out the damaged area incl. the insulating boards and remove. 2. Remove the finishing plaster and rendering, approx. 5 cm wide, all round up to the insulating board surface. 3. Scrape off the existing reinforcement compound, approx. 10 cm wide, all round up to the fabric. 4. Scrape off the existing finishing plaster, approx. 5 cm wide, up to the reinforcement layer.
Insulating material	Affix a precisely cut section of insulating material in the form of a “seal”.
Variant 1	Organic-based system
Reinforcement layer	Apply Capatect cement free reinforcement mortar ZF 699 or CarbonSpachtel with corresponding overlaps, embed Capatect Mesh 650 and smooth over again with mortar.
Render/plaster	Apply render/ plaster and match the structure to surraounding areas: _ Capatect Façade Render/Plaster _ AmphiSilan Façade Render/Plaster
Variant 2	Mineral-based system
Reinforcement layer	Apply Capatect Adhesive and Reinforcement Mortar 190 or ArmaReno 700 with corresponding overlaps. Embed Capatect Mesh 650 and smooth over again with mortar.
Render/plaster	Apply render/ plaster and match the structure to surraounding areas: _ Sylitol Façade Render/Plaster _ Capatect Mineral Render/Plaster _ Capatect Mineral Lightweight Render/Plaster
Paint coating	To visually conceal repair spots when reworking partial areas, it is always recommended to coat the entire surface of the affected façade section. See page 8 for the paint coating system.

The product to be used must be selected depending on the type (binder) of the existing coating and the existing insulating material.

- **Capatect façade insulating boards**
  Polystyrene or mineral wool.
- **Capatect Mortar ZF 699 or CarbonSpachtel**
  Cement-free reinforcement mortar.
- **Capatect Adhesive and Reinforcement Mortar 190 or ArmaReno 700**
  Cement-based reinforcement mortar.
- **Capatect Mesh 650**
  Glass fibre mesh for reinforcement.
- **Capatect Façade Render/Plaster**
  Dispersion-based textured render/plaster.
- **AmphiSilan Façade Render/Plaster**
  Silicone resin-based textured render/plaster.
- **Sylitol Façade Render/Plaster**
  Silicate-based textured render/plaster.
- **Capactect Mineral Plaster/Render, Capatect Mineral Lightweight Render/Plaster**
  Lime cement-based textured renders/plasters.
- **ThermoSan**
  Innovative silicone resin binder combination with integrated nano-quartz particles for clean façades. Optimal moisture regulating properties. ThermoSan is protected against algae and fungal attack.

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Status analysis / condition

- The entire surface of the finishing plaster and rendering on EPS insulation is damaged and cannot be repaired

Measure

Full replacement of the render/plaster coating

Procedural steps	
■ **Preparation measures**	"Strip off" the damaged coating. To do so, make approx. 5 mm deep incisions in sections and peel off the coating in strips. Grind down the remaining EPS insulating boards. Replace any damaged insulating boards. Carry out dowelling, if necessary.
Variant 1	Organic-based system
■ **Reinforcement layer**	Apply Capatect cement free reinforcement mortar ZF 699 or CarbonSpachtel, embed Capatect Mesh 650 and smooth over again with filler.
■ **Render/plaster**	Apply and structure as desired: _ Capatect Façade Render/Plaster _ AmphiSilan Façade Render/Plaster
Variant 2	Mineral-based system
■ **Reinforcement layer**	Apply Capatect Adhesive and Reinforcement Mortar 190 or ArmaReno 700, embed Capatect Mesh 650 and smooth over again with mortar.
■ **Render/plaster**	Apply and structure as desired: _ Sylitol Façade Render/Plaster _ Capatect Mineral Render/Plaster _ Capatect Mineral Lightweight Render/Plaster
■ **Paint coating** (optional)	Capatect SI Façade Finish 130 as a equalising colored coating for painted mineral renders/plasters.
■ **Paint coating** (optional) Priming coat Finishing coat	algae/fungal protection _ ThermoSan, max. 10 % thinned with AmphiSilan Tiefgrund LF _ ThermoSan, 5 % thinned with water

Products

- **Capatect Mortar ZF 699**
  Cement-free reinforcement mortar.
- **CarbonSpachtel**
  Hard-wearing, carbon fibre-reinforced, dispersion-based reinforcement mortar to create heavy-duty reinforced renderings.
- **Capatect Adhesive and Reinforcement Mortar 190 or ArmaReno**
  Cement-based reinforcement mortar.
- **Capatect Mesh 650**
  Glass fibre mesh for reinforcement.
- **Capatect Façade Render/Plaster**
  Dispersion-based textured render/plaster.
- **AmphiSilan Façade Render/Plaster**
  Silicone resin-based textured render/plaster.
- **Sylitol Façade Render/Plaster**
  Silicate-based textured render/plaster.
- **Capatect Mineral Render/Plaster,**
- **Capatect Mineral Lightweight Render/Plaster**
  Lime cement-based textured renders/plasters.
- **Capatect-SI Façade Finish 130**
  Dispersion silicate paint for mineral substrates.
- **ThermoSan**
  Innovative silicone resin binder combination with integrated nano-quartz particles for clean façades. Optimal moisture regulating properties. ThermoSan is protected against algae and fungal attack.

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Insulation doubling and new render/plaster finish, variant 1 (EPS + EPS) in accordance with technical approval Z-33.49-1071

Principle requirements for doubling:

- A diffusion calculation establishing the functional capability of the structural-physical aspects must be carried out.
- An all-round fireproof barrier or mineral wool strip must be installed on the lintel if the overall insulation layer thicknesses of the old and new system are > 10 cm polystyrene.
- Bonding and dowelling must always be carried out.
- The current requirements of the respective regulation for energy saving in buildings and building systems (e.g. EnEV in Germany) must be complied with.
- Dowelling with approved dowels through both layers in the load-bearing masonry must be carried out.
- Doubling of rail (profile) systems is not permitted.
- Multiple doubling is not permitted.
- Bonding with adhesive foam is not permitted.
- The minimum thickness of the new system must be 40 mm.
- The maximum overall thickness of the insulating material must be ≤ 300 mm.

Procedural steps

■ **Preparation measures**	Check the condition of the existing ETICS system as regards load bearing capacity measures. If necessary, carry out detail adjustments (e.g. horizontal covers).
■ **New ETICS system**	_ Bond insulating boards (bonding of partial areas optional) _ Dowel complete system structure _ Form connection joints _ Install edge protection profile _ Apply reinforcement layer _ Priming coat (optional) _ Apply render/plaster coating _ Paint coating (optional)

Products

The new Capatect ETICS system (to be applied) must be selected according to the technical and design specifications.

- **Insulating material**
  - _ Polystyrene rigid foam
  - _ Mineral wool boards (fire barrier)
  - _ Mineral wool lamellae (fire barrier)
- **Reinforcement layer**
  - _ Organic-based
  - _ Mineral-based
- **Renders/plasters**
  - _ Dispersion-based
  - _ Silicone resin-based
  - _ Silicate-based
  - _ Lime cement-based

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Insulation doubling and new render/plaster finish, variant 2 (MW + MW) in accordance with technical approval Z-33.49-1071

Principle requirements for doubling:

- A vapour diffusion calculation establishing the functional capability of the structural-physical aspects must be carried out.
- The current requirements of the respective regulation for energy saving in buildings and building systems (e.g. EnEV in Germany) must be complied with.
- Bonding and dowelling must always be carried out.
- Dowelling with approved dowels through both layers in the load-bearing masonry must be carried out.
- Doubling of rail (profile) systems is not permitted.
- Multiple doubling is not permitted.
- Bonding with adhesive foam is not permitted.
- The minimum thickness of the new system must be 40 mm.
- The maximum overall thickness of the insulating material must be ≤ 200 mm.

Procedural steps

■ **Preparation measures**	Check the condition of the existing ETICS system as regards load bearing capacity measures. If necessary, carry out detail adjustments (e.g. horizontal covers).
■ **New ETICS system**	_ Bond insulating boards (bonding of partial areas possible) _ Dowel complete system structure _ Form connections _ Install edge protection profile _ Apply reinforcement layer _ Priming coat (optional) _ Apply render/plaster coating _ Paint coating (optional)

Products

The new Capatect ETICS system (to be applied) must be selected according to the technical and design specifications.

- **Insulating material**
  - _ Mineral wool boards
  - _ Mineral wool lamellae
- **Reinforcement layer**
  - _ Mineral-based
- **Renders/plasters**
  - _ Lime cement-based

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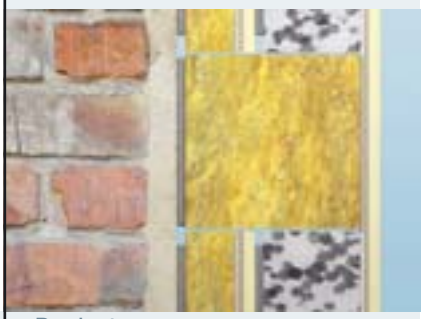
Insulation doubling and new render/plaster finish, variant 3 (MW + EPS) in accordance with technical approval Z-33.49-1071

Principle requirements for doubling:

- A vapour diffusion calculation establishing the functional capability of the structural-physical aspects must be carried out.
- An all-round fireproof barrier or mineral wool strip must be installed on the lintel if the overall insulation layer thicknesses of the old and new system are > 10 cm polystyrene.
- Bonding and dowelling must always be carried out.
- The current requirements of the respective regulation for energy saving in buildings and building systems (e.g. EnEV in Germany) must be complied with.
- Dowelling with approved dowels through both layers in the load-bearing masonry must be carried out.
- Doubling of rail (profile) systems is not permitted.
- Multiple doubling is not permitted.
- Bonding with adhesive foam is not permitted.
- The minimum thickness of the new system must be 40 mm.
- The maximum overall thickness of the insulating material must be ≤ 200 mm.



Procedural steps

■ **Preparation measures**	Check the condition of the existing ETICS system as regards load bearing capacity measures. If necessary, carry out detail adjustments (e.g. horizontal covers).
■ **New ETICS system**	_ Bond insulating boards (bonding of partial areas optional) _ Dowel complete system structure _ Form connections _ Install edge protection profile _ Apply reinforcement layer _ Priming coat (optional) _ Apply render/plaster coating _ Paint coating (optional)

Products

The new Capatect ETICS system (to be applied) must be selected according to the technical and design specifications.

- **Insulating material**
  - _ Polystyrene rigid foam
  - _ Mineral wool boards (fire barrier)
  - _ Mineral wool lamellae (fire barrier)
- **Reinforcement layer**
  - _ Organic-based
  - _ Mineral-based
- **Renders/plasters**
  - _ Dispersion-based
  - _ Silicone resin-based
  - _ Silicate-based
  - _ Lime cement-based

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Insulation doubling and new render/plaster finish, variant 4 (EPS + MW) in accordance with technical approval Z-33.49-1071

Principle requirements for doubling:

- A vapour diffusion calculation establishing the functional capability of the structural-physical aspects must be carried out.
- The current requirements of the respective regulation for energy saving in buildings and building systems (e.g. EnEV in Germany) must be complied with.
- Bonding and dowelling must always be carried out.
- Dowelling with approved dowels through both layers in the load-bearing masonry must be carried out.
- Doubling of rail (profile) systems is not permitted.
- Multiple doubling is not permitted.
- Bonding with adhesive foam is not permitted.
- The minimum thickness of the new system must be 40 mm.
- The maximum overall thickness of the insulating material must be ≤ 200 mm.

Procedural steps

■ **Preparation measures**	Check the condition of the existing ETICS system as regards load bearing capacity measures. If necessary, carry out detail adjustments (e.g. horizontal covers).
■ **New ETICS system**	_ Bond insulating boards (bonding of partial areas optional) _ Dowel complete system structure _ Form connections _ Install edge protection (profile) _ Apply reinforcement layer _ Priming coat optional _ Apply render/plaster coating _ Paint coating (optional)

Products

The new Capatect ETICS system (to be applied) must be selected according to the technical and design specifications.

- **Insulating material**
  - _ Mineral wool boards
  - _ Mineral wool lamellae
- **Reinforcement layer**
  - _ Mineral-based
- **Renders/plasters**
  - _ Lime cement-based

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Production Sites

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Stiftung & Co KG
D-64372 Ober-Ramstadt

LACUFA GmbH
Lacke und Farben
Werk Fürstenwalde
D-15517 Fürstenwalde

LACUFA GmbH
Lacke und Farben
Werk Köthen
D-06366 Köthen

LACUFA GmbH
Lacke und Farben
Werk Nerchau
D-04685 Nerchau

OOO SP „LACUFA-TWER"
RU-170039 Twer

Meldorfer Flachverblender
D-25704 Nindorf/Meldorf

VWS-Ergotherm
GmbH & Co Dämmstoffe,
Dämmsysteme KG
D-69493 Hirschberg-
Großsachsen

DAW France S.A.R.L.
F-80440 Boves

Caparol Italiana
GmbH & Co. KG
I-20080 Vermezzo (Mi)

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