

# Ceresit

## Material efficiency



Fibre reinforcement also influences the behavior of fresh render. The fibre network increases internal cohesion, improving stability during application. This reduces sagging, enhances adhesion to the substrate, and allows better control of layer thickness.

Material losses can also be reduced, especially on structured surfaces or under challenging site conditions. Overall, fibre-reinforced renders provide more forgiving application behavior, supporting consistent execution quality.

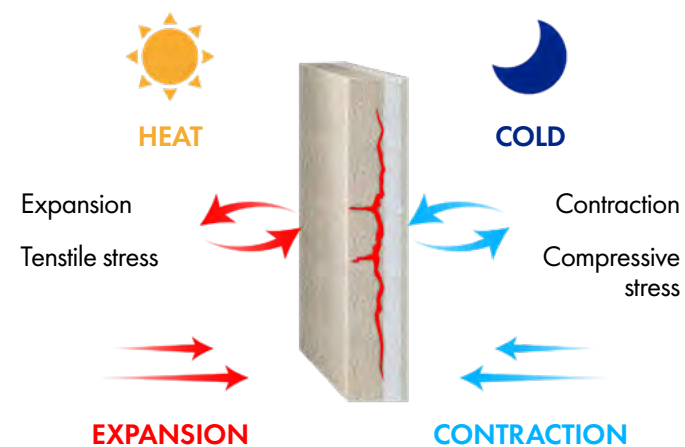
## Thermal Stability and Temperature Cycling

Façades experience repeated thermal cycles that cause rapid heating and cooling, generating tensile and compressive stresses in the render layer.

Fibre reinforcement in Ceresit renders helps redistribute these stresses during expansion and contraction, reducing thermally induced microcracking. By limiting crack formation and width, fibres help maintain a more uniform surface and reduce pathways for moisture penetration.

This more stable surface structure also supports more uniform ageing and improved colour stability over time.

### Effect of temperature on facade

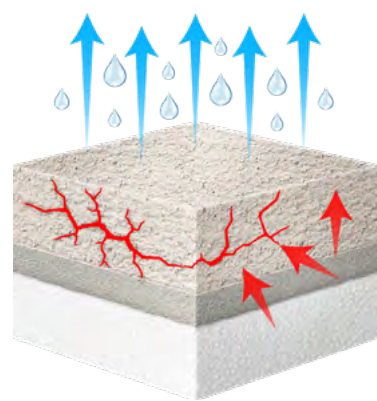


## Shrinkage Control – Curing and Drying

Materials in the ETICS system shrink during hydration and drying. If these stresses are not controlled, early microcracking can affect durability.

Fibres act as internal restraint within the fresh matrix, counteracting stresses caused by shrinkage. This stabilizes the surface during the curing phase, reducing the risk of early microcrack formation, creating a mechanically stable façade surface.

### Fibres help control shrinkage cracking during curing



WITHOUT fibres  
Shrinkage cracks appear



WITH fibres  
Stress redistributed, cracks prevented

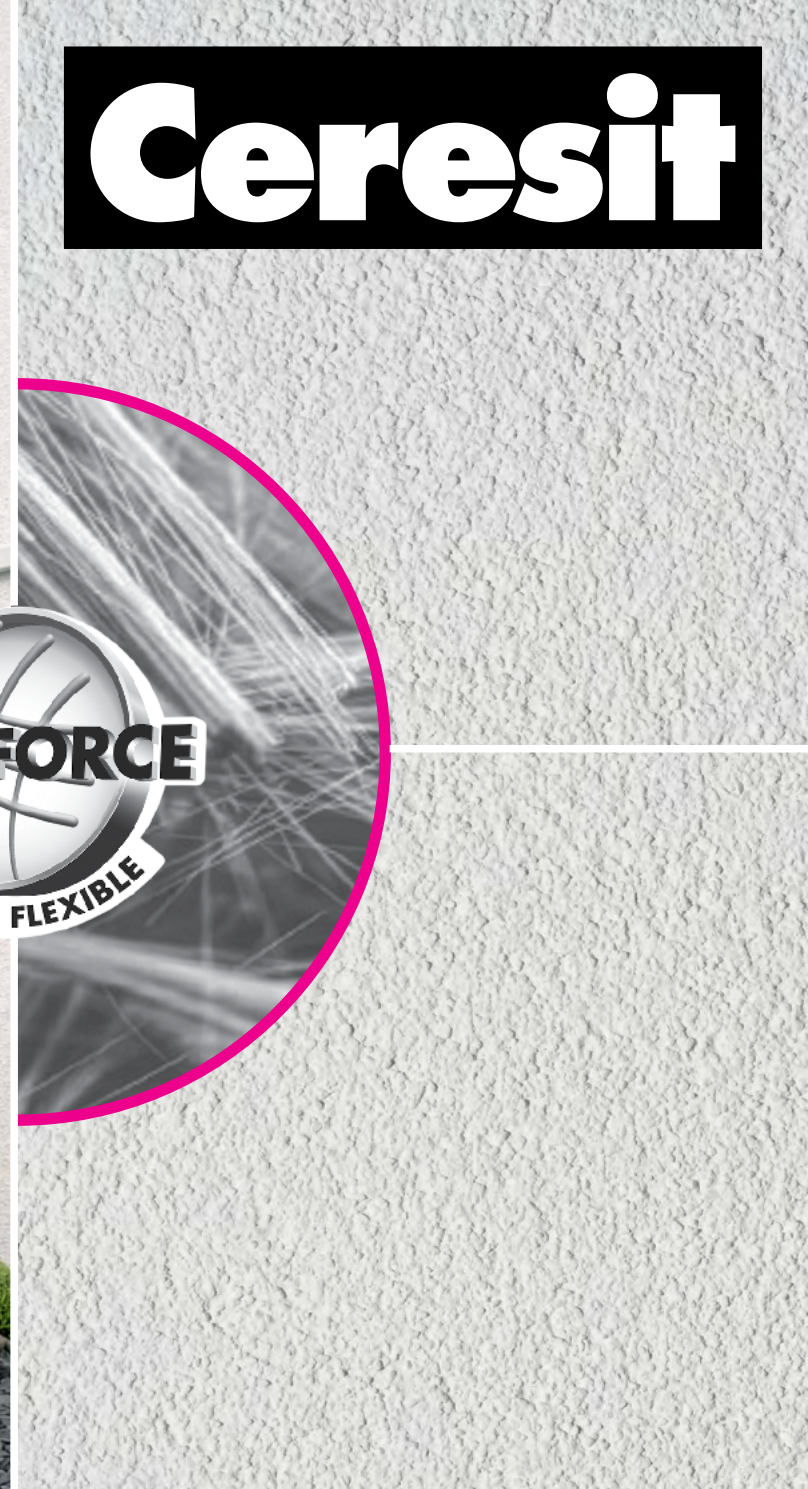
## Full System Compatibility

Durable adhesion between the base coat, reinforcing mesh, and render is essential for ETICS performance, as differential movement between layers can create shear stresses that may lead to debonding or delamination.

Fibre-reinforcing the base coat and render improves dimensional stability, reduces differential movement and lowers interface stresses. This supports long-term interlayer integrity without changing standard ETICS installation principles.



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**NEW**

## Fibre reinforced renders for facade durability:

- Flexible – preventing micro cracks
- Strong – reinforcement with basalt fibres
- Easy application and less waste





## Next step in ETICS reinforcement

Durability by design for long-lasting façades

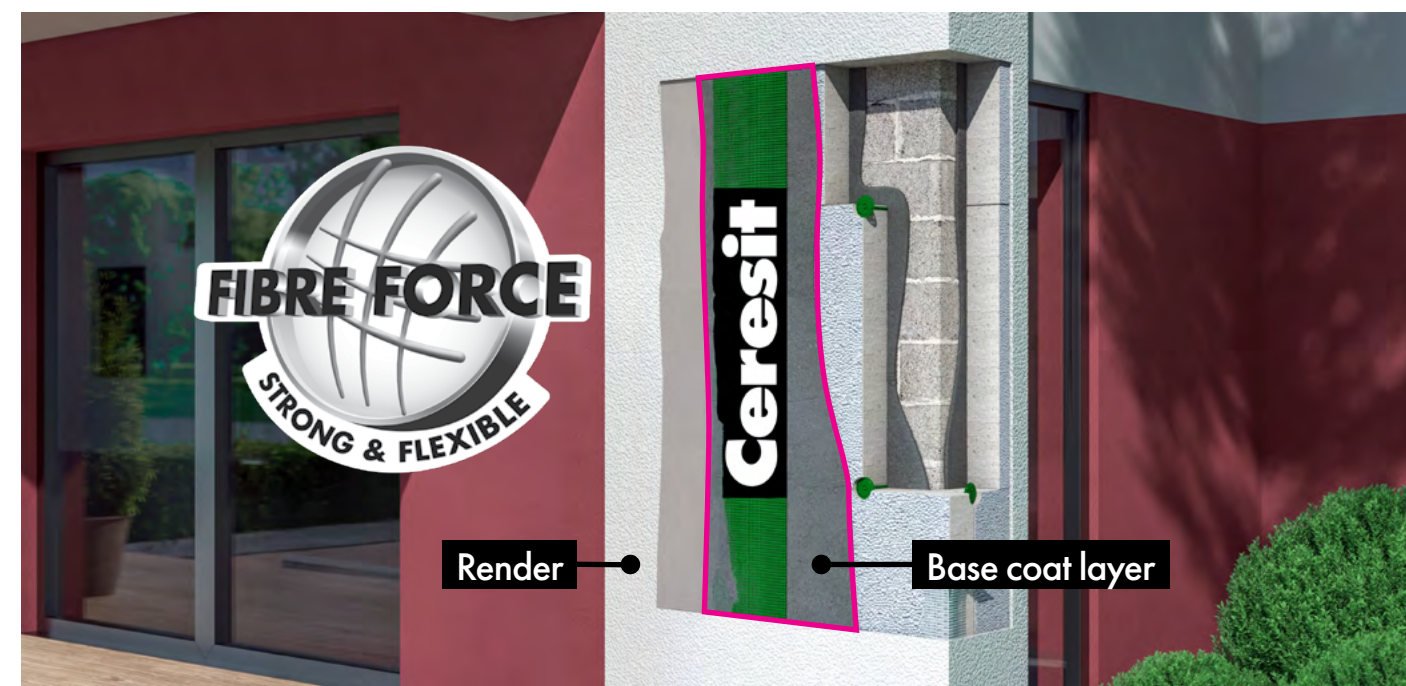
- Controlled stress.
- Fewer cracks.
- Consistent performance.

The long-term durability of ETICS façades depends on how well the system manages mechanical, thermal and environmental stresses. Over time, these stresses can lead to microcracks, loss of adhesion or surface deterioration.

For many years, Ceresit fibre-reinforced base coats have been an established part of durable Ceresit ETICS systems. By improving flexibility, internal cohesion and crack resistance in the most structurally stressed layer of the system, fibre-reinforced base coats from Ceresit have proven their ability to limit crack initiation and support long-term mechanical stability.

Building on this proven approach, Ceresit is now extending fibre reinforcement into the render layer.

### Extending reinforcement to the render layer



Reinforcing the render with fibres improves stress distribution at the surface, reducing microcracks caused by temperature changes, moisture, and mechanical impact. Combined with a reinforced base coat, the system forms a durable, stress-resistant structure that enhances adhesion, flexibility, and long-term façade performance and appearance.



## Flexibility and Stress Distribution

Controlling microcrack formation

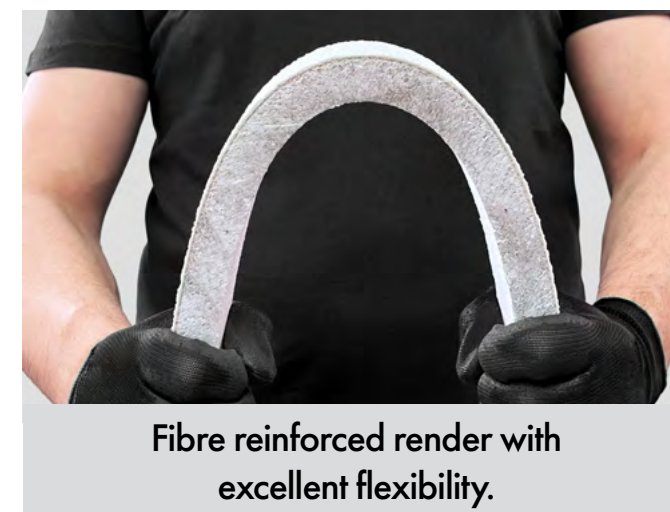
Microcracks are the earliest and most critical form of facade damage. They typically occur when a wall is subjected to excessive stress and the material cannot withstand it. The added fibres act as distributed micro-reinforcement within the render. When tensile stress occurs, they redistribute it across a wider area, reducing stress concentration at weak points such as pores or grain boundaries.



Render with micro-cracks



Render without micro-cracks



Fibre reinforced render with excellent flexibility.

Fibre reinforcement allows controlled deformation, which helps the render to accommodate small dimensional changes from temperature fluctuations or substrate movement without forming visible cracks.

By limiting both the initiation and width of microcracks, fibre-reinforced renders help maintain a closed façade surface, supporting long-term durability and weather resistance.

### Crack-Bridging Mechanism

When a microcrack forms, fibres transfer tensile forces across it, slowing propagation and limiting crack opening. Cracks may still occur, but they remain fine, stable and non-progressive.

Such controlled microcracks are far less harmful than wider cracks that allow moisture ingress and accelerate ageing, helping preserve both the appearance and protective function of the render.



Fibre-supported microcrack



Cross section - fibre reinforced render



## Strength – Contribution of Basalt Fibres



Microscope visualization of fibres inside the render

Part of the fibre mix used in Ceresit renders includes basalt fibres, made from natural basalt rock and well suited for construction materials due to their high tensile strength, thermal stability, and resistance to alkaline environments. Embedded in the render matrix, they improve resistance to mechanical impacts by helping dissipate energy.

Instead of brittle fracture under impact, the fibre-reinforced matrix distributes the load over a wider area, reducing localized damage such as chipping or cracking. While this does not make the render structural, it increases resistance to everyday mechanical and thermal stresses, contributing to a longer façade service life.

### Comparative characteristics of different fibre types

Index	Basalt fibre	Steel fibre (metal)
Tensile strength, MPa	up to 1400	360 - 420
Resistance to corrosion and alkalis	very high	low

### Examples of basalt fibre application



Industrial floors



Thermal insulation



Basalt rebar



Composite pipes