

WACKER

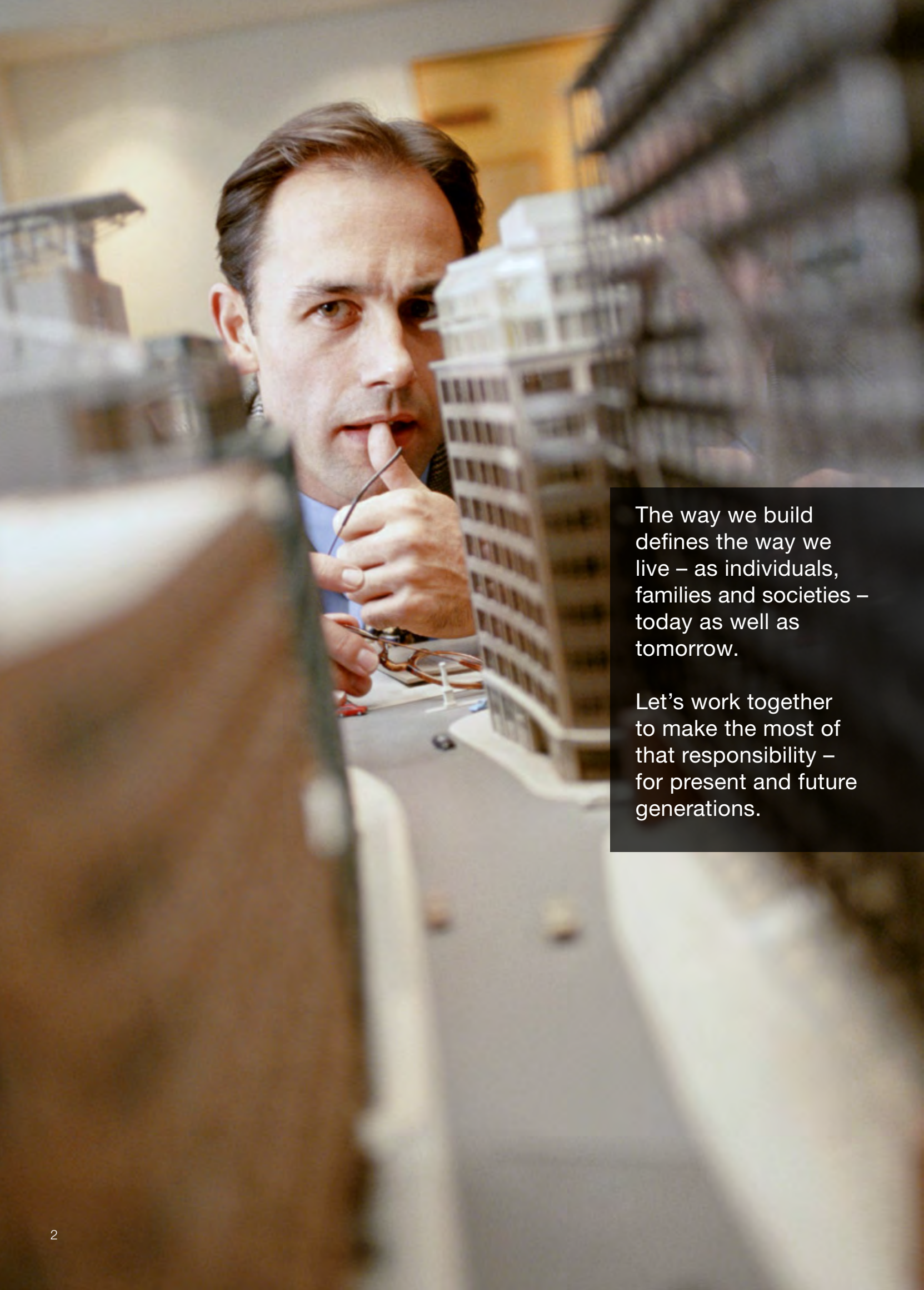
CREATING TOMORROW'S SOLUTIONS

PRIMIS®

VINNAPAS®

CONSTRUCTION | POLYMER BINDERS | ASIA PACIFIC

POLYMER DISPERSIONS AND POWDERS FOR CONSTRUCTION APPLICATIONS



The way we build defines the way we live – as individuals, families and societies – today as well as tomorrow.

Let's work together to make the most of that responsibility – for present and future generations.

WACKER – WE'RE HERE FOR YOU

WACKER is a global chemical company with over 100 years of history and a leading portfolio of solutions for the construction, coatings and paint industries. From our beginnings in Burghausen, Germany, we have been continuously developing for decades to become an active partner across the Asian Pacific region. We maintain a strong production footprint in the region with a plant in Nanjing, China, which opened in 2009, and a plant in Ulsan, South Korea, which opened in 2008. Beyond our production facilities, we also operate technical centers in Shanghai, Mumbai, Singapore and Seoul, which work closely with customers to meet regional requirements.

Count on Us!

We Give Our Best

Why do something halfheartedly if you can do it right? To us, quality is not about choosing between an expensive or economic solution. VINNAPAS® polymer binders significantly improve the cost-performance ratio of construction materials.

We Act Locally

Topography, climate and culture make architecture local by nature. That is why we are local, too. With sales offices, production sites, technical centers and native experts around the globe, we work globally with customers and authorities to develop local solutions.

We Value Sustainability

In construction, resources are needed for building and maintenance work. Our R&D specialists and application chemists focus on finding answers that conserve resources throughout the entire lifespan of a building.

We Improve Standards

Quality of life should not be a privilege. We strive to develop and enable solutions that are in balance with human, environmental and economic demands.

We Keep Inventing

WACKER is one of the most research-intensive companies in its field. We invite you to challenge us with your questions and ideas.



Polymer binders have revolutionized the construction and paint industry more than once. WACKER has been a key player in this development.

1920s

WACKER begins researching polymer binders.

1938

Poly (vinyl acetate) dispersion production begins on an industrial scale.

1949

VINNAPAS® makes dispersion-based paints possible.

1957

WACKER is the first to produce a free-flowing dispersible polymer powder by spray drying.

1960

WACKER develops dispersions based on vinyl acetate-ethylene (VAE).

1964

WACKER develops the first terpolymer dispersion with vinyl chloride.

1985

The first dispersible powders based on VAE are manufactured.

2008

WACKER takes control of its APP joint venture by acquiring the share held by Air Products and Chemicals – strengthening its global position and market leadership in all key markets.

2015

WACKER introduces its high performance dispersion product line PRIMIS®.

2017

WACKER showcases its expansion of the PRIMIS® product line of easy-to-clean/ stain-resistant wall and flooring solutions at the European Coatings Show.

POLYMER CHEMISTRY – A KEY TO QUALITY

Polymer binders enhance two critical characteristics of all mortars and coatings: adhesion and flexibility. They ensure the quality of buildings and prolong their life expectancy while reducing material consumption. At the same time, they increase creative freedom by making it possible to combine a wide variety of construction materials.

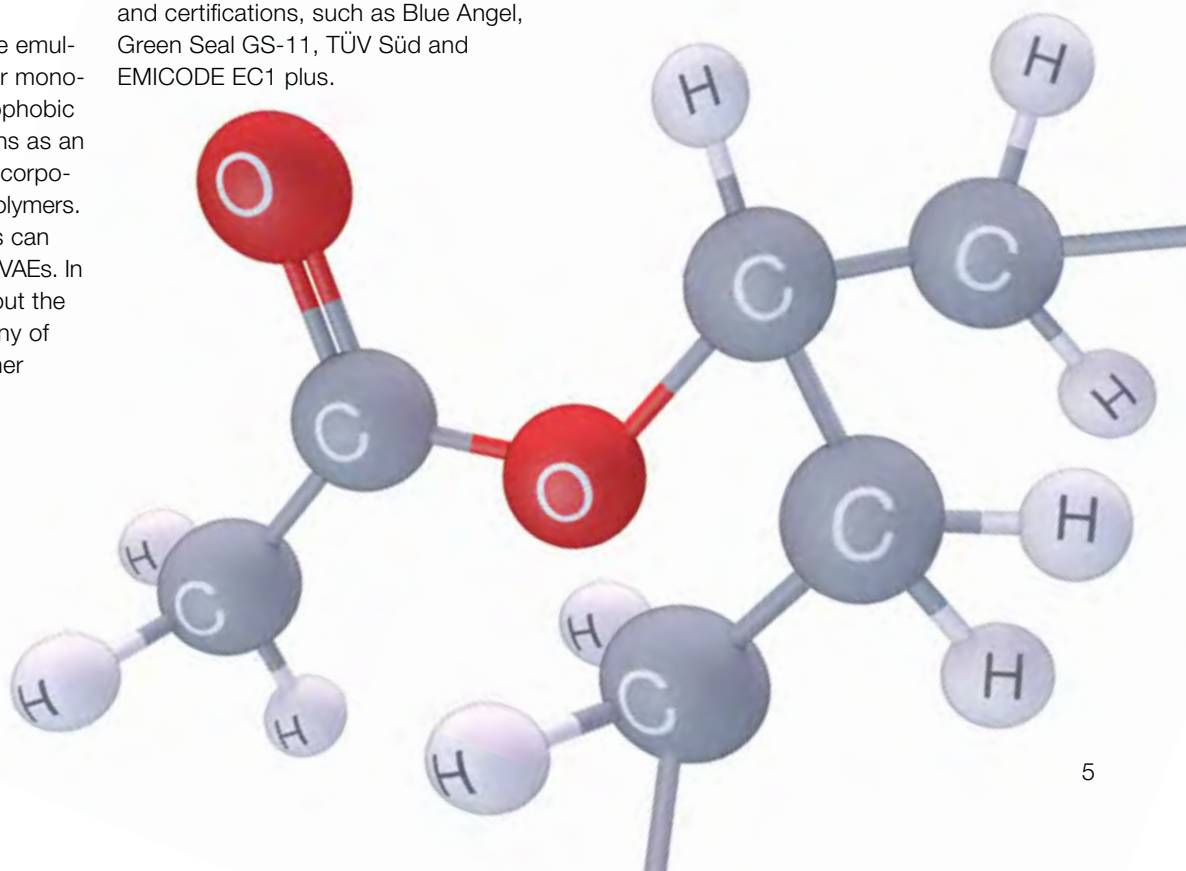
Vinyl Acetate-Ethylene (VAE) – Serving the Megatrends of Today and Tomorrow

VINNAPAS® dispersions are co- and terpolymers based on vinyl acetate, ethylene and other monomers. Vinyl acetate-ethylene (VAE), in particular, combines technical performance with environmental benefits at an attractive cost-in-use ratio.

VAE dispersions are produced by the emulsion polymerization of the hard, polar monomer vinyl acetate and the soft, hydrophobic monomer ethylene. Ethylene functions as an optimal flexibilizer for vinyl acetate, incorporating permanent flexibility into VAE polymers. Consequently, the use of plasticizers can be minimized when formulating with VAEs. In addition, all grades are stabilized without the use of APEO-based surfactants, many of them also show low residual monomer content (<500 ppm).

Compliance with Strict Labels

With our cutting-edge VINNAPAS® VAE binders, the construction and paint industries are equipped to meet stringent governmental regulations like Chinese standards HJ2537-2015 (VOC < 50 g/l) and JG/T481-2015 (VOC ≤ 20 g/l). In addition, we meet the requirements of internationally recognized ecolabels and certifications, such as Blue Angel, Green Seal GS-11, TÜV Süd and EMICODE EC1 plus.



WACKER SERVICES – YOUR COMPETITIVE EDGE

In our decades of working with polymer binders, we have learned a lot about their specific chemistry – and even more about their markets. We bring that knowledge to you at our technical centers and WACKER ACADEMY.



Do You Want Your Products to Meet New Requirements?

Our technical center helps to optimize your formulation.

Are You Looking for New Business Ideas?

At your WACKER ACADEMY, we organize innovation workshops that are relevant to markets.



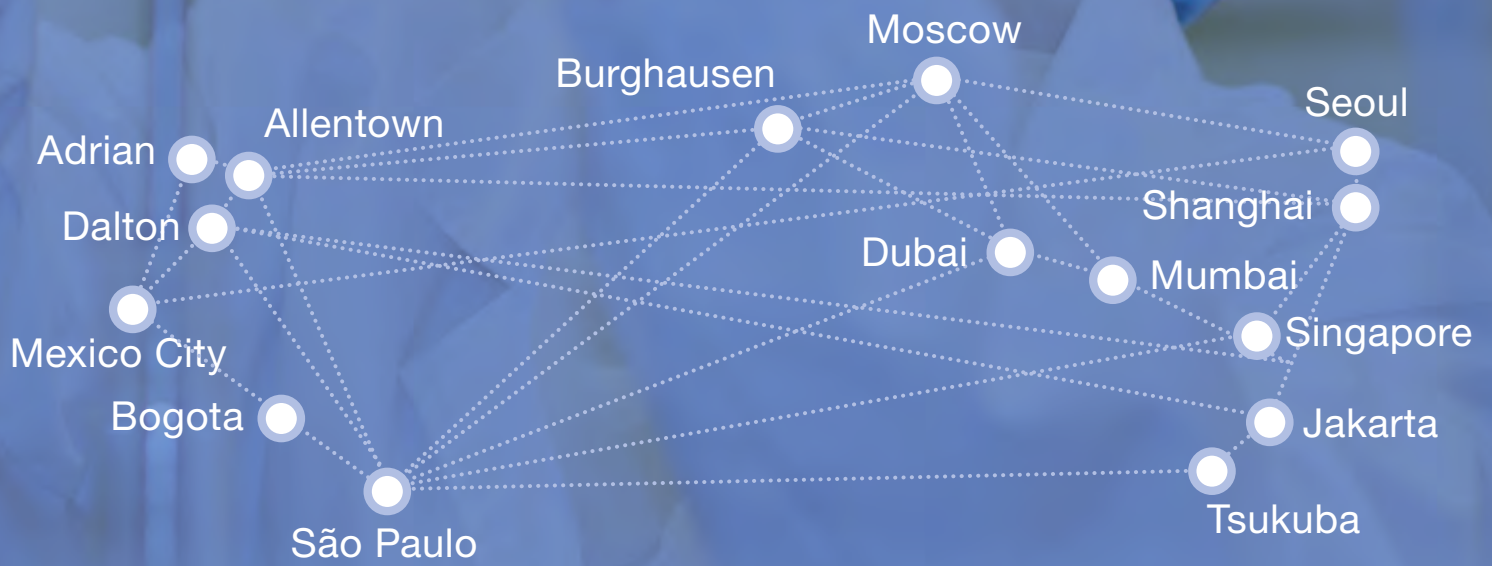
Do You Want to Enhance Your Product with a VINNAPAS® Polymer?

At your WACKER ACADEMY, we offer training in polymer chemistry and its application fields such as architectural coatings or mortar formulations.





WACKER ACADEMY and Technical Centers Worldwide



A VARIETY OF CONSTRUCTION APPLICATIONS



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EXTERNAL THERMAL INSULATION SYSTEMS (ETICS)

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VINNAPAS® polymer powders

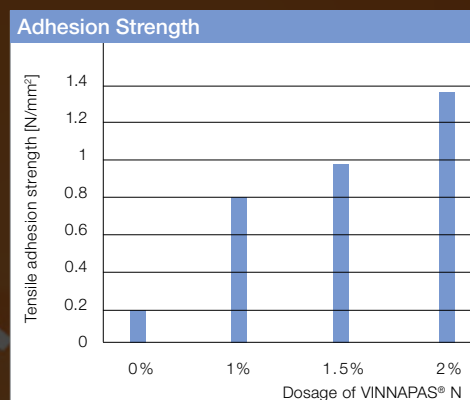


VINNAPAS® polymer dispersions

The Fast Way to a Perfect Surface

Skim coat/wall putty application is a popular method of achieving flawless smooth facades, ceilings and walls. Applying just a few millimeters of skim coat/wall putty provides a smooth finish to the substrate.

Modern skim coat/wall putty generally consists of cement, polymer binders, fillers and various additives. Skim coat/wall putty quality is decided not only by their composition, but by the quality of the individual components. VINNAPAS® products provide you with high-quality polymer binders, which you can use to make high-performance skim coat/wall putty for interior and exterior applications.





SKIM COAT/ WALL PUTTY

VINNAPAS® polymer binders improve the adhesion, flexibility and workability of skim coat/wall putty. Polymer-modified skim coat/wall putty shows excellent adhesion to many substrates and provide a flexible, mechanically stable and smooth surface for paints and wallpaper. The result is increased adhesion of paints as well as weathering resistance and longevity of building facades.

Featured Solutions

Flexible Skim Coat/Wall Putty:

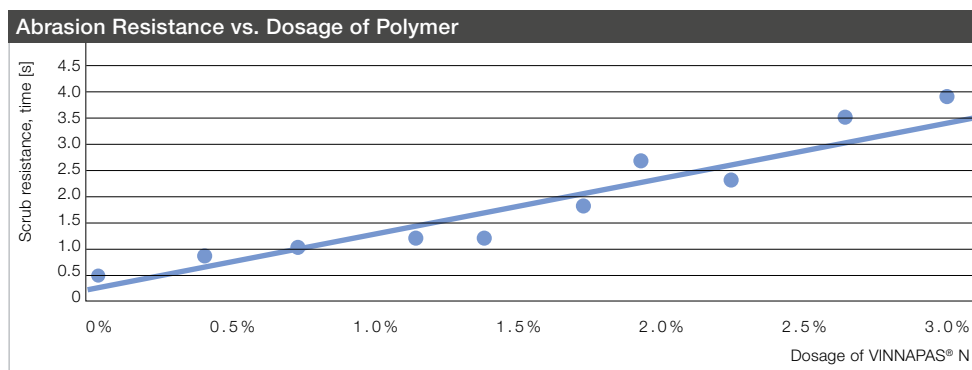
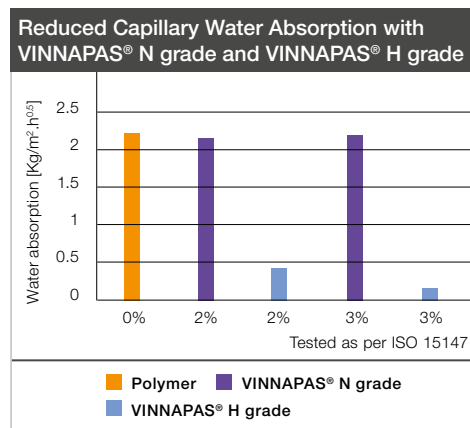
Flexible skim coat/wall putty is recommended to be applied on external walls in cold areas, such as in North China. Its advanced flexibility can help to resist the great temperature differences in these regions.

Rigid Skim Coat/Wall Putty:

Rigid skim coat/wall putty is recommended to be applied on external walls in southern areas. This rigid skim coat/wall putty, with a high bonding strength, suits environments with small differences in temperature and high rainfall.

Improved Weather Resistance

Skim coat/wall putty modified with VINNAPAS® hydrophobic polymer binders offers improved weather resistance, providing increased life to building facades.



As can be seen in the graph above, there is a linear relationship between the dosage of VINNAPAS® N and the hardness of the skim coat/wall putty surface.

GENERAL BENEFITS

- Enhanced flexibility
- Long lasting hydrophobicity
- Good workability
- Smooth surface for efficient paint coverage
- Durability
- Excellent bonding
- Paint adhesion

APPLICATION SPECTRUM

- Interior and exterior applications
- All types of substrates: concrete, rendered surfaces, surfaces of thermal insulation systems, cement fiber board, bricks, AAC/ALC blocks, decorative mortar, lightweight concrete, block work etc.

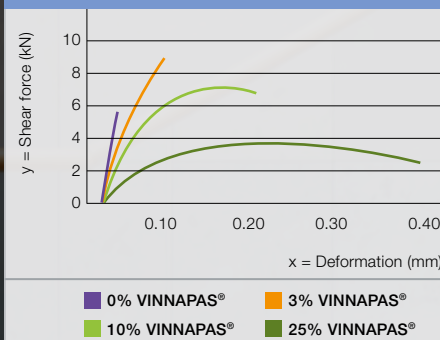
All Varieties of Tiles

VINNAPAS® modified tile adhesives show strong adhesion properties, e.g. when applied between fully vitrified tiles and difficult substrates.

Large Format Tiles

Thixotropic VINNAPAS® T polymer powders provide excellent non-slump properties for easily fixing large heavy tiles.

Shear Forces and Deformability of Tile Adhesives



Schematic view of the shear forces and deformability of tile adhesives with different amounts of polymer modifier, on earthenware tiles (DIN 18156/3, modified).



TILE ADHESIVES

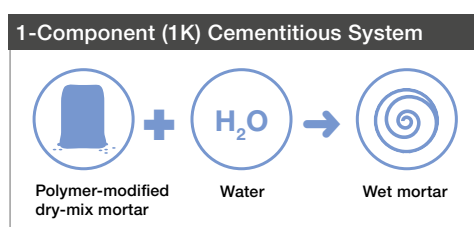
VINNAPAS® polymer binders enhance the performance of cementitious and ready-to-use tile adhesives and optimize their cost-performance ratio. Improved adhesion makes it possible to lay nonporous or large format tiles even on difficult substrates, such as wood or other tiles. Thanks to special grades, they can be adjusted to meet specific challenges such as enhanced hydrophobicity or thixotropy.

Featured Solutions

We offer different products for formulating tile adhesives:

VINNAPAS® Polymer Powders

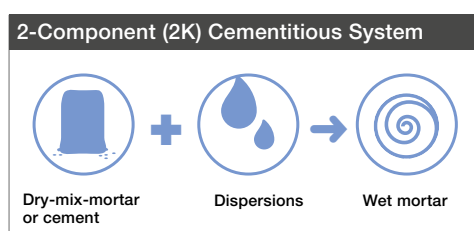
VINNAPAS® polymer powders are used in the formulation of dry-mix mortars. Dry-mix mortars are premixed 1K cementitious tile adhesives that contain cement and need only be mixed with water at the jobsite.



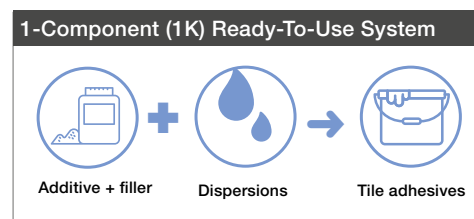
VINNAPAS® Polymer Dispersions

VINNAPAS® polymer dispersions are used in two kinds of tile adhesives:

a) In 2K cementitious tile adhesives which are often packaged in bags. For this reason, this is also called “bag and bottle technology.” In this case the dispersion is mixed onsite with either a cementitious dry-mix mortar or an ordinary cement.



b) In prefabricated 1K ready-to-use pasty adhesives that contain no cement and are usually a blend of aggregates, filler, defoamer, wetting agent, etc. They are used at the jobsite without further preparation, mainly sold in the DIY market.



GENERAL BENEFITS

- Excellent adhesion to different substrates in a wide range of conditions
- Longer open and correction times even at high ambient temperatures
- Improved cohesive strength
- Improved flexibility to prevent cracking resulting from stress between the substrate and the tile

APPLICATION SPECTRUM

- Natural and artificial stones
- Floor and wall tiles
- Small and large format tiles
- Porous and nonporous tiles
- Mineral and nonmineral substrates

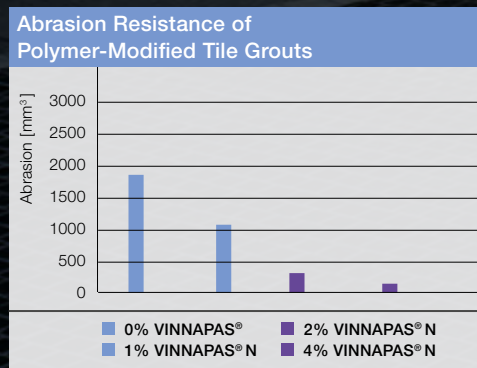




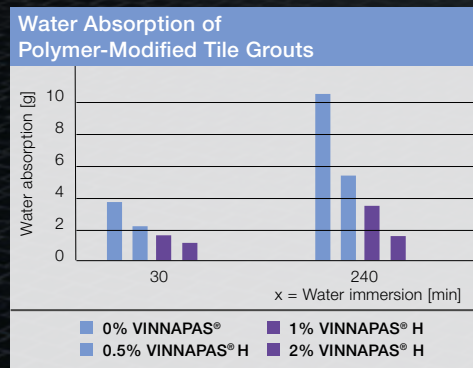
Quality Lasts Longer

A tiled surface looks as good as its joints. The challenge: traditional tile grouts are often not resistant to modern detergents and quickly become dirty or damaged. They can also crack due to thermal expansions

of the tiles or substrate. Some VINNAPAS® grades even offer additional hydrophobicity. The tiles thus maintain appearance and prevent water from seeping in.



Abrasion resistance of a cementitious tile grout mortar according to EN 12808-2.

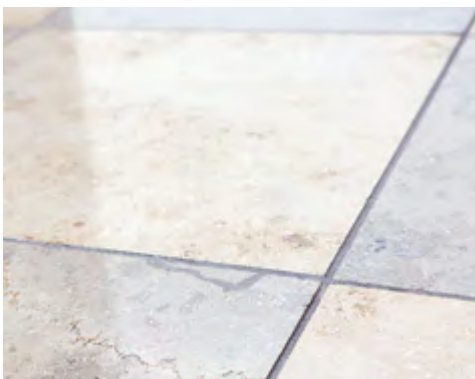


Water absorption (g) of a cementitious tile grout mortar according to EN 12808-5 with an 8x4x4 cm mortar prism (stored for 28 days under standard climatic conditions), immersed in water for 30 min and 240 min respectively



TILE GROUTS

VINNAPAS® polymer powders provide long-lasting hydrophobicity, optimize adhesion to tile edges, increase flexibility, and improve abrasion resistance. This improves the durability and visual appearance of grouts.



GENERAL BENEFITS

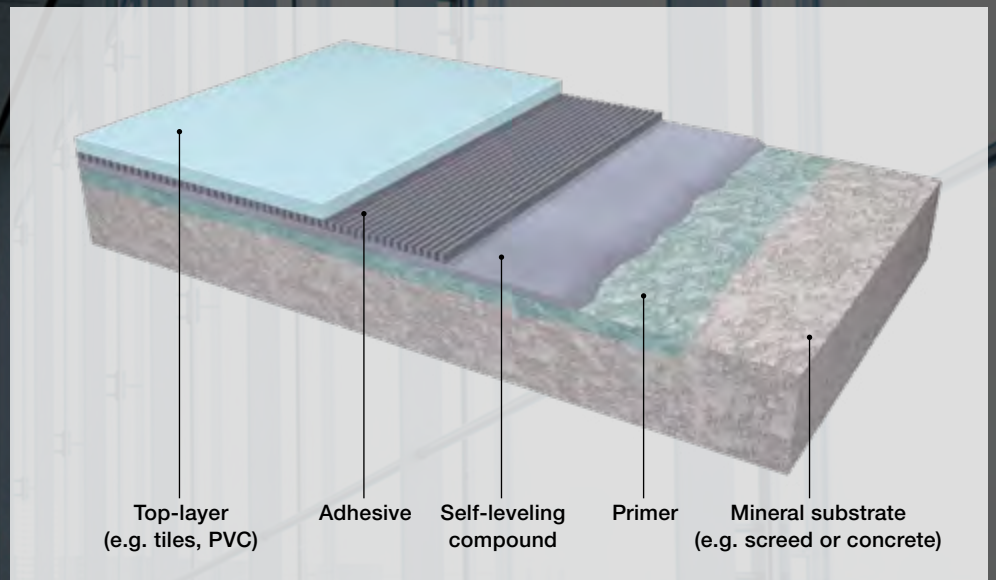
- Higher flexibility and better mechanical properties
- Protection against water penetration thanks to greatly improved adhesion to tile edges and reduced shrinkage
- Increased deformability and improved abrasion resistance
- Higher hydrophobicity and water repellency when using VINNAPAS® H Class polymer powders
- High durability

APPLICATION SPECTRUM

- Natural and artificial stones
- Floor and wall tiles
- Small and large tiles
- Porous and nonporous tiles
- Interior and exterior

Go for Perfect Floors

VINNAPAS® polymer binders are used for self-leveling compounds, adhesives and primers. PRIMIS® SAF 9000 dispersions can be applied on the self-leveling compound as a stain-resistant surface treatment if no top-layer is used.





SELF-LEVELING SYSTEMS

VINNAPAS® polymer binders ensure perfect surfaces and help installers save time. VINNAPAS® L and F dispersible polymer powders add functionality to self-leveling compounds and can reduce the number of additives needed. The result is void-free, smooth, abrasion-resistant, even surfaces.

Featured Solutions

Perfect Surfaces with Less Ingredients

VINNAPAS® L Class polymer powders improve both mechanical and flow properties. They achieve very smooth, blemish-free surfaces when used in combination with casein and synthetic super-plasticizers. They also reduce surface bleeding and segregation. VINNAPAS® F Class polymer powders act both as a binder and a superplasticizer. This feature is particularly advantageous for mixing pumpable compounds, where machine application minimizes mixing time. The required rheology can be adjusted to the right choice of F Class polymer powder, thereby simplifying handling and logistics.

Meeting the Requirements of Ecolabels

VINNAPAS® L Class powders meet the requirements of European ecolabels such as Blue Angel, Ecodecode EC1 plus, etc. Compliance with such labels is determined by the dosage level of VINNAPAS® L Class powders and other ingredients.

VINNAPAS® and PRIMIS® primers and adhesion layers are used to prepare underlying surfaces to ensure optimal performance of self-leveling layers.

PRIMIS® surface finishes protect mineral surfaces such as concrete or self-leveling underlayments against stains or mechanical stress.



Flow test: the influence of VINNAPAS® dispersible powders measured with an ABS ring.



VINNAPAS® also improves the workability of the system.



PRIMIS® SAF 9001 renders surfaces stain-resistant: Coffee and blackcurrant juice leave noticeable stains on untreated decorative mineral floors even after they've been wiped with a wet sponge (left). On the treated flooring (right), both substances can easily be completely removed by moist wiping.

GENERAL BENEFITS

- Increased adhesion to different substrates
- Improved compressive and flexural strength
- Better abrasion resistance
- Increased tensile strength and deformation capability
- Enhanced flow and self-leveling properties
- Defoaming properties
- Stabilization against bleeding and sedimentation

APPLICATION SPECTRUM

- Fine smoothing compounds and thick-layer leveling screeds
- Self-leveling under- and overlays
- Pumpable and hand-applied compounds
- Cementitious and gypsum-based formulations
- Industrial and residential applications

Good Crack-Bridging Ability

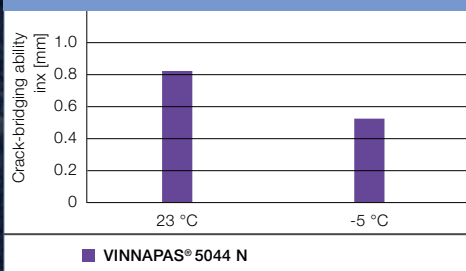
Highly flexible waterproofing membranes modified with VINNAPAS® can accommodate small movements in the substrate. Movements can occur, for example, due to temperature fluctuations, or when small cracks form due to shrinkage or substrate setting. The membranes thus form a reliable barrier against water leakage.

Easy to Apply

The application of waterproofing membranes modified with VINNAPAS® is easy:

- For small-area applications, the waterproofing membrane is applied by brush, trowel or roller
- For larger areas, machine spray application is recommended.

Crack-Bridging Ability according to EN 14891 [mm] – Formulation with a Resin/Cement Ratio of 1.45





WATER- PROOFING MEMBRANES

Waterproofing membranes (WPM) with VINNAPAS® polymer binders form a reliable barrier against water. The polymer binder provides a high performing combination of adhesion and flexibility. This means the membrane only needs to be a few millimeters thick to provide optimal protection.

Featured Solutions

We offer different solutions for formulating WPMs:

- VINNAPAS® polymer powders for 1K cementitious WPMs
- VINNAPAS® dispersions for 2K cementitious systems
- VINNAPAS® dispersions for 1K ready-to-use (pasty) systems



Flexible waterproofing membranes can bridge cracks caused by movement of the substrate.



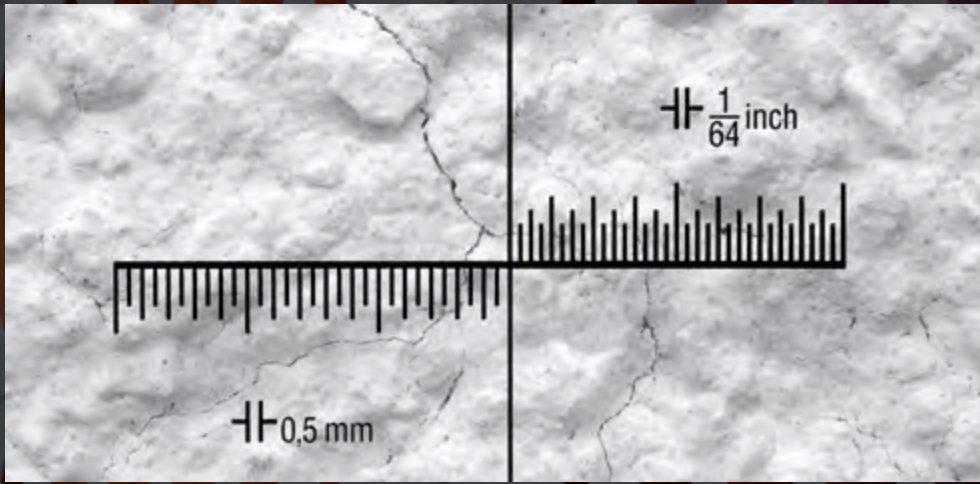
Water-bearing pipes and sewers can easily be rendered waterproof to prevent leakage and loss of water during transport.

GENERAL BENEFITS

- Reliable barrier against hydrostatic pressure
- Water-vapor permeability
- Protection against water under pressure
- Bridging of cracks due to shrinkage or settling of substrate
- Accommodation of small movements in the substrate
- Excellent adhesion to many different substrates
- High flexibility
- Increased tensile strength
- Excellent workability
- Excellent compatibility with cement

APPLICATION SPECTRUM

- Basement walls and foundations
- Sewers, canals and water pipes
- Swimming pools
- Showers and bathrooms
- Balconies and patios
- General concrete infrastructure



Improved Impact Resistance

By improving the cohesion and flexibility of the hardened mortar, VINNAPAS® provides plasters with an improved impact and crack resistance. This can be shown by performing an impact test (see picture on the right).



RENDERS AND PLASTERS

VINNAPAS® polymer binders improve the quality and increase the life expectancy of renders and plasters. They enhance adhesion as well as flexibility and prevent weathering damage.

Featured Solutions

Improved Hydrophobicity

VINNAPAS® H polymer powders and selected dispersions provide water repellency, protecting the substrate and improving durability.

Flame Retardancy

Using selected VINNAPAS® powder and dispersion grades makes it possible to achieve high flame-retardancy.

Improved Esthetics

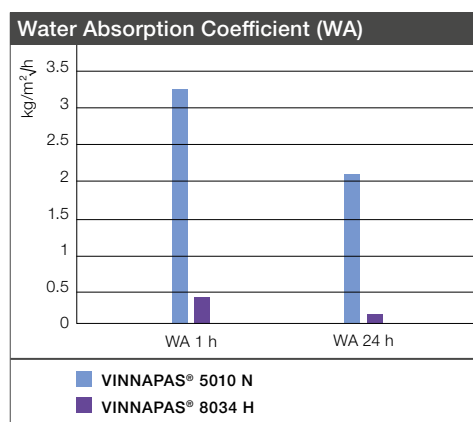
VINNAPAS® imparts very good weatherability with low dirt pick-up and high color stability.

Improved Impact Resistance

By improving the cohesion and the flexibility of the hardened mortar, VINNAPAS® gives plasters improved resistance to impacts and cracks.

Long-Lasting Effects

VINNAPAS® polymer technology ensures long-lasting effects such as water repellency.



Coefficient of water absorption [kg/m²√h] according to ISO 15148 – lime-rich formulation, 1.0% DPP.

GENERAL BENEFITS

- Improved adhesion to a variety of different substrates
- Improved hydrophobicity

APPLICATION SPECTRUM

- Indoor walls
- Facades

Diatom Ooze

VINNAPAS® dispersible powders help to improve the overall performance of diatom ooze. The formaldehyde content in certain VINNAPAS® grades, as certified by SGS, the product testing group, shows excellent low-VOC quality. By increasing the flexibility, VINNAPAS® dispersible powders can help to improve the crack resistance significantly.

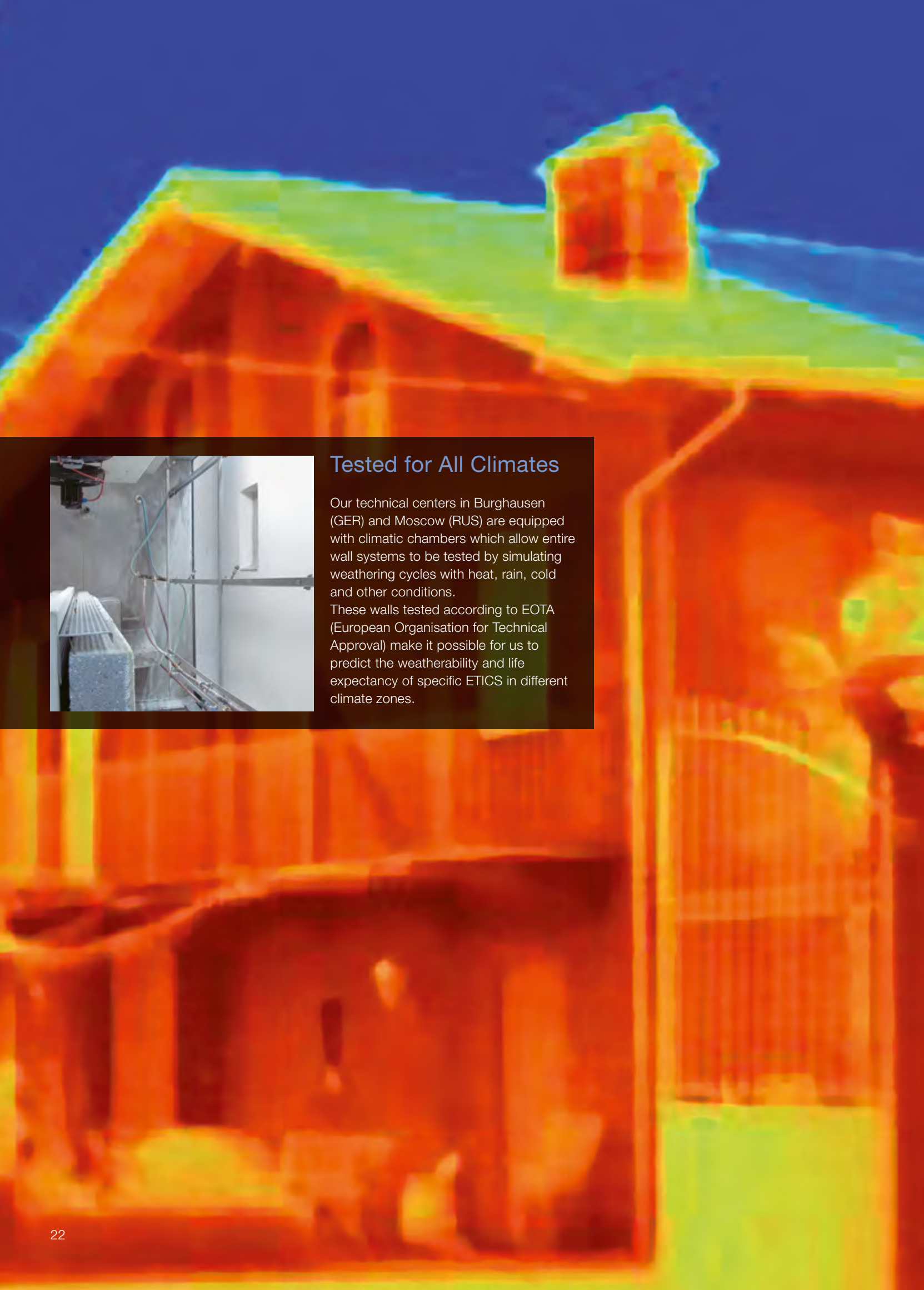
General Benefits

- Extremely low VOC content
- Odorless

- Especially fine particle size
- Improved crack resistance
- Improved wet scraping resistance
- Outstanding bonding strength

Application Spectrum

- Natural and artificial stones
- Floor and wall tiles
- Small and large format tiles
- Porous and nonporous tiles
- Mineral and nonmineral substrates



Tested for All Climates

Our technical centers in Burghausen (GER) and Moscow (RUS) are equipped with climatic chambers which allow entire wall systems to be tested by simulating weathering cycles with heat, rain, cold and other conditions.

These walls tested according to EOTA (European Organisation for Technical Approval) make it possible for us to predict the weatherability and life expectancy of specific ETICS in different climate zones.



EXTERNAL THERMAL INSULATION SYSTEMS (ETICS)

VINNAPAS® polymer binders improve the characteristics of mortars applied in ETICS, creating a stable and flexible bond between the various layers. They especially enhance the adhesion of mortar on various types of exterior insulation panels used in ETICS.

Featured Solutions

Energy Efficiency

Worldwide, buildings consume 40% of primary energy and generate one-third of greenhouse gas (GHG) emissions. At the same time, buildings offer the greatest potential for reducing these emissions at the lowest cost. Still today, energy consumption in buildings can be reduced by 30% to 80% using proven and commercially available technologies¹.

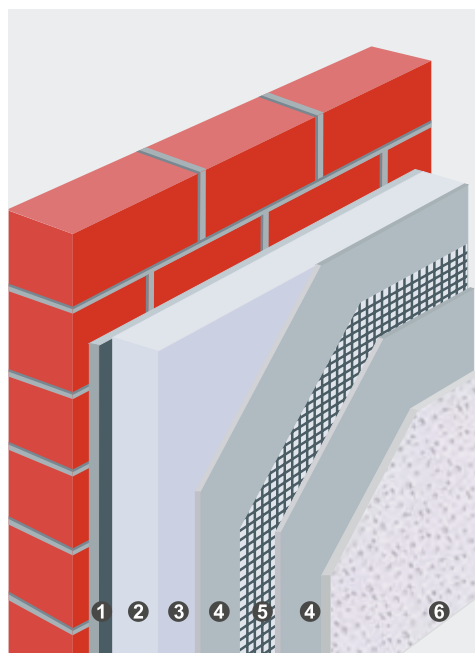
Suitable for Old and New Buildings

ETICS are among the most successful methods for insulating walls from the outside, thus achieving substantial energy savings, among other advantages. Brickwork, concrete, stucco and plaster, wood and just about all other substrates can easily be fitted with ETICS. This means the systems can be used for both for renovation work and in new buildings. In addition, the outer shell can be designed individually, using plasters, paints, skim coats or tiling, for example.

VINNAPAS® polymer powders and selected dispersions with flexible ethylene segments boost the performance of ETICS by offering very good tensile adhesion strength particularly to different insulation materials (organic, mineral, biological-based), very high impact strength, and improving the workability of mortars.

Improved Indoor Climate for All Climates

Facades fitted with ETICS act as heat shields: they keep out the cold and keep in the heat or vice versa. Thus insulated walls also improve the indoor climate by reducing the temperature differences between indoor air and wall surfaces.



Composition of ETICS

- 1 Masonry
- 2 Adhesive – cementitious mortar containing VINNAPAS® binders
- 3 Insulation material
- 4 Base coat – cementitious mortar containing VINNAPAS®
- 5 Glass-fiber mesh
- 6 Top coat – plaster and coating modified with VINNAPAS®

GENERAL BENEFITS

- Stable bond between insulation board, embedding mortar and wall
- Increased impact resistance in the embedding mortar
- Improved water repellency and weatherability in the top coat and base coat can be achieved by the use of VINNAPAS® H powders

APPLICATION SPECTRUM

- Adhesive mortar
- Base coat (embedding mortar)
- Top coat

1. Data: United Nations Environment Programme



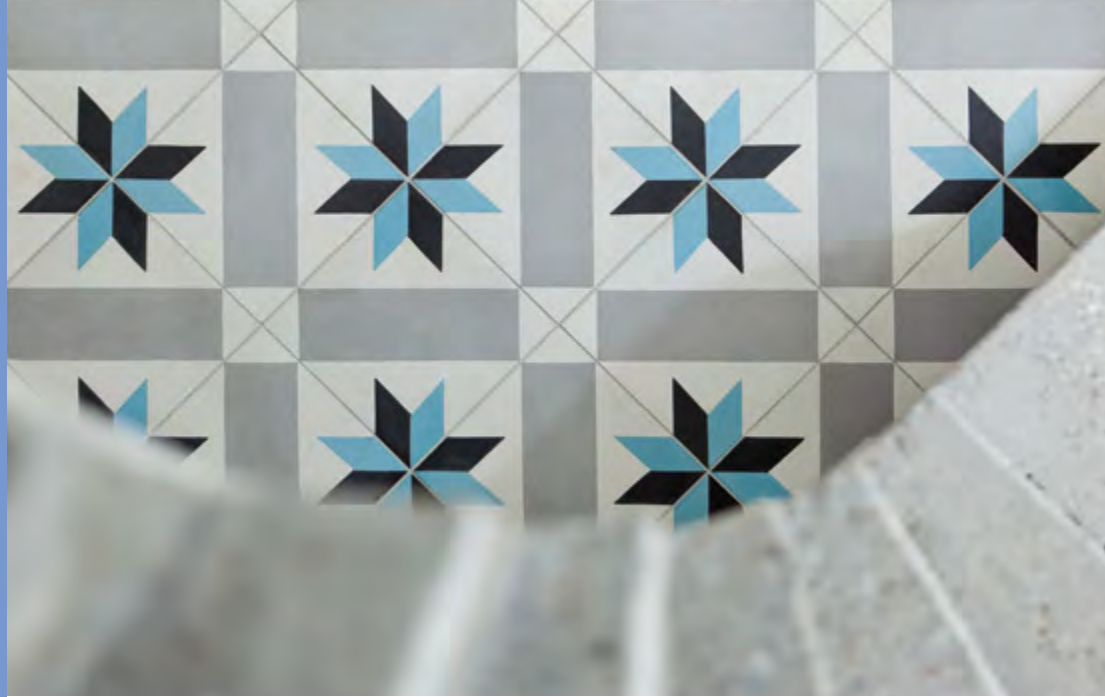
CEMENT ADMIXTURES

GENERAL BENEFITS

- Excellent compatibility with cement
- Increased flexural strength and lower elastic modulus
- High green strength
- Excellent workability with long pot life

APPLICATION SPECTRUM

- Modification of “onsite mortars”
- “Add-on” dispersions to improve adhesion, cohesion and durability of critical substrates or to meet increased performance requirements compared to unmodified products



VINNAPAS® dispersions are ideal for modifying all kinds of mortars, thus improving their properties, especially in critical applications.



Cement admixtures formulated with VINNAPAS® are easy to use and provide the basis for a variety of applications.



BONDING AGENTS, PRIMERS AND SURFACE FINISHES

GENERAL BENEFITS

- Good impregnation due to high penetration into pores
- Excellent barrier properties
- Low and uniform absorbency
- Good adhesion even on critical substrates
- Bridging of small cracks
- Long open time
- Good consolidation of construction surfaces
- Excellent stain and abrasion resistance

APPLICATION SPECTRUM

- Adhesion-promoting layer
- Barrier layer for migration protection
- Construction surface consolidation
- Stain and blocking resistance
- Surface finishes of mineral substrates

VINNAPAS® dispersions improve the properties of primers, so providing the basis for optimal performance of subsequent layers. They also act as bonding agents thanks to their excellent adhesion and cohesion properties.

Featured Solutions

Improved Stability

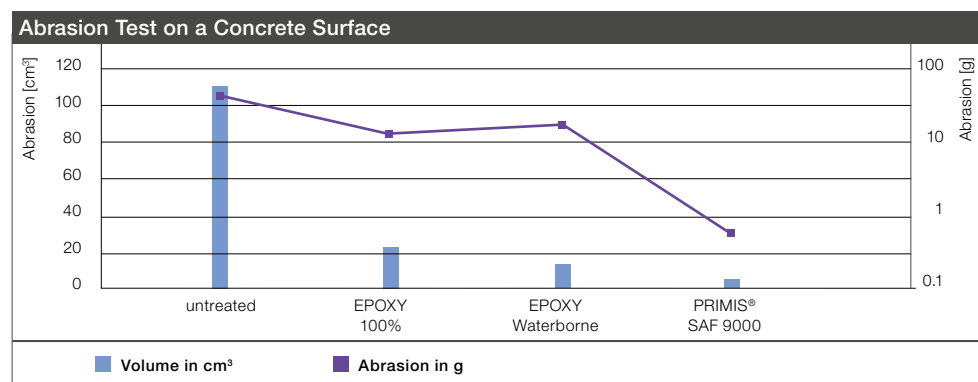
Primers and bonding agents are essential to ensure long-term stability of layered building systems. VINNAPAS® dispersions provide excellent adhesion to a variety of substrates. VINNAPAS® dispersions with small particle sizes are available for open-pore substrates such as concrete, cement and gypsum plasterboards. They ensure good penetration into the surface, thus consolidating the substrates and controlling their absorbency. In outdoor applications, hydrophobic VINNAPAS® dispersions ensure high water repellency and good barrier properties. VINNAPAS® dispersions are suitable for formulating bonding agents with or without the use of fillers such as sand or co-binders such as cement.

Surface Finishes

Thanks to their fine-particle size the hydrophobic-oil-resistant PRIMIS® dispersions penetrate deep into the pores of mineral substrates. This makes them ideal for protecting mineral floors and other surfaces against all types of stains while significantly improving their mechanical stability.

Key Coats

VINNAPAS® modified key coats are applied in very thin layers to improve the adhesion of the plaster to the substrate, thus sparing the process of chipping the concrete surface and maintaining the structural integrity of the concrete. It can be applied on internal or external walls and ceilings, Mivan walls or concrete pillars.





CONCRETE REPAIR

GENERAL BENEFITS

- Slower drying of the thin layers
- Increased impermeability to CO₂ and pollutants such as road salt
- Improved resistance to freezing/thawing
- Ideal adhesion to installed concrete and steel
- Increase in deformability and flexural strength
- Drop in modulus of flexibility
- Improved processability and wetting properties

APPLICATION SPECTRUM

- Walls
- Basements
- Bridges



Modification with VINNAPAS® polymer powders improves the technical performance, processability and wetting properties of repair mortars, thereby helping to meet the growing demand for concrete repair in the future.

Reliable and Easy Processing

The first step is to re-shape the concrete with a repair mortar. An adhesive, cementitious slurry that has been modified with VINNAPAS® is added to the mortar to ensure it adheres reliably and permanently to the cementitious substrate (concrete). The repaired concrete structures are generally covered with a layer of fine filler one to three millimeters thick. VINNAPAS® dispersible polymer powder ensures good processing, prevents the thin layers from drying too quickly, enhances the impermeability to CO₂ and pollutants such as road salt, and improves resistance to freezing/thawing.





JOINT COMPOUNDS

GENERAL BENEFITS

- Enhanced adhesion
- Increased cohesion
- Flexibility of joint fillers and prevention of cracking
- Suitable for different substrates
- Improved workability

APPLICATION SPECTRUM

- Gypsum plasterboards
- Floors, walls, ceilings
- Cement fiberboards

With VINNAPAS® polymer binders, wall and joint fillers adhere reliably to the substrate. Workability is improved and the hardened compound exhibits enhanced flexibility, quality and crack resistance.

Featured Solutions

VINNAPAS® T Polymer Powders

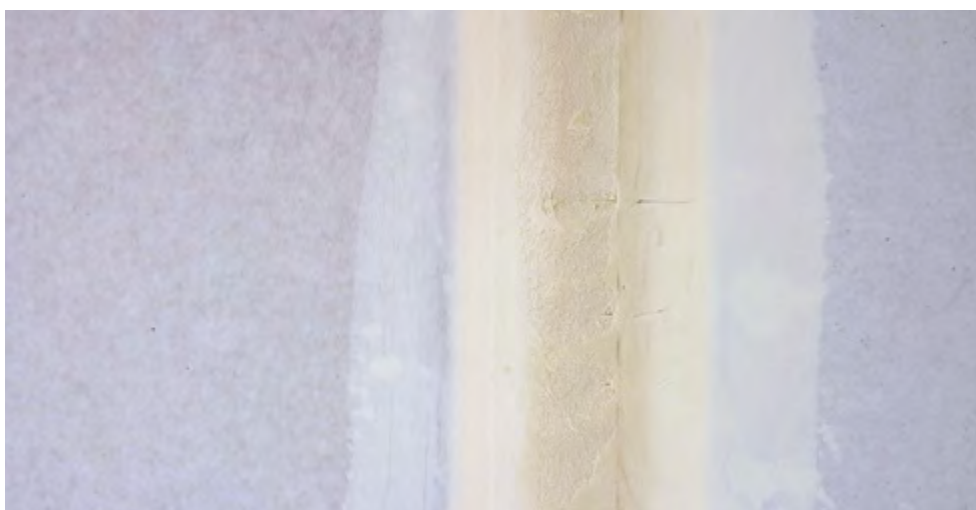
enable all joint fillers (including gypsum-based grades) to be used on a wide range of substrates, while at the same time maintaining excellent workability and adhesive properties.

VINNAPAS® H Polymer Powders

make cement-based products water repellent, thus protecting the substrate and improving durability.

Serving the Gypsum Trend

Drywalling with gypsum boards is on the rise. VINNAPAS® polymer powders and dispersions serve as a quality enhancer for gypsum-based joint fillers, putties or troweling compounds. VINNAPAS® grades increase the tensile adhesion strength remarkably. Adhesion is improved to both the gypsum board and paper bands used for stabilization.





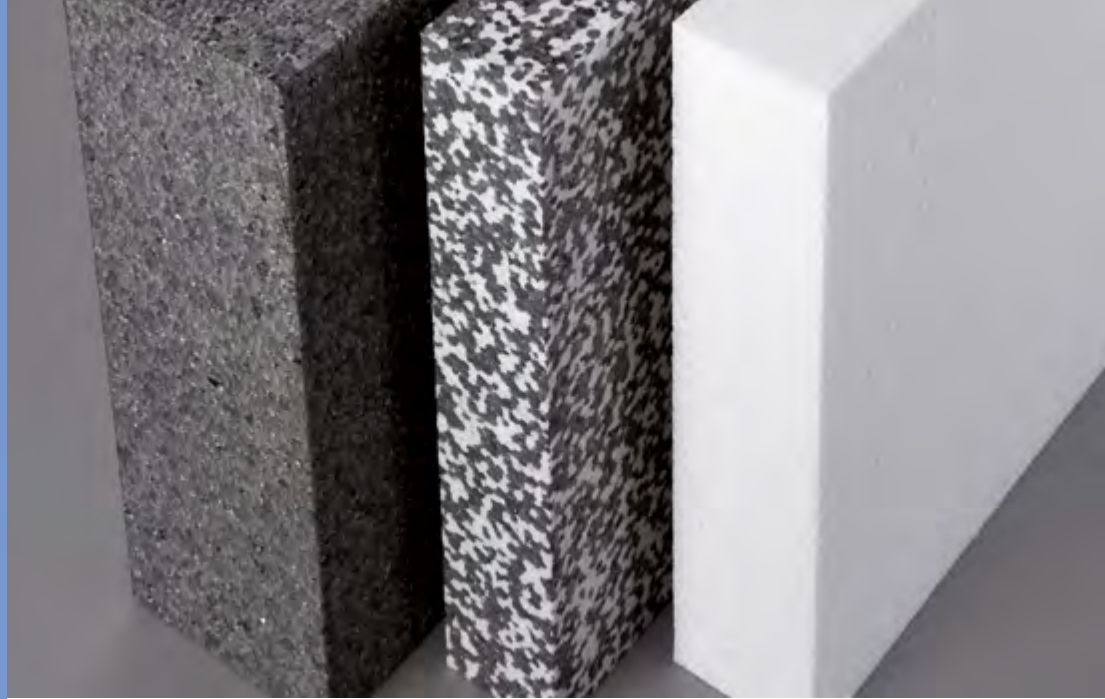
NON-COM-BUSTIBLE EPS

GENERAL BENEFITS

- Retain shape after curing of EPS board
- Excellent bonding between EPS particles
- Good water resistance
- Great tackiness
- Very good compatibility with major flame-retardant additives
- VAE exhibits inherently lower flammability than comparative technologies

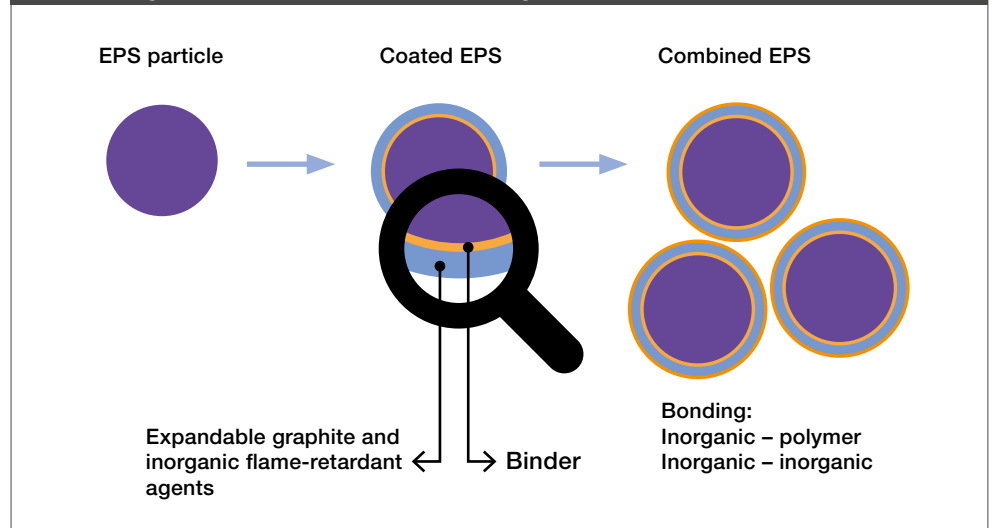
APPLICATION SPECTRUM

- Non-combustible EPS foam



In the manufacturing of fire-retardant EPS foam, VINNAPAS® VAE dispersions serve as a binder for good adhesion of the functional coating to the particles and the particles among each other. They are especially suited since VAE shows very good compatibility with general ingredients for flame-retardant formulations such as phenol, melamine, borax, aluminum hydroxide, magnesium hydroxide, carbon black or expandable graphite.

Manufacturing of Non-Combustible EPS Foam using VINNAPAS® Binders



During manufacturing of the foam, the EPS beads are treated with fire-retarding agents.



JOINTING MORTARS FOR BLOCKS

GENERAL BENEFITS

- Improved adhesion
- Less material consumption
- Better workability
- Improve open time
- Less water absorption

APPLICATION SPECTRUM

- AAC/ALC blocks
- Concrete blocks
- Hollow clay bricks

VINNAPAS® polymer powders increase the adhesion of jointing mortars to autoclaved aerated concrete (AAC) thus achieving secure bonding with very thin layers of mortars. This saves material, helps to avoid thermal bridges, and avoids load-bearing problems in high-rise buildings.



Building with AAC blocks: traditional unmodified mortars have no wetting capability and need to be applied in thick layers of 10 – 20 mm. Plus: the bricks must be prewetted.



Traditional unmodified mortars show poor adhesion to AAC blocks. The mortar can be pulled off easily.



Mortars modified with VINNAPAS® have good wetting properties and can be applied in thin layers of 3 – 5 mm. No prewetting is necessary. This saves material and time.



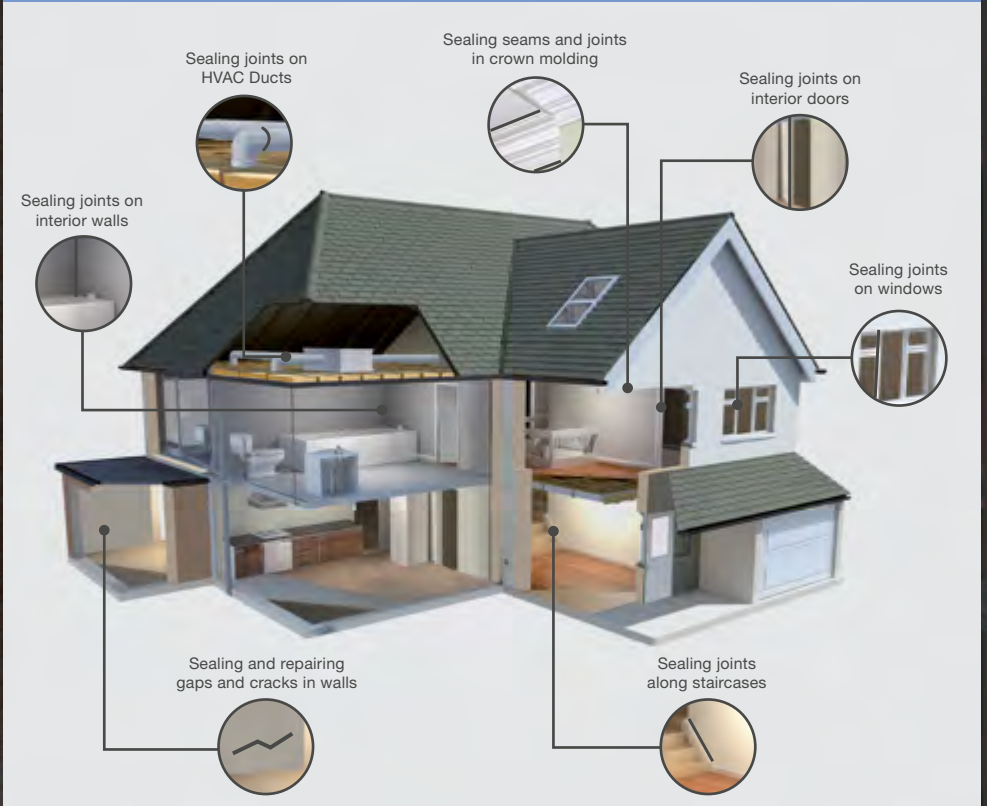
Mortars modified with VINNAPAS® have excellent adhesion: tests show a bond strength of 0.6 N/mm².



Low Odor – High Quality

Caulks and sealants formulated with VINNAPAS® dispersions exhibit low odor and thus are excellent for many indoor applications. They are available in a wide range of glass transition (T_g) temperatures to minimize the need for plasticizers.

Typical Areas of Use for Caulks and HVAC Mastics





SEALANTS: CAULKS/ MASTICS

As core-strength binders in caulks and sealants, VINNAPAS® dispersions offer numerous advantages, such as high filler acceptance and excellent adhesion to many substrates. Due to their low odor, they are ideal for interior applications.



VINNAPAS® dispersions are used as binders in high-performance products for HVAC duct mastics and sealants. They are compatible with other latex dispersions, epoxy resins and water-based urethane dispersions. They are especially suitable for interior applications and – due to their ease of application and cleaning – are ideal for both professional and DIY applications.

GENERAL BENEFITS

- High filler acceptance
- Good adhesion to a variety of substrates (e.g. concrete, metal, wood, plastics)
- Low odor, low formaldehyde and produced without APEO surfactants
- Internally plasticized
- Excellent paintability
- Enables excellent gunability and tooling work
- Provides improved UV resistance

APPLICATION SPECTRUM

- Gap and crack filling
- Painter's caulk
- Flame-retardant caulks
- Repair products
- Ductwork sealant

SIX GOOD REASONS TO BUY FROM WACKER

At WACKER, we believe in building and maintaining close partnerships with our customers, to achieve success together. Today and tomorrow. Talk to us!

Decades of Experience

- 75 years as market leader in VAE polymer dispersions
- 60 years as a leader in polymer powders

Diversified Portfolio

- Products for different performance profiles and different market segments
- Tailor-made products for local markets
- Innovative products for new applications

Constant High Quality

- Worldwide production in accordance with uniform standards and specifications



Powerful Customer Support

- Testing and technical support at technical centers
- Training and collaboration at WACKER ACADEMIES
- Different solutions for ordering, packaging and transport
- Fast and flexible delivery

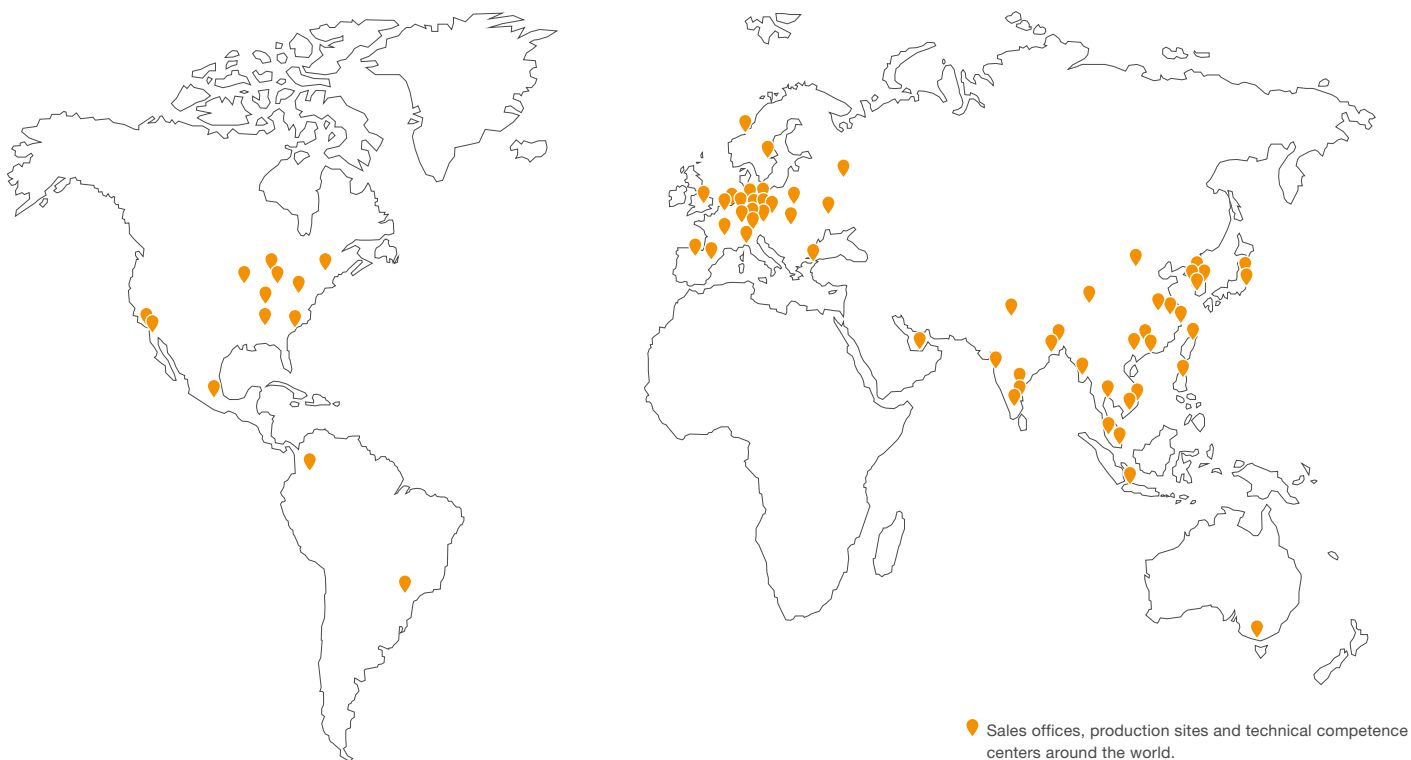
Strong R&D

- Over 100 years of R&D
- Over 3% of sales spent on R&D (in 2016)
- 5,300 patents granted
- Collaborations with more than 40 academic institutions
- Global presence

Committed to Values

- Sustainability is our company philosophy
- We live up to our social responsibility as corporate citizens

EXPERTISE AND SERVICE NETWORK ON FIVE CONTINENTS



WACKER is one of the world's leading and most research-intensive chemical companies, with total sales of €6.21bn. Products range from silicones, binders and polymer additives for diverse industrial sectors to bioengineered pharmaceutical actives and hyperpure silicon for semiconductor and solar applications. As a technology leader focusing on sustainability, WACKER promotes products and ideas that offer a high value-added potential to ensure that current and future generations enjoy a better quality of life, based on energy efficiency and protection of the climate and environment.

Spanning the globe with 4 business divisions, we offer our customers highly-specialized products and comprehensive service via 26 production sites, 23 technical competence centers, 14 WACKER ACADEMY training centers and 52 sales offices in Europe, North and South America, and Asia – including a presence in China. With a workforce of some 14,400, we see ourselves as a reliable innovation partner that develops trailblazing solutions for, and in collaboration with, our customers. We also help them boost their own success. Our technical competence centers employ local specialists, who assist

customers worldwide in the development of products tailored to regional demands, supporting them during every stage of their complex production processes, if required.

WACKER e-solutions are online services provided via our customer portal and as integrated process solutions. Our customers and business partners thus benefit from reliable service and comprehensive information to enable projects and orders to be handled fast, reliably and highly efficiently.




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