

WACKER

CREATING TOMORROW'S SOLUTIONS

VINNAPAS®

CONSTRUCTION | SEALING | DISPERSIBLE POLYMER POWDERS

CONSERVE RESOURCES, PROTECT
ASSETS: WITH POLYMER-MODIFIED
CEMENTITIOUS WATERPROOFING
MEMBRANES

CLEAN WATER, SOUND BUILDINGS: SUSTAINABILITY IS ACHIEVABLE





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Water is scarce in many countries of the world. At the same time, it is the arch-enemy of all structures. Whether water pipes need sealing or buildings need lasting protection against damage: VINNAPAS® based cementitious waterproofing membranes ensure that you can accomplish this innovatively, dependably and without harming the environment.

50 Years of Research for Better Building

For 50 years, VINNAPAS® research has focused on the use of polymeric binders to improve building materials. It was VINNAPAS® which made mortar so easy to process in the first place. And when this polymer is used to modify cementitious waterproofing membranes, it also makes for a seal that is both long-lasting and water-repellent.

Our Expertise: Your Competitive Edge

Over half a century of experience in polymeric binders manifests itself in a vast range of innovative VINNAPAS® polymer powders for you to benefit from. No matter whether you formulate them to rigid or flexible polymer-modified waterproofing membranes, you will always have a competitive edge, thanks to the expertise that has made us the technological leader in this field. This means you can offer your customers building materials that permit faster, cleaner and cheaper construction.

Protecting the Environment, Conserving Resources

VINNAPAS® helps you to promote eco-friendly building. VINNAPAS® boosts the ability of mortars to resist penetration by CO₂ and harmful substances, such as road salt. Using it in arid regions to seal leaky water pipes and irrigation systems facilitates more prudent management of water – a vital resource.

Building on our Expertise

We will gladly let you have the benefit of our expertise. Whether you are looking for seminars, technical advice or to draw on our many years of experience with local markets: look no further than our WACKER experts. Their expertise will enable you to unlock the growth potential in your markets. Your WACKER field sales consultants are waiting to hear from you right now.

POLYMER-MODIFIED CEMENTITIOUS WATERPROOFING MEMBRANES: REVOLUTIONIZING THE CONSTRUCTION INDUSTRY



All around the world, masonry and pipes are being perfectly sealed with polymer-modified waterproofing membranes based on VINNAPAS®. It only takes a layer just a few millimeters thick to imbue a building with long-lasting protection against water damage. Not only that, but these membranes additionally prevent dissolved salts, such as chlorides and sulfates, from penetrating into masonry.

Quick and Easy Preparation

The only preparation required for polymer-modified waterproofing membranes is to mix them with water on the site. This concept of one-component dry-mix mortars was revolutionary when it first appeared in the 1960s. It superseded the standard practice of adding a liquid polymer dispersion binder to the dry-mix mortar on the site. Not only did the earlier practice require experience, but the results were not always reproducible.

WACKER Revolutionizes Building Practice

It was WACKER that, in 1957, succeeded in producing a polymeric binder powder for adding to dry-mix mortars. This achievement revolutionized the construction industry. For the first time, a cementitious, polymer-modified one-component system was available that produced highly dependable results and only required water to be admixed on the site. Its simplicity has transformed the construction industry down to this very day. What's more, a one-component mixture makes it even easier to comply with EN and other standards.

Versatile Formulations

VINNAPAS® polymer powder gives manufacturers the power to formulate all kinds of mortar properties:

- Rigid sealing systems can be obtained with a class H VINNAPAS® polymer powder in a concentration of approx. 5%.
- Flexible dry mortars capable of withstanding high hydrostatic pressure are obtained by adding 20 to 40% of a class N or class E VINNAPAS® polymer powder which is flexible. The names of such products have end digits ranging from 40 to 59 (see page 14).



SIMPLE SEALING NOT ENOUGH?

THE NEW POLYMERIC BINDERS CAN DO MORE.

Waterproofing membranes based on VINNAPAS® polymer powders can seal almost any type of building. They can be formulated to additionally keep out water under pressure, to be water-vapor permeable, to bridge cracks and to adhere excellently to all substrates. They are thus superior in many ways to traditional methods, such as cement-only and bitumen seals.

High Resistance to Hydrostatic Water Pressure

Cementitious waterproofing membranes modified with VINNAPAS® polymer powders are not only water-repellent, they also keep out water under high hydrostatic pressure. Thus, they easily pass the all-important pressurized water tightness test of EN 14891 (seven days' exposure to hydrostatic water pressure at 1.5 bar).

Permeability to Water Vapor

Waterproofing membranes based on VINNAPAS® polymer powders reliably seal concrete roofs and basements without causing significant impairment of water-vapor permeability. In fact, due to innovative VINNAPAS® technology, our polymer powders achieve better water-vapor permeability than any other polymer system.

Excellent Adhesion

Dry mortars which are based on VINNAPAS® polymer powders offer outstanding adhesion to all substrates. For example, in the EN 14891 immersion tests, they produced tensile adhesive strength values in excess of 0.5 N/mm².

Crack Bridging

Cementitious waterproofing membranes modified with VINNAPAS® polymer powders meet the crack-bridging criteria of EN 14891 for temperatures down to -5 °C. They can bridge cracks wider than 0.75 mm down to this low temperature. Consequently, they are suitable not only for use indoors, such as in bathrooms/toilets, but also fulfill standard outdoor requirements.



We Give You Our Best: Our Expertise

The WACKER ACADEMY offers you unique hands-on access all around the world to the field of “polymeric binders.” Its training rooms are situated right next to WACKER’s state-of-the-art technical centers. So, you can put your new-found knowledge to use straight away.

You will find our seminar program here:
www.wacker.com/wacker-academy



WATER IS LIFE. DON'T LET IT SEEP AWAY

Leaky irrigation networks and hopelessly outdated sewers pose major challenges in many regions. An inexpensive alternative to replacing the pipes is to repair them with polymer-modified waterproofing membranes.

Sewer Rehabilitation Protects Groundwater

It is not only people in developing countries who are affected by leaky sewer systems. In many European countries, too, sewer systems are reaching the end of their service lives. In Germany alone, some 100,000 kilometers of pipes need rehabilitation. Once sewage water starts seeping into subsoil, it is not long before the groundwater becomes contaminated. You can rectify this by treating crumbling sewer pipes with waterproofing membranes based on VINNAPAS® polymer powders.

Rehabilitating the Alz Canal

The beds of straightened rivers can also be rehabilitated with polymer-modified waterproofing membranes. An example of this is afforded by the Alz Canal, which carries water from Lake Chiemsee to Burghausen (southern Germany). Built back in 1916, the surface-level Alz Canal was recently lined and sealed with polymer-modified waterproofing membranes to prevent water losses.

Rehabilitating Irrigation Networks, Protecting Lifelines

Life in the world's arid zones is usually only possible because of irrigation systems. Polymer-modified waterproofing membranes from WACKER greatly simplify maintenance work on such systems. A good example is Oman. In many parts of this country, water is scarce. Since ancient times, therefore, farmers have used a sophisticated irrigation system that brings water from the mountains to their fields.



Without irrigation, Oman could not grow dates, limes or pomegranates, which are three of the Emirate's main agricultural products.

Water Means Quality of Life

Polymer-modified cementitious waterproofing membranes can effect immeasurable changes to people's lives in arid regions. By reliably sealing water pipes, they help to ensure that this precious commodity is used sparingly. And they prevent sewage from seeping into the groundwater and spreading disease.

Do You Need a Special Formulation?

Raw material quality, climatic conditions and legal requirements vary from region to region. The VINNAPAS® technical centers will help you find the right formulation for your market. VINNAPAS® technical centers are located in Allentown (USA), Burghausen (Germany), Dubai, Melbourne, Moscow, Mumbai, Beijing, São Paulo, Shanghai and Singapore.

Just Contact Us:

Your WACKER field sales advisors will gladly put you in contact with a technical center that specializes in your market.



BUILDINGS ARE ASSETS: LET'S PROTECT THEM AGAINST MOISTURE

Polymer-modified cementitious waterproofing membranes play a key role when it comes to sealing buildings. They are the tools for you and your customers to successfully combat hydrostatic water pressure and seepage water. This applies not only to new buildings, but also to the rehabilitation of existing ones.

Permanent Protection against Water

Polymer-modified cementitious waterproofing membranes are typically used to seal basements from the outside. They protect the basement walls and foundations against soil moisture, hydrostatic water pressure and seepage water. Another classic application area is the sealing of balconies and terraces. All it takes to seal a structure is a layer two to three millimeters thick. The seal continues to protect even when fine cracks appear in the masonry due to vibration, settling and shrinkage. Unlike traditional sealing methods, polymer-modified waterproofing membranes allow water vapor to diffuse back and forth.

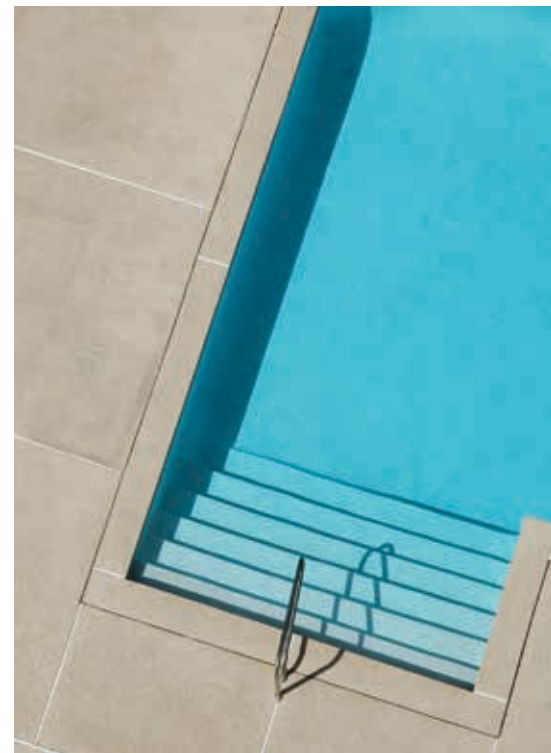
High-Quality Replacement for Bituminous Systems

Bitumen is still widely used to seal basements and foundations in many parts of the world. Unlike bitumen-based waterproofing materials, waterproofing membranes formulated with VINNAPAS® polymer powders are odor-neutral and solvent-free.

Diverse Application Areas

VINNAPAS® based cementitious waterproofing membranes are suitable for sealing:

- Water-bearing pipes and sewers
- Basement walls and foundations
- Balconies
- Garage roofs
- Bathrooms and toilets
- Swimming pools
- Multifunctional rooftops, e.g. rooftop terraces and parking decks
- Underground parking lots



SEALING A POOL OR SPA AREA NEVER PROVED MORE RELAXING



Excellent Moisture Protection for Standing Water

Polymer-modified cementitious waterproofing membranes reliably seal wet areas, such as bathrooms, showers, saunas and swimming pools. Applied beneath the tiles or flooring, they offer excellent protection against standing water.

High Flexibility – Even When Cracks Form

For highly flexible polymer-modified waterproofing membranes, use our class N and class E VINNAPAS® polymer powders with end digits 40 to 59 (see page 14). They accommodate small movements by the substrate. This means that the elastic coating will not leak even if a component moves (for example, due to temperature fluctuations). The same applies to small cracks that form due to shrinkage or substrate settling.

Bathrooms, showers, toilets, saunas and pools impose particularly high demands on protection against water. With polymer-modified waterproofing membranes, you can be assured that the moisture will not penetrate walls or floor for years – not even if cracks form in the substrate.



Go for the Optimum

Polymer and silicone chemistry have changed the construction industry worldwide. WACKER offers you this expertise in a unique way. WACKER is:

- A worldwide leader in polymeric binders for construction materials
- One of the biggest silicone producers worldwide
- Close to you with experts that speak your language
- And offers individual technical assistance and trainings through our technical centers and the WACKER ACADEMY in all key regions.

Profit from a Comprehensive Portfolio

Our diversified product portfolio and know-how in organic and inorganic chemistry enables us to recommend and develop optimum customized solutions that are independent of the various technologies.

Find out more about our solutions for the construction industry at

www.wacker.com/construction



VINNAPAS® – THE PERFECT FIT FOR YOUR APPLICATION

Our portfolio of VINNAPAS® dispersible polymer powders has been developed and optimized in the course of over 55 years to offer you the perfect fit for your application, whether for today's or tomorrow's needs. To make it easier for you to choose the ideal product, we have divided our portfolio in product classes.

Do you need to enhance the adhesion and flexibility of your product while maintaining neutral rheology and a maximum of formulation freedom? Then choose from our VINNAPAS® Standard range!

VINNAPAS® N Class – Neutral effect on rheology

For a high degree of formulation freedom to improve adhesion and crack-bridging properties.

Do you need more specific properties? Then choose from our VINNAPAS® Plus range!

VINNAPAS® E Class – Enhanced properties

For enhanced properties in a number of applications and improved essential characteristics like improved workability, increased adhesion and very good crack-bridging properties.

VINNAPAS® H Class – Hydrophobic excellence

For remarkable hydrophobic properties in all types of renders/plasters, tile grouts, ETICS (External Thermal Insulation Composite Systems) as well as waterproofing membranes.

VINNAPAS® T Class – Thixotropic expertise

For high thixotropy, which is desirable in thixotropic tile adhesives and troweling compounds.

VINNAPAS® L Class – Leveling optimization

For smooth surfaces with excellent leveling properties, e.g. self-leveling compounds.

VINNAPAS® F Class – Flow superiority

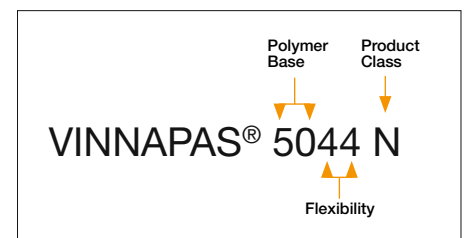
For excellent flow properties without additional synthetic superplasticizers or casein, suitable for self-leveling compounds and fillers requiring fast processing with a 2-in-1 solution.

Please be aware that not all products are available in all regions.

For more information, please consult your VINNAPAS® sales manager.

Find the right grade easily

To make it easier for you, our product names reveal the basic product properties:



Polymer Base	Flexibility
10 – 14: VAc	00 – 09: Very hard
15 – 19: A	10 – 19: Hard
20 – 29: S-A	20 – 29: Semi-flexible
30 – 39: VC-E	30 – 39: Flexible
40 – 49: VAc-E	40 – 49: Very flexible
50 – 59: VAc-E	50 – 59: Highly flexible
60 – 69: VAc-others	
70 – 79: VAc-E-others	
80 – 89: VC-E-others	

A = acrylate, E = ethylene, S = styrene, VAc = vinyl acetate, VC = vinyl chloride, MMA = methyl methacrylate

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 €4.63 billion. Products range from silicones, binders and polymer additives for diverse industrial sectors to bio-engineered 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 five business divisions, operating 24 production sites, WACKER is currently active in over 100 countries. The Group maintains subsidiaries and sales offices in 29 countries across Europe, the Americas and Asia – including a solidly established presence in China. With a workforce of 16,300, WACKER sees itself as a reliable innovation partner that develops trailblazing solutions for, and in collaboration with, its customers. WACKER also helps them boost their own success. Our technical 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 comprehensive information and reliable service to enable projects and orders to be handled fast, reliably and highly efficiently. Visit us anywhere, anytime around the world at:

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