

CONSTRUCTION | FLOORING | POLYMER MODIFICATION

PROVIDING SOLUTIONS FOR A SOLID FOUNDATION



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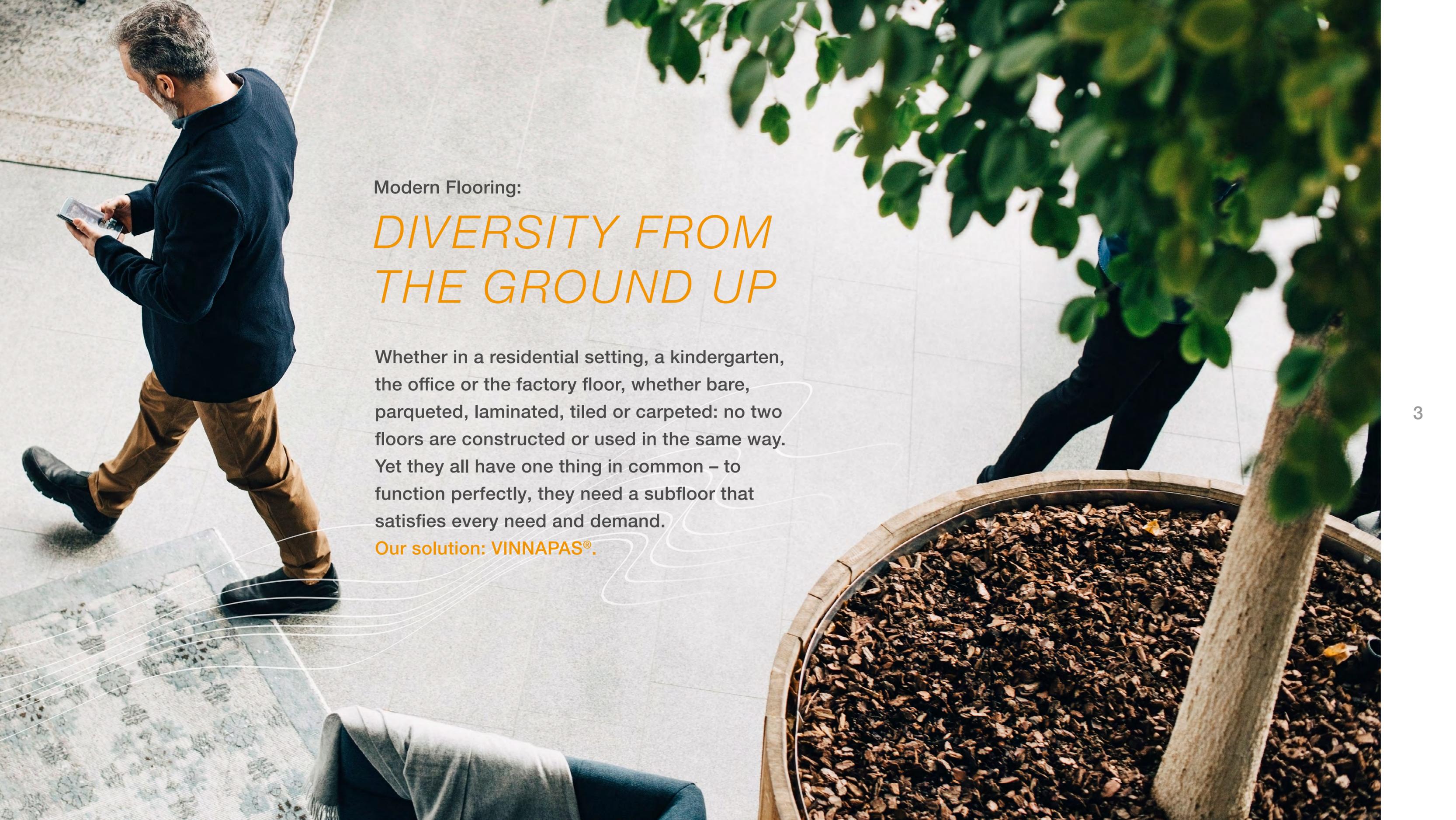
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Modern Flooring:

DIVERSITY FROM THE GROUND UP

Whether in a residential setting, a kindergarten, the office or the factory floor, whether bare, parqueted, laminated, tiled or carpeted: no two floors are constructed or used in the same way. Yet they all have one thing in common – to function perfectly, they need a subfloor that satisfies every need and demand.

Our solution: VINNAPAS®.

For Better Flooring Solutions:

THINK SYSTEMS, NOT PRODUCTS

Floors are traditionally layered systems in which each layer plays a particular role. System set-up depends on the subfloor and on how even it has to be. With our VINNAPAS® and PRIMIS® portfolio, we offer perfectly coordinated solutions for each layer.

 Surface protection formulated with PRIMIS®

 Self-leveling flooring compound formulated with VINNAPAS®

 Primer formulated with VINNAPAS®

Smoothing compound formulated with VINNAPAS®

For Quality at Every Step:

BUILD ON CHEMISTRY AND EXPERTISE

Polymer modification is the key to meeting technical requirements. VINNAPAS® dispersions and dispersible polymer powders in cementitious systems form polymer bridges that give rise to excellent mechanical properties, like tensile adhesive strength as well as flexibility, abrasion resistance and elongation. A sufficiently high polymer content will provide adhesion to even difficult substrates such as wood or metal. Special grades are available that additionally boost hydrophobic and rheological properties.



WACKER has been researching, producing and marketing dispersions and dispersible polymer powders for more than 60 years. This film shows how polymer modification works in a cement-bound system.



The polymer bridges in the cement matrix are also visible under the electron microscope.



Technical Data

TESTED FOR YOU

The benefits of polymer modification with VINNAPAS® for flooring solutions can be shown by tests conducted according to relevant technical standards. For many important properties it can be shown that the performance increases with the polymer content.

The studies were performed on a formulation consisting of Portland cement/high-alumina cement/anhydrite, VINNAPAS® dispersible polymer powder, and a large number of other components.

Optimized Tensile Adhesion Strength

VINNAPAS® dispersible polymer powders optimize adhesion to the subfloor. The higher the proportion of the VINNAPAS® dispersible polymer powder, the better the adhesion to the substrate.

Greater Flexibility

VINNAPAS® also makes mortar more flexible, allowing the flooring compound to better accommodate subfloor deformation and the stresses generated.

Tensile Strength and Elongation

The behavior of polymer-modified self-leveling compounds can be demonstrated by a tensile test. As the polymer content increases, tensile strength and elongation at break likewise increase.

Improved Flexural Strength

VINNAPAS® dispersible polymer powder increases the cohesion – and thus the flexural strength – of the system. The flexural strength is seen to increase with a higher polymer content.

Reduced Cracking

The ratio of compressive strength to flexural strength correlates to the cracking tendency. By reducing the compressive strength of self-leveling compounds while increasing their flexural strength, VINNAPAS® lowers this ratio, thereby reducing cracking.

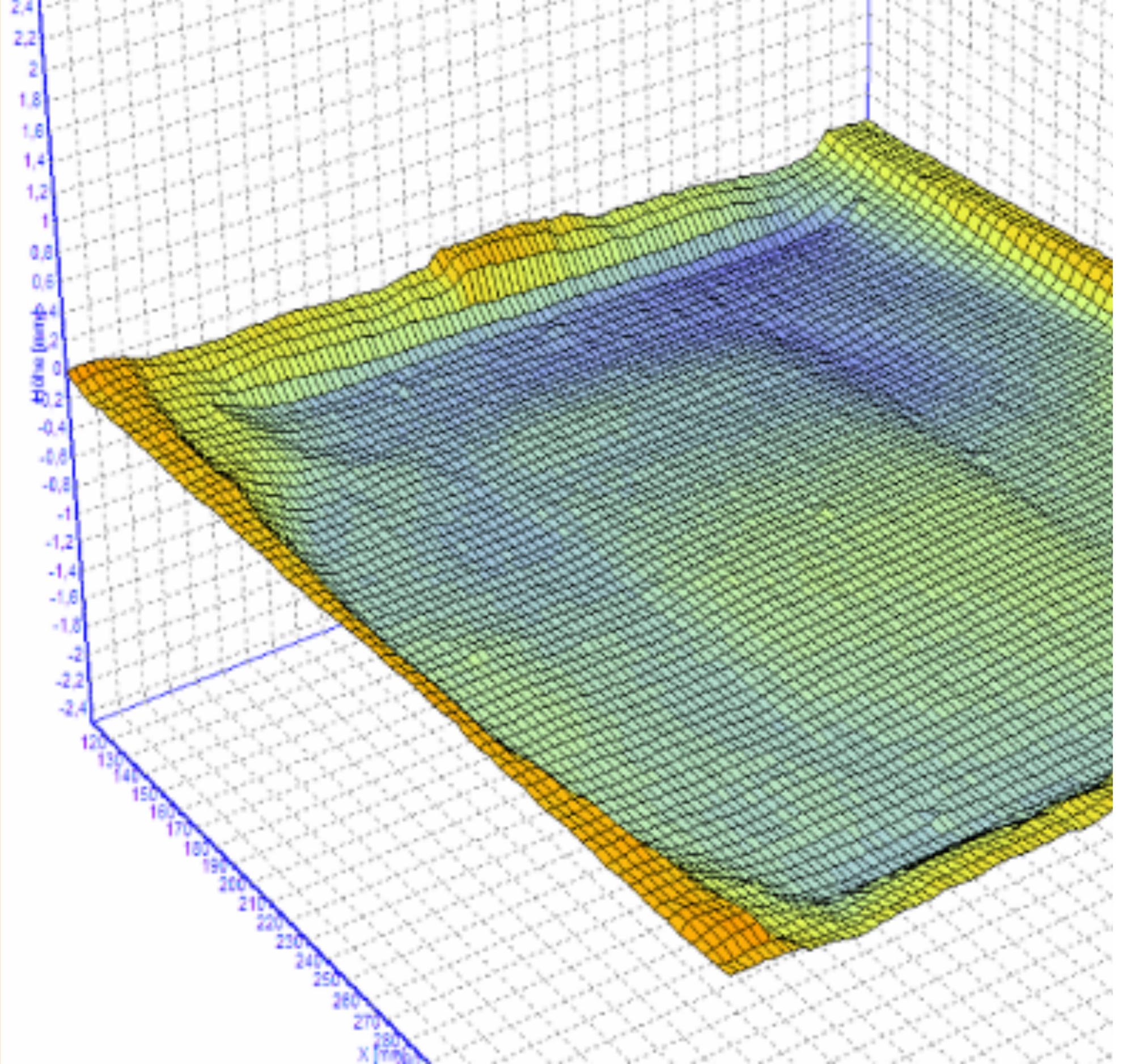
THE TOPOGRAPHY OF DURABILITY

Abrasion resistance is critical to the quality and the longevity of a flooring system, especially where the floor is exposed to dynamic loading, such as that caused by the rolling or maneuvering wheels of a turning forklift truck.

The abrasion system of a flooring system can be determined by two standardized test methods.

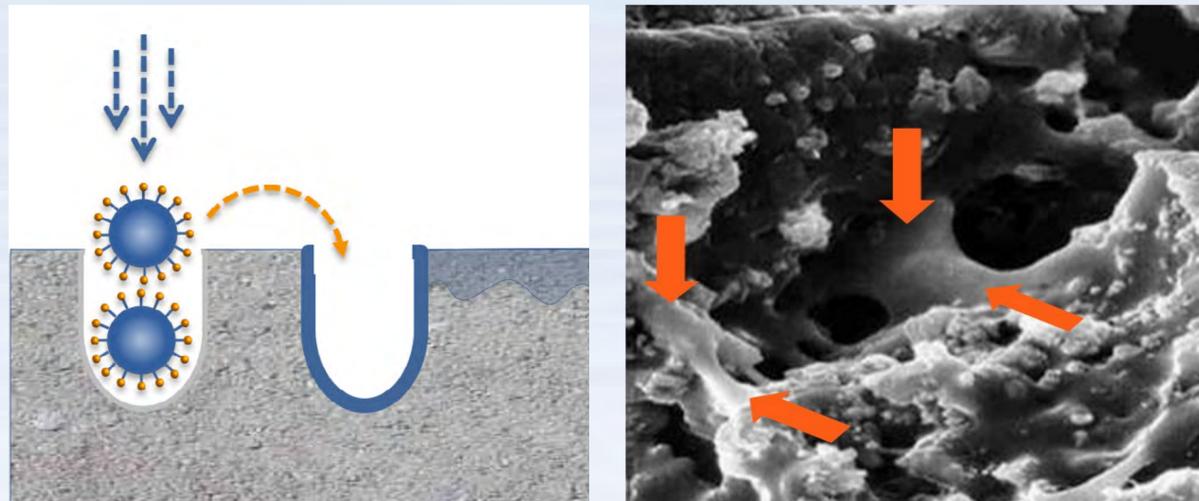
The rolling wheel test
The taber abrasion test

Both tests show that polymer modification increases the abrasion resistance substantially.



TOPPING IT OFF: SURFACE TREATMENT

PRIMIS® dispersions are siliconized, acrylic-based hybrid dispersions. Used as surface treatment, they further improve the abrasion resistance of polymer-modified flooring systems and add stain resistance.



PRIMIS® dispersions contain extremely fine particles that distribute evenly into the micro- and submicropores of the treated surfaces. During film-formation they form an interpenetrating network.

Stain Resistance

Mineral surfaces are porous: fluids and dirt are readily absorbed into the pores, where they dry. These stains are hard to remove. When PRIMIS® sealers are applied, they form a hydrophobic film, preventing dirt from penetrating into the substrate.

Abrasion Resistance

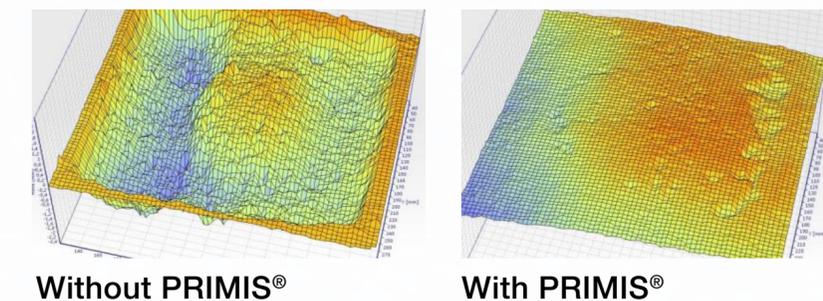
The microparticles form an interpenetrating network that strengthens the cohesion of the mineral substrate. Durability and abrasion resistance are increased.

Test formulations based on a self-leveling compound modified with 5 % polymer

Surface treatment with PRIMIS® protects mineral surfaces against staining. We also offer SILRES® BS products based on WACKER's proprietary alpha-silane technology. For more information, please visit: wacker.com/surface-treatment



Surface profile of an unmodified mineral surface with and without PRIMIS® surface treatment after the rolling wheel test



Kindergarten

PLAYING AND RUNNING AROUND ARE HEALTHY

Crawling, playing, running around: The flooring in a kindergarten where children are likely to come into contact with it one way or the other must meet special requirements. It needs to be hard-wearing, warm and easy to clean. For this purpose a wide variety of flooring may be used, e.g. linoleum, PVC, wood, cork or tiles. VINNAPAS® ensures that it will lie perfectly flat, while transforming the flooring system into a safe and healthy playground.

+ Smooth and Even

+ Low in VOCs

+ Plasticizer- and Solvent-Free

Residential Setting

FLAWLESS EVERY STEP OF THE WAY

Nor is there any need for VINNAPAS® to keep out of sight in a residential setting. Quite the opposite! The modern floor covering it is a revelation – and not just for its good looks alone. VINNAPAS® "helps produce perfectly smooth surfaces that are hard-wearing and stain-resistant. All this while also meeting the most stringent residential health regulations.

+ Flexibility of the flooring system

+ Healthy Living

+ Decorative Flooring

Office

COPING WITH STRESS

Stress in modern public places usually means stress for the flooring, too: office chairs, foot traffic and heavy objects all exact a toll. And, with people wanting more sustainable indoor surroundings, naturally they also need a healthy indoor climate. VINNAPAS® takes the stress out of meeting all these requirements.

 Abrasion Resistance

 Stress Compensation and Greater Flexibility

 Healthy Living

Factory

EFFICIENCY FROM THE GROUND UP

Efficiency matters in a factory. From the ground up and starting with the floor covering. VINNAPAS® is essential for formulating solutions for covering large areas quickly, easily and cost-efficiently with heavy-duty flooring. Chemical resistance, abrasion resistance, excellent cohesive strength for coping with heavy machinery, and an attractive appearance – VINNAPAS® provides it all.

+ Fast Drying

+ Chemically Resistance
(e.g. food industry)

+ Efficient Application

+ High Durability

Restoration

OLD MADE NEW

Restoration projects don't always have to be on a grand scale, such as returning Sleeping Beauty's palace to its former glory. Smaller projects too can present their own challenges: building materials that are old, damaged and in need of replacement, structures deemed worthy of preservation, and many more. VINNAPAS® is the best way to prepare floors for new coverings, and to get tough projects done and looking like new in a short period of time.

+ Excellent Leveling Property

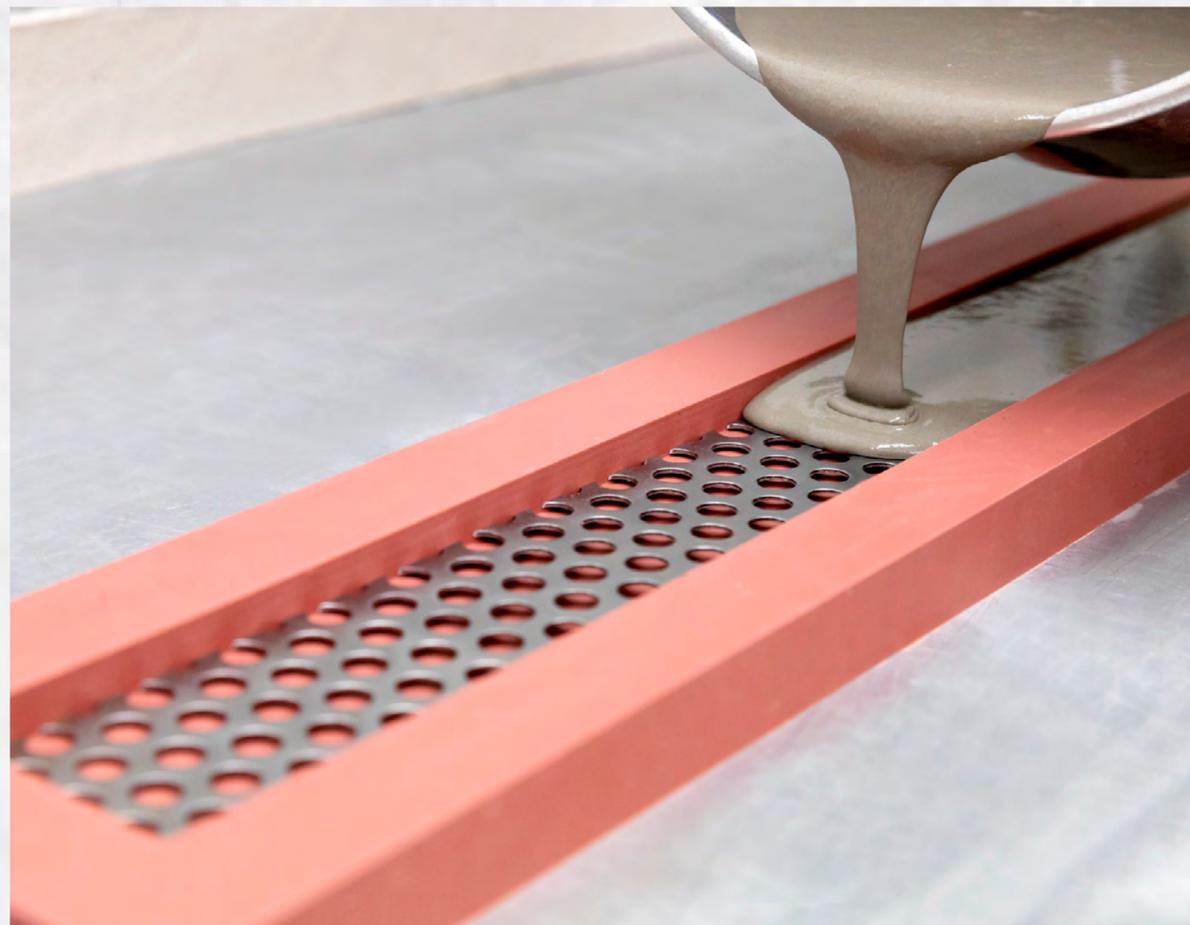
+ Considerable Flexibility

+ Secure Adhesion

COUNT ON OUR EXPERTS. FOR SERVICE ALL THE WAY.

Floor systems are complex. Self-leveling flooring compounds alone contain at least 10 ingredients. Generally, the formulations are tailored to highly specific applications. Flow, pumpability, drying time, emissions: these are just some of the properties that we test in our 15 technical centers around the world. Thanks to our vast formulation expertise, we can deliver exactly the right product properties for a given set of requirements.

[Our Technical Center](#)



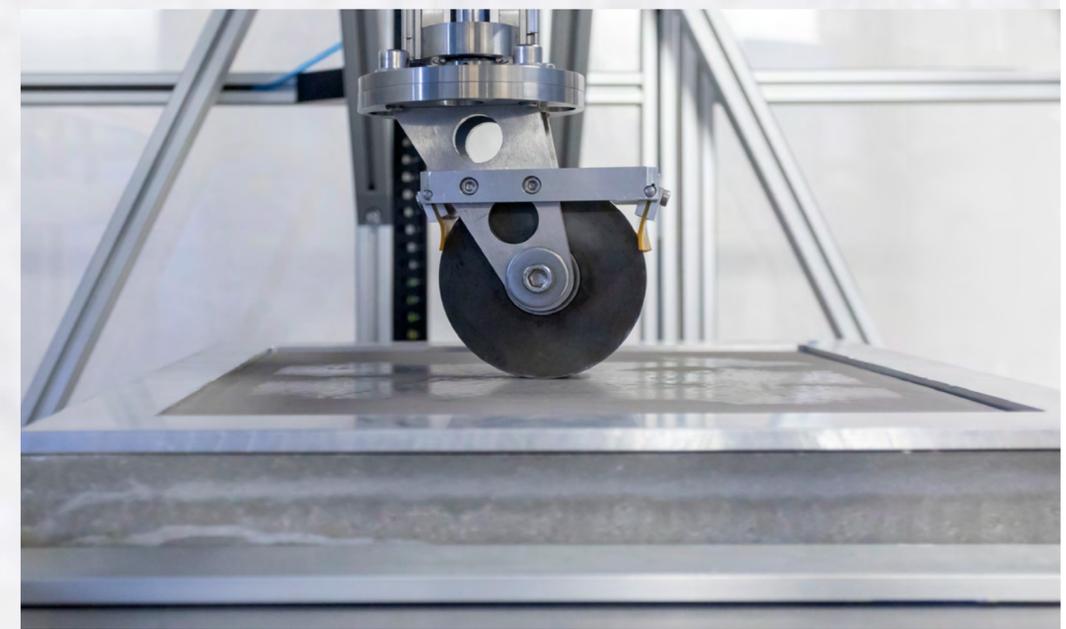
Below and right:
Measuring the shrinkage
of a specimen bonded on
one side to a metal strip.



Measuring the spread of a
specified volume of mortar on
a non-absorbent substrate after
1 and 15 minutes.



The abrasion test described
in EN 13892-5 measures the
stress generated by a rolling
load of 2000 N over 10,000
cycles. Abrasion resistance/
sandability under rotation can
also be measured by the
Taber test method.





THE WACKER ACADEMY *CONNECTING THE BEST*

The global forum for learners, networkers, creators and discoverers
WACKER ACADEMY offers cutting-edge expertise for regional markets. Participants can meet and swap experiences with colleagues from similar areas – at 14 locations around the world.

CREATING TOMORROW'S SOLUTIONS

A Diverse Array of Products for Growing Markets

Our product portfolio ranges from silicones, binders and polymeric additives all the way up to bioengineered pharmaceutical actives. Rounding these out is hyperpure silicon for semi-conductors and solar applications.

Innovations that Improve Quality of Life

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.

Global Knowledge for Local Markets

When you work with WACKER, you have 100 years of chemistry expertise at your disposal, with access to the research findings and best practices of our experts throughout the world. Our knowledge base consists of a network of 23 technical centers, 14 training centers and our basic research center.

And most importantly: we are there wherever you need us – worldwide. Our local specialists know your markets and speak your language. Working with them, you will find innovative solutions that win over your customers and make you more competitive.

Follow us:

Find us on LinkedIn, YouTube and Twitter, and we'll keep you up to date on the latest and discuss current issues with you.



All figures are based on fiscal 2020.



Silicones and Polymers
3,200 specialty products from organic and inorganic chemistry



Global Market Leader
In dispersions and dispersible polymer powders based on vinyl acetate-ethylene (VAE), in building-protection silicones and in the production of cyclodextrin and cystein.



Globally Active

- Sites worldwide
- Headquartered in Munich
- 26 production sites in Europe, Asia and the Americas
- 23 technical centers
- 14 WACKER ACADEMY training centers
- 52 sales offices



Employees: 14,300



Total Sales
€4.69 billion

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