WACKER WORLD WIDE MAGAZINE

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A STRONG BACK

Carpets fitted in offices, hotels or conference centers are exposed to high loads – so their backing needs to be correspondingly durable. For these types of application areas, Dutch manufacturer Condor has now developed a new product line that uses VAE dispersions from WACKER.

Every year, 90 million square meters of floor covering leave Condor's two production sites in Hasselt and Genemuiden in the Netherlands. This makes the Dutch company one of Europe's biggest manufacturers.

Our customers buy reliability," says Stefan Diemke, sales manager for Germany at Dutch carpet producer Condor, reaching for the sample folder that is on display at the Domotex tradeshow in Hannover. How are carpets related to reliability? Diemke has the answer: "Especially in the contract business, it is important for floor coverings to be sturdy, environmentally friendly and easy to fit: this avoids complaints later on."

Customers can get this reliability with a carpet from Condor's new Powerbacking line. Diemke takes a gray-blue sample out of the folder and runs his hand over the polyamide fibers. He explains that these floor coverings are particularly durable, which is also indicated by the "Class 33" label. This means that Powerbacking carpets have been approved for commercial areas with heavy foot traffic. They are fitted in business offices, medical facilities, hotels or conference centers – known as the contract business. "This is a sophisticated market, which we want to expand," explains Jan Hoekman Jr., head of marketing and a managing director at Condor.

"Especially in the contract business, it is important for floor coverings to be sturdy, environmentally friendly and easy to fit."

Stefan Diemke, Sales Manager at Condor Carpets

CERTIFIED PRODUCTS

Due to the product line's excellent durability, the Dutch company is advertising Powerbacking with the claim "Bound to Endure." Furthermore, Powerbacking floor coverings bear the Blue Angel and GUT (Association of Environmentally Friendly Carpets) labels – two quality labels that stand for low emission of pollutants and sustainable production. "German customers, in particular, love products that have been thoroughly tested and certified," says Hoekman.

At seminars and training courses, Hoekman and his engineering and sales team are currently working successfully at convincing wholesalers of the Powerbacking line's benefits. For Condor, wholesalers are the gateway to the market, as this is where property developers submit their specifications regarding the design, area of use or emission values of the carpets to be installed. The various labels and classifications relating to environmental properties and wear classes make it easier for wholesalers to narrow down the choice. They then compile several quotations, which they pass on to the developers.

Among other things, the Powerbacking line differs from other Condor tufted carpets in that the carpet backing is bonded by means of vinyl acetate-ethylene (VAE) dispersions rather than the styrene-butadiene (SB) latex customary in the industry. The tufted-carpet pile is made of synthetic yarns – usually polypropylene, polyester or polyamide – which are pulled through a support fabric, the primary backing, during tufting. This creates loops that either remain closed (loop pile

Floor coverings from the Powerbacking line belong to wear class 33, which means that they have been approved for commercial areas with heavy foot traffic.

GUT

The GUT label was established in 1990 by the Association of Environmentally Friendly Carpets (GUT e.V.) in Aachen, Germany. Its members are leading European carpet manufacturers. It is now the best-known carpet labels in Europe and an integral part of the European PRODuct Information System for textile floor coverings, PRODIS. Test institutes such as the Textiles and Flooring Institute (TFI) at the Technical University of Aachen test the carpets, which are supposed to be odorless and free of pollutants. Certain critical substances, such as pentachlorophenol, are not allowed to be used at all, while limits have been set for others, such as volatile organic compounds. Products that comply with GUT standards obtain a test number that is displayed on the back of the product. In addition, the testers take the environmental compatibility of the production processes into account and ensure that old carpets and production waste are reused wherever possible.

WACKER, too, has chosen a carpet from the Powerbacking line. It was installed in a meeting room at the Burghausen site.

carpet) or are cut open by machine (cut pile or velour carpet). The manufacturer applies two layers of formulated compound – the primary and the secondary coat – to the primary backing in order to bind the yarns and the backing.

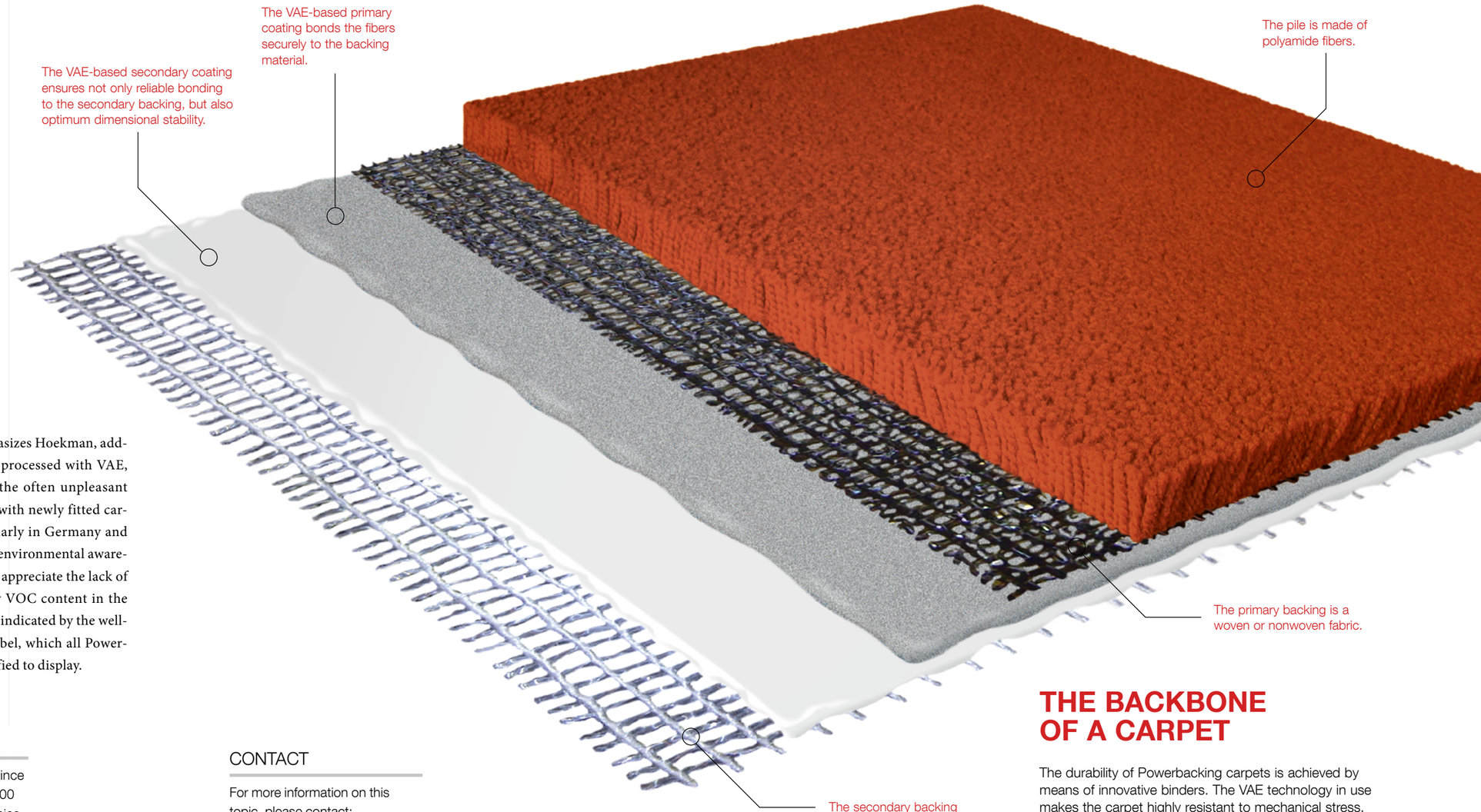
SPOTLIGHT ON HIGH-END MARKET

There are several reasons why Condor has decided to use VINNAPAS® VAE dispersions for its Powerbacking line, which is aimed at the high-end market. “In the contract business, we go for top quality,” emphasizes Hoekman, adding that floor coverings processed with VAE, moreover, do not have the often unpleasant odor usually associated with newly fitted carpet. Customers, particularly in Germany and Northern Europe where environmental awareness is particularly high, appreciate the lack of carpet odor and the low VOC content in the end product. This is also indicated by the well-known Blue Angel ecolabel, which all Powerbacking carpets are certified to display.

BLUE ANGEL

The Blue Angel was launched in 1978 by the German government and has since developed into the ecolabel best known to end users in Germany. Over 12,000 environmentally compatible products and services from some 1,500 companies currently bear the Blue Angel label. These range from low-radiation telephones to wall paints and even entire data centers.

Due to their extensive surface area, floor coverings have a particularly high potential to contaminate indoor air. In this product sector, the Blue Angel label also identifies healthier alternatives for consumers. Textile floor coverings that emit particularly low amounts of organic compounds to indoor air obtain the label.



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THE BACKBONE OF A CARPET

The durability of Powerbacking carpets is achieved by means of innovative binders. The VAE technology in use makes the carpet highly resistant to mechanical stress, while reducing emissions in the end product.

WWW ▸ SPECIAL ▸ **FLOOR COVERINGS**

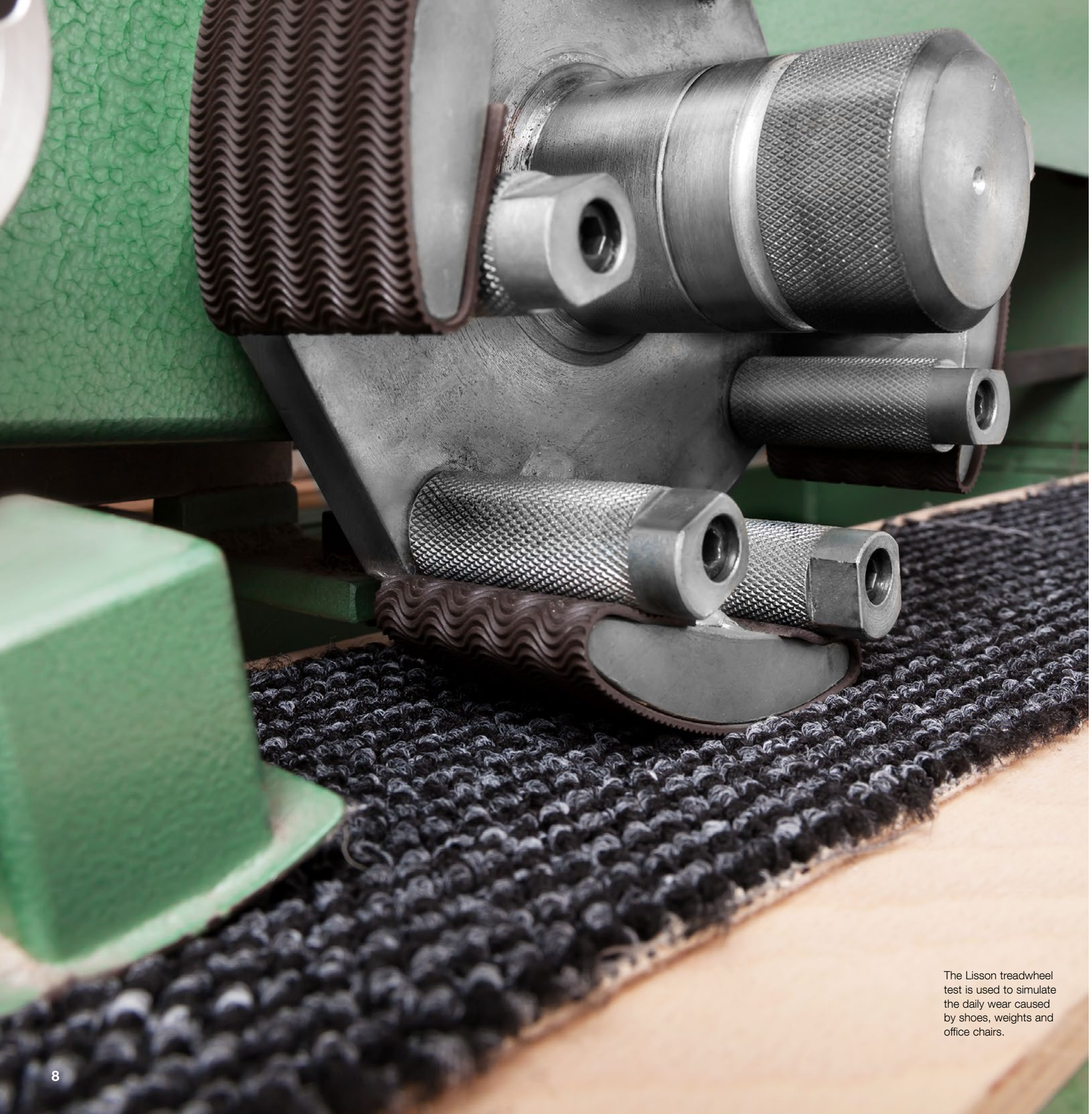
Condor produces floor coverings in more than

600

different configurations – differentiated according to pile, design, color, quality, durability, application area and a whole range of other criteria.

CONDOR GROUP

With around 600 employees, the Condor Group, which was founded in 1992, is one of the three largest manufacturers of floor coverings in Europe. Every year, around 90 million square meters leave its two production sites in Hasselt and Genemuiden in the Netherlands. Condor produces floor coverings for living areas, offices, vehicles, gardens and sports fields. The Condor Carpets division – the origin of the group – now has 25 tufting machines. The other divisions are Vebe Floorcoverings (needlefelt), Condor Grass (artificial turf) and Condor Cartex, where floor mats and other interior trim components for the automotive industry are manufactured. The Dutch company also works as a contract manufacturer for other carpet brands.



The Lisson treadwheel test is used to simulate the daily wear caused by shoes, weights and office chairs.

Both the emission values and the delamination values (resistance to delamination) of VAE-bonded carpets are better – one of the reasons why Condor is calling its new line for high-wear applications "Powerbacking." Delamination is the force required to separate the secondary backing from the remainder of the carpet. So, delamination values that are as high as possible mean carpets are very durable – and have a correspondingly long service life.

At its applications laboratory in Burghausen, WACKER tests how well a carpet is able to withstand everyday wear. For instance, the Vettermann drum test, castor chair test and Lisson treadwheel test simulate the everyday wear that a carpet undergoes due to weights, office chairs and shoes. In the Lisson test, a treadwheel is rolled to and fro across the carpet surface at least 500 times, after which the carpet's weight loss and changes in appearance are assessed.

The fact that most carpet manufacturers around the world are still working with SB latex to bond the backing of their floor coverings, despite the functional advantages of VAE dispersions, is not least down to one factor: the oil price. Styrene-butadiene is produced from crude oil and the price of butadiene correlates strongly to that of the raw material. The starting material for vinyl acetate-ethylene dispersions is ethylene, which can be produced by using crude oil or natural gas. That's why the low oil prices being experienced on the markets at the moment tend to push the cost advantage toward SB latex, whereas higher oil prices make VAE dispersions more interesting.

BETTER PROPERTIES

For this reason, the Dutch Condor Group uses VAE in its high-end line. Hoekman is convinced that the favorable properties of VAE-bonded carpets justify a slight price difference. "Since our production is cost-efficient, we are able to provide products with a good price/performance ratio," he says.

There is another point that shows VAE-based binders to be superior to SB latex: flame-retardant properties. WACKER chemist Dr. Holger Künstle points out that while floor coverings bonded with SB latex can achieve the same level of flame resistance as carpets produced with VAE, a higher level of flame-retardant additives such as alumina trihydrate (ATH) has to be added to the carpet backing.

A leading manufacturer such as Condor produces floor coverings in more than

The type of carpet that leaves Condor's Hasselt plant in the Netherlands changes approximately every half an hour.

600 different configurations – differentiated according to pile, design, color, quality, durability, application area and a whole range of other criteria. The type of carpet that leaves the plant in Hasselt, in the north of the Netherlands, changes approximately every half an hour. The employees must have the adequate experience to modify the compound composition and the production process to suit the carpet type.

"Manufacturers should be open to slight modifications to their formulations and machine settings if they are thinking about switching to VAE-based binders," explains Dr. Künstle, a technical service manager at WACKER. Together with Condor carpet experts, he performed several test series at the applications laboratory in Burghausen to determine a suitable composition for the binder mixture and to define suitable process parameters for the equipment.

Erik Altena, coating manager responsible for the technology behind carpet backing at Condor, was already involved in the initial tests with VAE three years ago. "In the beginning, we had to experiment a little, but now the carpets of the Powerbacking line run smoothly on our machines," he reports. The functional advantages of VAE-based binders were definitely worth the effort.

Soon, Powerbacking carpets will cover the floors of offices, hotels and conference centers all over Europe. Users will be unable to tell the difference between them and conventional SB-latex-bonded floor coverings. But thanks to their VAE-dispersion-based backing, these carpets produce fewer emissions, have a lower odor and are more durable – simply "Bound to Endure." ■

The project team celebrated a successful market launch at the Domotex tradeshow in Hannover: Dominique Nely (WACKER), Erik Altena and Jan Hoekman Jr. (Condor), and Melanie Trieflinger and Dr. Holger Künstle (WACKER).

EXPERTISE AND SERVICE NETWORK ON FIVE CONTINENTS

• Sales offices and production sites, plus 22 technical centers, ensure you a local presence worldwide.

WACKER is one of the world's leading and most research-intensive chemical companies, with total sales of €5.3 billion. 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 5 business divisions, we offer our customers highly-specialized products and comprehensive service via 25 production sites, 22 technical competence centers, 12 WACKER ACADEMY training centers and 50 sales offices in Europe, North and South America, and Asia – including a presence in China. With a workforce of some 17,000, 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 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: **www.wacker.com**

All figures are based on fiscal 2015.

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