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VINYL ACETATE-ETHYLENE FOR CAULKS AND SEALANTS

A current trend in the USA is to seal heating, ventilation and air-conditioning ducts with sealants to prevent exhaust air from escaping, and so save energy costs. To meet this demand, WACKER has developed specialty VINNAPAS® vinyl acetate-ethylene copolymer dispersions that are ideal for formulating high-quality sealants.

Heating, ventilation and air-conditioning (HVAC) systems are popular in the USA. Electric blowers deliver hot or cold air, as appropriate, through an extensive duct network to individual rooms to bring them to the required temperature. According to the US Energy Information Administration, air-conditioning costs – at around 47 percent – are the largest item on a household’s energy bill in the United States. Poorly sealed HVAC air ducts contribute significantly to high energy consumption. Leaks in the ducts that transport the hot or cold air into individual rooms can add hundreds of dollars a year to utility bills.

Sealing of the metal ductwork is easy with the aid of flexible sealing compounds. Polymer-based systems, for which WACKER has been supplying VAE dispersions as binders since 2009, are particularly suitable for this. They provide the water-based sealants with the necessary adhesion, stability and flexibility. In addition, WACKER’s VAE dispersions are heat-resistant and retain their outstanding adhesive properties even when exposed to high temperatures.

“The market for polymer-modified sealing and caulking compounds is promising.”

Dr. Martin Schierhorn, marketing manager for VAE dispersions for sealing and construction applications.



Essentially, the sealants have to be provided with the necessary adhesion, stability, flexibility and heat resistance. Thanks to VAE, all that is possible.

TAILOR-MADE SOLUTIONS

Depending on applications and requirements, WACKER offers different VINNAPAS® grades that are suitable for the formulation of sealants. With the right grade, the finished formulations show excellent bonding, even to difficult substrates such as PVC and metal. The various VINNAPAS® grades furthermore possess high filler acceptance. Compared to alternative binders, WACKER's VAE dispersions have a clear advantage. "Our VAE can be produced from a range of different raw materials. One possible starting material is natural gas, the price of which is virtually constant compared to that of



Over recent years, the demand for WACKER's VAE dispersions as binders for sealing and caulking applications has risen by an average of 16 percent per year.



Saving energy and costs: flexible sealing compounds based on WACKER's VAE technology are an easy and reliable way to seal the metal ductwork in HVAC systems.



Unlike other systems, the VAE-modified caulks can create a stable bond between two different surfaces, for instance between a mineral surface and wood. What's more, crown molding seams that are sealed with polymer-based caulks can be painted.

crude oil. This allows us to offer our customers price stability," says Dr. Martin Schierhorn, strategic marketing manager for VAE dispersions for sealing and construction applications.

Over recent years, the demand for these VAE dispersions from WACKER as binders for sealing and caulking applications has risen by an average of 16 percent per year. The VINNAPAS® binders for caulks and sealants

have grown into a key component of WACKER's product portfolio. "One of the reasons for this is a growing awareness among Americans that a lot of energy, and thus money, can be saved through simple measures such as sealing ventilation ducts," reports Robert Cuscino, marketing manager for VAE dispersions for sealing and caulking compounds at WACKER's US site in Allentown.

"Through simple measures such as sealing ventilation ducts, a lot of money can be saved."

Robert Cuscino, marketing manager for VAE dispersions for sealing and caulking compounds at WACKER's site in Allentown (USA).



To seal wooden trim moldings, the WACKER technology has one big advantage: the polymer-based caulks are flexible enough to compensate for movements within the wood.

GREAT MARKET POTENTIAL

WACKER's VAE dispersions are also ideal for formulating caulking compounds based on calcium carbonate or similar fillers. The dispersions lend the compound the necessary flexibility and ensure that the sealant retains its adhesion and provides reliably tight joints, even under heavy loading. Unlike other systems, the VAE-modified version can create a stable bond between two different surfaces, e.g. sealing the seam between a wooden baseboard and gypsum-based drywall. The same applies to wooden trim work like chair rails and crown moldings. "Another big advantage is that VAE can also be painted," explains Cuscino.

"The market for polymer-modified sealing and caulking compounds is promising," emphasizes Schierhorn. There is growing demand for the implementation of simple energy-saving measures, such as sealing ventilation ducts, in Asia, too. In the long term, however, WACKER wants to try and open up further applications as well. The team is currently testing formulations with VAE dispersions for assembly adhesives that are suitable for installing drywall, for example. WACKER's binders serve as ideal bonding agents between gypsum plasterboards and timber frames. ■

CONTACT

For more information on this topic, please contact:

Dr. Martin Schierhorn
Strategic Marketing
Dispersions
Tel: +49 89 6279-1969
Martin.Schierhorn@wacker.com

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Wacker Chemie AG Hanns-Seidel-Platz 4, 81737 Munich, Germany
Tel. +49 89 6279-0, www.wacker.com

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