



WACKER **POLYMERS**

SAVE ENERGY AND CUT COSTS WITH EIFS - EXTERIOR INSULATION AND FINISH SYSTEM

Silvia Basei, Account Manager Construction Polymers, 14th of October 2009

Convegno "Efficienza energetica per l' edilizia, Milano

CREATING TOMORROW'S SOLUTIONS

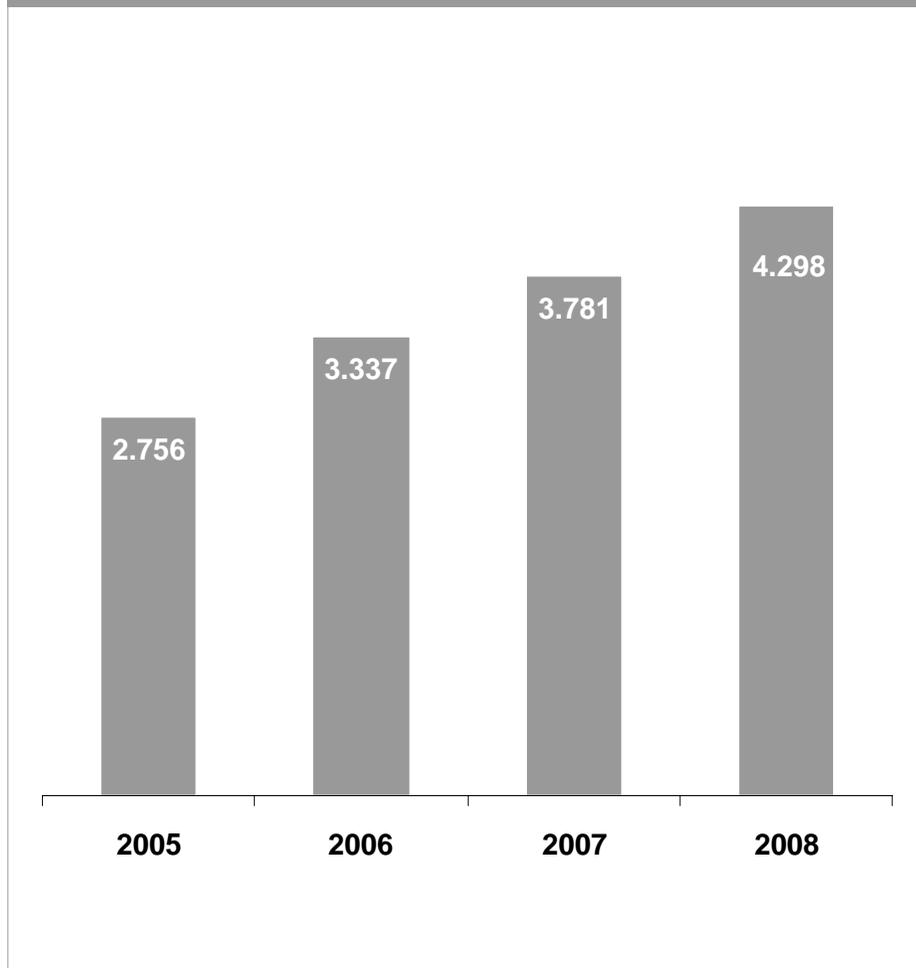
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- Welcome to WACKER
- VINNAPAS® Polymers in Exterior Insulation and Finish Systems (EIFS)

WACKER CHEMIE AG – SUCCESSFUL FOR MORE THAN 90 YEARS

WACKER Chemie Sales (mill. EUR)



WACKER Chemie AG

- Founded 1914 by Dr. Alexander Wacker
- IPO in April 2006
- Head office in Munich
- 27 production sites worldwide

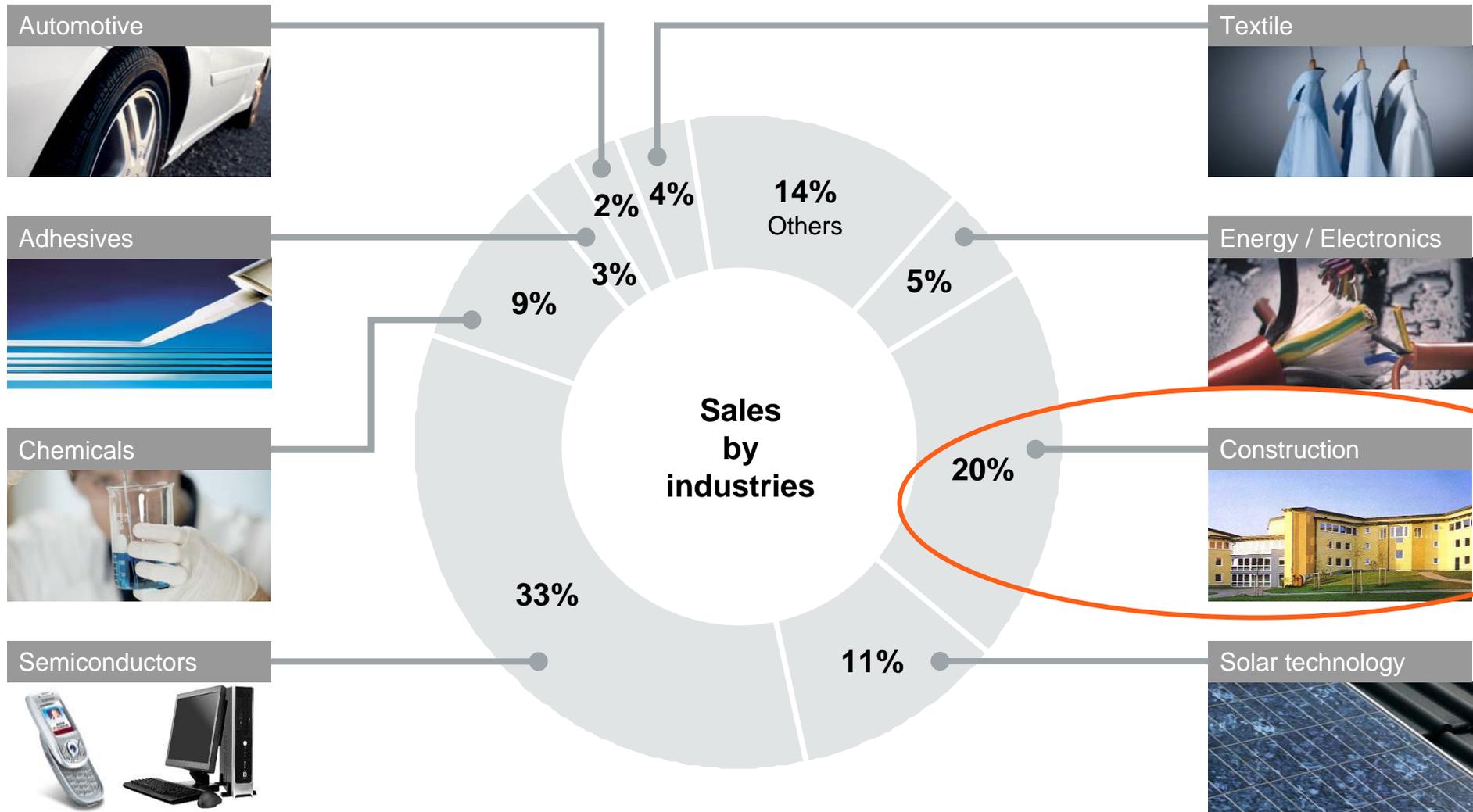
Key figures 2008

- Employees 15.922
- R&D expenditure € 163 Mio.



Burghausen site

PRODUCTS AND SOLUTIONS FOR KEY INDUSTRIES



WACKER POLYMERS - GLOBAL SETUP WITH REGIONAL FOCUS



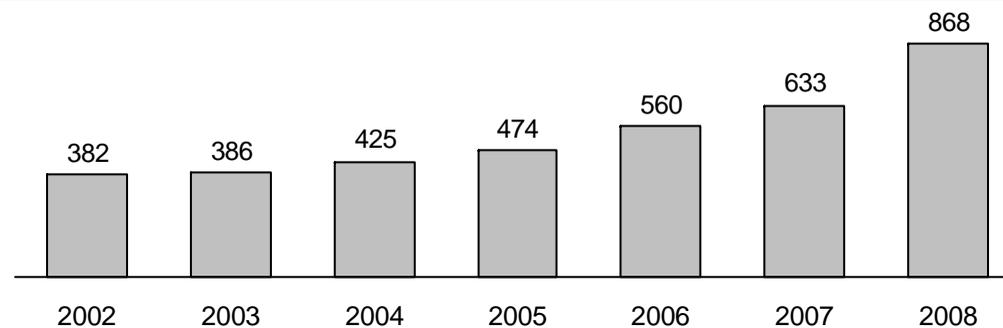
WACKER POLYMERS 2008

- Sales: € 868 Mio.
- EBITDA: € 108,9 Mio.
- Employees: 1,579

Wacker Polymers – Global Setup



Wacker Polymers - Sales in EUR mn**



* Sale of PA catalyst business in 2002, Divestiture of the brine and caustic soda business in 2003; sales effect of APP Acquisition in 2008

WORLD MARKET LEADER CONSTRUCTION POLYMERS: ADDING VALUE TO DRY-MIX MORTAR SYSTEMS



Products

- Co- and Terpolymers as
- Dispersible Polymer Powders
 - Dispersions

Trademark

VINNAPAS®

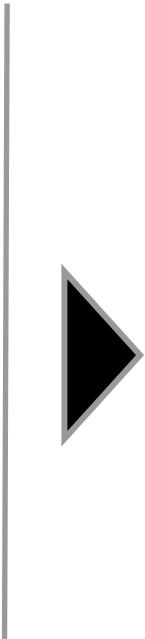
Main Industries

Construction Chemicals
Dry-Mortar

Applications of Dispersible Polymer Powders in Dry-Mix mortars

- Tile adhesives
- Grout mortars
- Sealing slurries
- **Exterior Insulation and Finish Systems**
- Primers
- Cementitious surface coatings
- Self-leveling compounds
- Adhesive slurries
- Plasters
- Concrete renovation
- Gypsum applications
- Skim coats
- Powder paints
- Troweling compounds

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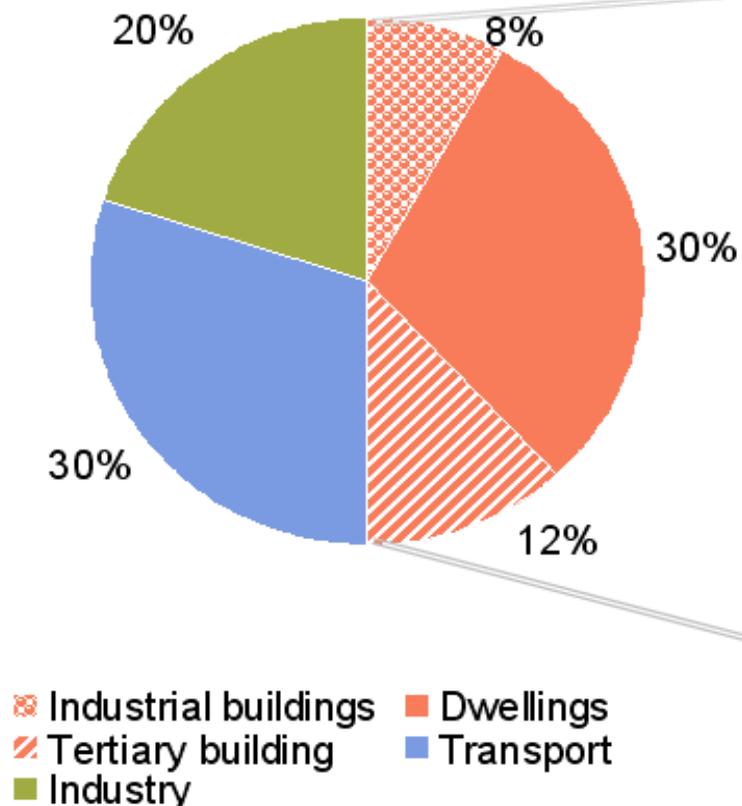
- 
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CLIMATE CHANGE IS OMNIPRESENT - SAVING ENERGY IS CRUCIAL FOR STOPPING GLOBAL WARMING

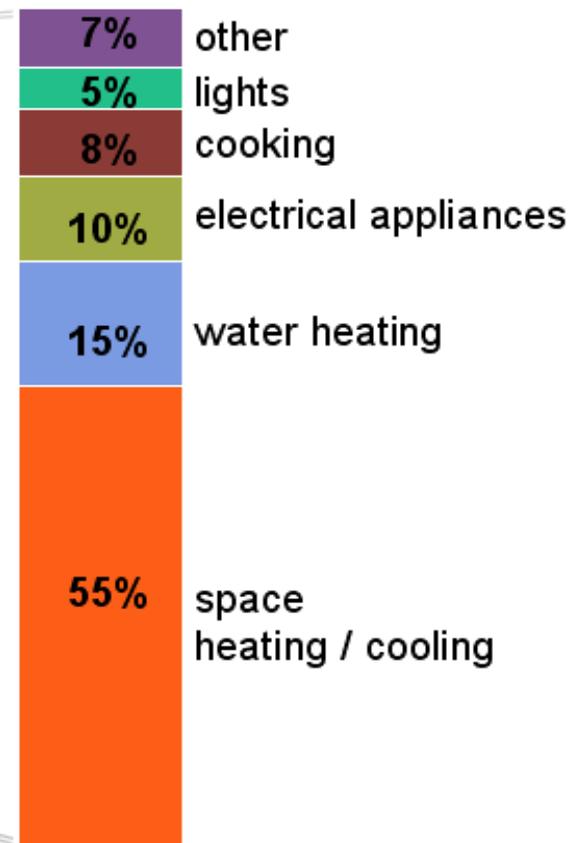


SINGLE LARGEST ENERGY-CONSUMING SECTOR IS BUILDINGS: RESPONSIBLE FOR MORE THAN 50% OF ENERGY USE

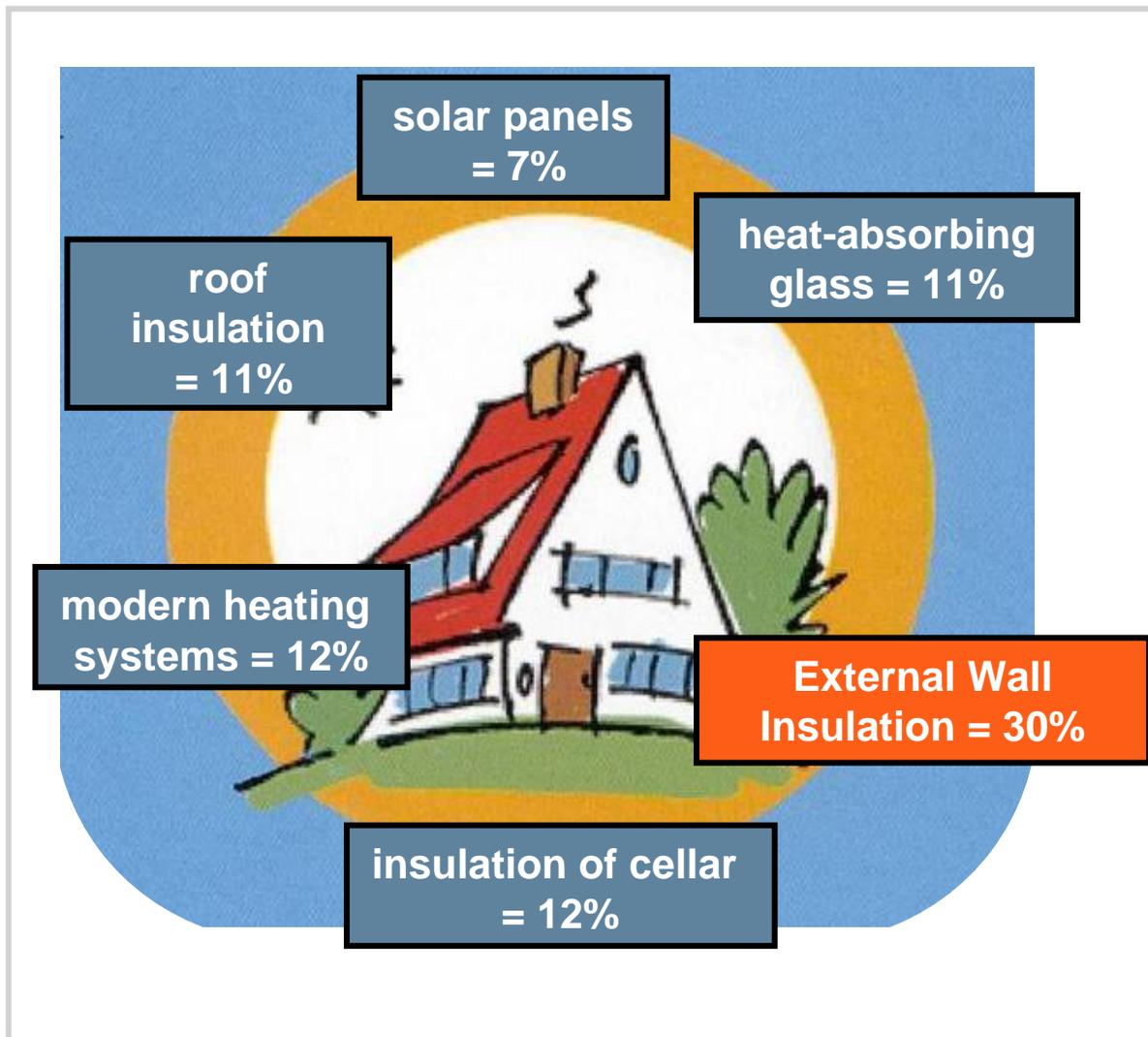
Total energy consumption



Energy consumption in buildings

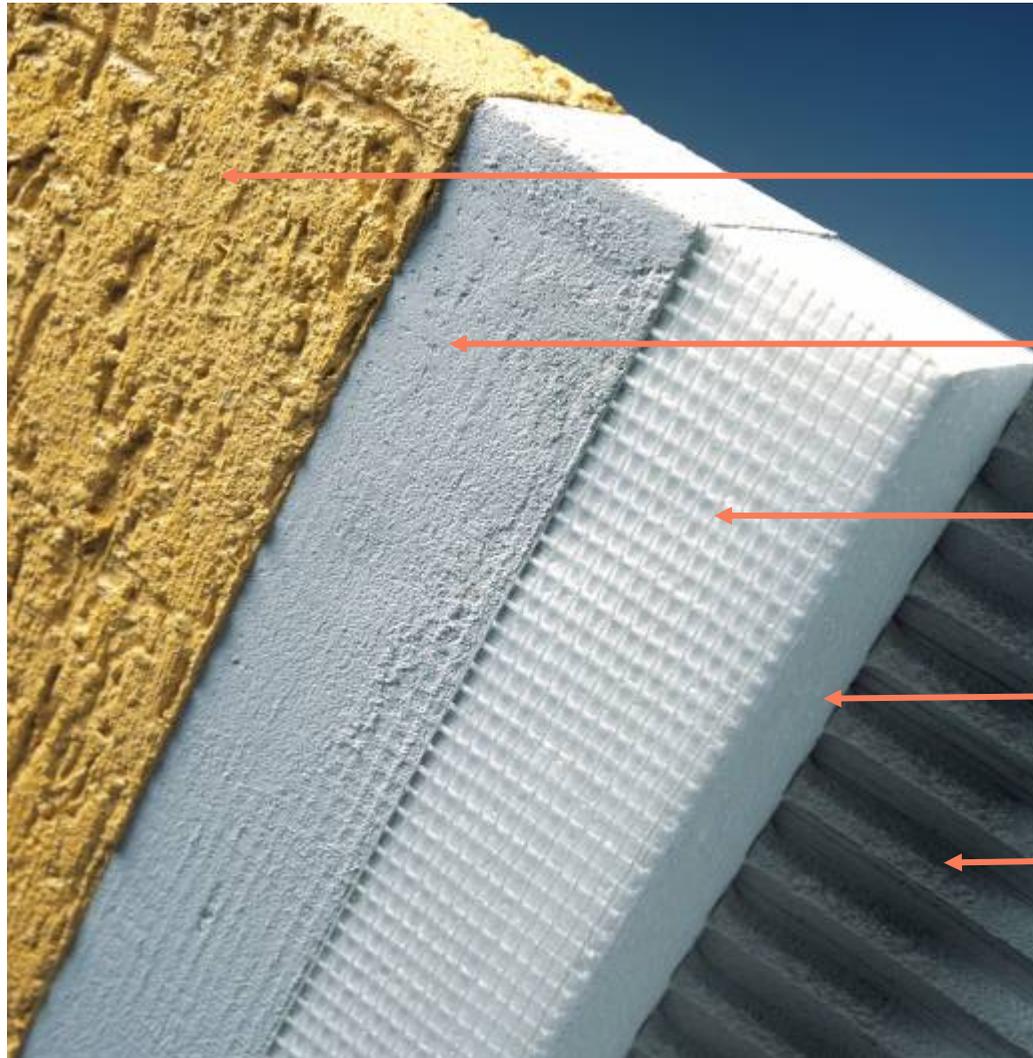


EXTERIOR WALL INSULATION CONTRIBUTES THE MAJOR PART OF SAVING ENERGY IN BUILDINGS



Source: WDVS-Fachverband, 2006

THE MAIN COMPONENTS OF EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS)



Top Coat / Plaster

Embedding mortar

Fibre mesh

Polystyrene (insulation)

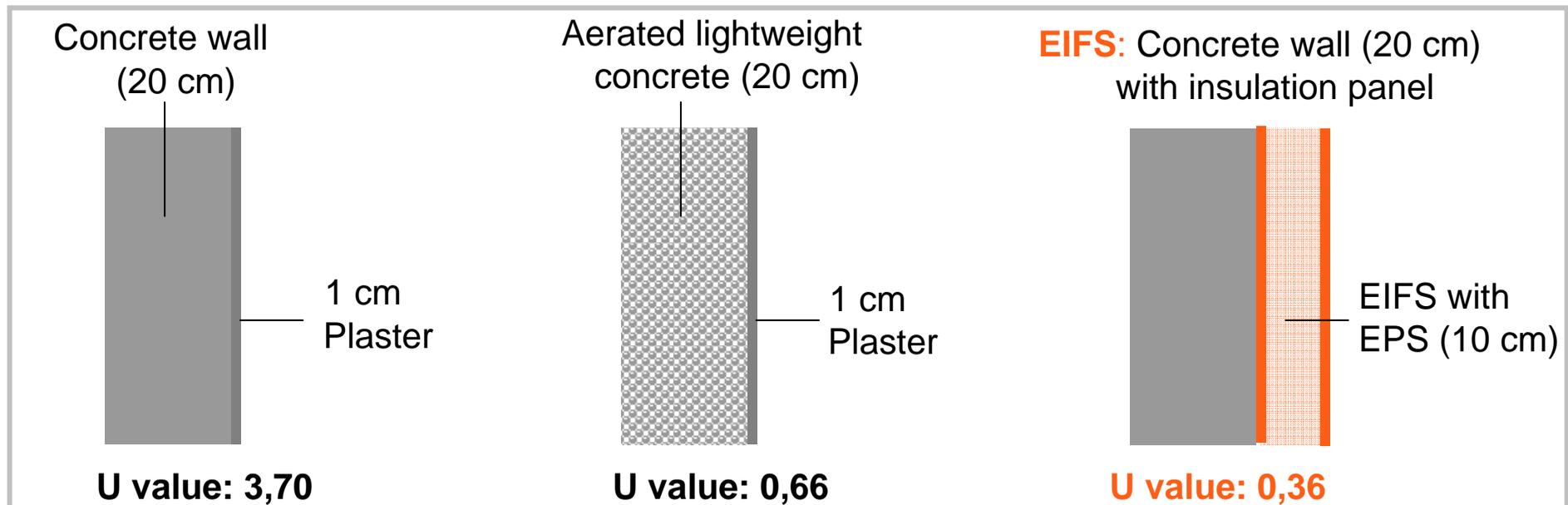
Adhesive

THE POWER OF EXTERIOR INSULATION AND FINISH SYSTEMS: SUPERIOR WAY TO INSULATE YOUR WALLS

Scientific measurements are available to calculate energy loss

- Energy loss through a wall is measured as
 - **U-value = W / m² K**
 - Energy that transfers per square meter and per hour for each temperature degree difference between inside and outside

→ **The lower the U-value the better the insulation**



Source: <http://www.energiesparhaus.at/denkwerkstatt/uwert.htm>

HIGH REQUIREMENTS FOR MORTAR AS THE CRITICAL COMPONENT OF EIFS



Requirements for fresh mortar:

- Good **workability** for manual and machine application
- Long **open time**

Requirements for hardened mortar:

- Good **adhesion** to polystyrene boards and other substrates (concrete, bricks, old renders)
- High flexibility and **impact strength**
- Good **vapor permeability**
- Hydrophobic properties (**water repellency**)
- Good **weathering resistance**

WITH WACKER'S VINNAPAS® POLYMERS, YOU GAIN FOUR STRONG PERFORMANCE FEATURES

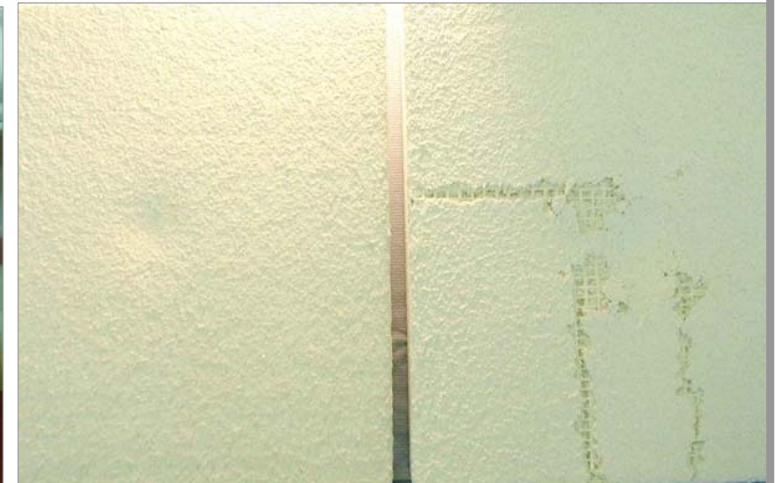


Functions of **VINNAPAS®** Polymers in EIFS mortars:

- Improved **adhesion** to all substrates (polystyrene, mineral wool, concrete, bricks, old renders etc.)
- Increased flexibility and improved **impact resistance**
- Excellent **hydrophobicity**
- Durability and **long-term performance**

→ With WACKER's VINNAPAS® products, EIFS become **stable, flexible and long-lasting**

LABORATORY TESTING IS MANDATORY FOR A SUCCESSFUL EIFS DEVELOPMENT



VINNAPAS® MAKES THE DIFFERENCE



With 3% VINNAPAS®

Without VINNAPAS®

EXAMPLE GERMANY: EIFS CONTRIBUTES SIGNIFICANTLY TO INDEPENDENCY FROM OIL AND GAS IMPORTS

Savings during the last 50 years reached with EIFS in Germany

~ 740.000.000 sqm

installed EIFS →

~ 240.000.000.000 liters

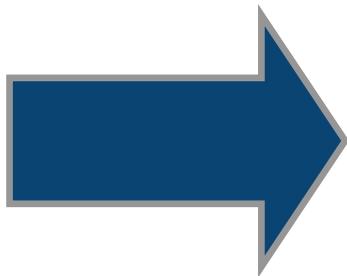
Saved heating oil

~ 670.000.000 tons

Saved CO₂

~ 120.000.000.000 €

Saved heating costs (oil price 2007)



- EIFS is a **well established and approved** building application for several decades.
- EIFS is **ecological** since it reduces residential energy consumption and CO₂ emissions significantly.
- EIFS is **economical** since it reduces heating costs significantly with reasonable expenditures.

Source: Market study "Quo vadis WDVS 2007-2012"

WACKER'S TARGETS

Our Targets

- We want to promote EIFS
- We want to promote the “System Mindset” for EIFS
- We want to promote the quality awareness in the field of EIFS and also dry mortars

We are looking forward to discussions ...

- ... with architects, construction companies on EIFS and trends in exterior wall insulation.
- ... with authorities on system quality and norms
- ... with individuals who want to enter the EIFS field



WACKER **POLYMERS**

THANK YOU FOR YOUR ATTENTION !

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