Vacuum Insulation Panels (VIPs) in the construction
Key driver: Thermal energy efficiency

60% of primary energy consumption in industrial countries is used for thermal purposes.

Source: AG Energiebilanzen e.V.
Technical progress: smaller and more efficient
va-Q-tec at a glance

Wuerzburg (HQ), Deutschland

- Production space: 22,000 m²
- Production lines: 7 VIP, 1 PCM, Container & Boxen
va-Q-tec at a glance

Wuerzburg (HQ), Deutschland

- Production space: 22,000 m²
- Production lines: 7 VIP, 1 PCM, Container & Boxen
One technology platform, multiple end markets

Our products, systems and services are tailored to markets which require excellent thermal insulation and have space restrictions.

<table>
<thead>
<tr>
<th>Business lines</th>
<th>Products</th>
<th>Systems</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>End market</td>
<td>Appliances &amp; Food</td>
<td>Technics &amp; Industry</td>
<td>Building</td>
</tr>
<tr>
<td>Description</td>
<td>Refrigerators, freezers, food transport systems</td>
<td>Hot water tanks, hot water boilers, pipelines, industrial devices</td>
<td>Floors, curtain walls, terraces, roofs</td>
</tr>
<tr>
<td></td>
<td>Mobility</td>
<td>Healthcare &amp; Logistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refrigerated trucks, delivery vans, aircrafts, passenger cars</td>
<td>Pharma and biotech thermal transport systems: boxes &amp; containers</td>
<td></td>
</tr>
</tbody>
</table>
Products:
Vacuum Insulation Panels (VIPs)
Vacuum Isolations Paneele (VIPs)

VIPS vs. Conventional insulation

Advantages

- Ultra thin, powerful insulation
- Up to 10 times better than other insulation
- Rigid, highly porous core material enclosed in a thin, gas-tight outer shell that is evacuated and sealed
- VIPs are used wherever space is limited and excellent thermal insulation is required
- Environmentally friendly

VIPs vs. Conventional insulation
The evolution of thermal insulation

- Straw: by nature
- Fur: by nature
- Fibreglass: by technology
- Foams: by technology
- Vacuum insulation: a 1000 year technology limited by physics
Core Components: Vacuum Insulation Panels (VIPs)

- Drastically reduced insulation thickness and heat conductivity
- Very long service life
- Versatile VIP in different shapes
Insulation with VIPs

VIPs can be used

- where good insulation is required but little space is available
- in new and existing buildings
- to get more living space
- as a part of an thin and elegant new construction
- to solve problems with heat or cold bridges
- to heal construction faults
Our Projects
New building: terrace floor insulation

Terrace in Switzerland

- Very thin but efficient insulation
- Easy to install
- No step from interior to exterior
New building: balcony floor insulation

Balcony in Belgium

- Water tight layer is already installed
- Product: va-Q-vip F 40 mm
- PU insulation for protection and managing the water flow
Facade refurbishment: Regensburg (Germany)

Project partner: energie-tib.de and Hasit.de

requirement monument protection authority: max. 30mm incl. VIP Insulation and plaster on a massive brick wall
Facade project Grand Tower Frankfurt/Main

Highest residential tower in Germany. Building height 172m.

401 appartments on 48 floors.

The building is ready to move in mid-2019.
Prefabricated houses: Seeresort Graz (Austria)

Wall construction insulated with VIPs

- VIP 50mm -> u-value 0,14 W/(m²K)
- reduction of transport volume
- quick assembly with slim elements
Cooling rooms: Migros Supermarkt (Switzerland)

Floor construction insulated with VIPs

- one floor level inside and outside
- 2 layer VIP construction
- short installation times
What are the benefits to be our customer?

- Largest VIP producer in the western hemisphere
- Different types of VIPs
- Standard and customizied VIPs
- Large numbers in stock
- Certificates according the DIN and ETA standard
Contact:
Ronald Ellebrecht
Mail: ronald.ellebrecht@va-q-tec.com
Mobil: +49 151 55044371