



Source: Sto AG

C R E A T E S P A C E - S A V E E N E R G Y

W A L L

*Application examples
for Vacupor® in the
area of effective wall
insulation*

WALL INSULATION WITH VACUPOR®

Owing to the energy conservation provision, greater demands are being placed on the overall energy efficiency of buildings. In order to achieve improved thermal protection of buildings according to the specifications of the energy conservation provision, the building envelope in particular requires excellent insulation. The wall insulation generally takes the largest share in terms of area in this case.

With conventional insulating materials, these specifications are only complied with by means of high insulation thicknesses, as the planning, functional or aesthetic requirements form an obstacle in many cases. Space is usually very limited particularly in the reveal area of windows and doors. A combination of Vacupor® and various different face sheets provide the solution in this case.

An additional insulation thickness may therefore result in increased shading for example. Filigree constructions are therefore already impossible in the planning stage. The use of conventional insulation systems substantially reduces the usable surface area, which may represent a disadvantage for clients in marketing their property.

Examples of efficient wall insulation



Porextherm Vacupor® vacuum insulation panels (VIPs) easily meet the requirements of the EnEV without drastically increasing the insulation thickness. Quite the contrary, Vacupor® VIPs allow an unimaginably slim structure and therefore offer more design leeway.

Wall insulations with Vacupor® are indicated for the external and internal area, provided that the structural guidelines are observed.

Since the extension of the technical approval (DiBt), Vacupor® VIPs can also be profitably used as an innovative wall insulation system both in new construction and in old building renovations.

All advantages at a glance

- ▶ Significantly slimmer wall structure
- ▶ Increased gain in living/usable space
- ▶ No shading due to high wall thicknesses
- ▶ Enormously increased energy efficiency with equal or reduced insulation thickness
- ▶ Additional design leeway for aesthetic requirements
- ▶ No health or physiological risks during processing



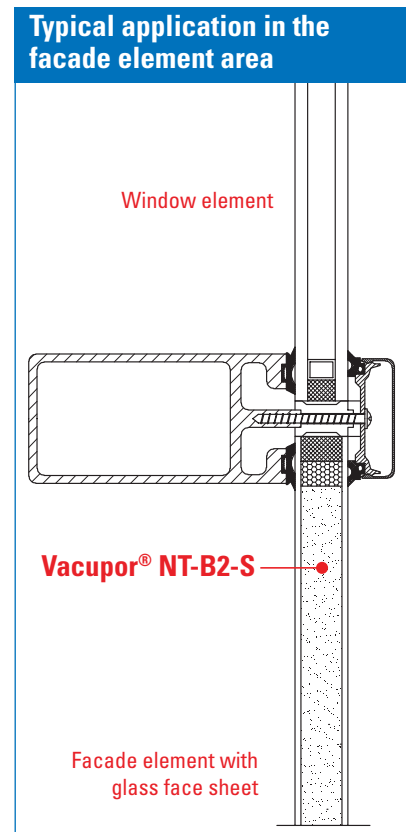
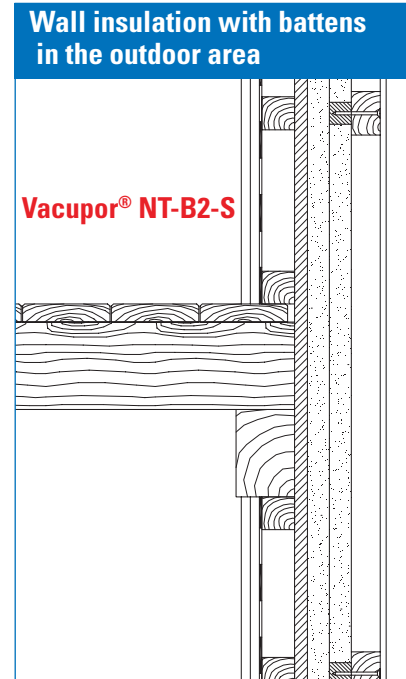
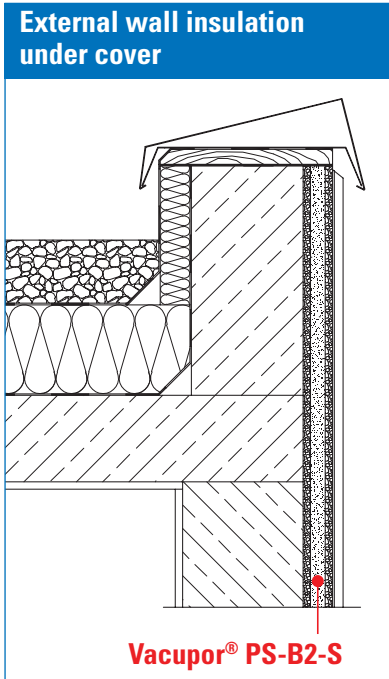
CORRECT USE AND PROCESSING

Efficiency of Vacupor® – successfully tested in modern facade constructions

Modern facade constructions today are widely dominated by so-called sandwich elements. High quality face sheets made of glass and/or aluminium sheeting are used in this case. The Porextherm Vacupor® VIP in conjunction with this high tech insulation in prefabricated building offers an extremely interesting alternative with many advantages:

- ▶ Reduction in the overall height of the façade panel
- ▶ Increased gain in space
- ▶ Greatly increased energy efficiency
- ▶ Saving in transport costs as a result of lower load volumes
- ▶ Extensive design leeway for aesthetic requirements

For different applications:
 Vacupor® PS-B2-S (right) and
 Vacupor® XPS-B2-S (bottom)



CORRECT USE AND PROCESSING

Good planning – perfect thermal insulation

Appropriate planning beforehand is always required for use of Vacupor® insulation panels. The on-site conditions should be precisely verified. In some cases, it is recommended calling on the advice of a building physicist and/or a building/structural engineer. Specific structural conditions for optimum laying of Vacupor® VIPs possibly need to be created, for unlike conventional insulating materials, Vacupor® VIPs must not be cut to size or damaged.

After clarifying all the details and following measurement, a definite laying plan is drafted to allow subsequent installation of the VIPs at the correct position.

The available standard sizes are mainly adequate for most tasks in the wall area; only at the periphery and in problem areas is it necessary to use appropriately matching special sizes according to the planning.

We and our sales partners will be pleased to help you to also effectively and meaningfully benefit from the advantages of Vacupor® VIPs.



On-site processing is easy to implement

In principle, installation of Vacupor® VIPs does not pose any major problems and is generally possible without any special tools and accessories.

Vacupor® VIPs should nevertheless be laid by experienced specialists in order to guarantee the desired advantages of this effective insulation. It is essential however to observe the following instructions in order to avoid problems.

The procedure during the use of VIPs should basically be the same as for example in case of windows, doors, glass facades and other prefabricated components.

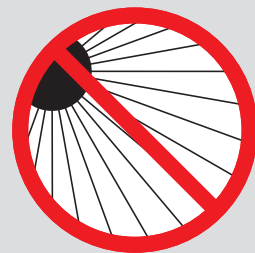
Base must be clean and even



Protect against moisture



Protect against direct sunlight



15 IMPORTANT PROCESSING INSTRUCTIONS



- 1 The VIPs should only be installed by professionally trained processors. Ask us for appropriately qualified companies.
- 2 Vacupor® VIPs are to be protected against damage and must be stored in a dry place protected from sunlight. The panels must be visually inspected for possible damage before processing.
- 3 It is advisable on principle to always lay the panels in the same installation direction.
- 4 The abutting edges should ideally be covered with adhesive tape for fixing the panels.
- 5 Dimensional tolerances can be filled and compensated if necessary using conventional insulation.



- 6 Vacupor® VIPs must be laid in the dry state.
- 7 The surfaces on which the panels are processed must be even and free from sharp-edged or pointed objects.
- 8 Care should be taken that the barrier film is not damaged by uncontrolled tensile or pressure stress.
- 9 The barrier film must not be damaged or removed.
- 10 Working by sawing, cutting, drilling or the like is not permissible!
- 11 Loss of the vacuum automatically results in deterioration of the insulating properties.
- 12 The constant application temperature must not exceed 80° C.

- 13 Solvent-free adhesives and adhesive tapes are to be used for adhesive fixings.
- 14 Contact with solvents is to be avoided as a matter of principle.
- 15 We kindly request that you contact us if in doubt.

Our Vacupor® range – just as individual as your projects

In our range, we offer different versions of Vacupor® insulation panels which can generally be tailored to the requirements of various different applications. In principle, a wide range of covering and protective layers is feasible.

We can also produce individual shapes, thicknesses and finishes specifically for you. Our Vacupor® S types have a further improved rated value of 0.007 W/(m · K).

Do not saw or cut	Do not drill	Do not walk on*

* only applies to unprotected panels

OTHER INFORMATION

Available forms of Vacupor®

Vacupor® VIPs are manufactured precisely customized to our customers' specifications. The laying plans of the properties dictate the sizes and thicknesses.

Our standard sizes are generally used in the floor insulation area, with which the major part of the area can be covered. The remaining areas, as a rule in the periphery, are filled with special sized panels.

Standard sizes for:

Vacupor® NT-B2-S

600 x 250 mm
600 x 500 mm
1000 x 600 mm
1000 x 300 mm
1200 x 500 mm
1200 x 1000 mm

Vacupor® PS-B2-S

250 x 250 mm
500 x 250 mm
500 x 500 mm
1000 x 500 mm

Vacupor® XPS-B2-S

250 x 250 mm
500 x 250 mm
500 x 500 mm
1000 x 500 mm

Our standard sizes are available in 10, 15, 20, 25 and 30 mm.

Special sizes and other thicknesses are available on request.

Approvals and test certificates

Technical approval under the no. Z-23.11-1662 has been available for our variously modified Vacupor® types since December 2008. This approval covers various different applications in the indoor and outdoor area and is constantly being supplemented with further applications.

Our Vacupor® B2-S types have an even further improved rated value of 0.007 W/(m · K).

Consequently, it is easy to realize applications in which maximum demands are requested on the insulating performance.

Further current detailed information concerning the present status of the DiBt approval, the current B2 fire protection certificate, the FIW test certificate and the Ü label can be found on our website.

Quality speaks for itself – the RAL quality label

Porextherm has been an official member of the Güteschutzgemeinschaft Hartschaum e.V. (GSH) [Rigid Foam Quality Assurance Association] since April 2008.





On the same date, the "Vacuum insulation panel" product group was established within the GSH. Renowned vacuum insulation panel manufacturers joined together in the

Güteschutzgemeinschaft Hartschaum e.V. with the target of assurance quality.

The jointly drafted quality and testing regulations were approved by the RAL, Deutsches Institut für Gütesicherung und Kennzeichnung e.V. and the RAL quality label was awarded.

Porextherm is therefore subject to very stringent quality criteria, specifically in the area of the products which are sold in the construction industry.



In addition to the technical approval for Vacupor types and likewise the Ü label for external monitoring, the RAL quality

mark will also continue to contribute to improve processors' and consumers' confidence in the quality of vacuum insulation panels.

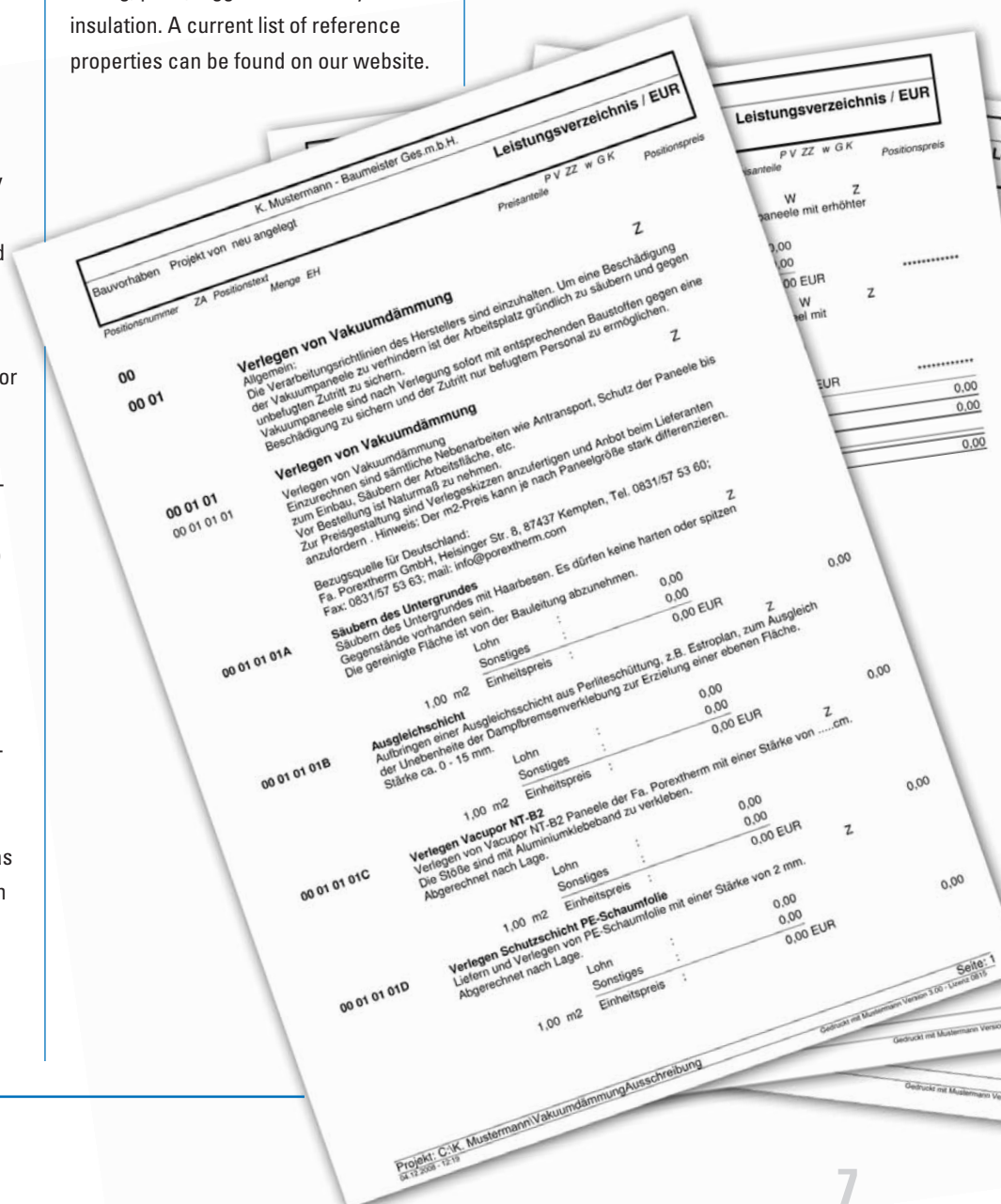
Furthermore, Porextherm is certified according to ISO 9001 (quality management system) and ISO 14001 (environment management system). An EPD (environmental product declaration) has just recently been achieved for a selection of Vacupor® types.

Our references are something to be proud of

Porextherm is one of the world wide innovation and market leaders for thermal insulation and vacuum insulation panels. Our products have contributed to innovative projects (among others the Solar Decathlon house) having received awards. In conjunction with our partners, we have already successfully handled properties in the area of floor, ceiling, patio, loggia and balcony insulation. A current list of reference properties can be found on our website.

Quotations made easy – with prepared tender documents

We offer our customers an additional service for the elaboration of quotation. We have placed the most common call to tender texts in the download area of our website: www.bau-vip.com. These will allow you to react quickly and professionally to your customers' wishes.



Porextherm is your supplier of innovative thermal insulation solutions. Since the company was founded in 1989, we have been continuously increasing our core competence in the field of microporous insulation systems and have built up a wide product portfolio with partly patented products and production processes. Based on our own research and technology, we have developed an impressive range of insulation products manufactured on our state-of-the-art production facilities in Kempten/Germany.

Our service and products can be obtained either directly from us or through one of our selected and qualified trading partners.

Authorized Porextherm partner



Porextherm Dämmstoffe GmbH

Heisinger Straße 8/10
D- 87437 Kempten
Phone: + 49 (0) 831 – 57 53 60
Fax: + 49 (0) 831 – 57 53 63
eMail: info@porextherm.com
www.porextherm.com
www.bau-vip.com