



KUHLMANN
Technische Dämmsysteme

CUSTOMISED INSULATIONS

Individual Insulation Systems for Your Products



THE FIRST CONVERSATION

Demands and expectations regarding insulation are as manifold as fitting shapes, heat exchanger dimensions, or station components. We will figure out your individual requirements in a personal conversation.

COURSE OF CONVERSATION

Besides basic data such as fields of application, minimum and maximum temperatures as well as predicted numbers of units per year, we compile your ideas and wishes. Depending on the project, this ranges from shaping to surface requirements, exchangeable logos and inserts, combination options, to marked tensioning straps and the design of manuals for the product. The suitable tool has to be worked out at first. Our in-house engineering design department and mould-making facility make us very flexible in processing your project.

SELECTION OF MATERIALS

Depending on field of application, application temperature, number of units, etc., different materials are considered a suitable option. For example, material used for cold insulation must feature different properties compared to those used for heat insulation. To cover all requirements of the Building Service sector, we deploy different materials. Compared to other companies having specialised in one material, we are much more flexible in selecting the material that optimally fits your requirements. Our in-house mould-making facility enables us to act in a fast and flexible manner.

CONTACT



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COURSE OF ORDER PROCESSING

DEFINING TASK

PREPARING DRAFT

DEVELOPING PROTOTYPE

SERIES PRODUCTION

MOULDED PARTS MADE FROM POLYURETHANE RIGID FOAM

GWK Kuhlmann has emerged from polyurethane production. To this date, this has been our largest field of production, where we process different polyurethane foams (PUR for short). Polyurethane rigid foam features the best insulation properties of all insulation materials that are used for series production in the Building Service sector. There are foams that form a solid and stable skin as well as open-pore foams. Foams that are cross-linked to a greater extent can be used at temperatures of up to +150°C.

APPLICATION

Moulded parts made from polyurethane have proven successful in a variety of different industry sectors. They can be deployed both in ventilation and heat appliances. Polyurethane foam features outstanding insulation properties and is therefore ideally suited as a high-performance insulation. However, you can also deploy PU in cold insulations or for direct foam-coating of plate heat exchangers. We have already foam-coated tanks with a capacity of 600 litres. Polyurethane rigid foam can also be used as a basic material for milling samples and prototypes.

Polyurethane can be deployed both for small batches and very large components; depending on the number of units, the tools can be designed from very simple to high-performance. Thus, polyurethane is a true allrounder.

WE PROCESS

Polyurethane rigid foam up to +130 °C, polyisocyanate rigid foam up to +150 °C, half-rigid integral foam black (with skin forming) and polyurethane rigid foam black.

SUITABLE FOR:

- heat insulation
- cold insulation
- milling samples and prototypes
- very small batches
- large components

TECHNICAL DATA

MATERIAL
Polyurethane rigid foam

COLOUR
natural coloured or black

BUILDING MATERIAL CLASS
B2 acc. to DIN 4102, E acc. to EN 13501-1

SPEC. VOLUMETRIC WEIGHT
55–280 kg/m³

THERMAL CONDUCTIVITY
up to 0.029 W/mK (40 °C)

APPLICATION TEMPERATURE
up to +150 °C (+170 °C peak)

ADVANTAGES

- outstanding insulation properties
- favourable tools for small batches
- versatile
- easy to customise
- dimensionally stable up to +150 °C



EPP – EXPANDED POLYPROPYLENE

FAVOURABLE UNIT PRICES

CUSTOMISED MOULDED PARTS MADE FROM EPP

Our second largest field of business is EPP manufacturing. We have specialised in small batch sizes and a wide variety. The material features rebound elasticity and automatable manufacturing processes. Thus, it is an interesting alternative to polyurethane given a certain number of units/year. In many cases, we offer both materials to allow for easy comparison of tool costs and unit prices.

APPLICATION

Moulded parts made from EPP are ideally suited as heat insulation. Another option is combinations where the insulation can simultaneously be used as shipping packaging.

The material can be used up to an application temperature of +110 °C. EPP is not suitable for cold insulation since it does not have good adhesive properties. The material itself is virtually diffusion-resistant. EPP is 100% contaminant-free and recyclable.

EPP block goods are ideally suited for manufacturing milling samples. However, it has to be taken into consideration that some features, like, for example, clamping through rebound elasticity or machine-finished surface, cannot be achieved.

SUITABLE FOR:

- fittings and valves
- plate heat exchangers
- boiler safety group assemblies
- pump groups
- compact fresh water stations

TECHNICAL DATA

MATERIAL

EPP (expanded polypropylene)

COLOUR

anthracite or silver grey

BUILDING MATERIAL CLASS

B2 acc. to DIN 4102, E acc. to EN 13501-1

SPEC. VOLUMETRIC WEIGHT

45–55 kg/m³

THERMAL CONDUCTIVITY

0.035 W/mK (10 °C)

APPLICATION TEMPERATURE

up to 110 °C

ADVANTAGES

- easy to install
- recyclable
- insensitive surface
- integrated clamping systems possible
- favourable unit prices

XPE – EXTRUDED POLYETHYLENE

DIFFUSION-RESISTANT

A MATERIAL FOR THE COLD

Cold insulations present a challenge: the insulation must be perfectly adapted to the shape of the fitting to prevent icing between fitting surface and inner surface of the insulation. The insulation has to be sealed in a diffusion-resistant manner to avoid cold/heat bridges. Furthermore, it must completely enclose the fitting and feature a wall thickness that is properly related to the temperature of the medium and the ambient temperature. To put it in a nutshell – it has to be customised.

APPLICATION

XPE material is ideally suited for efficient insulation of fittings at low-temperature appliances and for preventing condensation water generation or icing, respectively.

Our newly developed cold insulation makes usual adherence obsolete. It is removable, reusable, and easy to install. Moreover, the adjustability of the insulated valves is maintained. By using compression-moulded polyethylene, a diffusion-resistant material is adapted to the shape of the fitting. These soft-foam half-shells are tightly sealed at linear pressing points through overlapping polyethylene half-shells. Depending on the type of fitting, the sealing device is manufactured using tensioning straps made from galvanised steel or high-quality detachable cable ties made from PE.

SUITABLE FOR:

- cold insulation
- condensation water insulation

TECHNICAL DATA

MATERIAL

XPE (extruded polyethylene)

SPEC. VOLUMETRIC WEIGHT

30–60 kg/m³

COLOUR

black

μ VALUE

3.500

APPLICATION TEMPERATURE

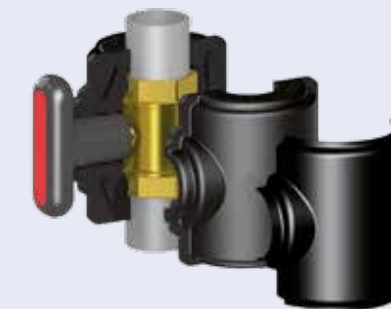
- 40 °C to + 80 °C

FIRE PROTECTION CLASS

B2 acc. to DIN 4102

ADVANTAGES

- removable
- reusable
- installation without tool and adhesive



THERMOFORMING

In thermoforming, thermoplastic resins are heated and formed to a predetermined shape by suction onto a tool, the shape being maintained after cooling down. In contrast to the injection moulding process, thermoforming is also suitable for manufacturing small batches and large-scale components.

APPLICATION

In our deep-drawing department, we deep-draw the polystyrene shells for our merchandise. Here, we can manufacture half-shells, bonnets and facings, and process a wide variety of different plastics. Deep-drawn bonnets in combination with an inner core are an interesting option for station insulations.

Our machines allow for processing plates up to a size of 1,000 x 1,500 x 500 mm. Trimming is executed on our 5-axis milling machine.

All plastics are available in different colours and can also be adapted to specific requirements by additives like fire protection or stabilisers ensuring impact strength and resistance to weather.

WE PROCESS THE FOLLOWING THERMOPLASTIC RESINS

- Polystyrene (PS)
- Acrylonitrile butadiene styrene (ABS)
- Polyethylene (PE)
- Polypropylene (PP)
- Polyvinyl chloride (PVC)
- Polyethylene terephthalate (PET)

SUITABLE FOR:

- small batches
- large-scale components

ADVANTAGES

- colours acc. to RAL
- small batches
- large components
- appealing look
- different surfaces

TEST LABORATORIES

- diffusion resistance
- cold insulations
- heat insulations
- watt heat loss

WE THINK ABOUT TOMORROW TODAY

Our service includes a lot more than insulation. We offer solutions.

RESEARCH AND DEVELOPMENT

We are consistently doing research and development. This enables us to find new materials and to adapt our production to the requirements of the Building Service sector. Many of our machines and equipment are specifically developed and built by us. The energy efficiency of these machines and equipment is always to the fore, since our insulations would not be able to contribute to energy efficiency if we did not put emphasis on exactly this feature during their production. To give an example: our EPP machines are so efficient that they need only one third of the energy consumption of normal EPP machines. Product and material research is conducted both on customer's order and on our own initiative and is related to the fields of „energy efficiency“, „thermodynamic behaviour“, and „material properties“. For this field of research we have designed and built a test laboratory in which we can simulate cold and heat applications. For example, we develop skin formation and coating systems for low-temperature appliances.

STANDARDS AND REGULATIONS

DIN standards, EN standards, building material classes, building regulations, etc. – we are at home in these subjects. Thanks to our specialisation in the Building Service sector, you can be sure that the insulation systems we develop for you comply with applicable regulations. As a member in various panels and committees, we assist in implementing new regulations with a practical orientation and have future standards influence our new developments right from the beginning.



ON THE SAFE SIDE

All materials processed by us have a material test certificate. In addition, our insulations distributed by wholesale are tested and certified as individual assembly group by the Materials Testing Institute.

MERCHANDISE

Our merchandise includes fitting insulations, insulation systems for station and plant engineering as well as heat exchanger insulations. Prefabricated fitting insulations can be easily allocated to the respective fitting by means of special matching lists. For further information, please visit www.gwk.de/standard-produkte/

CUSTOMISING SERVICE

You need an insulation for a somewhat "special" component? For which no existing insulation type would fit? To meet these requirements, we have initiated our GWK customising service. A combination of flange fittings, pump groups, tubular heat exchangers or other components - we make many things possible. And all that without charging you tool costs. We manufacture customised components frequently from EPP, however, even more frequently from polyurethane rigid foam. Particularly with our modular AL system with aluminium coarse grit lamination, we can achieve a great deal with low expenditure. Since the customising service is about manufacture that does not require special tools to be produced, this type of precisely fitting insulation is suitable for very small batches and even for one-off production.

Our team is ready to answer your questions and to meet new challenges.

Put us to the test!

Yours

GWK Kuhlmann Team

WE LOVE THE CHALLENGE.

CONTACT



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