carcoustics

Molded Polyurethane Foam Parts

Our Solutions: Flexible. Individual. Global.

Company

WHO WE ARE

Carcoustics is a highly innovative SME company that is characterized by a wide competence spectrum and dynamic international growth. Carcoustics develops customized solutions for a diverse range of applications, particularly to optimize the acoustic and thermal properties of technical systems and components. For this purpose, we offer a wide range of flexible and structural foams for both industrial and automotive applications, for instance for the vehicle interior or the engine bay. We also have wide-ranging expertise in various technologies. Our products are used in different sectors throughout the world. Besides the car industry, they are used in commercial vehicles, household appliances, heating and air conditioning systems, agricultural machinery, rail vehicles, and mechanical engineering. In our development work, we combine acoustic and thermodynamic competence with material expertise and modern production techniques, producing tailor-made, customer-specific solutions that fulfill the highest standards and impress through innovation, functionality, and quality.

Headquarters:	Leverkusen, Germany
Founded:	in 1952 under the name Illbruck, from 2001: change in ownership and renamed Carcoustics
Workforce worldwide:	approx. 1,500
Locations worldwide:	10
Revenue:	approx. EUR 250 million

Locations

WHERE WE ARE

To ensure that we are always there for you wherever you are located, Carcoustics has expanded its presence and its product portfolio in line with its “Growth Strategy 2019” not only into Eastern Europe but also into the emerging markets in China and America. In our expansion drive, we are focusing on flexible molded foam systems made from polyurethane (PUR). We are continuing to expand our global production network alongside our existing factory in Haldensleben (Germany) and our new facilities in Nováky (Slovakia), Querétaro (Mexico) and Langfang (China).

Through its global manufacturing structure, Carcoustics offers you valuable logistical advantages as well as the use of local materials. We can manage projects and offer you solutions in your vicinity through our competent local contacts. As an experienced development partner, we have years of experience in international project management and enjoy an excellent reputation among numerous manufacturers and suppliers.

Production site Nováky (Slovakia)

Production site Querétaro (Mexico)

Production site Langfang (China)

TechConsult

WHAT WE CAN DO FOR YOU

Carcoustics offers individual solutions that are tailored entirely to your requirements. We assist our customers from the first design draft through prototype development through to the stage where the product is ready for series production. Numerous experts in acoustics, thermodynamics, material development, as well as testing and prototyping work together as a team during this process. Based on our acknowledged competences in the areas of vehicle acoustics and system development, we optimize the NVH behavior (noise, vibration, harshness) of vehicles and industrial devices according to customer-specific requirements. Our purpose-built thermodynamics laboratory is equipped with thermal testing stations, infrared thermal imaging camera, and various sensors that can determine temperatures, pressures, and humidity levels, amongst other things. For large-scale developments, our materials and acoustics laboratories are equipped with modern measuring systems, experimentation equipment, and test rigs. These allow us to build prototypes within a short space of time and test them directly. Even at this early stage, we match the product to the requirements of series production.

In parallel with current projects, our committed staff in the materials laboratory are continuously working on the development of new polyurethane materials in order to offer you today the solution for tomorrow.

PUR(E) or with extras

WE WILL FIND THE RIGHT SOLUTION FOR YOUR CHALLENGE

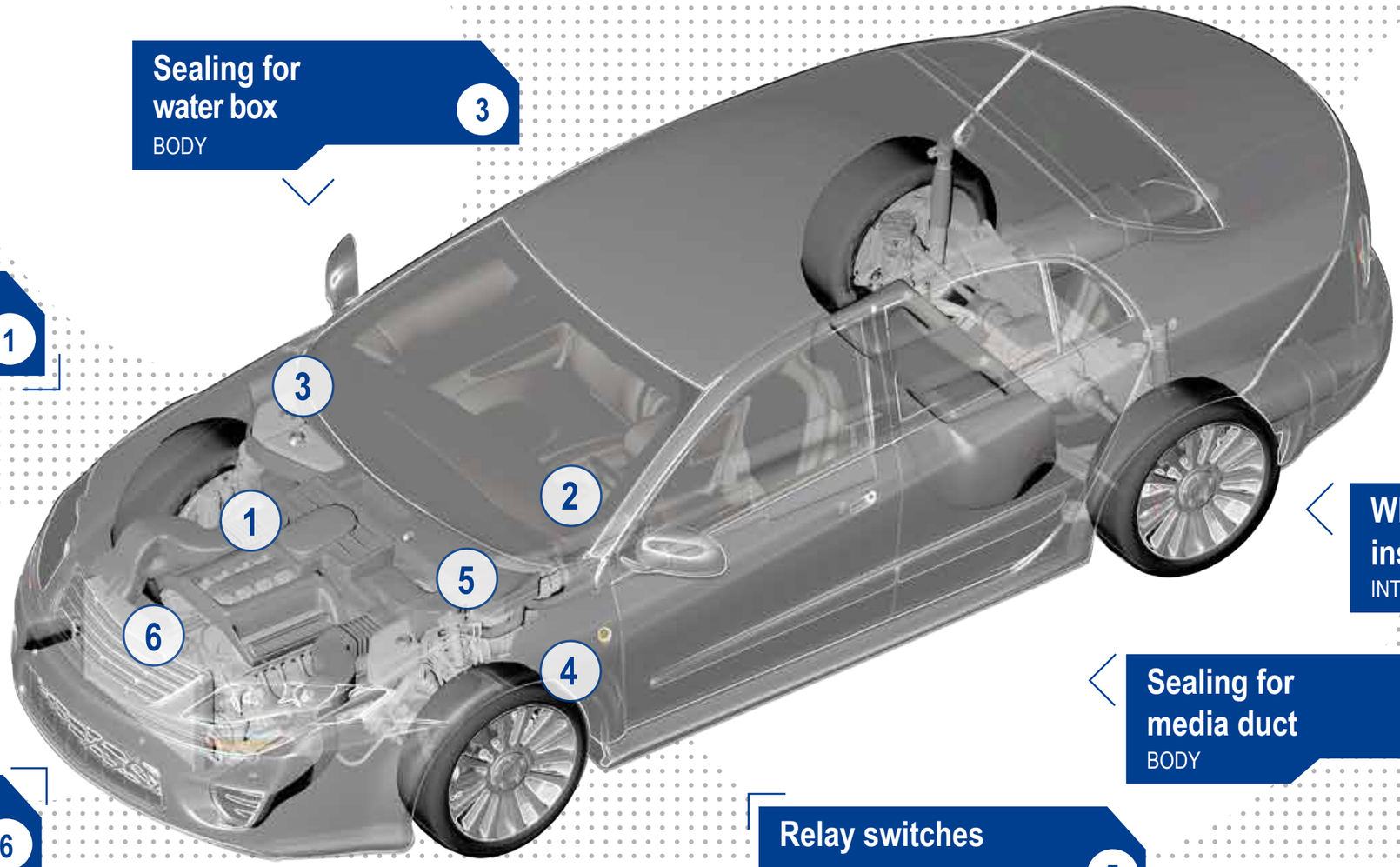
PUR

There are many factors involved in the development of modern vehicle concepts. Better thermal insulation of the engine bay will, for instance, delay the cooling down of the drive assemblies and reduce cold starts, helping to achieve significantly lower CO_2 emissions and fuel consumption. An intelligent and consumption-focused temperature management system requires truly efficient thermal insulation of the more heat-sensitive assemblies and components in the engine bay. Added to this are increasingly challenging customer demands with respect to noise reduction, driving comfort, and aerodynamics. To ensure that the developed measures add as little weight to the vehicle as possible, innovative lightweight construction materials and solutions are used that also fulfil the customers' high demands regarding chemical resistance and temperature stability, for instance. Polyurethane is frequently used for this purpose. The advantageous features of this material, which is increasing in demand in the automotive industry, include particularly its flexibility in terms of form and function as well as its outstanding material properties.

AND OUR EXTRAS

Combination with functional materials also offers obvious benefits. Formed aluminum components for radiant heat reflection or volume fleeces for improved acoustics, for instance. With all its PUR products, Carcoustics offers its customers the crucial advantage of finding an individual, tailor-made solution. Thanks to the flexibility in the selection of raw materials as well as our engineers' long years of experience in prototyping and in the acoustics laboratory, their work produces components with customer-specific properties. In addition, Carcoustics offers optimum production support through an international process engineering network as well as a global manufacturing structure. Because when it comes to series production, Carcoustics has flexible manufacturing facilities available on three continents that include modern, specially designed molded polyurethane foam machines and tools.

Product examples



Sealing for water box 3
BODY

Engine beauty cover 1
ENGINE BAY

Wheel housing insulation 2
INTERIOR

Sealing for media duct 4
BODY

Enclosing aggregates 6
ENGINE BAY

Relay switches 5
INTERIOR

Our recipe

BEST INGREDIENTS FOR YOUR PRODUCT

The first decision to be made is about the material best suited to your planned application: flexible foam (density approx. 60-130 kg/m3) or structural foam (density approx. 180-400 kg/m3). The use of different systems ensures that you achieve precisely the specific characteristics that the product needs in subsequent use. Depending on customer requirements, our products are also highly flame-retardant and can be used in temperatures of up to 150 °C.

Extensive expertise

OUR KNOW-HOW FACILITATES TAILOR-MADE APPLICATIONS

Carcoustics' key competence lies in its capability to create products that represent significant improvements over existing solutions by purposefully influencing noise (noisy/quiet), temperature (hot/cold), size (big/small), weight (heavy/light), sealing properties (wet/dry), and rigidity (flexible/robust).

DRY	WET
LIGHT	HEAVY
QUIET	NOISY
FLEXIBLE	RIGID
COLD	HOT
SMALL	BIG

Legend: Blue denominates the characteristics of the individual products.

Our Solutions: Flexible. Individual. Global.

INNOVATIONS OF TODAY FOR TOMORROW

ENGINE BEAUTY COVER

This application fulfills several tasks simultaneously. It ensures thermal insulation and effective sound dampening around the cylinder head and injection system. By absorbing sound, the cover minimizes noise emissions, thus contributing actively to driving comfort. The low material weight represents a further benefit as it assists manufacturers in their efforts to reduce fuel consumption and CO_2 emissions through lightweight construction. Furthermore, modern designs also improve pedestrian safety.

RELAY SWITCHES

With this PUR solution, sound insulation is the main objective. This molded foam part is fitted in the switching console in the vehicle interior and enhances the visual quality. The effective sound insulation permanently reduces the perceived noise in the driver's immediate environment.

The most important benefits of the components

- **Thermal insulation**
- **Optimized sound insulation and absorption**
- **Optimized NVH behavior**
- **Combination of different functional materials**
- **Optimum match to component geometry**
- **Accuracy of shape**
- **Fast prototyping**
- **Installation improvement**

FACTS ON PRODUCT:
Material: PUR flexible foam/ -integral foam
Density: 60-130 kg/m³
180-400 kg/m³

FLEXIBLE	RIGID
QUIET	NOISY

FACTS ON PRODUCT:
Material: PUR flexible foam
Density: 60-130 kg/m³

FLEXIBLE	RIGID
QUIET	NOISY
LIGHT	HEAVY

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INNOVATIONS OF TODAY FOR TOMORROW

SEALING FOR WATER BOX

Fitted to the outlet of the water box, the product performs two functions in parallel. The main purpose is to keep out leaves and dirt, thereby ensuring that the water box functions reliably and consistently. In addition, the visible sealing element enhances the appearance of the vehicle.

FACTS ON PRODUCT:

Material: PUR integral foam
Density: approx. 200-400 kg/m³

DRY / WET
QUIET / NOISY

WHEEL HOUSING INSULATION

Besides acoustic insulation and absorption, the molded foam part offers a tight water seal. It can be fitted in the front wheel housing underneath the A-pillar as well as in other areas subject to water spray. Due to the use of PUR, accuracy of fit and thus the functionality is ensured.

FACTS ON PRODUCT:

Material: PUR flexible foam covered with thermoformed PE or PUR film
Density: approx. 70 kg/m³

DRY / WET
LIGHT / HEAVY
QUIET / NOISY

SEALING FOR MEDIA DUCT

Areas of application include the space containing the air conditioning unit or heating box as well as apertures in the dash that lead to the devices mounted in the vehicle interior. The sealing component prevents the ingress of liquids, while simultaneously ensuring a high level of sound insulation. Particularly suitable to seal apertures for the numerous cables and wiring harnesses between the engine bay and the vehicle interior.

FACTS ON PRODUCT:

Material: PUR flexible foam
Density: approx. 60-130 kg/m³

DRY / WET
QUIET / NOISY
FLEXIBEL / STABIL

ENCLOSURE FOR AGGREGATES

This all-rounder among the molded polyurethane foam parts is equally effective in terms of acoustics and thermodynamics. When used for the air conditioning / heating box as well as for apertures in the dash leading to the devices, it provides both acoustic insulation and absorption, while offering mechanical protection as well as thermal insulation forheat-sensitive components at the same time. All sound-intensive devices such as valves, actuators, and similar units can thus be acoustically optimized.

FACTS ON PRODUCT:

Material: PUR flexible foam and PUR integral foam
Density: approx. 60-130 kg/m³ or approx. 200-400 kg/m³

DRY / WET
LIGHT / HEAVY
QUIET / NOISY
COLD / HOT

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