BÖLLH**O**FF



Your partner for 360° joining technology



Good cooperation is the basis for success. Our customers' and ours.

Customised solutions for special requirements.



umlaut and Böllhoff ensure safety - also above the clou



umlaut - "We add something on top."

Emerged from the 1996 founded P3 Group, the umlaut AG is a global, cross-industry full-service company. The group of more than 20 specialised companies offers technological and organisational consulting and implementation services.

In 2019, an annual turnover about 400 million euro was achieved by 4,500 employees at 50 locations worldwide. Customers are several enterprises from the automotive sector, telecommunication, energy and aerospace segment.

The umlaut engineering GmbH in Hamburg concentrates for instance on project management, mechanical and electrical constructions, calculations and technical documentations for the international aerospace industry.

Aerospace project: the HAFEX fire extinguisher

Since the 1960s, the gas halon has been used in portable handheld fire extinguishers. In aircrafts, they are installed amongst others in the cabin interior, engines, lavatories and cargo compartments.

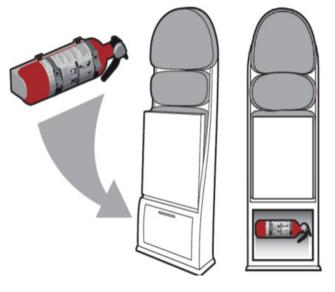
Following the classification of halon as a CFC gas, which leads to a depletion of the ozone layer, the use of halon fire extinguishers has been banned throughout the EU since 2004.

Exceptions only exist for the aerospace industry and military applications, but they are now successively repealed.

The medium-term target: a halon-free aviation.



Halon alternative - the new HAFEX fire extinguisher



HAFEX fire extinguisher in a seat for flight attendants (cabin attendant seat)

This was also the specification of the International Civil Aircraft Organisation (ICAO) and the European Union Aviation Safety Agency (EASA): Since mid 2019, all new registered wide-body aircrafts have to be equipped with eco-friendly fire extinguishers and all remaining ones required to retrofit by 2025.

The demands were huge, the time short. But that was motivation enough for the well-known player umlaut to plan a halon-free alternative in a cooperation with the expert for fire extinguishers FIREMARK (today EXTINGUISH) and the manufacturer ANAF GROUP. It has become possible, what seemed to be impossible.

HAFEX came into existence, the smallest, lightest and most flexible, eco-friendly fire extinguisher for aircraft cabins. For this innovative development, umlaut was recognized in the category "Systems & Equipment, Cabin and Propulsion" and received the Airbus Innovation Award 2017.

Initial situation

Besides the already high demands on the new fire extinguisher, it should also be flexible to install. In order to use it on existing mounting points of typical halon fire extinguisher in all civil aircraft types, it was therefore created as a drop-in alternative. This considers different mounting types of all large aircraft producers. In some aircraft types, the drop-in insert is not needed directly, since the current brackets are sufficient.

For deliveries of fire extinguishers, e.g. in the United States, it is mandatory to always include a bracket in the sending. This law is defined by the American organisation Underwriters Laboratories, who certifies products regarding their safety.

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Installed TEPRO® bracket with HAFEX fire extinguisher

TEPRO® bracket

However, the previously used brackets were heavy and made of metal screws covered with rubber, which were screwed together in a complicated way.

Continuing the HAFEX success story, a new bracket should be realised. It had to be extremely robust, easy to assemble, lightweight and furthermore a compatible part of the whole HAFEX packaging.

This was the optimal time to talk with Böllhoff, the expert for joining technology. The company from Hamburg discovered quickly the great potential of the Böllhoff product group TEPRO® for their own project.

The solution: TEPRO® – customised engineering plastic products and subassemblies

Böllhoff and umlaut worked closely together in order to create a new individual bracket. Whether shape, colour or function – every customer request was taken into account during the development. For realising this idea, Böllhoff used modern CAD systems according to current requirements. The demands of the Underwriters Laboratories regarding the definition of an appropriate material were considered in any case. For an efficient bracket production, the injection moulding process was optimised and every activity in the project closely supported.

The new developed, one-piece TEPRO® plastic bracket is highly stressable, recyclable and weight-reduced. 5,000 pieces per year will be delivered to Hamburg in the future and ensure together with the HAFEX fire extinguisher your safety.

Do you like to know more? Please contact us.

Customer benefits

- Focus on individual customer benefits
- In-house development, design, prototype manufacture
- Own tool making
- Expertise in material and injection moulding
- Accredited laboratory

Product characteristics

- Highly stressable
- Weight-reduced
- Recyclable
- Functional
- Easy to install

Böllhoff Group

Innovative partner for joining technology with assembly and logistics solutions.

Find your local partner at www.boellhoff.com or contact us at fat@boellhoff.com.

Passion for successful joining.

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