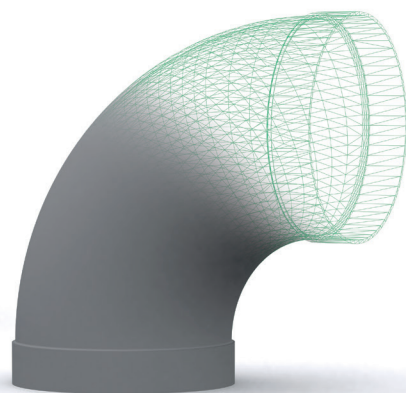
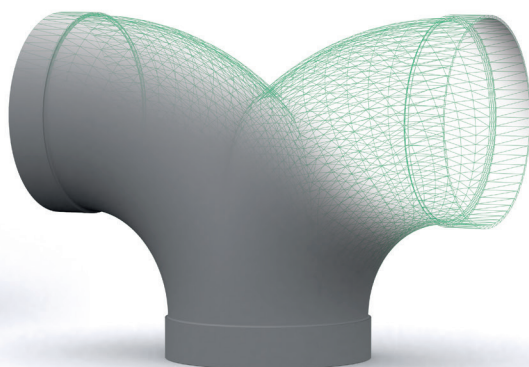
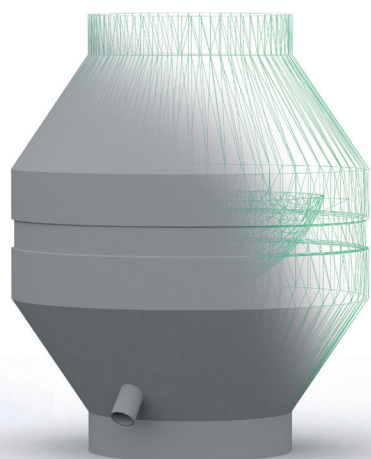
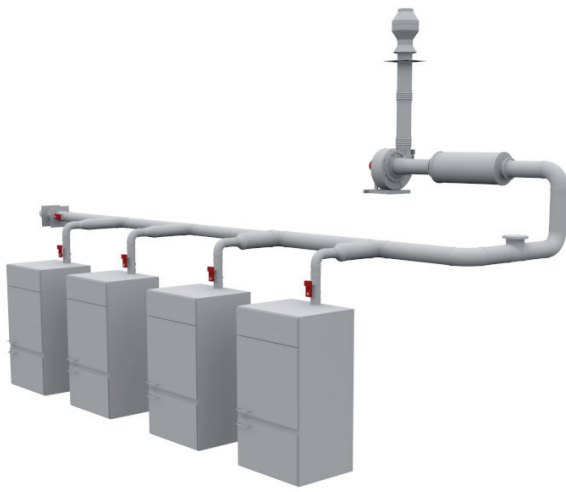


VENTILATION SYSTEMS OF THERMOPLASTIC MATERIAL

for permanent application in exhaust air



HOKA



Thermoplastic material ventilation systems have many advantages and can be used almost everywhere.

VENTILATION SYSTEMS MADE OF THERMO- PLASTIC MATERIAL

The use of thermoplastic polymers in ventilation systems has a long tradition. The application fields continued to expand for many decades, especially due to the positive experiences in terms of workability, chemical resistance and operating efficiency.

Because of the outstanding properties of the individual plastic materials, ventilation systems made of thermoplastic materials can be used almost everywhere.

Classical application fields are:

- Laboratories
- Chemical industry
- Clean room industry
- Surface finishing (caustic, electroplating)
- Hospitals
- Chlorine industry

Nowadays, these fields can be easily equipped with plastic pipes.

Taking the relatively low system costs of standard thermoplastics such as PVC-U, PP-H or PE-HD as basis, there is very often a clear economic advantage compared to metal solutions with the same property profiles.

THE ADVANTAGES AT A GLANCE



Chemical resistance to aggressive substances

Owing to their proven high resistance, the various thermoplastic materials are particularly well-suited for industrial applications in the chemical industry, the pharmaceutical industry, electroplating plants or the solar industry, etc., and guarantee a high level of security and long operating life, depending on the concentration of chemicals, the temperature and the pressure.



Low weight

The low dead weight of thermoplastic material makes it easy to transport and handle during assembly.



Corrosion resistance

Thanks to the corrosion resistance and the excellent properties of the individual materials, a ventilation duct made of thermoplastic material has a much higher service life.



Operating efficiency

Operating efficiency is particularly emphasized by the long service life, easy processing and the simplified manufacturing process (e. g. injection moulding) of the individual materials. Plastics engineering also makes it very easy to expand and repair existing systems. Consequently, this results in a clear advantage over a metal solution.



Less danger to humans and the environment

The individual components are bonded using a suitable welding process which demonstrates a 100% leak tightness when done professionally, thus causing less dangers to humans and the environment.



Lower maintenance costs

Incrustations (deposits) are the result of carried suspended solids. The surface of the thermoplastic fittings is smooth, which reduces the adhesion of such substances and also reduces the necessity of cleaning and servicing entire plants at frequent intervals.



Environmental protection

Thermoplastics are 100% recyclable. All waste matter is ground finely and homogeneously before being recycled. Thermoplastic materials can be easily recycled in many different ways with minimum power consumption. Hence, natural resources are used multiple times. This is one of the reasons why plastics are used in many new areas of application, representing all ranges of material of the 21st century. From an ecological and economical perspective thermoplastic material is the substance of the future.



HOKA: HIGHEST QUALITY AS FAST AS POSSIBLE

Quality

For over 30 years, the name HoKa has been a synonym for quality and experience in the production of ventilation fittings made of thermoplastic material.

We are specifically responsible for the quality of our products and have therefore established a QM system that complies with the requirements of DIN EN ISO 9001 in the respectively valid version. It also takes the specific requirements of ventilation engineering into consideration. This is continuously monitored by the DQS.

Our company motto is found at every work station and is supported by every employee:

“Highest quality as fast as possible”

To ensure constant product quality, we procure our raw materials from well-known manufacturers. All products undergo

a QA check and are manufactured on the basis of DIN 1946, thus complying with the requirements in the sector of ventilation and aeration. We follow the relevant DIN standards for our dimensional tolerances, thus guaranteeing compatibility with the respective ventilation pipe manufacturers. In addition to the current fittings, the extensive product range also includes specialised custom-made designs.

Environmental protection

To protect our environment, we invest in renewable energies. HoKa GmbH has a total of 5 independent photovoltaic systems with a gross output of 560 kWp which produce up to 504,000 kWh of electricity per year. We currently generate more electricity per year than we actually use. At present, this saves us 50,000 litres of petrol or diesel - or 126,000 kg of firewood, or 65,500 kg of bituminous coal or 66,500 m³ of natural gas each year.

TRAINING REQUIRED? CONTACT US!

You are welcome to attend a training course on the subject of “Ventilation systems made of thermoplastic materials” at our premises. Alternatively, we can also schedule a presentation meeting at your company.

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MATERIALS

PVC-U grey and white, PPs, PP-H, PE-HD, PP-EL-s and PVDF

The specified data are standard values. These values can be influenced by processing conditions, modifications, material additives and environmental effects and do not free the user from the responsibility of performing their own tests and trials. The information has been compiled on the basis of current experiences and knowledge. A legally binding assurance of particular properties or applicability for a concrete purpose cannot be derived from our information.

Material	PVC-U grey	PVC-U white	PPs
Short Profile	Polyvinylchloride, abbreviated Hard-PVC, is an unplasticised amorphous thermoplastic material. PVC is characterized by high chemical resistance and it is self extinguishing after withdrawal of an external flame. Additional characteristics of the material are its high strength, rigidity and dimensional stability. In the Ventilation area, PVC-U grey is primarily chosen for interior use.	Polyvinyl chloride, abbreviated Hard-PVC, is an unplasticised amorphous thermoplastic material. PVC is characterized by high chemical resistance and it is self extinguishing after withdrawal of an external flame. Additional characteristics of the material are its high strength, rigidity and dimensional stability. In die Ventilation area, PVC white is chosen for interior as well as exterior use. Further more PVC white is UV-resistant.	Polypropylene is a flame resistant material. It is characterized by its high chemical resistance and low density. A feature of the material is its stability at high temperatures in connection with flame resistance as well as good surface hardness and electrical insulating properties. In the Ventilation area, the material is suitable for interior use.
Characteristic Profile and Recommended Application Areas	<ul style="list-style-type: none">• Density (specific weight): $\approx 1,35 \text{ g/cm}^3$• High chemical resistance: esp. against organic acids and alkalis• Flammability: Tested according to European fire standard B1• Operating temperature: 0° to $+50^\circ\text{C}$• High strength and rigidity• High corrosion resistance• Good electrical insulation• Can be used indoors	<ul style="list-style-type: none">• Density (specific weight): $\approx 1,35 \text{ g/cm}^3$• High chemical resistance: esp. against organic acids and alkalis• Flammability: Tested according to European fire standard B1• Operating temperature: 0° to $+50^\circ\text{C}$• High strength and rigidity• High corrosion resistance• Good electrical insulation• UV-resistant• Can be used indoors and outdoors	<ul style="list-style-type: none">• Density (specific weight): $\approx 0,94 \text{ g/cm}^3$• High chemical resistance: esp. against solvents and alcohols• Flammability: Tested according to European fire standard B1• Operating temperature: 0° to $+90^\circ\text{C}$• High corrosion resistance• Hydrolysis resistant (hot water or water vapor)• Good electrical insulation• Can be used indoors

JOINING TECHNIQUES OF THERMOPLASTIC MATERIALS

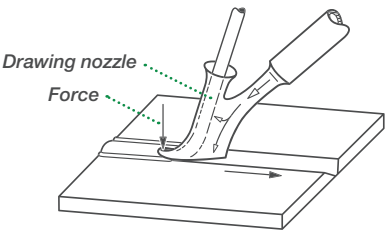
Plastics welding is the most professional and secure bond:

A welded connection results from compatible plastic fittings being bonded by heating and melting techniques.

Hot gas welding

For hot gas welding, a welding filler (e.g. a profile or round wire) is added to the joint zone through the nozzle outlet.

The joining surfaces of the base material and the welding filler are plasticised by hot gas, generally air. The beak-shaped attachment at the end of the nozzle applies the necessary joining pressure. The nozzle guide evenly pre-heats and plasticises the base material and the welding filler.



Note:

The recommended joining technique for all the materials listed here is plastic welding.

PP-H

Polypropylene is characterized by a high chemical resistance, good resistance to stress cracking, and its good thermo-stability. In addition, the material has a high rigidity, hardness and strength.

- Density (specific weight): $\approx 0,93 \text{ g/cm}^3$
- High chemical resistance: esp. against solvents and alcohols
- Flammability: normal flammability
- Operating temperature: 0° to $+90^\circ \text{ C}$
- High corrosion resistance
- Hydrolysis resistant (hot water or water vapor)
- Good electrical insulation
- **Can be used indoors**

PE-HD

Polyethylene is characterized by its high level of toughness and rigidity even at low temperatures. PE-HD has a very good chemical resistance. Above all the material is UV resistant and can be used also at sub zero temperatures.

- Density (specific weight): $\approx 0,95 \text{ g/cm}^3$
- High chemical resistance
- Flammability: normal flammability
- Operating temperature: -50° to $+80^\circ \text{ C}$
- Hydrolysis resistant (hot water or water vapor)
- Good electrical insulation
- UV-resistant
- **Can be used indoors and outdoors**

PP-EL-s

Polypropylene EL Flame Resistant is characterized by the associative properties of PPs and its electrical conductivity. To achieve these overall characteristics, PPs is treated with special conductive particles.

- Density (specific weight): $\approx 1,2 \text{ g/cm}^3$
- High chemical resistance: esp. against solvents and alcohols
- Flammability: flame resistant
- Operating temperature: 0° to $+90^\circ \text{ C}$
- High corrosion resistance
- Hydrolysis resistant (hot water or water vapor)
- Electrical conductivity $\leq 10^5 \Omega$
- **Can be used indoors and outdoors**

PVDF

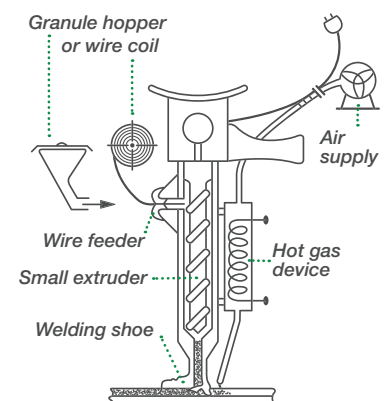
The material PVDF is part of the Fluoropolymers and is characterized by its very high chemical resistance even at higher temperatures. The material has a high rigidity and is insensitive to UV-rays. It has outstanding age-resistance in the air atmosphere. We process raw materials in accordance to FM 4910. Therefore, our products can also be used in clean rooms.

- Density (specific weight): $\approx 1,78 \text{ g/cm}^3$
- High chemical resistance: esp. against halogens and other oxidizing agents
- Flammability: flame resistant in accordance to DIN 4102 B1
- Operating temperature: -30° to $+145^\circ \text{ C}$
- Corrosion resistance
- Good electrical insulation
- UV-resistant
- **Can be used indoors and outdoors**

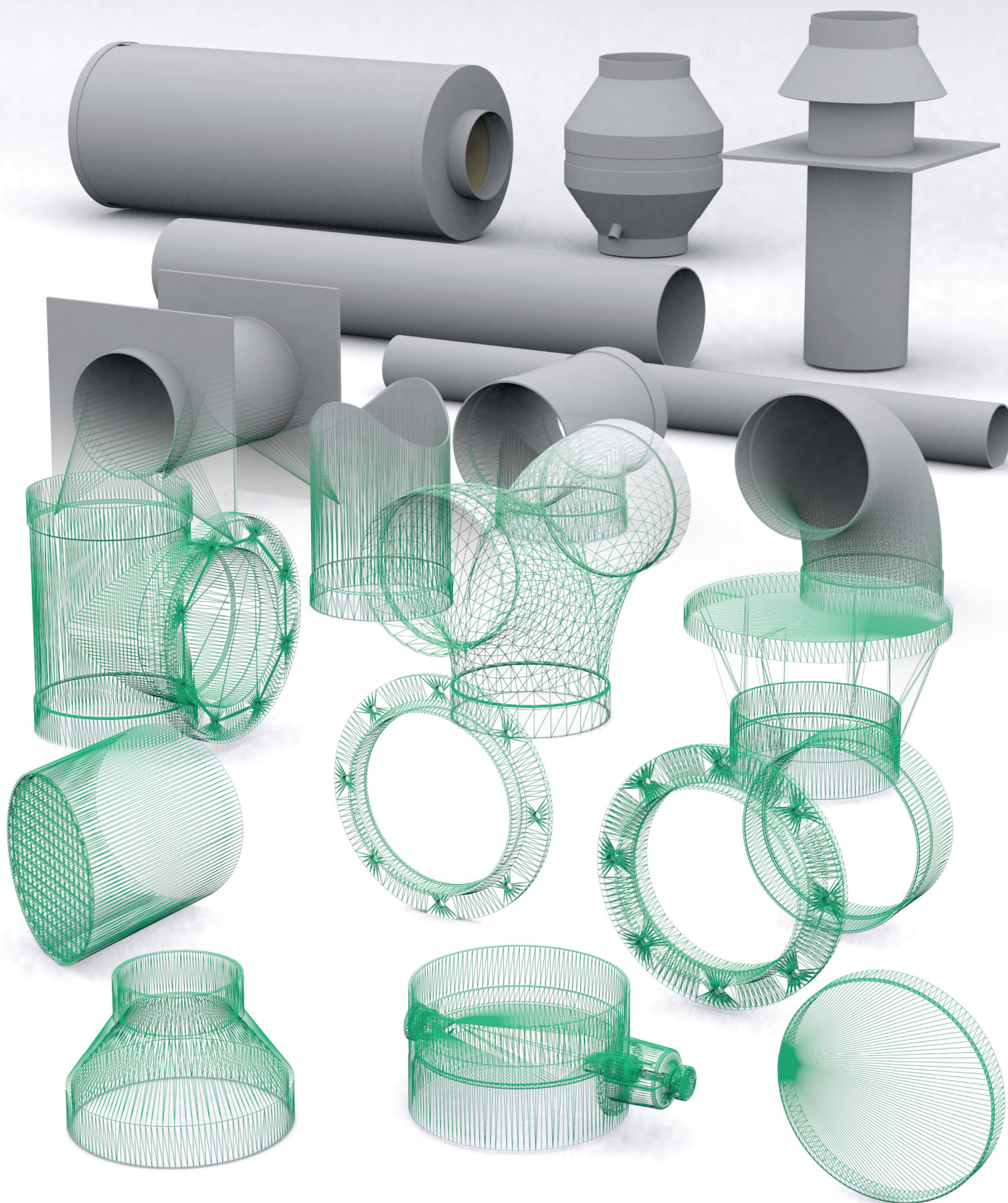
Hot gas extrusion welding

This type of welding is used, among others, for bonding thick-walled fittings and is welded by using a similar welding filler. The extrusion welder is a welder consisting of a small extruder as plasticising unit that may be driven by an electric motor. It is welded with a filler metal similar in type and molding material, which plasticises homogeneously and completely. The joining surfaces are heated by hot air to the welding temperature and a welding shoe distributes and presses on the extruded mass.

The plasticising depth is 0.5 - 1.0 mm, thus achieving shorter working times and greater mechanical strength properties, a higher weld quality and low internal stress as compared to hot gas welding.



100



Complete, fast, economical

Bends • Double sockets • Volume control dampers • Continuous dampers, control dampers • Reducers • Branch outlets
Breeches • Flanges • Flexible connectors • End caps • Condenser deflector housing • Roofheads • Outlet cowls • Through walls
Outlets with grille • Back flow dampers and Lamellar shutters • Saddles • Inlet grilles • Sound attenuators

Materials: PVC-U grey and white, PPs, PP-EL-s, PP-H, PE-HD and PVDF