

# Clean Room Extrusion

Customer-specific solutions for  
sophisticated medical requirements



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## Customer-specific solutions for sophisticated medical requirements

### Multi-layer design and materials

Due to the multi-layer structure of the fabric-reinforced hoses, the advantageous properties of individual layers, e.g. in terms of flexibility, optimized sliding friction and compressive strength, can be matched to each other and intelligently combined in the multi-stage production process. The overall system can thus be optimally adapted to the application-specific requirements.

In addition to biocompatible plastics such as

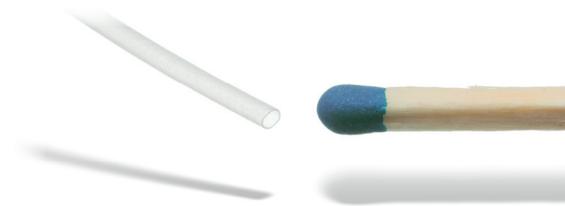
- PP (homopolymer and co-polymer)
- PE (HD and LD)
- PVDF
- TPU
- TPE-A,

plastic-based monofilaments (e.g. made of polyester) as well as stainless steel wires are used as reinforcing fabrics (braidings).

### Typical requirements for fabric-reinforced hoses in medical applications

- Buckling stability and torsional stiffness – even with extremely small product dimensions
- Compressive strength
- Adjustable linear expansion
- Flexibility
- X-ray permeability
- Optimized sliding properties
- Compressive strength

Exemplary illustration of possible product dimensions



### Application example: disposable endoscopy

In recent years, the trend in the field of internal medicine has been developed strongly towards disposable endoscopes, not only for reasons of hygiene. The product-specific advantages of our fabric-reinforced hoses are already widely used by customers in the fields of bronchoscopy and urology.

Now, we want to make this process engineering know-how available to other customers in the field of endoscopy. Here, we are also working with experts from clinical interventional endoscopy on the next generation of disposable endoscopes, e.g. with regard to the following points:

- Application scenario (gastroscopy approx. 9.0 mm O.D., colonoscopy approx. 13.0 mm O.D.)
- Dimensions (outer diameter from 1.5–12.0 mm and wall thicknesses from 0.1–5.0 mm)
- Layer structure ((biocompatible) materials, dimensions and individual product properties)
- Individual color and hardness settings

We support our customers right from the start in the selection of the basic materials and the appropriate production technologies. They are given an initial orientation in a selection matrix in which a large number of possible combinations (e.g. plastic, type of fabric reinforcement (material and braiding)) are available. Following a personal consultation, our experts will work out an optimal overall solution with regard to the subsequent application.

Selection from the multitude of possibilities of our cleanroom extrusion – from transparent standard hoses to fabric-reinforced functional hoses



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