

Fibres and constituents of stockings

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Standard in Centraleurop: RAL GZ 387

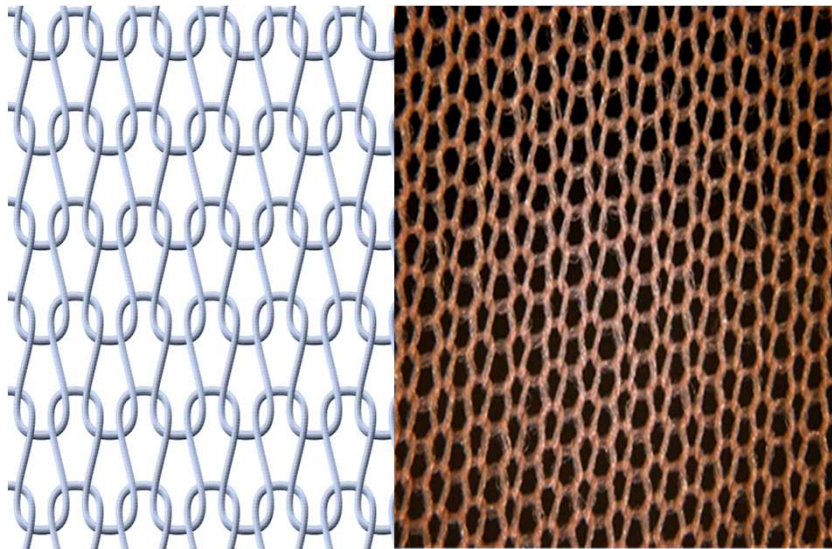
Reichsausschuß für Lieferbedingungen (RAL)

Some criteria of the RAL-Standard

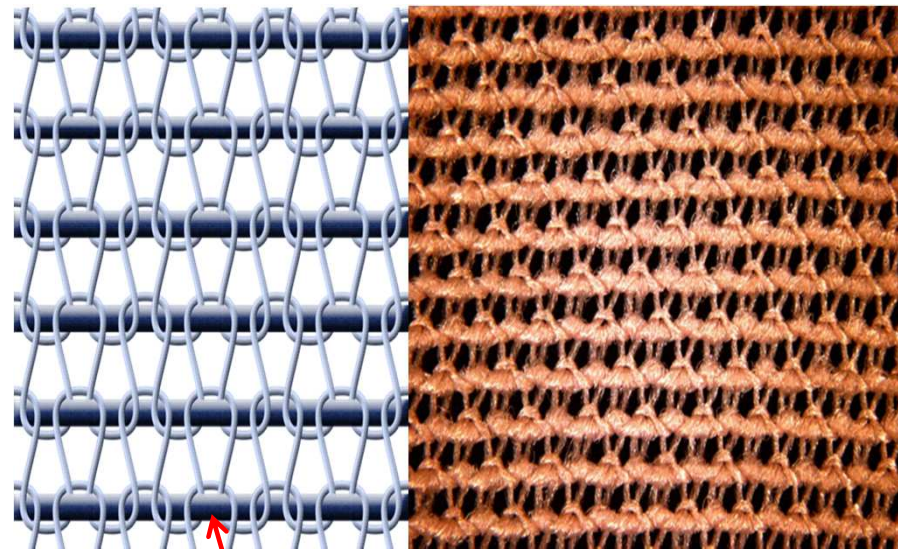
- Kontinuierliches Druckprofil von distal (unten) nach proximal
- Def. Druck im Fesselbereich als sog. Kompressionsklasse (Kkl.)
- **Minimum thickness of the yarn and specifications of the construction**
- Messpunkte und Strumpftypen (AD, AG...)
- **Materials have to be ecologically non-hazardous**
- Geschlossene, gestrickte Ferse

Comparison of „classical knitted fabric“ (pullover, socks...) with Compression knitted fabric

„classical knitted fabric“



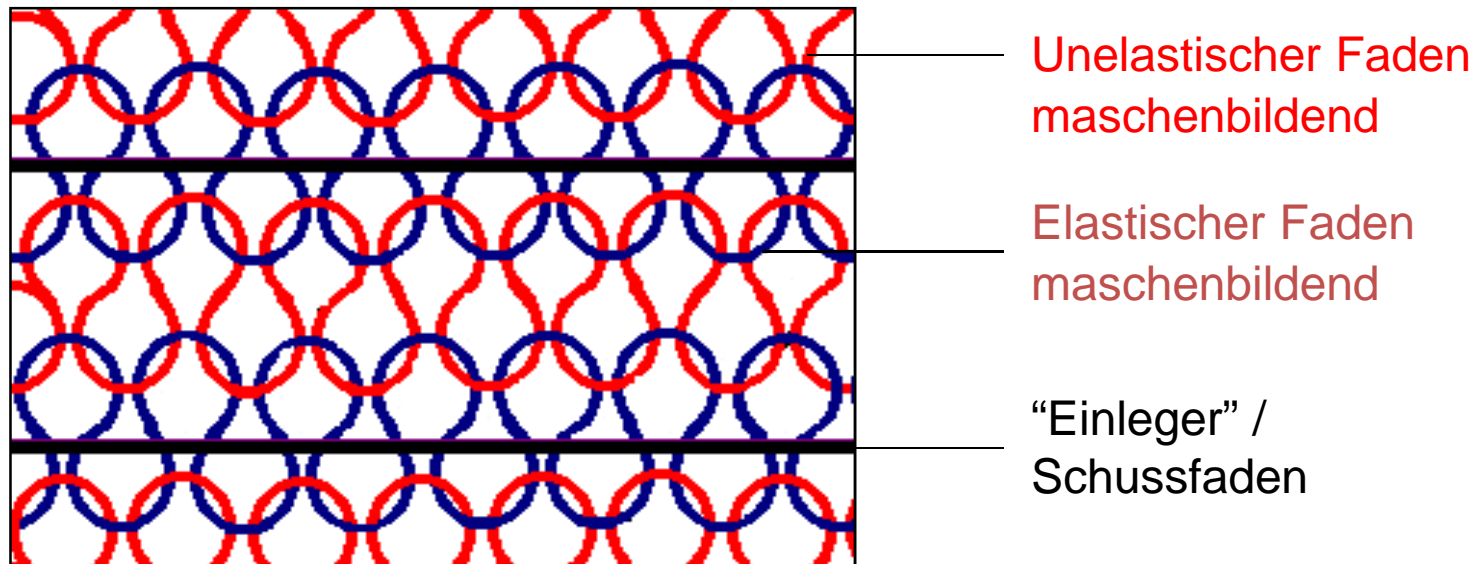
Compression knitted fabric



The difference: the „filling yarn“

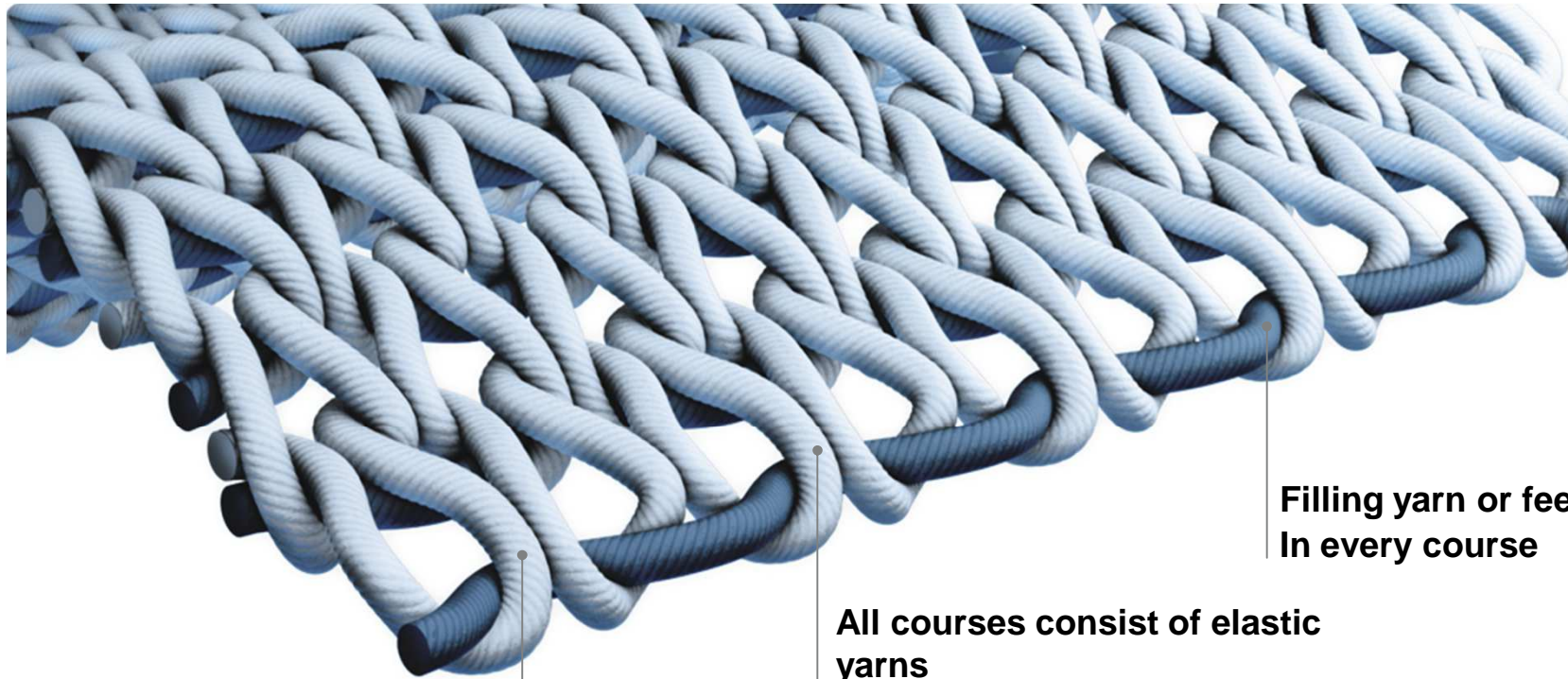
3. Herstellung von MKS

(Theoretische) Vorgaben des RAL-Standards zur Herstellung von MKS



Die heutige Praxis in der Herstellung sieht anders aus

Modern construction of Medical Compression Stockings

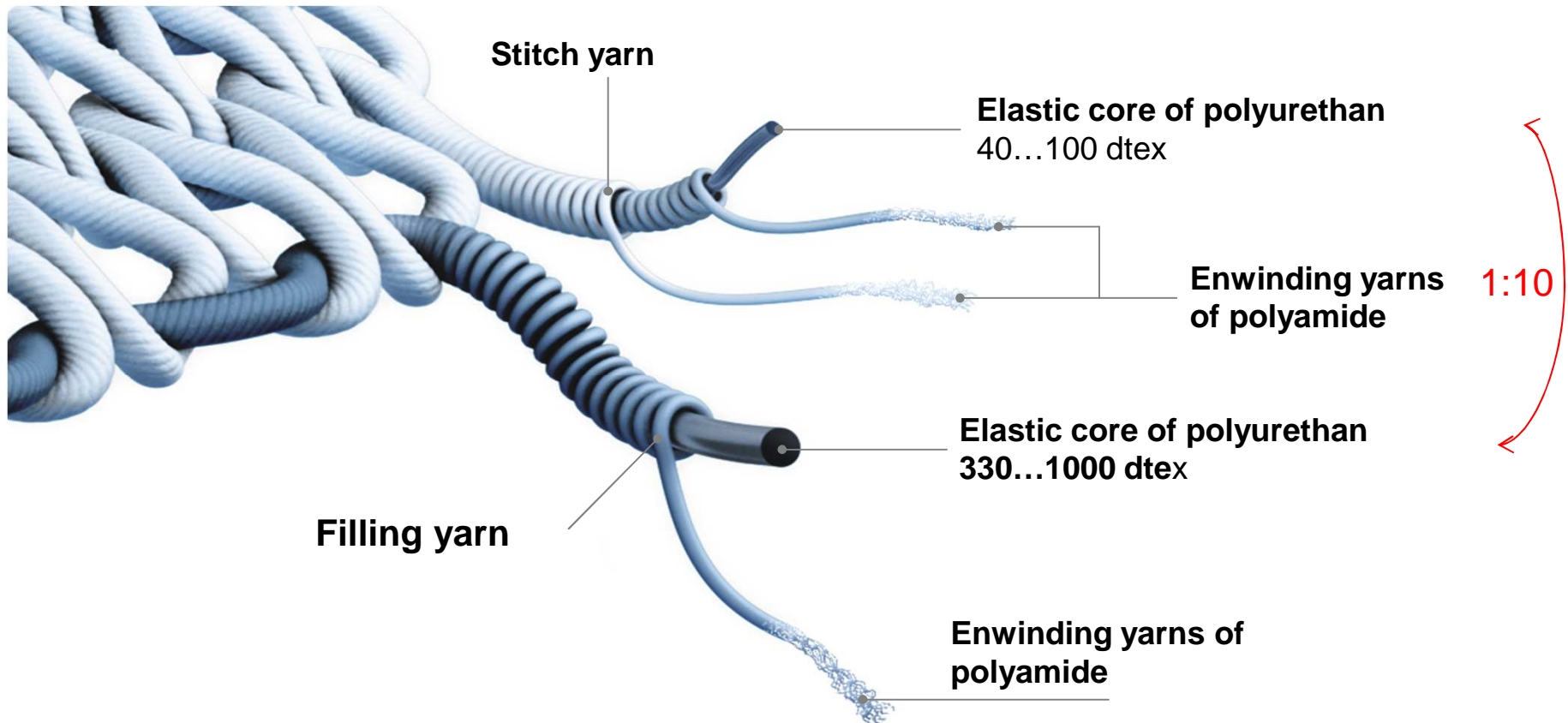


**Knit stitches
(form courses)**

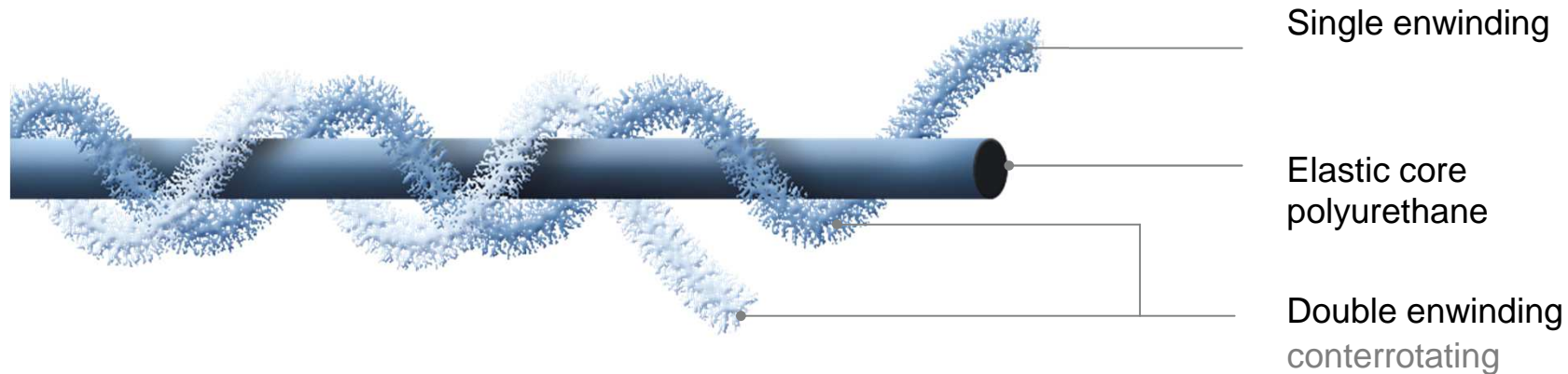
**All courses consist of elastic
yarns**

**Filling yarn or feeder
In every course**

Composition of a Thread



Enwinding technique



- Compression and elasticity depend on the elastic core (polyurethane)
- Polyurethane (Latex oder Lycra) provides a low wearing coomfort and cannot be coloured
- The enwinding yarns are responsible for the wearing comfort, colour and stability

Types of yarn

Faden	Komponente	Stärke	Material (ch)	Marke	Funktion
Knitting stitch courses	core	40...100 dtex	Polyurethan	Lycra	Longitudinal elasticity
	enwinding	40... 200 dtex	Polyamide	Helanca	Comfort of wearing colour Stability (Protection of Lycra)
Filling yarn	core	300... 1000 dtex	Polyurethan	Lycra	Kompression
	enwinding	0... 100 dtex	Polyamide	Helanca	Tragekomfort Farbe Haltbarkeit (Lycra-Schutz)

Finish of textiles

- e.g. antimicrobial finish (e.g.: Ag⁺⁺; 5-Chlor-2-(2,4-dichlorphenoxy)-phenol=Triclosan;)
- preservative agents (parabene=esther of parahydroxy benzoic acid)
- coloration
- skin care by emolients as finish
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All components have to be declared.

Moisturing agents:

- **Urea**
 - **Cocos nucifera**
 - **Squalane**
 - **Passiflora incarnata**
 - **Tocopheryl acetate**
 - **Potassium oleate**
 - **Tocopherol**
 - **Phenoxyethanol**
 - **Methylparaben**
 - **Propylparaben**
 - **Ethylparaben**
 - **Butylparaben**
 - **Sodium Polyacrylate**
 - **Gardenia tahitensis flower extract**
- (13-15% of total weight)**