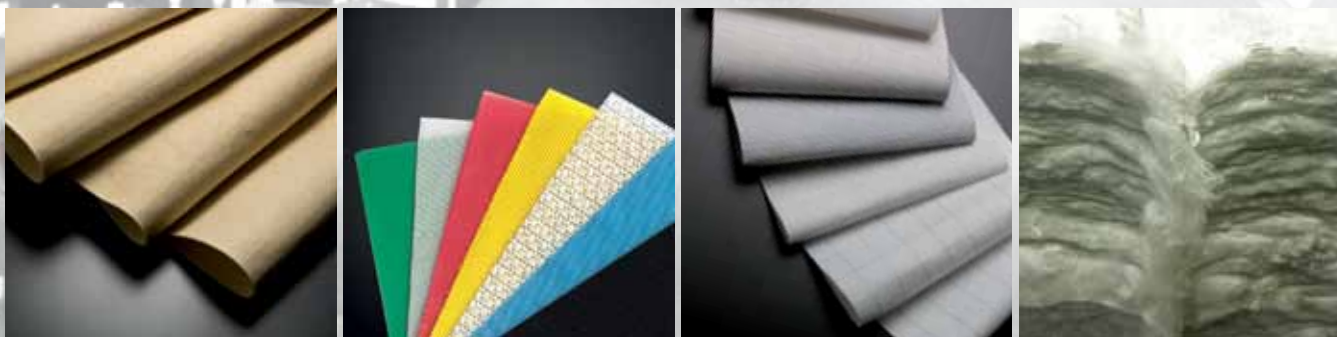


# CHOOSING TESTORI FILTER MEDIA



GAS AND LIQUID FILTRATION

 **testori**<sup>®</sup>  
TESTORI GROUP

Introduction

Testori Group has been operating for over **100 years in the technical textiles field** for **industrial filtration** in production processes and environmental protection installations.

**Testori's core** business is in the **design, production and marketing** of textile items for **gas** and **liquid filtration**. Our needle felts and woven fabrics are supplied as rolls or as ready-made products (bags, multi-channel bags, cloths, discs etc.).



Staple fiber



Yarn

Code/Trade mark	PE	PVC	PP	COTTON
Chemical composition	Polyethylene	Polyvinyl chloride	Polypropylene	Cellulose
Yarn type (A)	F-M	S-F-M	S-F-M	S
Specific gravity g/cm³	0,95	1,35	0,91	1,52
Moisture absorption 20°C H.R. 65%	0,05	0,05	0,05	7-8
Tenacity cN/dtex	5	3	4,5-6	2,5-5
Elongation %	18-30	35-40	35	5-7
Max continuous temperature °C	80	80-90	80-100	90-100
Max temperature (peaks) °C	90	90-100	90-110	110
LOI (limit oxygen index) %	18-20	45	18	18
Chemical resistance (B) strong acids	■■■■■	■■■■■	■■■■■	■
Chemical resistance (B) weak acids	■■■■■	■■■■■	■■■■■	■■
Chemical resistance (B) strong alkalis	■■■■■	■■■	■■■■■	■■■
Chemical resistance (B) weak alkalis	■■■■■	■■■■■	■■■■■	■■■■■
Chemical resistance (B) oxidizing agents	■	■■■■■	■	■■
Hydrolysis (moist heat)	■■	■■■	■■	■■■
Fibres specific solvents	CS <sub>2</sub>	CH <sub>3</sub> COOH CHCl <sub>3</sub> CS <sub>2</sub>	Hydrocarbon chlorinated solvents	H <sub>2</sub> SO <sub>4</sub>

Legend: (A) S=staple; F=multifilament; M=monofilament; (B) ■■■■■=excellent; ■■■■=good; ■■■=fair; ■=poor

## FIBERS

Solid-gas & solid-liquid separation request the use of many different fibers. Testori filter media are applied in a wide variety of industries where the operation conditions must be in accordance with the chemical and mechanical properties of the fibers; for this reason, we process many different raw materials for the production of felts and fabrics:


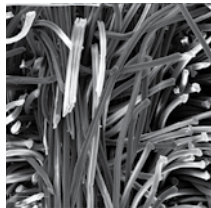




PA	PVDF	PAN (omopolymer)	PES	ECTFE Halar®	PPS	PMIA Nomex®	PIC P84®	PAI Kermel®	PTFE	PEEK Zyex®	GF
Polyamide	Polyvinylidene fluoride	Polyacrylo nitrile	Polyethylene terephthalate	Ethylene chlorotrifluoroethylene	Polyphenylene sulphide	Meta-aramid	Copolyimide	PolyImidamide	Polytetra fluorethylene	Polyether ether ketone	Silica
S-F-M	M	S-F	S-F-M	M	S	S-F	S-F	S	S-F-M	M	S-F
1,01-1,14	1,78	1,15-1,18	1,38	1,68	1,38	1,38	1,41	1,34	2,1	1,32	2,5
0,5-4	0,04	1-2	0,4	0,03	0,6	5-6	3	3-5	0,015	0,1	0
4,5-7,5	3	2,4-6,5	4,5-7,5	1,4	3,0-3,5	5	3,5-4,2	4	1,6	45	10-15
15-35	25	17-42	11-14	20-25	25-35	18-20	25-35	45	15	25	2-4
100-110	110	130	140	150	180-190	200	260	200-220	240-260	250	280-300
120	130	135-145	150	180	200-220	250	280	250	280	290	320
20-26	44	18	20	60	40	32	36	32	95	30	-
■	■■■■■	■■■	■■■	■■■■■	■■■■■	■■	■■	■■■	■■■■■	■■■	■■■
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CH <sub>3</sub> COOH HCOOH H <sub>2</sub> SO <sub>4</sub> / C <sub>6</sub> H <sub>5</sub> OH	HF	HNO <sub>3</sub> CHON(CH <sub>3</sub> ) <sub>2</sub>	H <sub>2</sub> SO <sub>4</sub> / C <sub>6</sub> H <sub>5</sub> NO <sub>2</sub> C <sub>6</sub> H <sub>5</sub> OH	HF	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> Strong acids	H <sub>2</sub> SO <sub>4</sub> NaOH	H <sub>2</sub> SO <sub>4</sub> NaOH	HF	H <sub>2</sub> SO <sub>4</sub>	HF

The above information is based on fiber manufactures' values and is intended for guidance only. Please contact us for more details

## FELTS

Dust removal for gases and fumes is mainly achieved using felts. The **dust type and its granulometry** are the major factors influencing the filter choice. Testori produces felt rolls of different length and according to the customer needs. The fiber choice is strictly linked to the final application and to the process itself (continuous **operating temperature** is the main parameter). We offer a wide variety of **special felts and special treatments**.

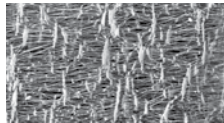
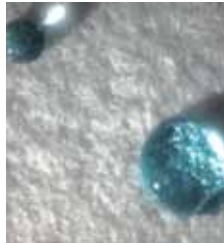
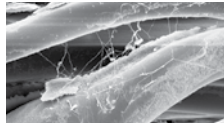
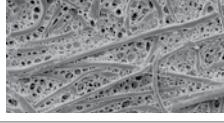
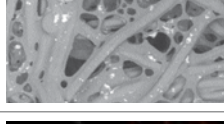

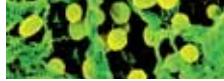

### SPECIAL FELTS

	Description	Fibers	Areal weight range	Benefit	Application	
 MULTILAYER MICROFELT®	<ul style="list-style-type: none"> <li>• Microfibers (up to 0,9 dtex) on the dust side</li> <li>• Alternatively use of multilobal fibers on the dust side; logo</li> </ul>	PES PAN PPS P84®	500÷700 g/m <sup>2</sup>	<ul style="list-style-type: none"> <li>• Controlled low emissions</li> <li>• Better efficiency</li> <li>• Increased bag lifetime</li> </ul>	<ul style="list-style-type: none"> <li>• Cement</li> <li>• Energy and waste to energy</li> </ul>	
 GREENFELT™	<ul style="list-style-type: none"> <li>• Regenerated polyester fibers from PET bottles</li> </ul>	PES	350÷650 g/m <sup>2</sup>	<ul style="list-style-type: none"> <li>• Eco friendly product</li> <li>• Same performance as standard PES needlefelts</li> </ul>	<ul style="list-style-type: none"> <li>• Cement</li> <li>• Vacuum cleaners</li> </ul>	
ANTISTATIC	<ul style="list-style-type: none"> <li>• Epitropic fibers blended with standard ones in the batt to improve conductivity of the finished felt</li> <li>• For better performances use of stainless steel fibers in the scrim</li> </ul>	PP PES PAN PPS PMIA	350÷650 g/m <sup>2</sup>	<ul style="list-style-type: none"> <li>• Surface resistivity even below 10<sup>4</sup> Ohm</li> </ul>	<ul style="list-style-type: none"> <li>• Food &amp; agrochemicals</li> <li>• Chemistry</li> <li>• Wood</li> </ul>	
FIRETES	<ul style="list-style-type: none"> <li>• Layered structure with fibers of pre-oxidized acrylic polymer on dust side blended with finer fibers and standard 2,2dtex fibers on the support batt</li> </ul>	PES	500÷550 g/m <sup>2</sup>	<ul style="list-style-type: none"> <li>• Increased resistance to sparks or any incandescent particle</li> <li>• Increased bag lifetime</li> </ul>	<ul style="list-style-type: none"> <li>• Steelworks &amp; foundries</li> </ul>	



## SPECIAL TREATMENTS

Our felts are provided with standard glazing (surface thermal smoothing) or singeing (treatment with flame). Furthermore we apply the following special treatments.

	Description	Fibers	Benefit	Application	
ePTFE MEMBRANE (Bonding)	<ul style="list-style-type: none"> <li>Expanded PTFE membrane coating on the dust side</li> </ul>	PES / PAN PPS PMIA / GLASS PTFE	<ul style="list-style-type: none"> <li>Controlled low emissions</li> <li>Better efficiency</li> <li>Good cleanability</li> </ul>	<ul style="list-style-type: none"> <li>Cement</li> <li>Energy &amp; waste to energy</li> <li>Chemistry</li> <li>Food and agrochemicals</li> </ul>	
KLEENTES	<ul style="list-style-type: none"> <li>Fluorinated resins by bath impregnation of the felt</li> </ul>	PP PES PAN	<ul style="list-style-type: none"> <li>Water repellency</li> <li>Better cake release</li> <li>Suitable for sticky dust</li> </ul>	<ul style="list-style-type: none"> <li>Cement</li> <li>Steel works &amp; foundries</li> <li>Ceramic; chemicals; non-ferrous metals; metallic plating</li> </ul>	
RHYTES	<ul style="list-style-type: none"> <li>Fluorinated and PTFE resins (high concentration) by bath impregnation of the felt</li> </ul>	PES PAN / PPS PMIA / P84®	<ul style="list-style-type: none"> <li>Water and oil repellency</li> <li>Better cake release</li> <li>Suitable for sticky dust</li> </ul>	<ul style="list-style-type: none"> <li>Cement</li> <li>Energy &amp; waste to energy</li> <li>Asphalts; chemicals; non-ferrous metals</li> </ul>	
MANTES	<ul style="list-style-type: none"> <li>PTFE resins by bath impregnation of the felt</li> </ul>	PAN / PPS PMIA P84®	<ul style="list-style-type: none"> <li>Water and oil repellency</li> <li>Very good cake release</li> <li>Increased bag lifetime</li> </ul>	<ul style="list-style-type: none"> <li>Cement</li> <li>Energy &amp; waste to energy</li> <li>Aluminum; mining; non-ferrous metals</li> </ul>	
NOVATES	<ul style="list-style-type: none"> <li>Polyurethane foam deep coating</li> <li>Suitable for continuous operating temperature up to 140°C</li> </ul>	PES PAN PMIA	<ul style="list-style-type: none"> <li>Better filtration efficiency</li> <li>Very low emissions even below 1 mg/Nm³</li> </ul>	<ul style="list-style-type: none"> <li>Cement</li> <li>Steel works &amp; foundries</li> <li>Asphalt</li> <li>Chemicals</li> </ul>	
SUPERNOVATES	<ul style="list-style-type: none"> <li>Copolymer foam deep coating suitable for temperature up to 200°C</li> </ul>	PPS	<ul style="list-style-type: none"> <li>Better filtration efficiency</li> <li>Very low emissions even below 1 mg/Nm³</li> </ul>	<ul style="list-style-type: none"> <li>Energy &amp; waste to energy</li> </ul>	
EKU	<ul style="list-style-type: none"> <li>Special deep bath finishing suitable for temperature up to 180°C</li> <li>Protects the filter media by preventing the heat transfer from the spark to the fiber</li> </ul>	PES PAN PPS	<ul style="list-style-type: none"> <li>Increased resistance to sparks or incandescent particles</li> <li>Increased bag lifetime</li> </ul>	<ul style="list-style-type: none"> <li>Steel works &amp; foundries</li> <li>Special applications</li> </ul>	
AgTes	<ul style="list-style-type: none"> <li>Antibacterial treatment</li> </ul>	PES	<ul style="list-style-type: none"> <li>Bactericide and bacteriostatic properties</li> <li>Washing resistance</li> </ul>	<ul style="list-style-type: none"> <li>Industrial vacuum cleaners</li> </ul>	

## WOVEN FABRICS

Many industrial fields require filter media for the **solid-liquid separation** (e.g. waste water treatment or recovery of active principles in pharmaceutical industry). The filter media act as physical barriers for the particles in the liquid suspension (at a certain pressure gradient). The fiber choice of the filter media is strictly linked to the technical requirements of the application and of the process itself: the resistance to the **chemical environment** is the main constraint.

The fibers generally applied are: **polypropylene, polyester, polyamide, cellulose, polyvinylidene fluoride (PVDF), meta-aramid, polytetrafluorethylene (PTFE), polyether ether ketone (PEEK), polyphenylene sulphide (PPS)**.

Testori produces ready-made items (cloths, bags, discs...) and also **rolls in different length and width** according to the customer needs:

- Loom state fabric width from 110 to 295 cm
- Areal weight from 100 g/m<sup>2</sup> to 700 g/m<sup>2</sup>

The different **yarn types and the wave patterns are combined to optimize the filter media features** (filtration rate, retention capacity, resistance to binding and easy cake release).








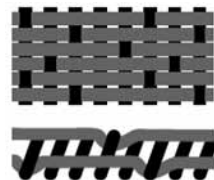
Mono/multifilament woven fabrics



Woven fabrics



Antistatic fabrics

	Staple	Multifilament	Monofilament
YARN TYPES	<ul style="list-style-type: none"> <li>Low tensile strength but large surface for the optimum retention of the smallest particles</li> <li>High filtration efficiency</li> <li>High resistance to wear</li> </ul> 	<ul style="list-style-type: none"> <li>High tensile strength</li> <li>Good retention capacity</li> <li>Good cake release</li> </ul> 	<ul style="list-style-type: none"> <li>Particularly smooth</li> <li>Excellent cake release and a low risk of blinding</li> <li>Low retention capacity of particles</li> </ul> 
	Plain	Twill	Satin
WEAVE PATTERNS	<ul style="list-style-type: none"> <li>Very simple structure with the same appearance of both sides of the fabric</li> <li>High retention capacity and low resistance to blinding,</li> <li>Good cake release properties</li> </ul> 	<ul style="list-style-type: none"> <li>Fabric pattern with a diagonal structure; the two sides may be differentiated</li> <li>Very good mechanical resistance</li> <li>Good resistance to blinding and effective cake release</li> </ul> 	<ul style="list-style-type: none"> <li>Smooth and bright appearance; the cake side can be very smooth and flat</li> <li>Excellent cake release</li> <li>Medium retention capacity and very good resistance to blinding</li> </ul> 

#### FILTER MEDIA FEATURES

	Weave patterns			Yarn types		
	Plain	Twill	Satin	Staple	Multifilament	Monofilament
Filtration rate	■	■■	■■■	■	■■	■■■
Retention capacity	■■■	■■	■	■■■	■■	■
Resistance to blinding	■	■■	■■■	■	■■	■■■
Cake release	■	■■	■■■	■	■■	■■■



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