

Nanofiber Technology

Finetex Technology

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Corporate Overview

Finetex EnE, Inc. was founded in 2004 after decade of research. We specialize in producing nano-scale fibers and structures through our patented electrospinning process. Our products can be manufactured on a full industrial width in mass scale. Headquartered in Seoul, Korea, with production facilities in Asia and North America, Finetex is being recognized as the “best in class” nanofiber company worldwide.

The choice is Finetex as we are the pioneer and the global leader in nanofiber technology. Our nanofibers are being applied in various applications and markets. We are redefining the fine fiber markets by significant improvements in performance and economy over existing membranes and conventional technology.

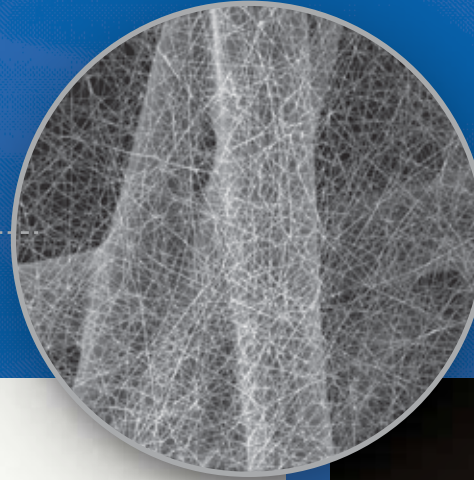
It is no coincidence that Finetex’s nanofibers are now being widely adopted into the most challenging environments for both textile and filtration markets. The most compelling opportunities for our technology can be found in various filtration applications including gas turbine, air pollution control, engine filtration, industrial air, HVAC, liquid filtration, microelectronic particle filtration, and functional textile applications to waterproof, breathable and stretchable fabric and clothing.

Advantages

- › Extended lifetime
- › Excellent surface filtration
- › Excellent water repellency
- › Highest Performance F7 – E10 Efficiency for pulsed applications
- › Highest Performance F7 – E12/H12 Efficiency for static applications

Applications

- › Power plants: Gas, Coal, Petroleum, Diesel Generator



Gas Turbine Filter Media

Air Intake Filtration

Technoweb™ X Series

Finetex is proud to introduce the Technoweb X series of filter medias now recognized globally as the best-in-class nanofiber filtration technology with exceptional performance in clean air intake systems for the Gas Turbine power industry. Finetex's patented the nanofiber technology together with proprietary, custom engineered nonwoven substrate, the final product is truly second to none. Technoweb X medias are constructed and available for all pulsed, static or "static-pulse" gas turbine inlet filtration applications found in various regions around the world.

As global test standards such as EN779:2012 and ASHRAE 52.2 continue to evolve and become more challenging, Technoweb X is well positioned to meet the demand. Available in cellulose/polyester blend and synthetic based media ranging from M7 to

E12, Technoweb X, meets and exceeds these high expectations and is one of the few media technologies that is proven to be compliant with the ARAMCO high dust load ing tests.

Available only from Finetex, Technoweb X offers true mechanical filtration. When used in pulse cartridges, the small pore structure created by the nanofibers provides the highest surface filtration efficiency and eliminates the risk of high, depth loading pressure drop, commonly found with wet laid media such as glass and/or electro-static meltblown media. Its true mechanical filtration allows the nanofiber technology to be unaffected by the latest environmental demands from coastal humidity and moisture and retains its highly efficient performance after exposure to neutralizing agents.

Product list

Cellulose

Class	Grade	Basis Weight (g/m ²)	Thickness (mm)	Air Perm (cfm@125Pa)	Pressure Drop (mmH ₂ O, 32l/min)
F7	X3112	110	0.55	30	5.0
F8	X3212	110	0.55	27	5.5
F9	X3312	110	0.55	23	6.5

Synthetic

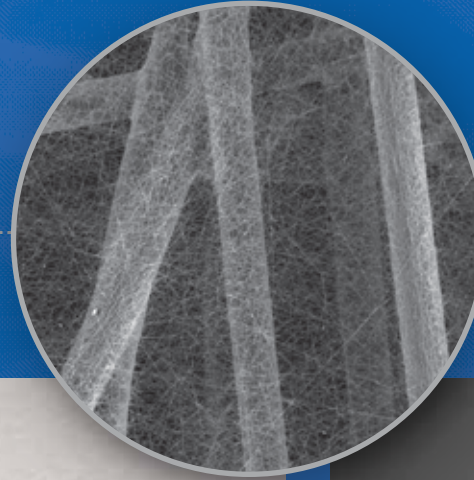
Class	Grade	Basis Weight (g/m ²)	Thickness (mm)	Air Perm (cfm@125Pa)	Pressure Drop (mmH ₂ O, 32l/min)
F7	CV470MC	130	0.45	100	1.5
F8	CV470MC	130	0.45	80	2.0
F9	CV470MC	130	0.45	60	2.5
	X7235C	160	0.60	50	3.5

Advantages

- › Excellent emission control
- › Excellent surface filtration of fine particulates
- › Low operating pressure drop over life of filter
- › Excellent pulsability
- › Increased productivity of dust collector
- › Reduced operating costs of dust collector
- › Best in class filtration

Applications

- › Chemical & Pharmaceutical
- › Cement & Lime
- › Food industries
- › Mineral processing
- › Metal refining & Processing



Air Pollution Control Filter Media

Technoweb™ V Series

The Technoweb V series of high performance filter medias are engineered specifically for the use in pulse-jet baghouses and industrial dust collection systems. The Technoweb V media incorporates the latest nanofiber technology as a surface filtration medium. The gradient density structure, with the fine fibers managing the dust cake, provides superior operating performance over conventional needlefelt, woven and spunbond filter media.

The Technoweb V media uses Finetex's unique and patented nanofiber (150-300nm) technology with an average pore size 10x smaller than most traditional nonwoven filter media. The smaller pore structure located on the dust inlet side, allows the dust cake to form on top of the nanofiber surface versus being clogged in the pores of the substrate.

Product list

Cellulose

Class	Grade	Basis Weight (g/m ²)	Thickness (mm)	Air Perm (cfm@125Pa)	Pressure Drop (mmH ₂ O, 32l/min)
F9	V3315FR	127	0.45	24	6.5

» Hydrophobic and oleophobic versions available

This ideal arrangement of fine fibers, allows low operating pressure drop over the life of the filter, while attaining maximum filtration of particulates.

Technoweb V, available only from Finetex, is primarily designed for the use in ambient temperature dust collector applications up to 135deg.C (275deg.F). The technology is available for the use in traditional round bag filters, pleated bags and pleated cartridge configurations.

Synthetic

Class	Grade	Basis Weight (g/m ²)	Thickness (mm)	Air Perm (cfm@125Pa)	Pressure Drop (mmH ₂ O, 32l/min)
F7	CV270MC	90	0.38	100	1.5
	CV470MC	130	0.45	100	1.5
	V7540D7C	160	0.65	90	2.0
F8	CV280MC	90	0.38	80	2.0
	CV480MC	130	0.45	80	2.0
	V7560D7C	160	0.65	75	2.0
F9	CV200MC	90	0.38	65	2.5
	CV400MC	130	0.45	60	2.5
	CV705MC	245	0.65	40	4.0
	V7570D7C	160	0.65	50	3.5
E10	CV715MC	245	0.65	30	5.0

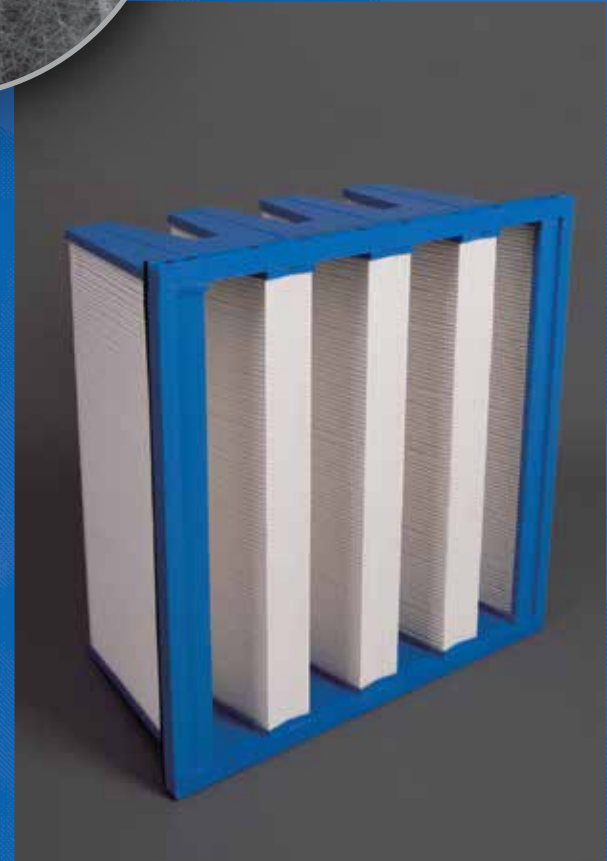
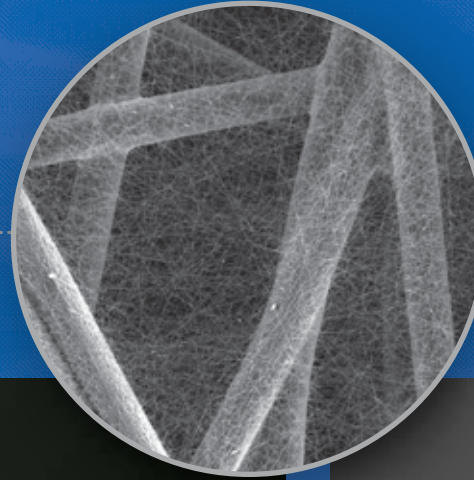
» Hydrophobic and oleophobic versions available
 » Corrugated and non-corrugated versions available

Advantages

- › Meets EN779-2012 and coming ISO 16890 standard
- › Typically 40% lower pressure drop than glass fiber
- › Energy savings to meet Eurovent A+ standard
- › Robust and easy to pleat with all pleaters
- › Stiffer than glass fiber meaning less glue bead separation needed
- › 100% Polyester

Applications

- › Industrial HVAC filter
- › Large commercial HVAC
- › Clean room: HEPA, ULPA grades
- › Cabin air & Appliances



HVAC Filter Media

Technoweb™ Pro

Technoweb Pro is the state of the art technology now available to the HVAC filtration market. Incorporating the use of nanofiber technology, Technoweb Pro provides the highest filtration efficiency and lowest pressure drop using true mechanical filtration. Made from Finetex's patented nanofiber technology, Technoweb Pro is free of glassfiber, fluorochemical and electro-static while still performing at an exceptional level.

The Technoweb Pro media are custom engineered composite filter media designed to operate in the most challenging HVAC applications with filtration from small pore structures formed by nanofibers. Depending upon the application, the fine fiber layer can be located on the upstream or downstream surface of the media, but

usually would be strategically located as a middle layer of the composite structure.

Ranging in filtration performance from F7 up to H13, Technoweb Pro is insensitive to conditions such as moisture and retains its filtration performance and low operating pressure drop, over the life of the filter.

As the market continues to evolve away from historical electrostatic and glass fiber media due to both performance and environmental concerns, the Technoweb Pro, nanofiber mechanical filtration technology is well positioned and is rapidly becoming the filter media of choice in the global HVAC market.

Product list

Synthetic (EN779:2012)

Class	Grade	Basis Weight (g/m ²)	Thickness (mm)	Air Perm (cfm@125Pa)	Pressure Drop (mmH ₂ O, 32l/min)
F7	P7540M1S	85	0.28	100	1.5
F8	P7560M1S	85	0.28	80	2.0
F9	P7570M1S	85	0.28	60	2.5

Synthetic (EN1822)

Class	Grade	Basis Weight (g/m ²)	Thickness (mm)	Air Perm (cfm@125Pa)	Pressure Drop (mmH ₂ O, 32l/min)
E10	P7585M1S	85	0.28	28	5.5
E11	P7595M1S	85	0.28	14	12.0
E12	P7512M1S	85	0.28	11	15.0
H13	P7513Q	190	0.70	9	18.0

>> Hydrophobic and oleophobic versions available

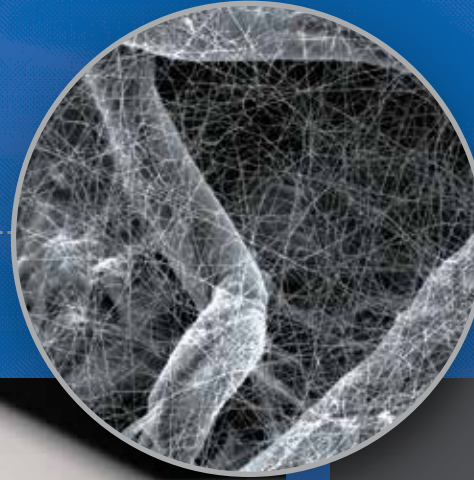
>> Different weights (85gsm, 100gsm, 120gsm), thickness, stiffness products are available

Advantages

- » High performance & Low environmental load
- » Higher particulate removal
- » Longer replacement interval

Applications

- » Heavy duty & Passenger vehicles
- » Cabin air filter, Fuels, Lubricant, Coolant etc.

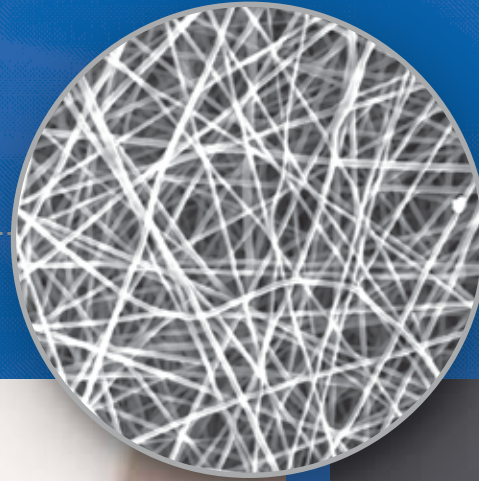


Advantages

- › Superior flux rates compared to traditional membranes
- › Very narrow pore size distribution
 - Available pore size ranging from 0.2 micron to 3 micron
- › Unique physical and mechanical performance

Applications

- › Food & Beverage
- › Wastewater treatment
- › Micro-electronics
- › Biopharmaceutical



Liquid Filtration

Microfiltration

Technoweb™ FILTERPRO

Technoweb Filtrepro is a complete range of liquid filtration nanofiber based membranes, engineered specifically for the microfiltration industry. The membranes are made from Nylon, PVDF and PU polymer using Finetex's patented nanofiber manufacturing process. Technoweb Filtrepro provides technically superior filtration efficiency, with high flux rate and low pressure drop compared with traditional cast or extruded films found in the market.

Technoweb Filtrepro is available in a wide range of micro size membranes from 0.2, 0.45, 0.7 up to 3.0 micron. With the extremely tightly controlled and uniform pore structure, the highest level of filtration efficiency from bacterial challenge can also be attained.

Product list

Membrane Type

Polymer	Grade	Basis Weight (g/m ²)	Thickness (μm)	Air Perm (cfm@125Pa)	Pore Size (μm)	
					Mean Flow	Max Bubble
PU	F10400	7	12	0.30	0.35	0.66
Hydrophilic PU	F20400	8	11	0.59	0.45	0.73
Hydrophilic PVDF	F40200	4	5	0.54	0.20	0.29
PVDF	F50200	4	4	0.50	0.20	0.27

With this in mind, we have found the superior membrane properties of Finetex Technology is quickly being adopted by most major microfiltration cartridge producers and are replacing the currently available membranes.

Coating Type

Polymer	Grade	Basis Weight (g/m ²)	Thickness (mm)	Air Perm (cfm@125Pa)	Pore Size (μm)	
					Mean Flow	Max Bubble
Hydrophilic PU	F20703A	30	0.10	3.5	0.7	1.5
	F21003A	30	0.10	11.0	1.0	7.0
	F23003A	30	0.10	17.0	3.0	5.0
PES	F30703A	30	0.07	5.0	0.7	1.5
	F31003A	30	0.07	11.0	1.0	1.6
	F33003A	30	0.07	32.0	3.0	8.0
Hydrophilic PVDF	F40803A	30	0.10	15.0	0.8	3.0
	F43003A	30	0.10	36.0	3.0	10.0
PVDF	F51003A	30	0.10	12.0	1.0	1.5
	F50712N	120	0.24	3.5	0.7	3.0
	F51012N	120	0.24	7.0	1.0	4.0
	F53012N	120	0.24	12.0	3.0	6.0
NYLON	F60203A	30	0.10	0.7	0.2	0.3
	F60203K	30	0.15	1.1	0.2	0.3
	F60207K	70	0.34	1.1	0.2	0.3

Advantages

- » Highly breathable & Air permeable
- » Waterproof & Windproof
- » Light weight & Soft touch
- » Stretchable for active comfort
- » Less noise than a traditional technical textile

Applications

- » Outdoor wear
- » Ski / Board / Golf wear
- » Active / Casual wear
- » Denim / Wool
- » Shoes
- » Accessories: Headwear, footwear, gloves, etc.
- » Professional performance outwear
 - Protective and Military



Technical Textile

Waterproof & Breathable

Nexture™

Finetex is now redefining the performance apparel market with its revolutionary nanofiber based waterproof, stretchable, air permeable nanofiber membrane.

Nexture is changing the world of waterproof breathable garments as we have known them after more than 30 years. When laminated between an outwear shell or fleece fabric and inner liner fabric, Nexture offers a real technology paradigm shift as it truly redefines comfort level to the wearer. By providing a membrane that is both air permeable and waterproof, Nexture offers an unmatched level of comfort to the wearer by allowing the body's humidity and sweat to immediately pass through the film and at the same time serve as barrier to wind and rain.

The elasticity, soft to touch and lightweight properties of the film, not only ensure maximum comfort, but enhance protection as well. These characteristics are made possible by the uniform micro-porous, highly dense structure of the film.

Nexture, available only from Finetex, is available at various performance levels from basic windproof up to fully waterproof. The versatile nature of the technology offers fabric and garment designers tremendous functionality and flexibility and Nexture has now been adopted by many of the world's leading performance outerwear brands.

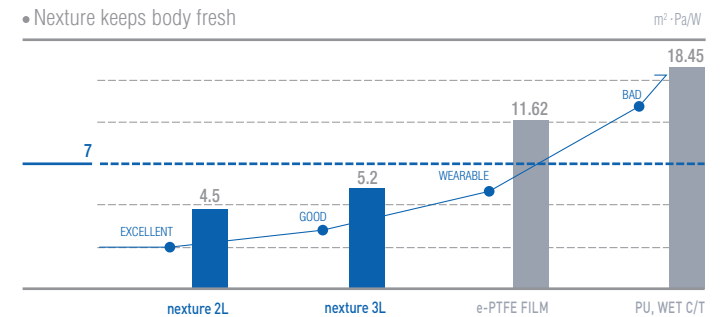
Air Permeability

Nexture gives you a new experience like you have never experienced ever before. Excellent air permeability allows your body feeling cool and fresh during workout or any outdoor activities.

Freshness (R.E.T. : Resistance to Evaporative Transmission)

The evaporative resistance is a measure of moisture permeability which affects the latent heat transfer from the skin through the clothing layer and affects evaporative heat loss from skin surface. The comfort level can be translated with R.E.T. measurement, and any number below '7' represents comfort and lower number translates to 'bigger comfort'.

Nexture demonstrated excellent level of breathability and air/moisture permeability



Casual & Outdoors

4-way Stretchable & Breathable Waterproof



Nexture's casual & outdoors is going to bring you this new generation of waterproof & breathable fabric, Nexture which not only blocks wind and water like a hardshell, but also is breathable, stretchy, soft and quiet like a softshell. By increasing air exchange in the fabric it dramatically improve the active environment within the garment, users will be drier inside in a wide range of activities and exertion levels than ever before.

Product list

Item	Composition		Width (inch)	Weight (g/m ²)	WP (mmH ₂ O)	AP (cm ³ /cm ² /sec)	MVTR (gr/m ² /24hr)
	face	back					
FT-KIK20EMACS	P100%	P100%	57/59	197	7,000	0.426	9,000
402-039C	P100%	P100%	57/59	143	7,000	0.280	9,000
FT-3011RB-3L	N82% PU18%	P100%	57/59	112	3,000	0.722	8,000

Denim



Nexture's denim is fashionable denim fabrics which is well integrated with nano membrane so that they can be used not only for casualwear but also for sportswear.

3L denim fabrics are quite distinguishable from conventional bonded denim fabrics due to excellent windproofness & high breathability.

Product list

Item	Composition		Width (inch)	Weight (g/m ²)	WP (mmH ₂ O)	AP (cm ² /cm ² /sec)	MVTR (gr/m ² /24hr)
	face	back					
307-049A	P20% C78% PU2%	P100%	49/51	410	6,000	0.329	8,000
308-025A	C97% PU3%	P100%	49/51	489	6,000	0.433	8,000

Wool

Escape the Confines of Traditional Wool



Nexture's wool fabrics features excellent windproofness & warmth throughout the cutting -edge of nano membrane.

It is well balanced with Nano membrane's functionality so that it can be extremely stretchable while maintaining waterproofness & windproof, but also having breathability that comes from the unique air-permeability.

Product list

Item	Composition		Width (inch)	Weight (g/m ²)	WP (mmH ₂ O)	AP (cm ³ /cm ² /sec)	MVTR (gr/m ² /24hr)
	face	back					
NXT1409-004	Wool60% Silk40%	P100%	56/58	137	7,000	0.265	9,000
NXT1409-005	Wool60% Silk40%	P100%	56/58	138	7,000	0.254	8,000

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