

Filter Element Grades



Filter Elements for all Grades of Filtration

Compressed air systems continually challenge filtration with moisture, solid particulates, and liquid oil or oil vapors. FIL Series filter elements represent state-of-the-art filter designs which allow for custom filtration at every installation.

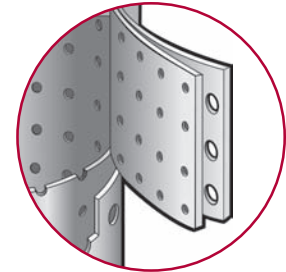
- Inside-to-out air flow maximizes filtration efficiency
- Two-stage filtration ensures long element life
- Stainless steel inner and outer cores add structural integrity
- Uniquely blended coalescing fiber media design
- Coated foam sleeves provide protection against chemical attack
- 100% silicone free, withstand temperatures to 150°F (66°C)

Grade A - Water Separator

Installation: after an air compressors' (or a stand-alone) aftercooler

Design: One-stage filtration with two stainless steel orifice tubes. Labyrinth style air flow path removes liquid water by forcing abrupt directional changes.

Performance*: Handles bulk liquid inlet loads to 30,000 ppm w/w and provides 10 micron solid particulate separation. Efficient to flows as low as 5% of rated flow.

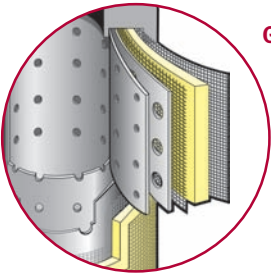


Grade B - Separator/Filter

Installation: after an air compressors' (or a stand-alone) aftercooler or as a prefilter to a refrigerated dryer

Design: Two-stage filtration with first stage of two stainless steel orifice tubes which remove bulk liquids and solid particulates to 10 micron. Second stage has in-depth coalescing fiber media which captures solid particulates to 3 micron.

Performance*: Handles bulk liquid inlet loads to 25,000 ppm w/w and provides 3 micron solid particulate filtration.

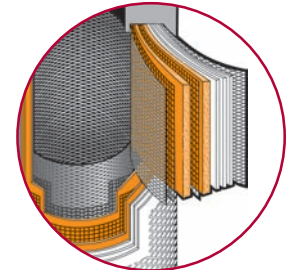


Grade C - General Purpose Filter

Installation: 1 micron particulate prefilter for refrigerated dryers and high efficiency oil removal filters.

Design: Two-stage filtration with a first stage of multiple layers of fiber media which pre-filter the air. Second stage has in-depth coalescing fiber media which coalesces oil aerosols and removes finer particulates to 1 micron.

Performance*: Handles bulk liquid inlet loads to 2,000 ppm w/w, provides 1 micron solid particulate filtration and oil removal to 1 ppm.

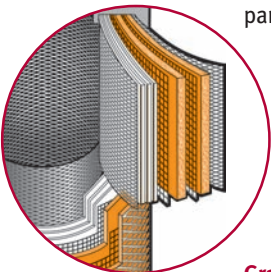


Grade D - Dry Particulate Filter

Installation: Dry, solid particulate afterfilter for heatless desiccant dryers

Design: Two-stage filtration with life-prolonging outside/in air flow with first stage of alternate layers of fiber media and a media screen capturing large particulates. Second stage captures finer particulates. Not designed for any liquid loading.

Performance*: Provides 1 micron solid particulate filtration of desiccant dust.

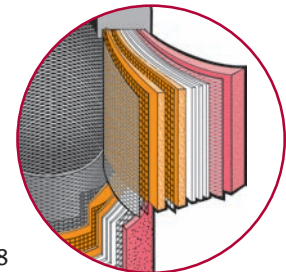


Grade E - High Efficiency Oil Removal Filter

Installation: Prefilter to desiccant and membrane dryers, afterfilter to refrigerated dryers and stand-alone oil removal at the point-of-use of compressed air.

Design: Two-stage filtration with a first stage of multiple layers of fiber media which prefilter the air. Second stage has in-depth coalescing fiber media which coalesces oil aerosols. Includes an outer-coated, closed cell foam sleeve.

Performance*: Handles bulk liquid water inlet loads to 1,000 ppm w/w and provides 0.008 ppm oil aerosol removal and 0.01 micron solid particulate separation.

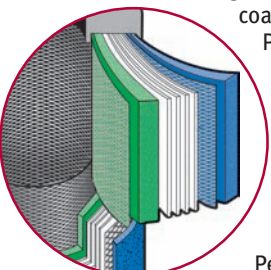


Grade F - Maximum Efficiency Oil Removal Filter

Installation: Prefilter to desiccant and membrane dryers with a Grade C prefilter, oil-free air applications.

Design: Two-stage filtration with a first stage of a coated, closed-cell foam sleeve which acts as a prefilter and flow disperser. Second stage has in-depth coalescing fiber media which coalesces fine oil aerosols. Includes an outer-coated, closed cell foam sleeve.

Performance*: Handles bulk liquid water inlet loads to 100 ppm w/w and provides 0.0008 ppm oil aerosol removal and 0.01 micron solid particulate separation.



Grade G - Oil Vapor Removal Filter

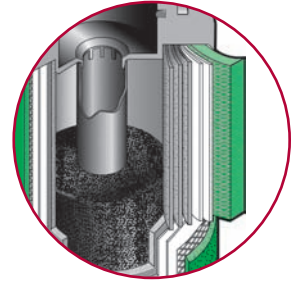
Installation: Afterfilter to high efficiency liquid oil removal filters for true oil-free applications.

Design: Two-stage filtration with a generously-sized first stage of a stabilized bed of carbon particles which remove the majority of the oil vapor. Second stage has multiple layers of fiber media with bonded microfine carbon particles which remove the remaining oil vapors. Includes an outer-coated, closed cell foam sleeve which prevents fiber migration.

Performance**: No liquid should be present at filter inlet. Provides 0.003 ppm w/w oil (as a vapor) removal and 0.01 micron solid particulate separation.

* Filter efficiencies have been established in accordance with CAGI standard ADF400 and are based on 100°F (38°C) inlet temperature

** Filter efficiency has been established in accordance with CAGI standard ADF500 and is based on 100°F (38°C) inlet temperature



ISO 8573.1 Quality Classes

ISO 8573.1 was developed in 1992 by ISO (International Organization for Standardization) to help plant engineers specify desired compressed air quality globally by providing “Quality Classes” for solid particulates, humidity and oil. Quality classes provide engineers with an internationally accepted unit of measure. A typical pharmaceutical plant, for example, would have a compressed air specification of ISO Quality Classes 1.2.1. This is equivalent to 0.1 micron particulate filtration, -40°F (-40°C) dew point, and 0.008 ppm (0.01 mg/m³) oil filtration.

No matter what language is spoken and what unit of measure is used, using ISO 8573.1 Air Quality Classes ensures that your factory will get the compressed air quality you specified.



Quality Classes	Solid Contaminants (maximum particle size in microns)	Maximum Pressure Dew Points °F (°C)	Maximum Oil Content (droplets, aerosols, and vapor ppm w/w (mg/m ³))
1	0.1	-94 (-70)	0.008 (0,01)
2	1	-40 (-40)	0.08 (0,1)
3	5	-4 (-20)	0.8 (1)
4	15	38 (3)	4 (5)
5	40	45 (7)	21 (25)
6	-	50 (10)	-

Air Quality/Pressure Drop Table

Filter Grade	Description	Pressure Drop at Rated Conditions psid [kgf/cm ²]	
		dry	wet
A	Water Separator	0.8 (0.06)	0.8 (0.06)
B	Separator/Filter	1 (0.07)	1.5 (0.11)
C	General Purpose	1 (0.07)	2 (0.14)
D	Dry Particulate	1 (0.07)	-
E	High Efficiency Oil Removal	1 (0.07)	3 (0.21)
F	Max. Efficiency Oil Removal	2 (0.14)	6 (0.42)
G	Oil Vapor Removal	1 (0.07)	-