Standards are not our Standards.

FILTER PROGRAM 2015
www.jackfilter.at
SPECIALIZED ON THE PROCESSES OF OUR CUSTOMERS

FACTS & FIGURES
THE JACK FILTER GROUP:

- Founding: 1947
- Total employees: 130*
- Locations:
  - Headquarters: Sattendorf / Ossiach in Carinthia
  - Cleanroom centre: Steindorf / Ossiach in Carinthia
  - Sales branch: Brunn am Gebirge near Vienna
  - Production site: Polgárdi in Hungary
- Export ratio: over 50%

*Status 2015
ITS A GOOD FEELING, WHEN YOU MAKE THE RIGHT DECISION

To inspire people is our mission. Therefore, we have decided not to be a “standard manufacturer” of “standard products”. We place great emphasis on personal service and fair prices. In other words: We create a good feeling, whenever possible.

INNOVATION FROM TRADITION

Since the founding in 1947, we have developed from an Austrian family company based in Sattendorf to one of the leading producers of air filters for industrial dust separation, ventilation, air conditioning and cleanroom technology.

As a privately owned medium-sized company, we have built long-standing relationships with our customers. We can refer to a variety of reputable references in various industries. The supervision and project implementation is straightforward, without complex group structure. More than 50% of products are exported.

OUR VISION

The path to the best manufacturer of Air filters for ventilation, clean-room and the dust collection Industry in Europe is far from easy to handle. But we are ready to deal with it uncompromisingly.
STANDARDS ARE NOT OUR STANDARDS

Jack Filter provides a high-class complete package with an extensive service, which distinguishes through the characteristics of reliability, speed, flexibility and mass customization.

The ISO 9001 certification is the foundation of the quality management system and due to the high level of automation we achieve a consistently high quality level.

FLEXIBILITY²

With our flexible production technology, we can also produce short lots economically and individually customize our air filters to your specific needs. There are almost no restrictions on the sizes of our filters, and this with fair prices from 1 to over 1000 pieces.

IN A FLASH...

Speed in our processes is an important differentiating factor of Jack Filter. Thanks to our own engineering and the use of industrial robots, we are able to achieve very short delivery times. Standard filter types are available in the most common dimensions from stock.

OPTIMIZED LIFE-CYCLE-COSTS

Decisive for the economic choice of the right filter is a holistic view of the filter life-cycle costs (LCC).

The flow-optimized design of our filters and the use of innovative filter media will reduce power consumption but retain the same high filter performance. With our program for LCC calculation we can compare up to five different filters with each other.
BREATHE…

The Human being breathes in daily 20-30 kilograms of air. In comparison, the daily consumed amount of solid food is only 0.8 to 1.5 kilograms. This makes the air we breathe the most important Nutrient. As a fundamental part of ventilation systems our filters provided us all with clean air.

SAVE MONEY AND NERVES

Our central concern is that the correct filter is delivered to the right place at the right time. Thus we can save our customers troubles and keep your warehouse costs low.

FULL-SERVICE

To ensure you get the optimum Jack filter for your plant, we will gladly advise you on the filter design and energy optimization and our teams can take over services during the commissioning, maintenance, filter changes and examination.

Do you have very special requirements?
Are you hard pressed for time?

This is exactly what we are best at and we look forward to your challenge.

MORE THAN 3,000 CUSTOMERS WORLDWIDE RELY ON FILTER SOLUTIONS FROM JACK FILTER MADE IN AUSTRIA
COARSE- AND FINE DUST FILTERS: TESTED ACC. TO EN 779

Particulate- and coarse dust filters are classified due to filter test EN779:2012. This method introduces a mandatory definition of a minimum efficiency. The minimum efficiency is the lowest measurement during overall testing. This affects synthetic filters in particular.

Every Jack air filter passes through the testing method EN779:2012. The standard applies to air filters in general applications from 0.24 m³/s (850 m³/h) to 1.5 m³/s (5400 m³/h) and encompasses the range from coarse dust to fine dust filters. These filters exhibit an initial efficiency of < 98% for a particle size of 0.4 μm.

EN779:2012 describes the testing method and test rig for measuring the filter performance. For the test results to be comparable and reproducible, testing must be performed within specified conditions. The filters are tested at 3400 m³/h as the standard.

To simulate the filter performance of the whole filter life-cycle, the filters are admitted with a synthetic test dust (Ashrae 52/76 test dust) till they reach a specified final pressure drop. Within this test method the separation efficiency of coarse dust filters and the efficiency of fine dust filters are determined.

The most important results of this test are the initial pressure drop, the initial efficiency and the average efficiency of the whole filter life-cycle. In addition it is also possible to determine the dust holding capacity and the energy consumption of the life-cycle.
The European filter testing standard is the most important basis for testing and classifying absolute filters. The method has five parts:

**Part 1: Classification, performance test and identification**

EN 1822-1:2009 distinguishes three groups of absolute filters:
- Group E: EPA filter – Efficient Particulate Airfilter
- Group H: HEPA filter – High Efficiency Particulate Airfilter
- Group U: ULPA filter – Ultra Low Penetration Airfilter

**Part 2: Aerosol production, measuring equipment and particle counting statistics**

This part describes the conditions for testing and the aerosol generators, the particle measuring technology and the statistical procedures used to evaluate the counts.

**Part 3: Testing flat sheet filter media**

Describes the determination of the fractional efficiency and determination of the Most Penetrating Particle Size (MPPS) of the flat sheet filter medium.

**Part 4: Leak testing of filter elements (scan method)**

On account of the high filtration efficiency expected of absolute filters, even the smallest leaks (that are hardly visible to the human eye) can produce increased local particle concentrations. For the automated process the filter element is set up in a test rig and admitted with a DEHS test aerosol (Di-2-Ethylhexyl-Sebacat) at rated flow. The mean particle size of the aerosol has to be within the range of the MPPS. The clean side of the filter is approached using the probes on computer-controlled linear axis. At each point on the clean side, the local aerosol concentrations are measured to determine the local degree of penetration. If the aerosol concentration does not exceed the required limit at any point, the filter is deemed to be leak-free. The necessity to determine the local efficiencies also implies the necessity for individual testing of each filter element upwards of filter class H13.

**Part 5: Determining the efficiency of filter elements**

Part 5 describes the determination the integral filter efficiency. This value is usually calculated as the mean of the local individual efficiencies measured in Part 4. Alternatively, an individual measurement with fixed sampling probes is also permissible.
POCKET FILTERS

Pocket filters are used as coarse- or fine dust filters in all types of HVAC systems. Depending on the application, they can be used both as pre-filters or main filters.

The progressive structure of the depth filter media used produces excellent filtration characteristics.

- High dust holding capacity, low pressure drop
- Tailored welded or stitched individual pockets for V-shape design by separator stitches
- Single-frame design made of galvanised metal or plastic

COARSE DUST

Pocket Filter TF (G4 to M5)
Fibre-based, thermically bonded polyester filter medium, welded individual pockets

FINE DUST

Used filter medium is a multilayer structured Polypropylene-Meltblown-Filter medium with integrated pre-filter or a glassfibre medium. V-shape design by separator stitches.

The following types are available:

Pocket Filter TP (F7 to F9)
Latest generation of pocket filter with innovative filter medium based on 5 layers, fiber diameter and structure progressiv aligned. Maximum efficiency and guaranteed long-term stability.

Pocket Filter TR (M6 to F9)
Standard pocket filter with espacially attractive cost /performance ratio.

Pocket Filter TW (F7 to F9)
The innovative NanoWave®-technology multiplies the internal to the external filter area by a patented wave structure of nano fibre, when required a high dust holding capacity. Furthermore another advantage is a significant reduction of the energy consumption and the CO2 emission.

Pocket Filter TG (M6 to F9)
Glass fibre pocket filters have already been used for many years due to filtration characteristics and easy to use handling.
MP MINI-PLEAT-PANEL FILTER CELLS

Mini-pleat filter cells are used when a high volumetric flow and therefore a large filter surface is required but the space for filter is limited. Humidity-resistant glass fibre paper is used as a filter medium.

The mini-pleat design achieves a very large filter surface. The special pleating with hot-melt spacers ensures high stability of the filter medium. Mini-pleat filter cells are therefore very stable, have flow surfaces on both sides and are highly resistant to humidity. Distinct installation depths enable both vertical and horizontal installation.

The following types are available:

- MP.K Plastic frame
- MP.P Cardboard frame
- MP.V Fleece frame
- MP.M MDF wooden frame
- MP.S Frame made of galvanised steel

JCF-COMPACT FILTERS

Compact filters M6 to H13 are used in all types of ventilation and air-conditioning systems, especially under difficult conditions (such as increased flow rates, multiple load changes / deactivations or high air humidity). Compact filters are very stable with flow surfaces on both sides. Unlike pocket filters they are designed for variable installation, both horizontal and vertical is possible.

The optimized flow characteristics of the newly developed 3V compact filter achieves a significantly lower pressure drop, optimum utilisation of the overall filter surface and therefore longer service life at highest energy efficiency levels. Humidity-resistant glass fibre paper is used as filter medium.

Compact filters are a economic alternative to pocket filters due to their higher filter surface and the resulting lower pressure drop.
**EPA-/ HEPA-/ ULPA-FILTER**

EPA-/ HEPA-/ ULPA- filters are able to reach efficiency up to 99.99995% and are installed, where there is a specified air purity to the protection of human beings and/or production processes. The use and requirements for cleanrooms are very diverse, among others in hospitals and medical engineering, food processing industry, semiconductor- and microelectronic industry, pharmaceutical and optical industry.

The high separation efficiency can be achieved with special and very fine fibers filter media in combination with the Mini-Pleat technology. This technology allows the assembly of compact filter elements with a large filter surface. Due to the large surface the flow velocity is extremely reduced, which supports the diffusion separation of sub-micron particles. With the pleat distancing by the use of hotmelt spacers a high stability, consistent pleat geometry and therefore a laminar flow can be achieved. To guarantee a permanent optimised geometry of the pleat packs to the selected frame, we can produce pleat packs with a height up to 280 mm and a pleat distance of maximum 11 mm.

**FILTER TYPE HM**

HM high efficiency particulate air filters are used in duct and roof outlets and a lot of other standardised cleanroom applications. The pleat pack is glued and fully-sealed leak-free in the frame of MDF (Medium-Density-Fibreboard), available in a depth from 48 up to 292 mm.

**FILTER TYPE HA**

HA high efficiency particulate air filters are used especially as terminal filters, where low-turbulence laminar flows are required. Typical applications are ceiling filters or clean workbenches in the semiconductor-, pharma- or food processing industry.

Jack Filter produces different aluminium frame models with PU-, Neopren- or Gel-gaskets with a frame depth from 30 up to 150 mm.

Usually the filter medium is a high efficient micro-glass fibre paper. If you need a high separation efficiency and at the same time a low pressure drop, we suggest the Composite-ePTFE-Membran filter medium.

Advantages of the PTFE filter medium:

- Ultra-fine nano fibres by e-PTFE fibrillin
- Less than 50% pressure difference than standard glass fibre paper
- Higher operating safety by a higher stability and a much lower failure
- Longer maintenance intervals
- No bor emissions

Every single filter higher H13 is tested to be leak-free according to EN 1822-4 and labelled with an enclosed test certificate.
FILTER TYPE HFV

HFV high efficiency particulate air filters are characterised by the application range for face velocities up to 3 m/s (4,000 m³/h by 610x610x292 mm). They are used in ventilation systems or air-handling units.

By using up to 12 pleated folded packages which are glued leak-free in V-shape into the frame, it is possible to produce a very large filter surface in a compact design.

HFV high efficiency particulate air filters are available in different metal frames and can be conducted with PU- or Neopren-gaskets.

ADSORPTION FILTERS

Adsorption filters mainly consist out of activated carbon. The EN 13779 suggests the use in urban environments, where indoor areas are to be protected against foul odours or gaseous pollutants.

A further application is the AMC-control in the microelectronic industry.

Activated carbon mainly consists out of a highly porous structured carbon (mostly > 90%). The inner surface has between 500 and 2000 m²/g of carbon.

AC.3
Activated carbon is offered as granulate or carbon mould blocks. Depending on the application, the activated carbon can be especially impregnated.

AC.C
Plastic or metal cartridges filled with activated carbon.

TAC
Pocket filter (F7) with special activated carbon layer.

JCF.AC
Compact filter with activated carbon medium or special composited medium (AC plus F7 particulate)
Z-LINE-FILTER CELLS

Z-Line filter cells differ from panel filter cells with respect to their pleated filter medium. To obtain a larger filtration surface and therefore a higher dust holding capacity at the same construction depth, the filter medium is pleated in Z-shape. The pleats are produced with predetermined radii and held at a defined distance. This provides an equal distribution of the air stream over the entire filtration surface. This pleating increases the filter surface by a factor of 2 to 5.

Filter cells with pleated filter medium therefore exhibit a much higher performance than filter cells with a filter medium that is inserted flush.

The following models are offered with self-supporting synthetic filter medium in the versions Standard, Performance and Extreme:

- **FZLP** Cardboard frame
- **FZLV** Polyester fleece frame
- **FZLS** Metal frame
- **FZLK** Plastic frame

FILTER CELLS

Filter cells are an alternative to filter mats and, in some cases, to coarse dust pocket filters.

A progressive structured synthetic filter medium with high dust holding capacity is used as filter medium. A variety of frame materials such as humidity-resistant cardboard or galvanised metal are available.

Jack Filter offers the following models:

- **FZ-ZM**
  V-shaped filter medium on supporting grid with metal frame.

- **FZ-SM**
  Synthetic medium inserted flat into the metal frame.
SYNTHETIC-FILTER MATS

Synthetic filter mats are made of a progressive, fibre-based, polyester filter medium structure.

The individual fibres solidify through thermo-bonding and/or needling. Chemical bonding agents that often provide a breeding ground for micro-organisms are not used. The filter medium has a progressive structure that provides deep filtration and therefore a long service with low pressure loss.

Coarse dust filter mats (G2-G4) are provided for multiple use. Regeneration can take the form of mechanical cleaning or washing.

Fine dust filter mats (M5) are provided for single use. Jack Filter offers special high-performance filter mats for final filtration of supply air in painting systems with a special smooth clean air side or attached support fabric.

Our filter mats are silicone-free and therefore suitable for paint finishing systems.

MOUNTING FRAMES

Mounting frames are used to accommodate and secure a fully-sealed air filter element in existing filter systems.

In combination with the associated press-on springs, these universal mounting frames allow the use of all brands and types of filters without need for any tools whatsoever.

The frames are supplied with matching seal and the required press-on springs.

The frames are available made of galvanised steel plate, aluminium or stainless steel.
<table>
<thead>
<tr>
<th>TYPE</th>
<th>FC</th>
<th>PARTICLES</th>
<th>APPLICATIONS</th>
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</thead>
<tbody>
<tr>
<td>COARSE DUST FILTERS</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>G1</td>
<td></td>
<td>Insects, Textile fibres, Hair, Sand, Airborne Ash, Pollen, Cement dust</td>
<td>Coarse dust filter for simple applications and very large particles, protection against insects, etc.</td>
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<tr>
<td>G2</td>
<td></td>
<td></td>
<td>Coarse dust filter for large and medium-sized particles for filter classes F6-F7, exhaust air filters for kitchens and paint finishing systems, pre-filters and ventilation filters for civil defense buildings, etc.</td>
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<tr>
<td>G3</td>
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<td>G4</td>
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<tr>
<td>M5</td>
<td></td>
<td>Spores, Pollen</td>
<td>Fine filters for small particles of dust, supply air filters for minimum requirements (production halls, storage rooms, garages, etc.), 1st filter level acc. to VDI6022 and EN 13779</td>
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<tr>
<td>M6</td>
<td></td>
<td>Cement dust, Germs on host particles</td>
<td>Pre-filters and filters for recirculating air in ventilation centres, final filters for moderate requirements (offices, warehouses, cinemas, laboratories, photographic industry, computer rooms, car industry, etc.), at least 2nd filter level acc. to VDI6022 and EN 13779</td>
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<td>F7</td>
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<tr>
<td>F8</td>
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<td>Oil smoke, Agglomerated soot, Tobacco smoke, Metal oxide smoke, Viruses, Pesticides</td>
<td>Fine filters for fine dust and submicron particles, final filters for ventilation systems with high requirements (hospitals, microelectronics, production halls, control centers, etc.)</td>
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<td>F9</td>
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<tr>
<td>FINE DUST FILTERS</td>
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<tr>
<td>M5 - M6</td>
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<tr>
<td>F7 - F9</td>
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<tr>
<td>E10 - U17</td>
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**PARTICLE SIZE μm**

- **PM 10**: 10 μm
- **PM 2.5**: 2.5 μm
- **PM 0.5**: 0.5 μm
- **PM 0.1**: 0.1 μm
- **PM 0.01**: 0.01 μm
- **PM 0.001**: 0.001 μm
- **RESPIRABLE**

**RANGE OF APPLICATION - FILTERCLASS**

- **G3 - G4**
- **M5 - M6**
- **F7 - F9**
- **E10 - U17**

**COARSE DUST**
<table>
<thead>
<tr>
<th>Filter Type</th>
<th>EN 779 average air resistance (%)</th>
<th>FAN-COEIL FILTER ELEMENTS</th>
<th>METAL FILTER-CELL</th>
<th>ROLLER FILTERS</th>
<th>FILTER MATS</th>
<th>FILTER CELLS / Z-LINE FILTERS</th>
<th>FOAM FILTERS</th>
<th>MINI-PLEAT PANEL FILTERS</th>
<th>ABSOLUTE / HEPA / ULPA FILTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>&lt;65</td>
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<td>G2</td>
<td>65-80</td>
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<td>80-90</td>
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<td>F8</td>
<td>90-95</td>
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<td>F9</td>
<td>&gt;95</td>
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<table>
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<tr>
<th>EN 1822 initial efficiency (%)</th>
<th>integral efficiency (%)</th>
<th>local efficiency (%)</th>
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<tbody>
<tr>
<td>E10</td>
<td>85</td>
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<tr>
<td>E11</td>
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<tr>
<td>U17</td>
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</table>

FILTER MATS / FILTER CELLS / Z-LINE FILTERS

- COARSE DUST FILTERS
- PRE DUST FILTERS
- MERV / ABSOLUTE FILTER

FILTER ELEMENTS: MINI-PLEAT PANEL FILTERS, FILTER MATS, FILTER CELLS / Z-LINE FILTERS, ABSOLUTE / HEPA / ULPA FILTER

- FAN-COEIL FILTER ELEMENTS: METAL FILTER-CELL, ROLLER FILTERS, FILTER MATS, FILTER CELLS / Z-LINE FILTERS, FOAM FILTERS

- METAL FILTER-CELL

- ROLLER FILTERS

- FILTER MATS

- FILTER CELLS / Z-LINE FILTERS

- FOAM FILTERS

- MINI-PLEAT PANEL FILTERS

- ABSOLUTE / HEPA / ULPA FILTER

- COARSE DUST FILTERS: G1, G2, G3, G4

- PRE DUST FILTERS: M5, M6, F7, F8, F9

- MERV / ABSOLUTE FILTER: E10, E11, E12, H13, H14, U16, U17

- FILTER MATS: FILTER CELLS, Z-LINE FILTERS

- FILTER ELEMENTS

- METAL FILTER-CELL

- ROLLER FILTERS

- FILTER MATS

- FILTER CELLS / Z-LINE FILTERS

- FOAM FILTERS

- MINI-PLEAT PANEL FILTERS

- ABSOLUTE / HEPA / ULPA FILTER
Standards are not our Standards.

Is it time to replace your filters?

Medical  Pharmaceutical  Semiconductor
Shopping  Automotive  Industry
Food-Processing  Conference
Hotel  Fair  Made in Austria

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