

# filtertechnik.Europe

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## **Metal Mesh Filters: Multi-functional Flow Elements for Confined Installation Space**

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**FILTECH**

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# filtertechnik.Europe

## Better Function in Metal Mesh



### Technology

Engineering and manufacturing of functional solutions of metal mesh

### Functions

Filtration, dispersion, sound absorption, heat absorption, precision assemblies

### Development

Development partner for industry customers from various sectors

### fteu®

Headquarters in Germany, further locations in P.R. China and the Czech Republic, global sales reps.



Multi-functional Metal Flow Elements  
for Confined Installation Space

Fluid  
Filtration

Fluid  
Dispersion

Precision  
Assembly

Sound  
Absorption

Heat  
Absorption

# Process Applications

## Demanding Constant Efficiency



### Filtration as enabler/preserver of quality

- Filtration as established sub-process in industrial processes
- Separation of process fluid and dirt particles

### Evolution of productivity

- Specification of process fluid varies and evolves over time
- Demand for increased productivity, uptime and output of existing processes

### Availability and reliability

- New solutions have to be dependable and failsafe to be considered for testing

**Filtration equipment as non-investment lever is not being exploited for industrial processes**



# Enhancing Efficiency

# Exploiting Production Technology



## Material integrity

Defined and controlled material quality is the basis for integrity of filtration media

## Functional Understanding

Grasping filtration and dispersion as dynamic functions in the context of a specific fluid, process, and target

## Production Technology as Key

Production Technology is the key to optimized flow elements that incorporate material integrity and functional understanding

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# Inserting Efficiency

## Increasing Functional Surface



### More Surface

Enhanced surface = more freedom in flow design

### Creating Flow Elements

With more surface flow design can be optimized to enhance

- Throughput
- Filtration
- Flow orientation/dispersion
- Uptime
- Process/resource efficiency



### Uncompromised Stability

Flow elements with stability for process conditions with high pressure/high pressure differences and backflush capability

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# Increasing Functional Surface MicroPleats – State of the Art



## Height

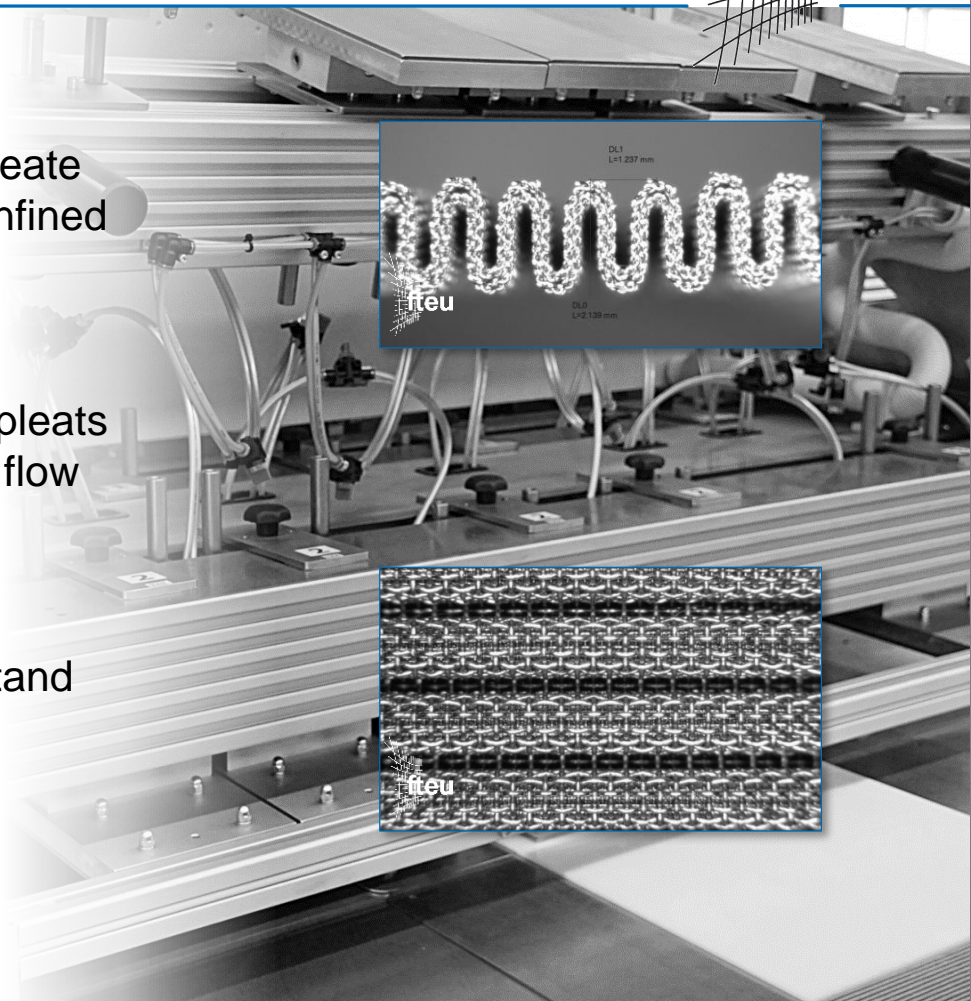
Low pleating heights of down to 2.3mm create increased surface for applications with confined installation spaces

## Shape

Defined shape (i.e. V-shape, S-shape) of pleats creates distinct characteristics to improve flow and stability for specific applications

## Characteristics

Low pleating heights are capable to withstand significant pressure differences without a support layer for backflushing



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# Best Practice Oil Filtration



## Process

Oil, oily water, and gasoline filtration with filter candles (height of up to 800mm; allocated in filter drums) that are frequently backflushed (i.e. maritime applications on vessels)



## Conservative Technology

- Flat candle filters with a metal mesh fineness of 20-50µm depending on specification
- Exchange of filters based on system pressure level

## Innovative Technology Using fteu® MicroPleats

- Pleated filter candle with >250% of original surface area

## Result

Enhanced throughput and uptime capability of process

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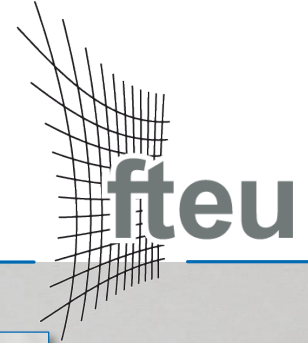
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# Best Practice

## Plastic Melt Filtration



### Process

Plastic (PA, PP) filtration and dispersion with multi-layer filter screens of an area of up to 7000m length

### Conservative Technology

- Multi-layer flat filter screens with a filtration fineness of 20-100µm depending on specification
- Exchange of filters based on system pressure level

### Innovative Technology Using fteu® MicroPleats

- Pleated filter candle with >230% of original surface area and optimized layer specification

### Result

Enhanced filtration, throughput and uptime (effective +44% in series conditions) capability of process



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# Outlook

## Potential and Next Steps



### Total Cost of Ownership

Positioning TCO-perspective as the standard for process optimization

### Qualification

Simply, accelerate and objectify qualification of new flow elements

### Production Improvement

Improving production technology on flow elements to be more efficient and accessible for process optimization

MicroPleats bring improved flow and process efficiency to applications that could not be addressed with conservative production technology

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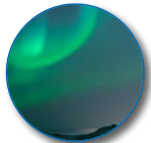
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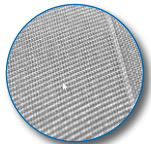
# Conclusion Process Efficiency with Metal Mesh MicroPleats



**Introduction**  
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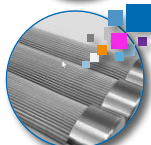
**Industrial Process Applications**  
Demanding Constant Efficiency



**Enhancing Efficiency**  
Exploiting Production Technology



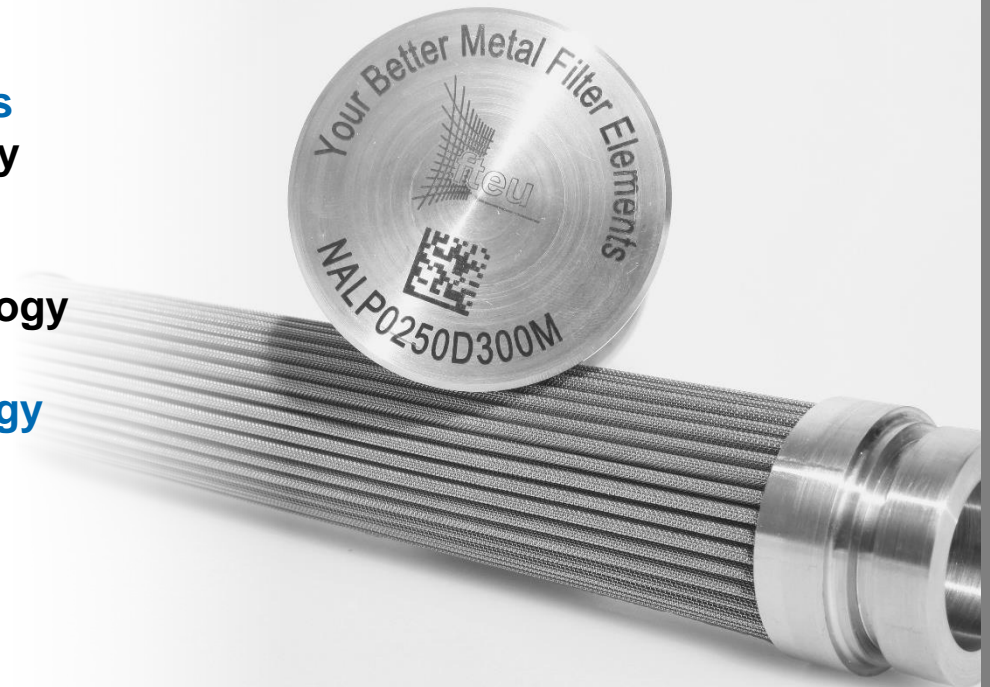
**MicroPleats Pleating Technology**  
Increasing Functional Surface



**Best Practices**  
MicroPleats



**Outlook**  
Potential and Next Steps



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# Technical Partner

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