

## Permeable metal sinter structures for effective filtration, dispersion, separation and flow

fteu® sinter technology creates precision permeable sinter structures. We offer standard specifications and custom specifications optimized to effectively cater to the required function regarding filtration, separation, dispersion for a given application. With carbon housing vacuum sinter technology we make material structures that are especially homogenous in three dimensions. fteu® sinter material is used for i.e. filters, gas-liquid phase separators or air/gas flow homogenizers.

### fteu® high porosity sinter felt

fteu® high porosity sinter felts offer a homogenous foam-like structure with a porosity of up to 80%. The sinter felt is made of flat material, with a height of up to 5mm. It delivers metal foam-like properties ideally suited for the homogenization/dispersion of liquid or gases. Products, such as combustion pads or fuel dispersers, of fteu® high porosity sinter felts enable high efficiency combustion processes.

- **Material:** 1.4841, 1.4404, 1.4301
- **Porosity:** 55%-75%
- **Dimension:** single mats with a length of up to 1000mm
- **Base material:** fibres/wire shreds, nonwoven wire structure
- **Product format:** as mat/sheet material, large areas by weld-connect of mats, as part of larger product assembly

*exact specification customized to customer app.*

### Function design sinter laminates, sintered by fteu®

We design and manufacture custom metal sinter laminates, combining the strengths of different permeable metal structures in one sinter material: the homogeneity and stability of wire mesh, the fine filtration of metal fibre felt and/or the porosity of fteu® sinter felt. Sinter laminates can be customized in various product shapes. Sintering with additional support components for unique one-piece metal products can be realized.

- **Material:** 1.4841, 1.4404, 1.4301
- **Metal structure:** wire mesh, fibre felt, perforated metal, expanded metal, fteu® sinter felt
- **Filtration/flow:** fineness 2µm-200µm, porosity/permeability spec. specific
- **Dimension:** laminates with dimensions of up to 500mm x 1'000mm
- **Product format:** as mat/sheet material, large areas by weld-connect of mats, as part of larger product assembly

### Vacuum sinter technology for all batch sizes with IATF16949 process quality

We run ovens with state-of-the-art vacuum sinter technology with carbon housed sinter chambers. Base material and sintered product are rigorously tested for quality, and structural integrity specifically. All sinter specifications are designed, qualified and manufactured in accordance with automotive standards.

- IATF 16949 and/or ISO 9001 certification along the entire supply chain
- Base material testing based on established industry norms
- Function oriented product testing
- Quality process and equipment for spot and large-scale 100% quality checking
- Documentation and qualification acc. VDA2

# Data Sheet for fteu® Sinter Products

## Overview Product Family **Combustion Pads**



### Combustion Pad

#### fteu® High Porosity Sinter Felt

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Porosity	up to 75%
Principle function	fluid (gas, liquid) dispersion
Support functions	combustion housing
Structure	sintered, metal fibre-based
Efficiency layer	fteu® high porosity sinter

Material	1.4841 (AISI314)
Thickness/depth	up to 3mm
Size	up to 500x1.000mm
Shape	stamped, laser-cut
Geometry	flat or formed (custom)



### 1.4841 (AISI314)

material for long term  
heat stability

### up to 75%

effective porosity 3D-structure,  
no straight permeation

### homogenous

deep structure and  
pore size distribution

#### Product and process quality assurance

##### Permeability

(air permeability testing)

##### Structural homogeneity

(norm liquid absorption capability testing; optical permeation analysis)

##### Shape and geometry

(optical parts measurement of free geometries)

##### Process quality

(ISO 9001, IATF 16949)

##### Qualification and traceability

(VDA2 PPF; PPAP)

#### Reference applications

- **Combustion pads** for specialized combustion environment in **heating system** for multiple-household buildings
- **Fuel dispersion** elements for mobile **combustion heating systems** (diesel and gasoline)
- Various **applications** with high demands for **consistent and efficient surface or porosity burning processes**

Function in Permeable Metals

Fluid  
Flow

Fluid  
Filtration

Heat  
Absorption

Sound  
Absorption

Engineered  
Precision