Dynamic Cross Flow Filtration with Ceramic Membranes

KERAFOLEschenbach / Germany
(1) Kerafol Products: Ceramic Membranes

Dynamic Cross Flow Filtration with Ceramic Membranes
(2) Dynamic Filtration

Conventional Cross-Flow-Filtration

1. static filter
2. tangentially flowing liquid

Dynamic Cross-Flow-Filtration

1. moving filter
2. static liquid

Dynamic Cross Flow Filtration with Ceramic Membranes
2) Dynamic Filtration

Filtration Technique

- Dynamic Cross Flow
- Cross Flow
- Semi Cross Flow
  (Dead End)

Polymer

Ceramic

Membrane

Dynamic Cross Flow Filtration with Ceramic Membranes
(3) Ceramic Filter Discs

Dynamic Cross Flow Filtration with Ceramic Membranes

Ø 152 / 312 / 374 mm

Permeate

Ceramic Membrane

Middle Layer

Ceramic Membrane

Permeate Channels
(3) Ceramic Filter Discs

Ceramic Filter Disc  Asymmetric Membrane  REM:
Ultra Filtration
Pore Size 60 nm

Dynamic Cross Flow Filtration with Ceramic Membranes
(4) Rotation Filtration

Filter Disc  Filter Stack  Rotation Filtration Plant

Dynamic Cross Flow Filtration with Ceramic Membranes
(4) Rotation Filtration

Dynamic Cross Flow Filtration with Ceramic Membranes
(4) Rotation Filtration

Increasing the Turbulence

Dynamic Cross Flow Filtration with Ceramic Membranes
(4) Rotation Filtration

Parameters

- Solid Content
- Transmembrane Pressure (Driving Force)
- Rotation Speed of the Discs (Cross Flow Velocity)
(5a) Application Metal Working Industry

Processing of Al-Swarf

Dynamic Cross Flow Filtration with Ceramic Membranes
Recycling of Glazes

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(6) Conclusion

Dynamic Cross Flow Filtration: high fluxes and low energy consumption

New applications for the membrane technology in the industrial and municipal sector

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