

REINHOLD ENVIRONMENTAL Ltd.



**2017 APC & Wastewater Round Table
& Expo Presentation**

July 17 & 18, 2017 in Charlotte, NC / Hosted by Duke Energy

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Multi-Pollutant Reduction Using Catalytic Filtration

Market potential Catalytic filtration



- Cement Kilns



- Power Plants



- Waste Incinerators



- Chemical Industry

- Biomass
- Glass plants
- Metal production (sintering)
- Roasting (Corn, cacao, Coffee)
- Carbon black
- Etc....

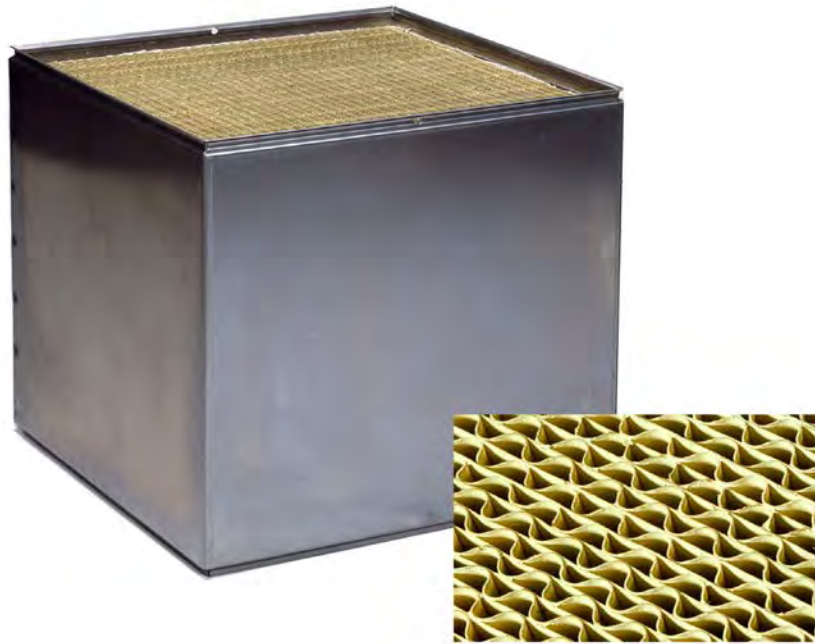
Overview – Legislation Within Cement Manufacturing

mg/Nm³ @ 10 vol. % O₂ (dry)

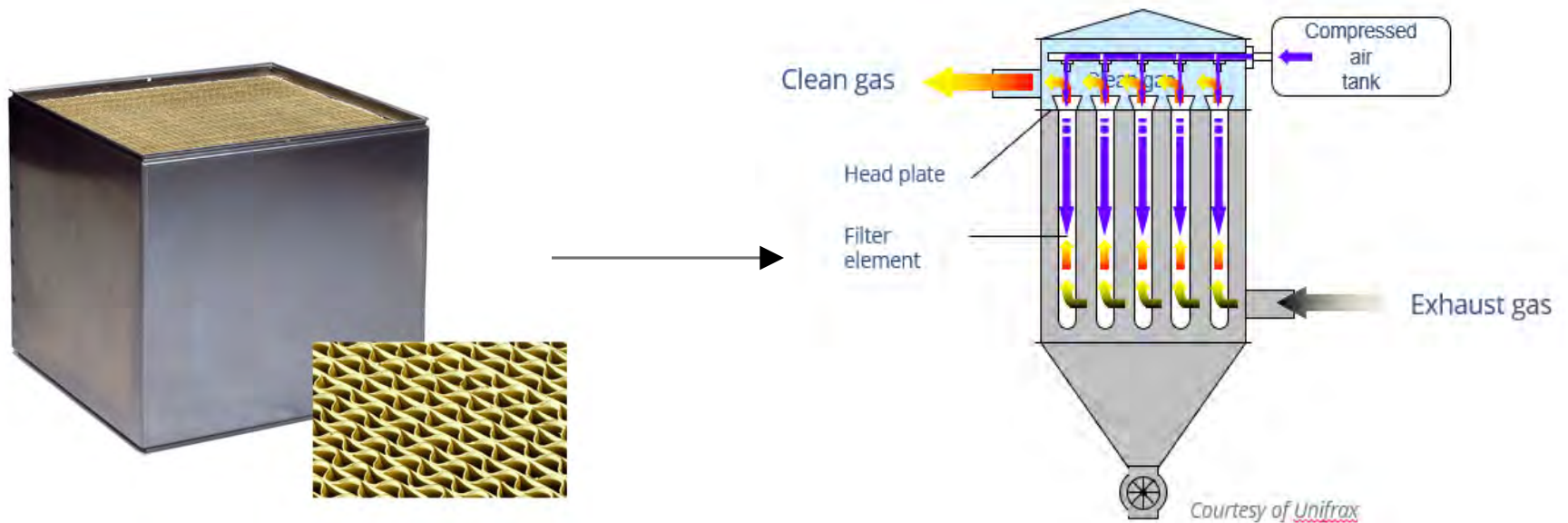
	USA	Germany	China (Common) ^α	World (Financing)
Pollutant	NESHAP/NSPS	BImSchV 17	GB30485– 2013	World bank
HCl	5	10	10	10
THC (TOC)	3.6	10*	10	10
SO ₂	94	50*	200	400
NO _x	360	200	400	600
NH ₃	–	30	10	–
Hg	0.005	0.03	0.05	0.05
Dust	1.8	10	30	30

SCR (Selective Catalytic Reduction) Catalyst

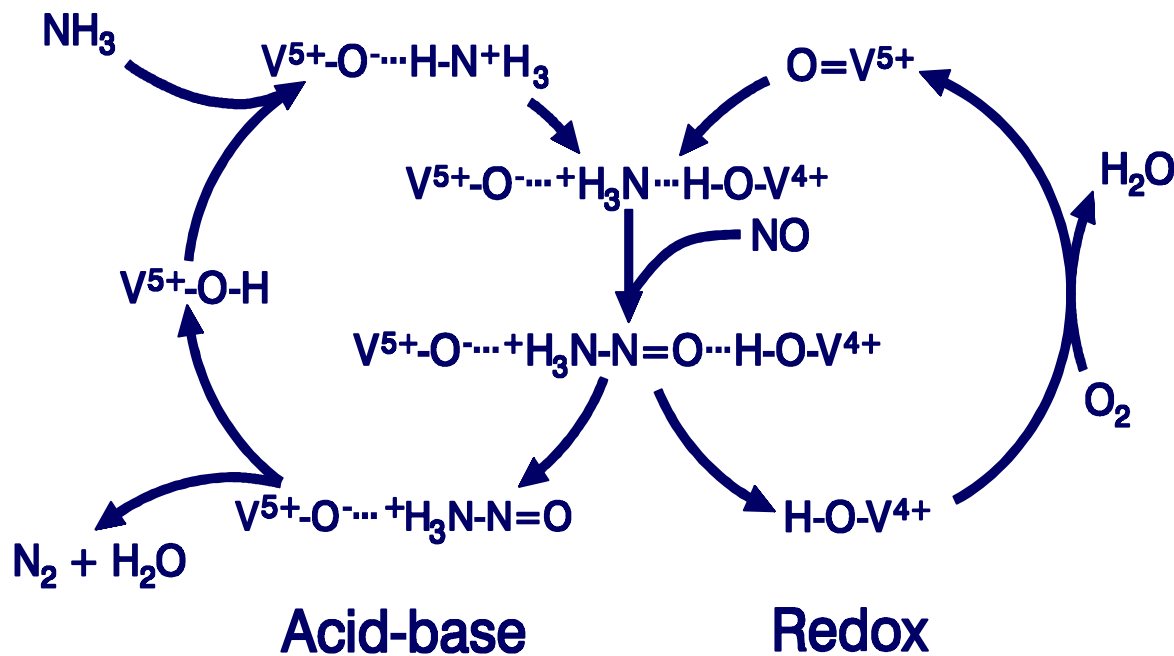
< 1,500 U.S. References
+
< 1,500 Global References



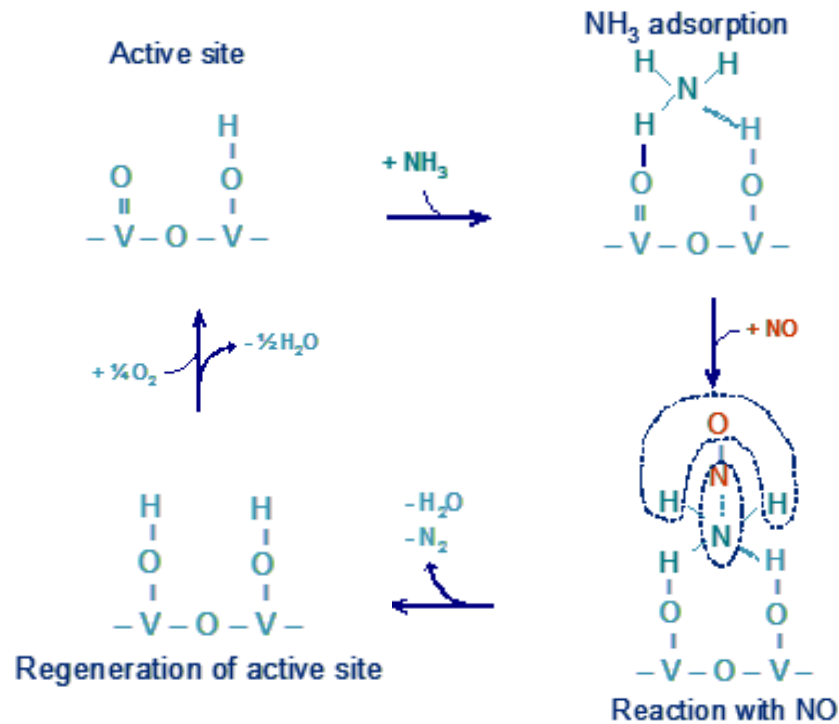
Knowledge Transfer



SCR DeNO_x Chemical Reaction

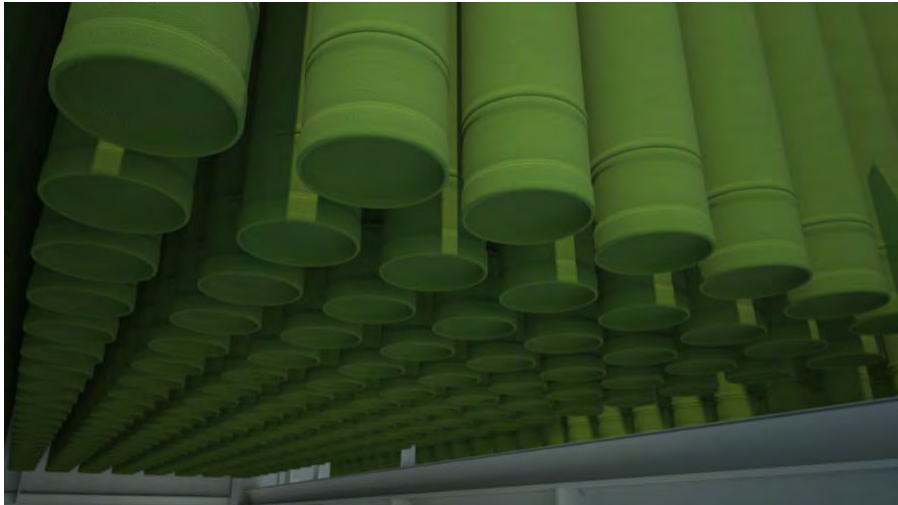


DeNO_x Chemical Reaction



Types of Catalytic Filters

Fabric

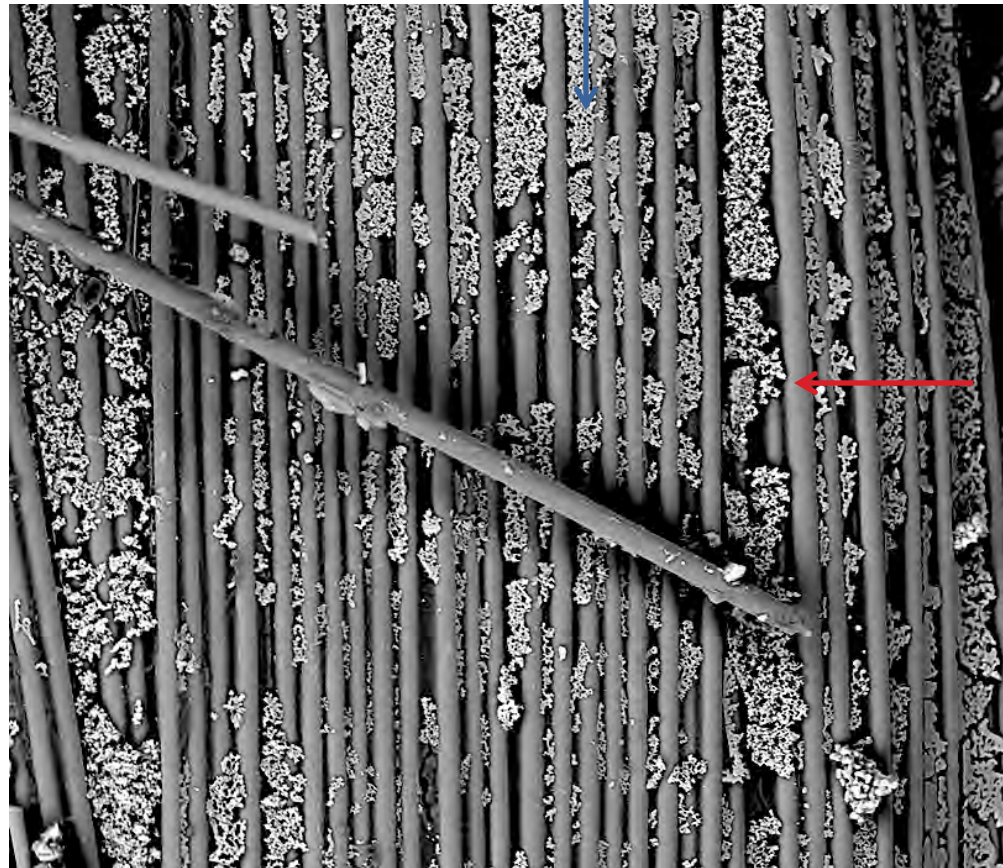


Ceramic



Catalytic Fabric Filter

Catalyst



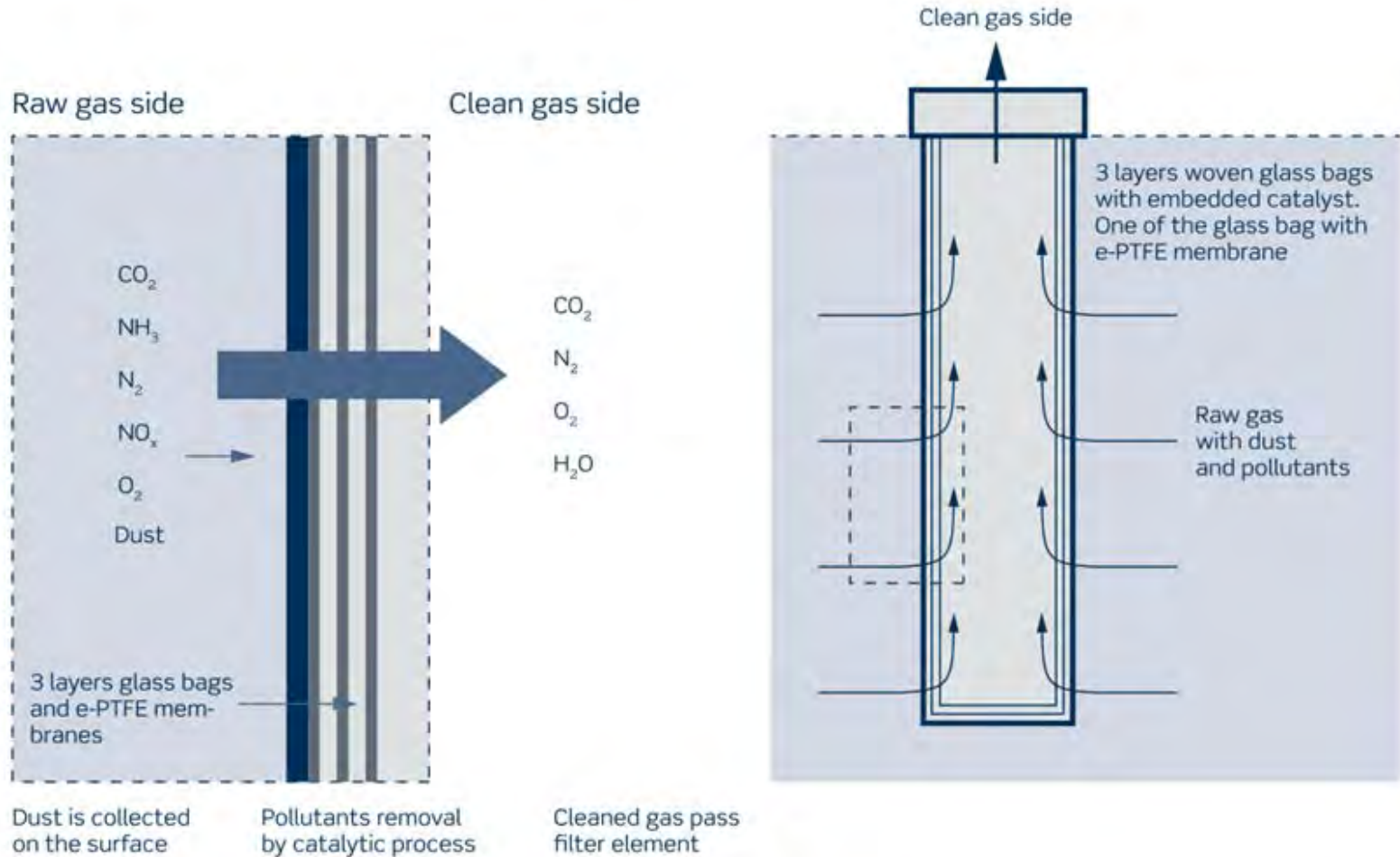
Fibers

Catalytic Ceramic Filter

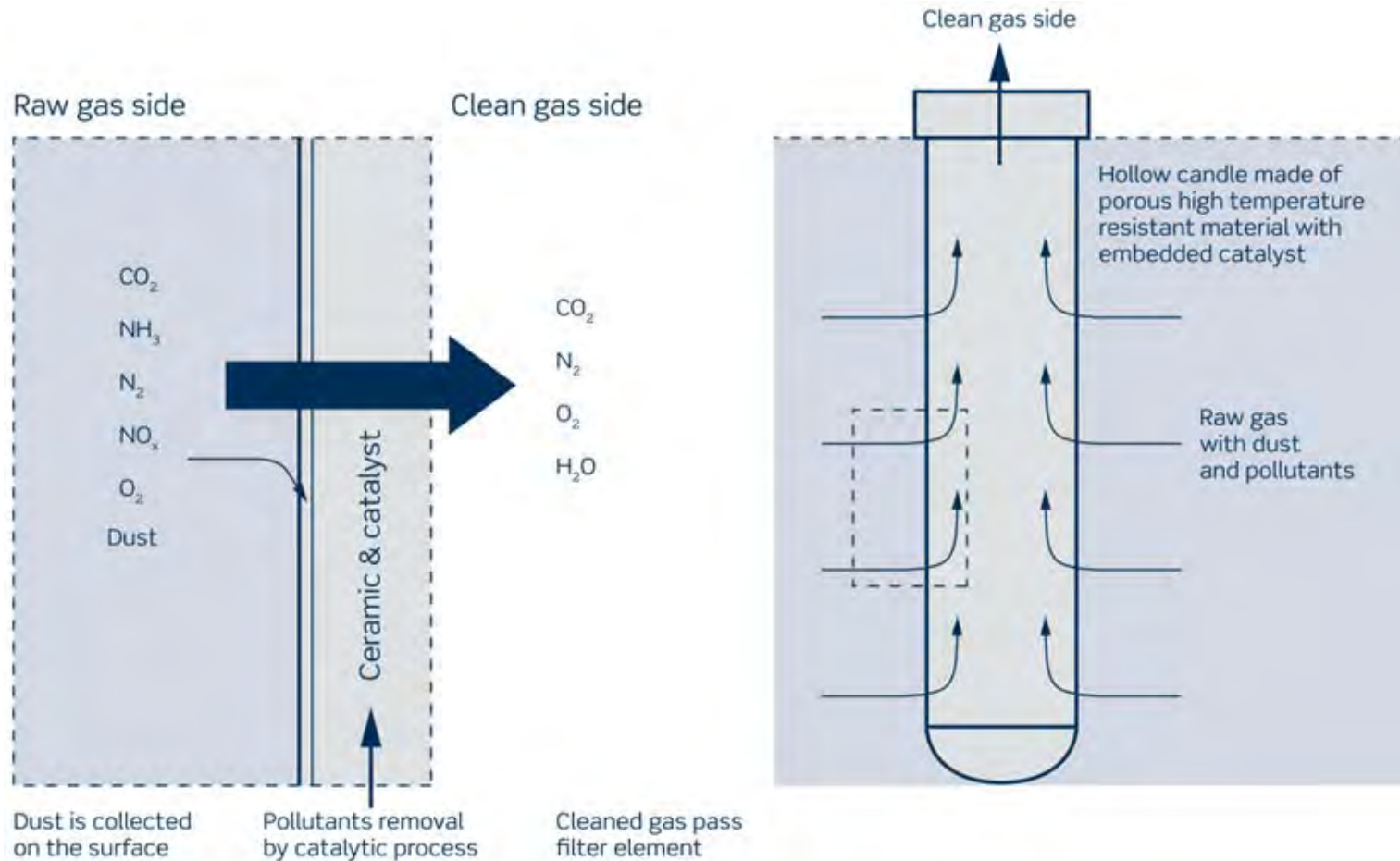


Catalyst

Catalytic Fabric Filter



Catalytic Ceramic Filter



Installation of Ceramic Filters



Unboxing of ceramic filters



Moving ceramic filters into filter housing

Installation of Ceramic Filters



View of full 3-meter ceramic filter length



Positioning ceramic filter for loading

Installation of Ceramic Filters



Ceramic filter turned vertical for loading



Ceramic filter carefully placed into cell plate

Installation of Ceramic Filters

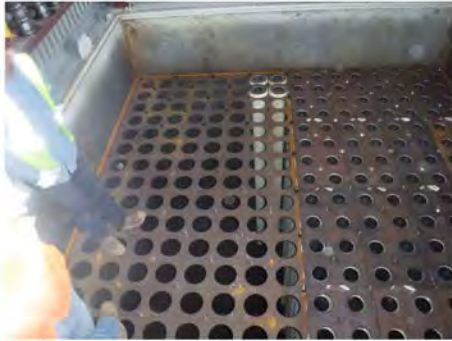


Ceramic filters loaded into cell plate



Ceramic filters with venturi installed

Installation of Ceramic Filters



Halfway point of the installation



Compartment filled with ceramic filters



Inspection of seal plates



Close-up of seal plate covers

Installation of Ceramic Filters



Installation of Fabric Filters

