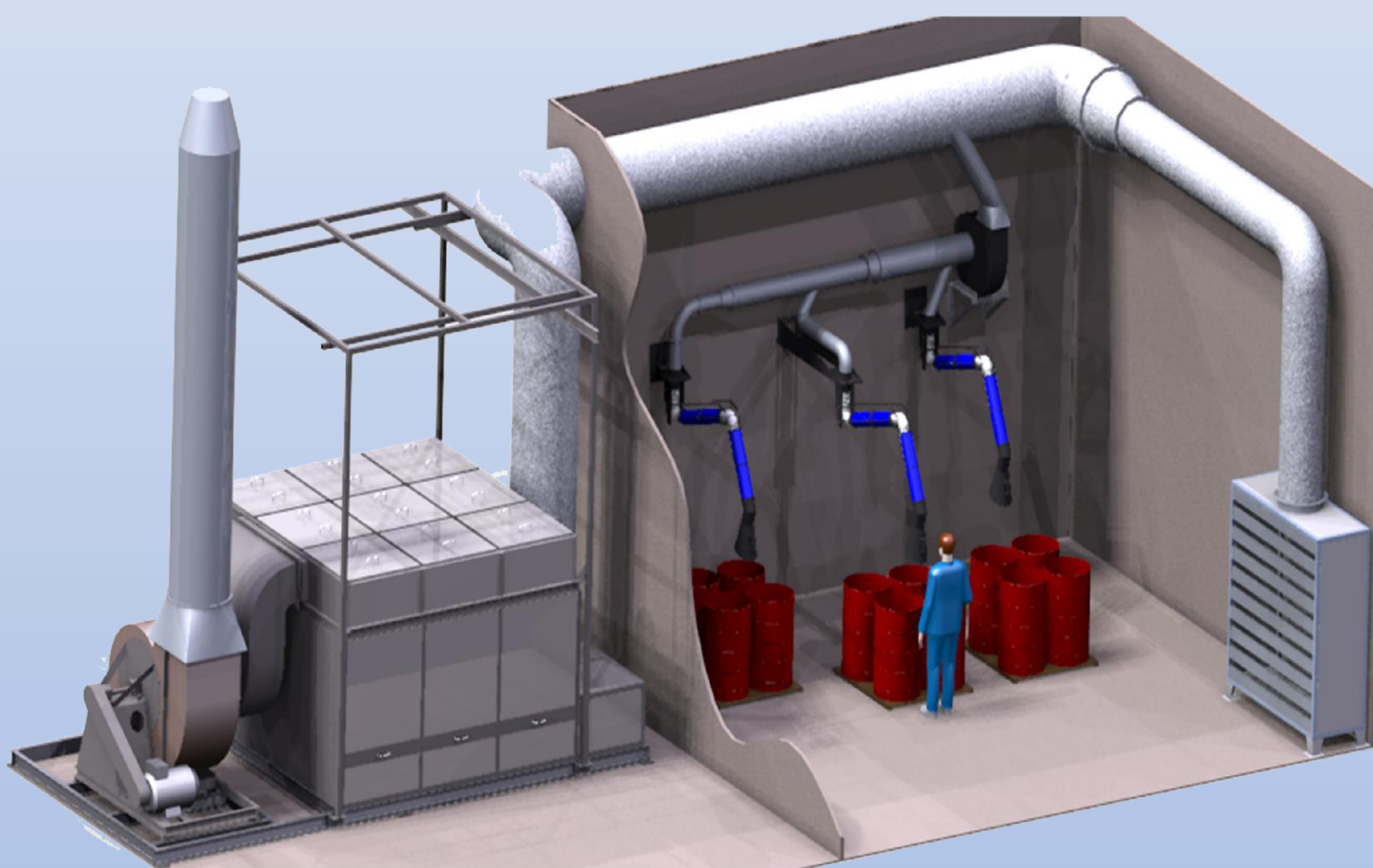


Granular Activated Carbon Filter for VOC and Odor Treatment



Activated carbon adsorption systems are filters which neutralizes odor, VOC's and some inorganic compounds.

The neutralization process based on a physical and chemical (carbon may be impregnated with different chemicals) adsorption principal. The polluted air stream flows through activated carbon layer (cartridges or drums) and get separated from the pollutants. In time, the activated carbon reaches the retentive limit (saturation) and the adsorption process stops. The carbon lifetime depend on different parameters such as the process temperature, emission rate, emission concentrations, humidity etc. To insure effective air or odor treatment, the activated carbon should be changed every 4-12 months according to the operating conditions.

The adsorption process emits heat (exothermic process) which is depend on the emission rate and concentration. Therefore, in some cases, air cooling is necessary. In addition, temperature (inlet and outlet) control and display is obligatory in every case. To protect the adsorption media, an integral particles separator is required to protect the carbon layer from external plugging. The mechanical filter lifetime is around 1-3 months.

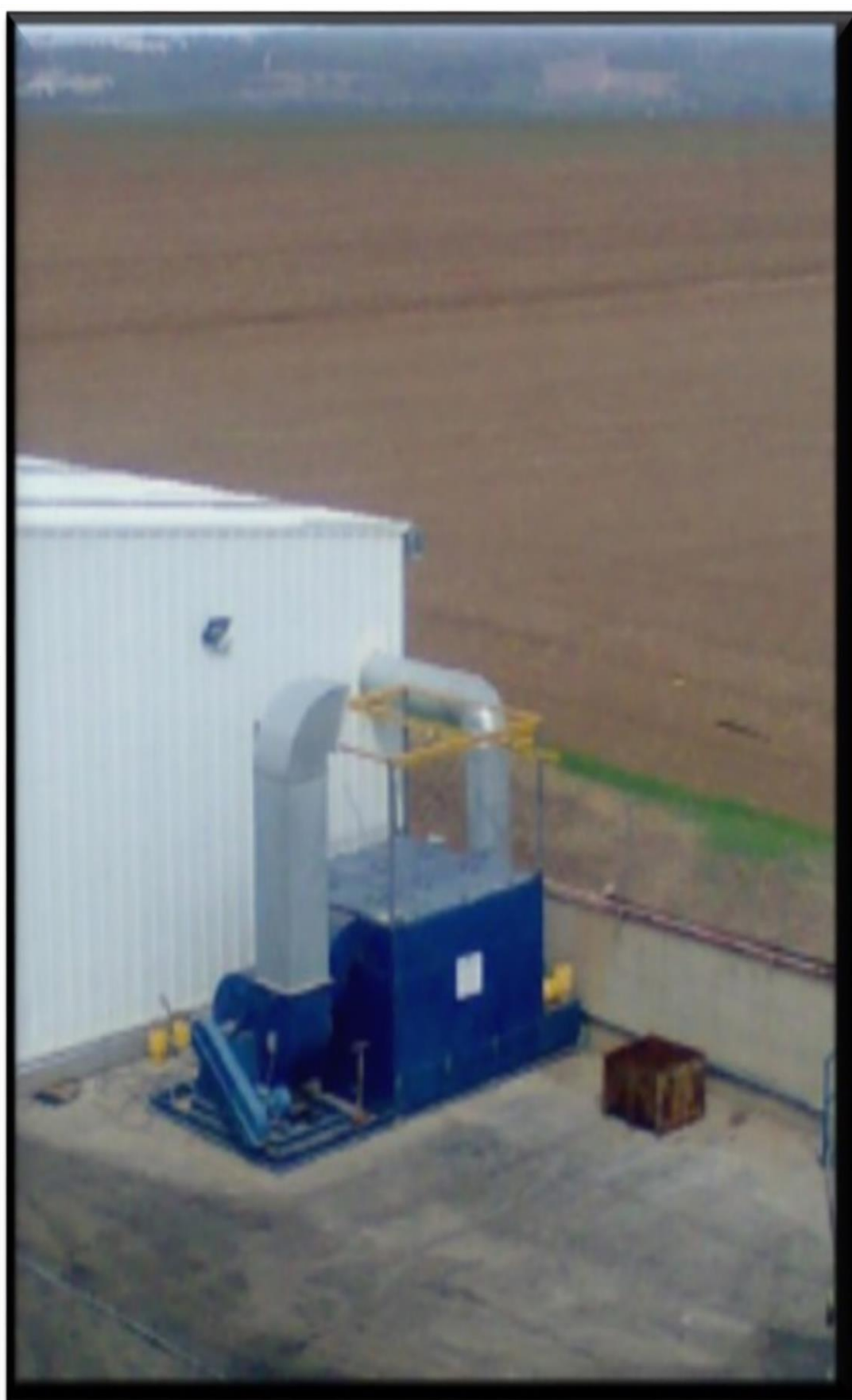
According to the above, the performance of the activated carbon adsorber depend on a number of operation parameters. A proper operation with those parameters insure an efficient adsorption and air treatment.

There are two models for different VOC emission concentration profiles:

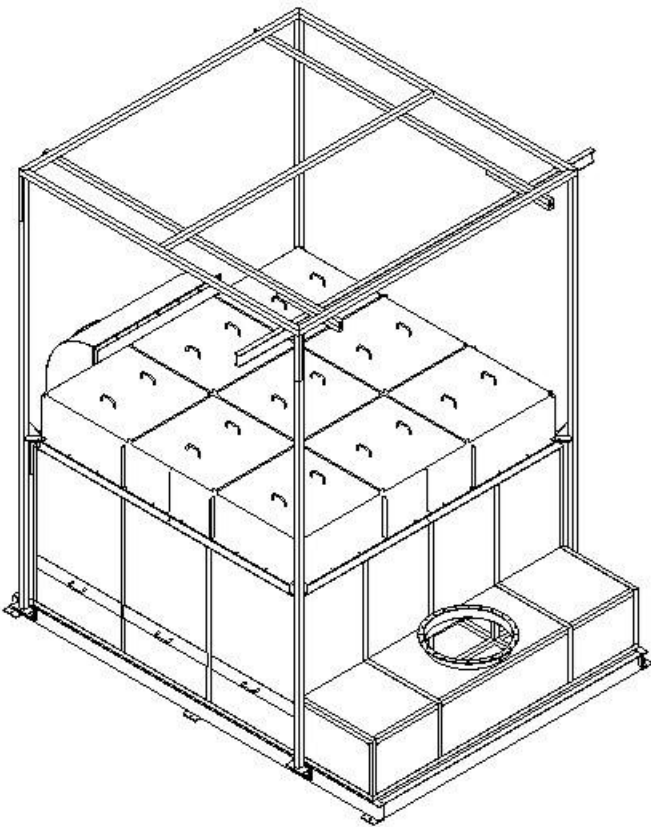
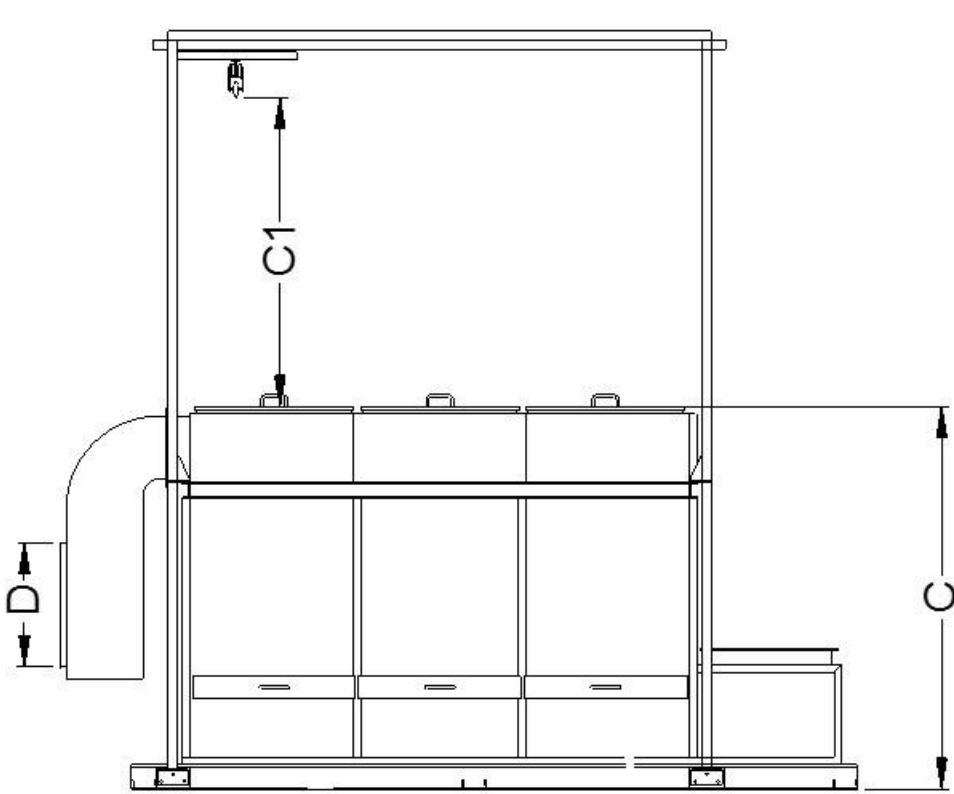
- ADD Model – For low VOC concentrations**
- TFM Model – For high VOC concentrations**

ADD MODEL – For low VOC concentrations

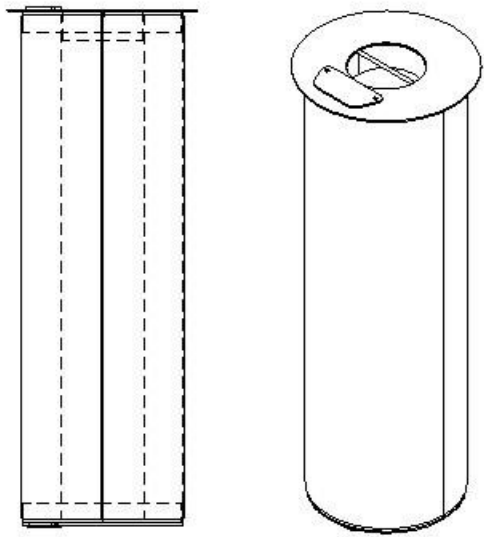
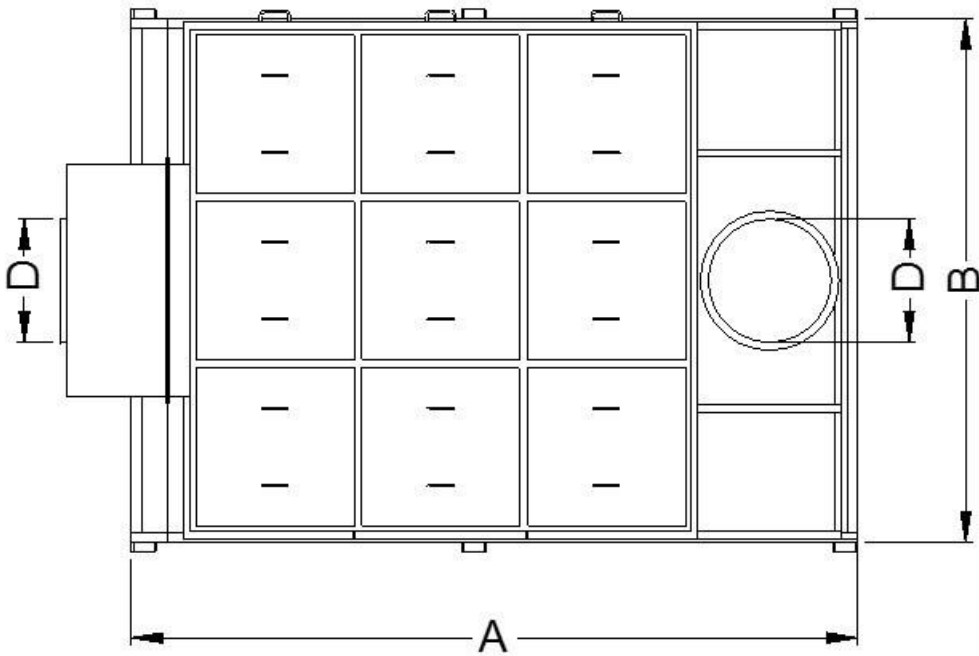
For installations with high flow rates up to 100,000 m³/h, which are characterized by low VOC concentrations we recommend the installation of cartridge adsorption plants. These filters are characterized with higher retention time and low adsorption velocity.



ADD MODEL – For low VOC concentrations



CARTRIDGE



TECHNICAL DATA

MODEL	Max. flow rate	Number of cartridges	Total volume of carbon	Thickness of carbon layer	Total average surface	Residence time	Max. crossing speed	Carbon	Dimensions (mm)				
	(m3/h)								A	B	C	C1	ØD
ADD2	2,000	2	0.60	320	5	1≤	0.3≥	280	1,490	1,915	2,300	2,200	"8
ADD2X3	5,000	6	1.80	320	14	1≤	0.3≥	840	2,520	2,440	2,500	2,200	"14
ADD3X4	10,000	12	3.50	320	28	1≤	0.3≥	1,680	4,160	2,440	2,500	2,200	"20
ADD3X5	15,000	15	4.40	320	36	1≤	0.3≥	2,100	5,040	2,440	2,500	2,200	"24
ADD3X6	20,000	18	5.60	320	43	1≤	0.3≥	2,520	6,000	2,440	2,500	2,200	"28
ADD4X6	25,000	24	7.10	320	57	1≤	0.3≥	3,360	6,000	3,260	2,745	2,200	"30
ADD4X7	30,000	28	8.30	320	66	1≤	0.3≥	3,920	7,010	3,260	2,745	2,200	"32
ADD4X9	40,000	36	10.60	320	85	0.95≤	0.3≥	5,040	8,870	3,260	2,745	2,200	"38
ADD4X12	50,000	48	14.80	320	114	1≤	0.3≥	6,720	11,510	3,260	2,745	2,200	"42

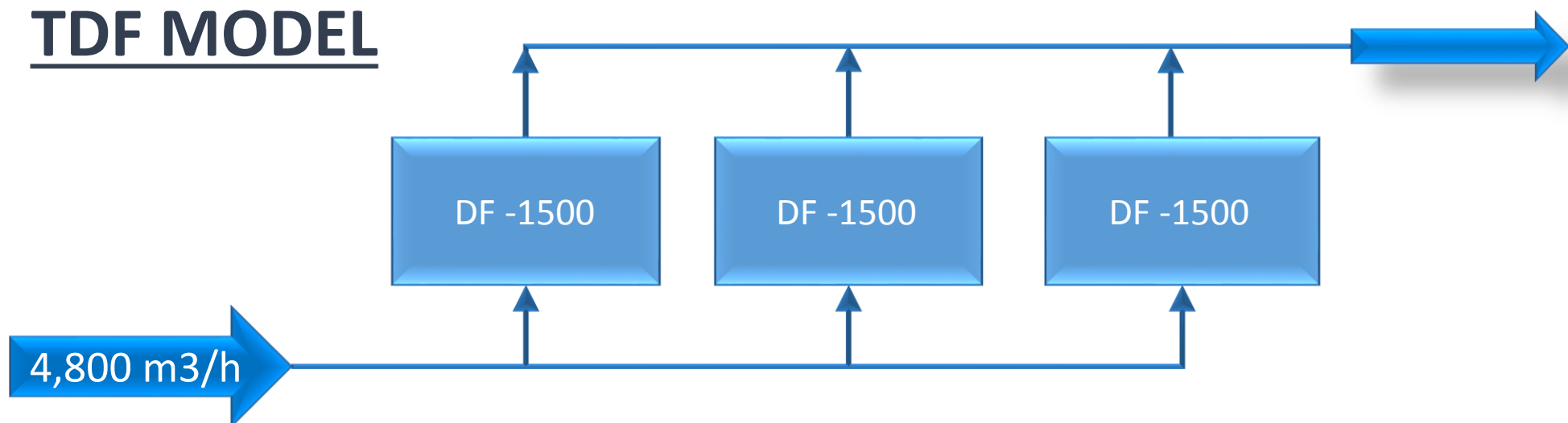
DRUM FILTERS FOR HIGH VOC CONCENTRATION

For installations with low flow rates up to 1600 m³/h, which are characterized by high VOC concentrations, we recommend the installation of DRUM-FILTERS (DF) adsorption plants.

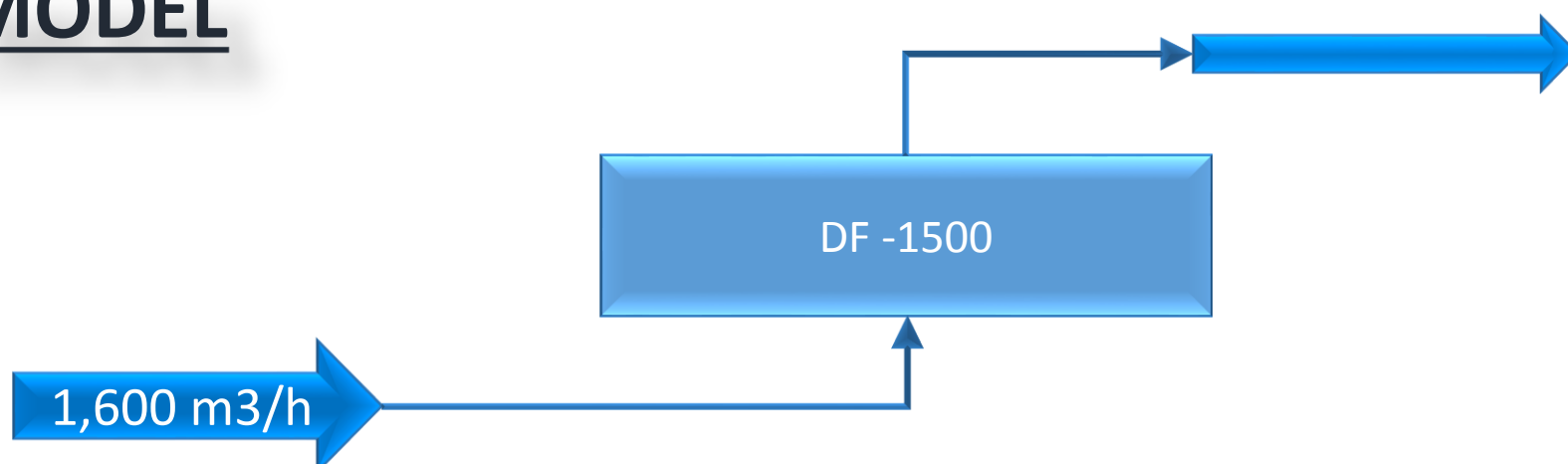
These filters are characterized with higher retention time.

It is possible to make adjustments to volume flows up to 4,800 m³/h by installing TDF treatment facilities (Triple-Drum-Filter).

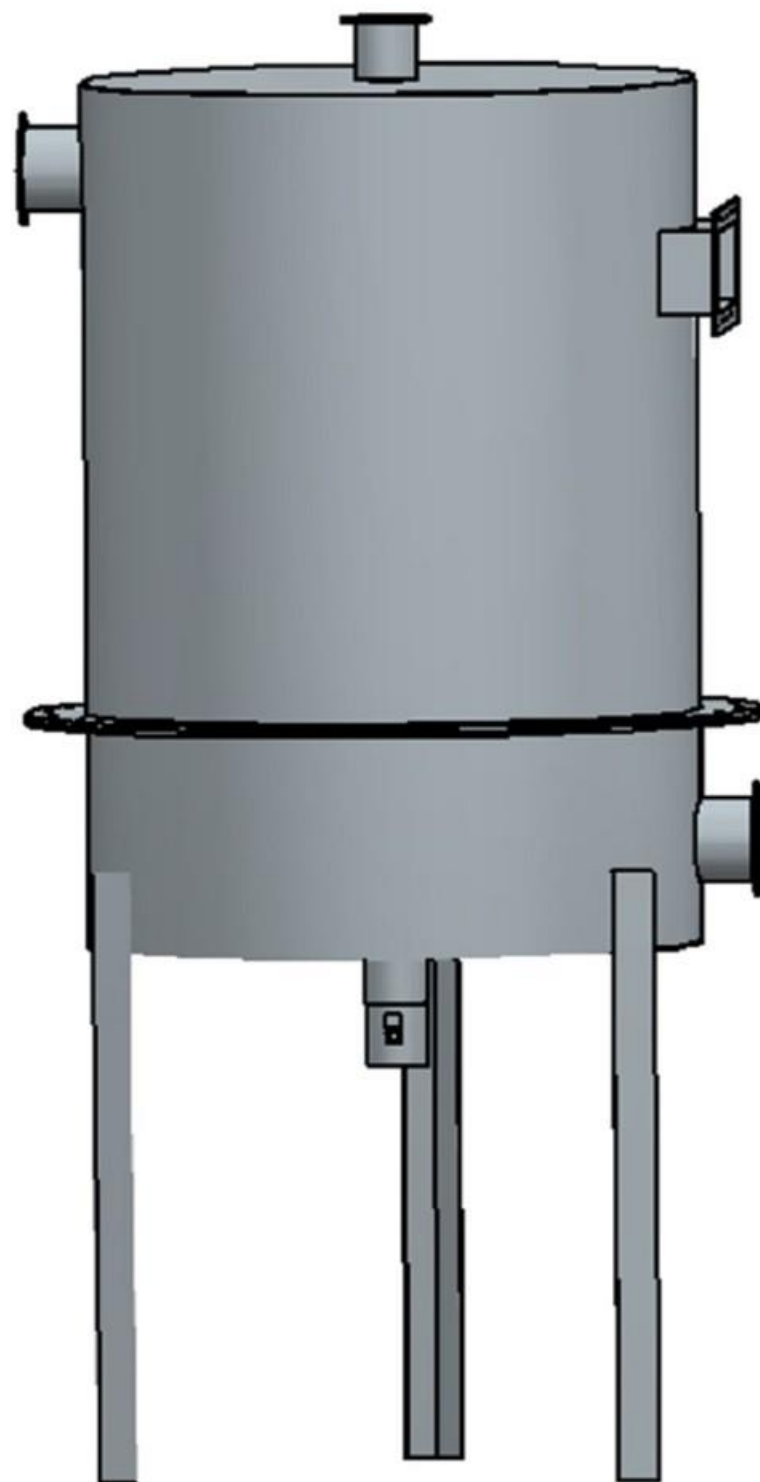
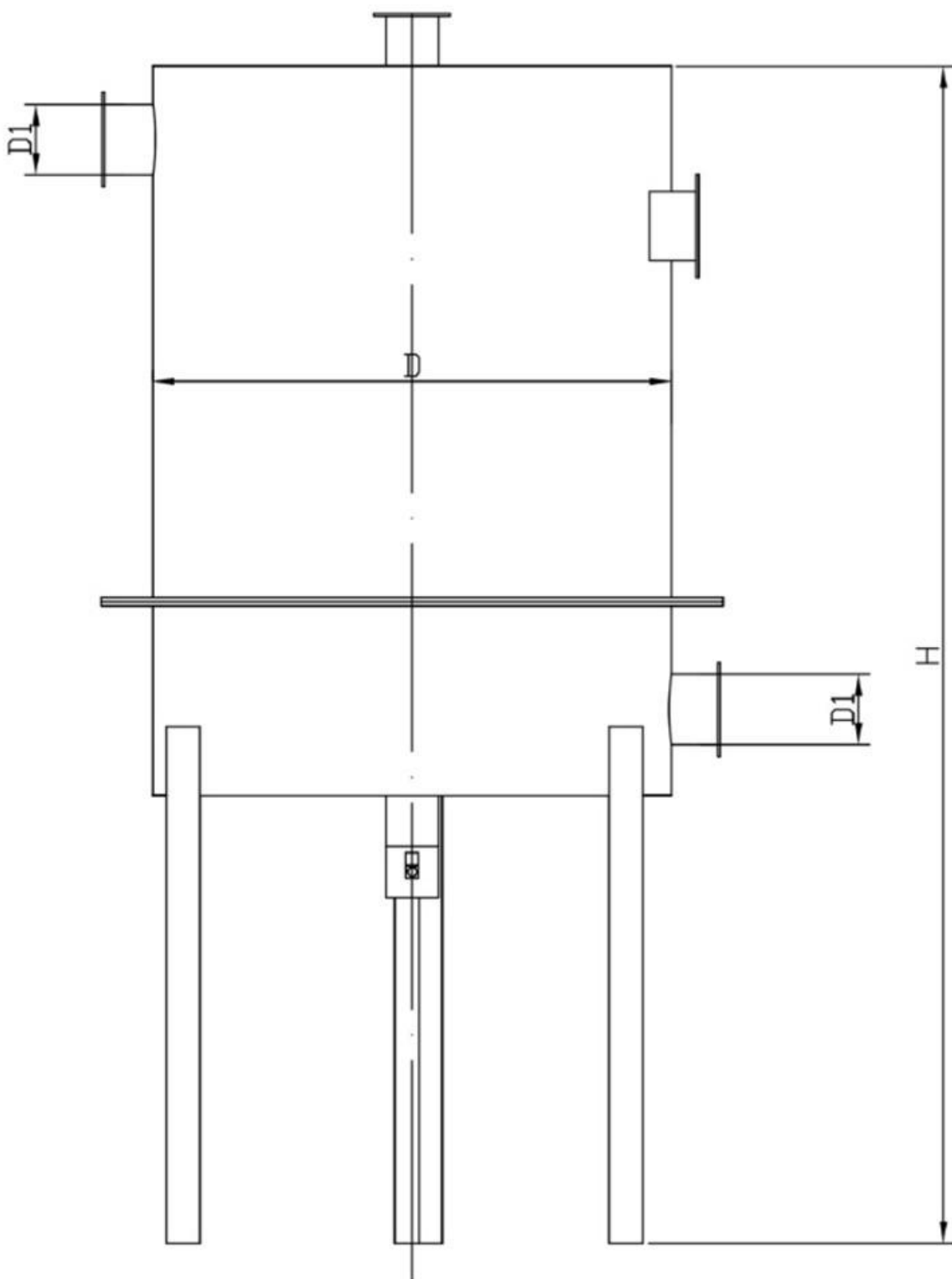
TDF MODEL



DF MODEL



MODEL – DF/TDF



TECHNICAL DATA

HIGH VOC CONCENTRATIONS (300-500 ppm)

MODEL	Max. flow rate	Number tanks	Total volume of carbon m ³	Tank diam m	Total average surface m ²	Contact time sec	Max. crossing speed m/s	Carbon kg	Dimensions (mm)		
	(m3/h)								H*	D	D1
DF600	250	1	0.4	0.6	0.28	6≤	0.25	210	2500	600	4"
DF600-H									3500		
DF1000	700	1	1.2	1.00	0.79	6≤	0.25	600	2500	1000	6"
DF1000-H									3500		
DF1200	1,000	1	1.7	1.20	1.13	6≤	0.25	870	2500	1200	6"
DF1200-H									3500		
DF1500	1,600	1	2.6	1.50	1.77	6≤	0.25	1,350	2500	1500	8"
DF1500-H									3500		

*** The height can be designed in different values compatible with the customer requirements.**