

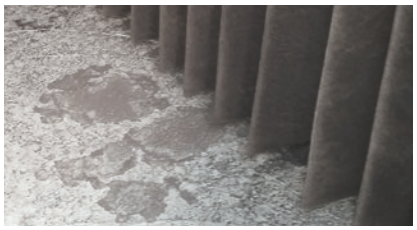
REFERENCE

viledon®

UPGRADE TO A 4-STAGE FILTRATION SYSTEM AT AN AIR SEPARATION PLANT IN THE NETHERLANDS COASTAL REGION

Introduction

A global leader in air separation solutions and technology operating a plant in the Netherlands coastal region wanted to upgrade the existing filter system of a compressor for generating oxygen, which runs over the fence of a steel mill. In order to offer outstanding efficiency, superior plant availability and lowest lifecycle costs, the user needed to solve severe corrosion problems inside the compressor.



Initial situation

- The initial situation showed that the existing 3-stage filtration system consisting of weather louvres in the 1st stage, Viledon® T60 pocket filters (filter class M6) in the 2nd stage and Viledon® T90 pocket filters (filter class F7) in the 3rd stage could not fully avoid water ingress into the compressor. This resulted in salt passing through the filter system.
- The compressor's impeller repeatedly broke down as a result of severe corrosion.

Viledon® solution

Conversion to a 4-stage filtration system. Behind the weather louvres stage, a new prefilter system combining 120 F45R pocket filters with 120 T60 pocket filters was installed in a single filter wall. This space-saving option is good practice wherever an additional filter stage needs to be incorporated into an existing filter wall.

The existing final filter frame work was equipped with 120 MX95 cassette filters class F8.



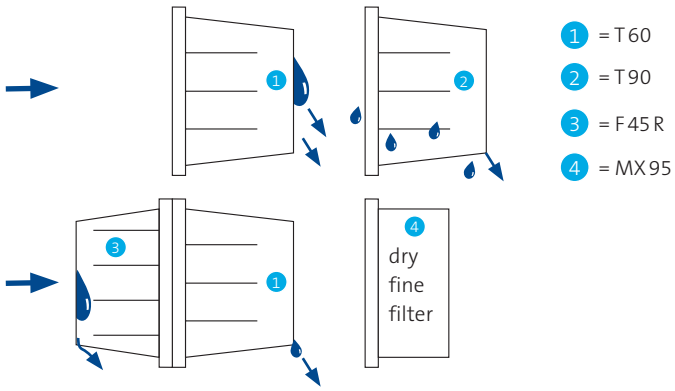
Viledon® Compact pocket filter F45R

Viledon® Compact pocket filter T60

WATER PATHWAYS IN COMPARISON

Old filtration concept with carry-through from water cascading; subsequent contamination unavoidable.

New filtration concept with front of filter drainage effect and avoidance of contamination.



1 = T60
2 = T90
3 = F45R
4 = MX95



Viledon® MX95 cassette filter

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Pocket filter F 45 R with water-repellent properties for excellent coalescing

Benefits for the user

- Thanks to the excellent coalescing properties of the F 45 R / T 60 arrangement, moisture is removed and the downstream MaxiPleat filter stage is kept dry, achieving optimum filtration for the compressor.
- Extended lifetime of the prefilter and final filter stages. Extremely high system reliability achieved as a result of trouble-free running of the filtration system.
- The stable and predictable filter pressure drop enables continuous operation for long periods between maintenance shutdowns.
- Following a short analysis, the new 4-stage filtration solution was recommended to the customer by our filter engineering team and was implemented by our Netherlands Viledon® sales partner Merrem & La Porte.



Left: 3rd filter stage T 60 pocket filters
Right: 4th filter stage MX 95 cassette filters

KEY DATA	
Location	Ijmuiden, The Netherlands
Compressor 1	MAN RIKT 25-3
Intake air flow rate per unit	300,000 m³/h
Intake air system / filters fitted	4-stage filter system 1st stage: weather louvres 2nd stage: 120 F 45 R pocket filters 3rd stage: 120 T 60 pocket filters 4th stage: 120 MX 95 cassette filters
Compressor 2	MAN RIKT 25-3
Planned intake air system	In 9-2016 a 2nd compressor will be equipped with the same 4-stage filter system including 100 pieces of filters in each stage.



Left: 4th filter stage MX 95 cassette filters
Right: Silencers; floor is free of water

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