



REFERENCE

viledon®

INTAKE AIR FILTRATION AT A FERROCHROME PRODUCTION PLANT

The production of stainless steel involves emissions at many points. An important component of stainless steel is ferrochrome, an intermediate alloy of iron and chromium. It is produced by the reduction of chromium ore with carbon in a smelting furnace. In the entire production area, employees are subjected to high temperatures and dust which contains iron. Fresh and clean air in workrooms and production halls is essential.

Initial situation

Even though the exhaust air from the stainless steel production process is filtered, the areas near to the production plant of a steelworks are always contaminated with particles and fine dust. Therefore the intake air for workrooms and production halls must be filtered in order to create good working conditions for employees. The intake air filtration of the ferrochrome production consists of a filter wall with 16 pocket filters and is operated at a volume flow of 54,000 m³/h.



Comparison of test runs

The stainless steel factory carried out test runs to find efficient air filters with a longer lifetime under these heavy conditions. Among others, the Viledon® Compact pocket filter T60 equipped with synthetic filter media was compared with a competitor's glass fiber pocket filter. The test run with the competitor filter with filter class M5 had to be stopped after 2–3 weeks because some of the pockets had ruptured at a pressure drop of 500 Pa.

For the test run with the Viledon® Compact pocket filter T60 with filter class M6, the old filter wall was removed and a new filter wall with Viledon® mounting frames was installed. The Viledon® Compact pocket filter T60, made from multi-layered progressively structured nonwovens, provides high functional reliability thanks to its rigid construction and achieves superlative performance even during temporary overload operation. During the test period, the Viledon® Compact pocket filter impressed with a final pressure drop of 500 Pa and a lifetime of up to 24 weeks without dust breakthrough.



Viledon® Compact pocket filter T60

Caverion

Caverion designs, builds, operates and maintains user-friendly and energy-efficient technical solutions for buildings and industries. For a long time Caverion has cooperated with the world's leading stainless steel producer in Northern part of Finland. Together with Freudenberg Filtration Technologies, Caverion equipped the air filtration systems with Viledon air filters on site.

TECHNICAL DATA

| | |
|-----------------------------|--------------------------|
| Number of filter walls | 1 |
| Total number of air filters | 16 |
| Volume flow | 54,000 m ³ /h |
| Final pressure drop | 500 Pa |

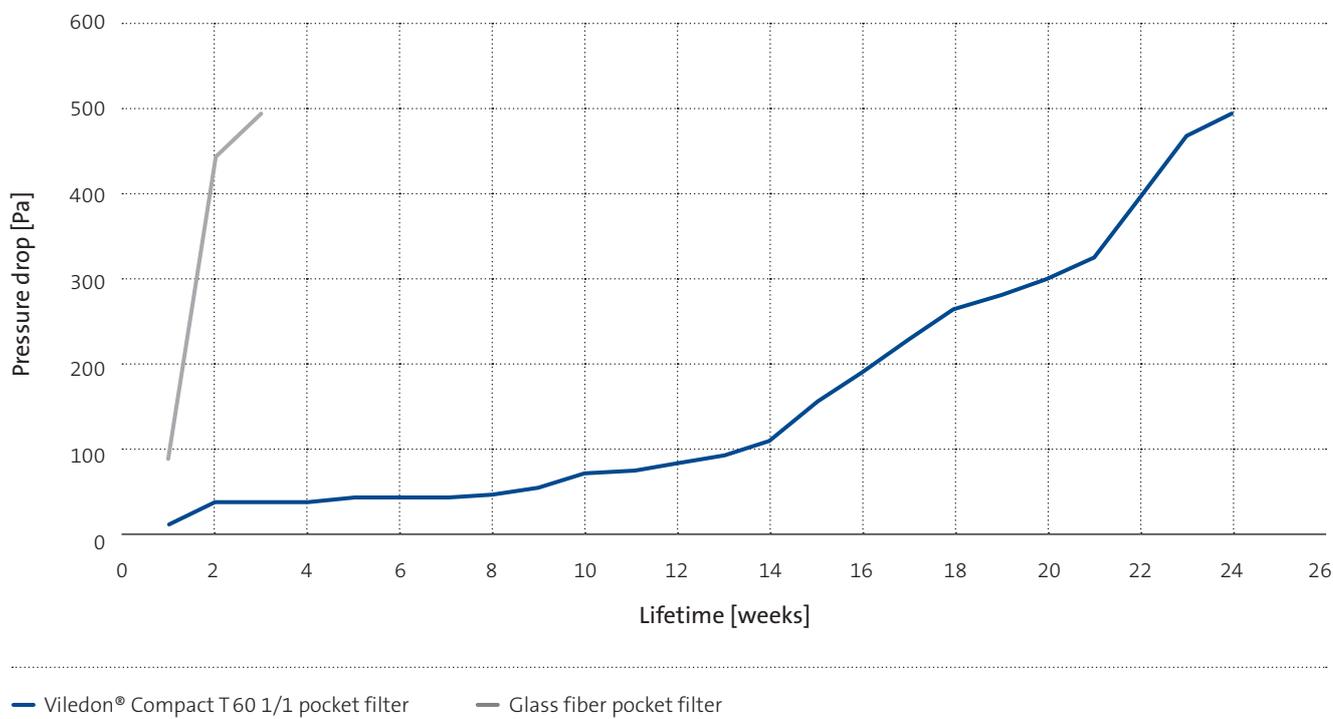
Result

The Viledon® Compact pocket filter T60 has a considerably longer lifetime compared to the competing filter. While the unit price for glass fiber filters is lower, the stainless steel factory had to replace the filters eight times more often in the 24-week test period. The change to Viledon® pocket filters therefore reduces not only the purchase costs, but also the replacement frequency and is therefore more cost-effective.



| COMPARISON VALUES | NEW | OLD |
|-------------------|--------------------------|-------------|
| Pocket filter | Viledon® Compact T60 1/1 | Competitor |
| Filter class | M6 | M5 |
| Filter medium | Synthetic | Glass fiber |
| Filter lifetime | 24 weeks | 3 weeks |

Comparison of the pocket filter's lifetime



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