PARTICLE technology

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Test Report
ISO 16890:2016-1

UKAS TESTING 4109

Job Number	22945
Date of Report	16-Mar-22

Filter Description

PTL Sample ID
36647
NA

Manufacturer	Not specified
Filter Model	Not specified
Part Number	Not specified
Filter Type	Flat sheet media
Dimensions (hxwxd), mm	550 x 415
Effective Filter Area, m^2	0.17
Media Type	Synthetic
Media Colour	White
Media Additives	Not specified
Electrostatic Charge	Not specified
Sample Obtained	Direct from client

Test Requester Information

Test Requester	Julian Martin
Date Requested	14/03/2022
Company Name	Martin Industries Ltd
Company Address	Unit 8 Milton Business Centre, Wick Drive, New Milton, BH25 6RH
Date Sample(s) Received	09/03/2022
Date of Test Commencement	14/03/2022

Test Equipment Information

Optical Particle Counter	Palas, Welas 3000H with 2300 Sensor (only used for fractional efficiency measurements)
Air Flow Meter	Orifice plate with Foxboro Multivariable Transmitter and RTD

Statement

The results of this test relate only to the test device in the condition stated herein. The performance results cannot by themselves be quantitatively applied to predict filter performance in all "real life" environments.

Test Conditions

Dust Type	ISO 12103-1:2016 A2 Fine		
Liquid Aerosol	DEHS		
Solid Aerosol	KCl		
Test Air Flow Rate (nominal), m^3/hr	918		
Barometric Pressure, mbar	1014.4	1016.7	MIN-MAX
Test Air Temperature, °C	18.6	19.5	MIN-MAX
Relative Humidity, %	36.4	39.4	MIN-MAX

Test Results

Initial Resistance to Flow, Pa	52	ePM1, %	NA
Flow, m^3/hr	922	ePM2.5, %	NA
Final Resistance to Flow, Pa	204	ePM1 min, %	NA
Flow, m^3/hr	915	ePM2.5 min, %	NA
Initial Arrestance, %	71	ePM10, %	NA
Test Dust Capacity, g	54		

ISO ePMx % Rating

ISO Coarse 70 %

Associated Test Reports

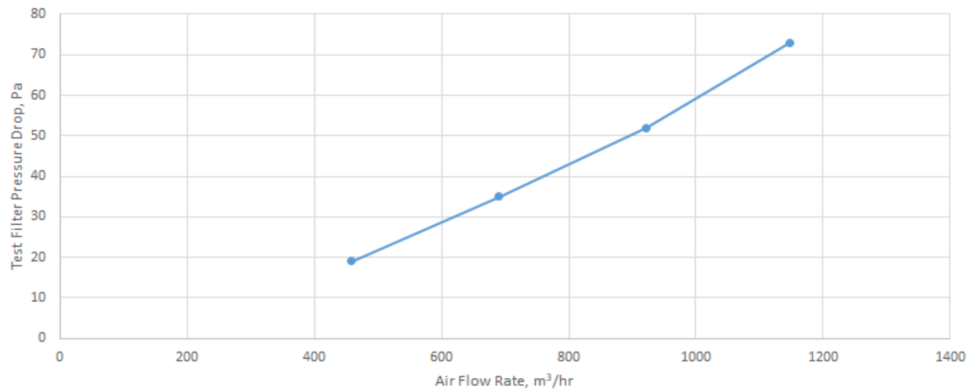
Test report to ISO 16890-2	NA
Test report to ISO 16890-3	22945 - BS EN ISO 16890-2016-3 TEST REPORT - Martin Ind SID 36647 - Issue 1
Test report to ISO 16890-4	NA
Test Performed By	L. Grimes

Test Data

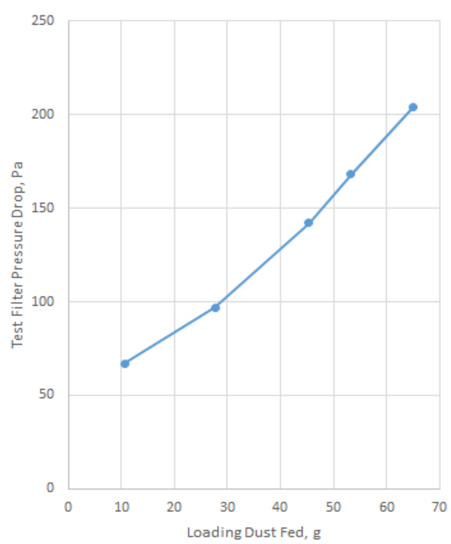
Fractional Efficiency Curves (Clean & Discharged Filter, ISO 16890 parts 2 and 4)

Test not performed

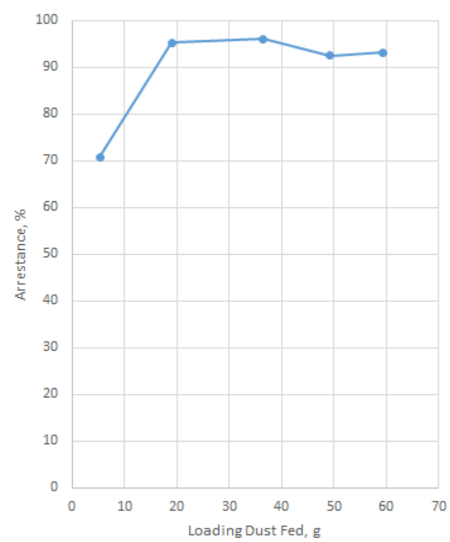
Initial Resistance to Airflow (Clean Filter, ISO 16890 part 2)



Resistance to Airflow (Loaded Filter, ISO 16890 part 3)



Arrestance (Loaded Filter, ISO 16890 part 3)



Summary of Test Methods

The test methods used when performing a test in accordance with ISO 16890:2016 parts 1 and 3 include:

- TM061
- TM062
- TM064
- TM066

The Welas 3000H OPC has a calibration check performed at the start of each test day using MonoDust from Palas.

Deviations from Test Methods

The tests were conducted in accordance with ISO 16890:2016 parts 1 and 3 using the test methods listed above . The batch number of the test dust used was 9906. There were no deviations from these test methods during the tests.

The Interpretation of Test Reports

This brief review of the test procedures, including those for addressing the testing of electrostatic charged filters, is provided for those unfamiliar with the procedures of this series of ISO standards. It is intended to assist in understanding and interpreting the results in the test report/summary (for further details of procedures, the full ISO 16890 document series shall be consulted).

Air filters may rely on the effects of passive static charges on the fibres to achieve high efficiencies, particularly in the initial stages of their working life. Environmental factors encountered in service may affect the action of these electric charges so that the initial efficiency may drop substantially after an initial period of service. This could be offset or countered by an increase in efficiency ('mechanical efficiency') as dust deposits build up. The reported untreated and conditioned ('discharged') efficiency shows the extent of the electrical charge effect on initial performance and indicates the potential loss of particle removal efficiency when the charge effect is completely removed and when, at the same time, there is no compensating increase in the mechanical efficiency. These test resuts should not be assumed to represent the filter performance in all possible environmental conditions or to represent all possible 'real-life' behaviour.

Additional Information

Sample mounted into frame - upstream face

Sample mounted into frame - downstream face

Report Issue	History	Approval	Date
1	First issue to customer	Dr Mike Stillwell CEng	16/03/2022

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