

INDOOR AIR HYGIENE GROUP

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Report No.: TR-KKL-2020-102

**Test on a Pleated Combi Filter Element
based on DIN 71460-1**

Client	Stadler Form AG Chamerstr. 174 6300 Zug Switzerland
Testing object	Pleated Combi Filter Element "Roger Dual Filter H12" Serial-No.: ---
Order	PO 4082
Date of order	30.09.2020
Arrival of the testing objects	06.10.2020
Content of order	Determination of the initial fractional efficiency according to Section 8.2 of DIN 71460-1
Standard of test	DIN 71460-1:2006
Test period	November 2020

The test report consists of 6 pages.

The test results refer exclusively to the test objects.
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1 Introduction

The Pleated Combi Filter Element "Roger Dual Filter H12" of Stadler Form is tested according to DIN 71460-1:2006, Section 8.2 and the standards cited therein. The examined value is the initial fractional efficiency. Chapter 2 provides a general overview of the test object and test conditions.

The tests are carried out in the Business Segment Refrigeration & Air Quality, DMT GmbH & Co. KG, in Essen. The results of the tests are listed in Chapter 3.

2 Testing object and test conditions

2.1 Description of the test object

Figure 1 and Figure 2 show photographs of the tested Pleated Combi Filter Element.



Figure 1: Upstream side of the Pleated Combi Filter Element – "Roger Dual Filter H12"

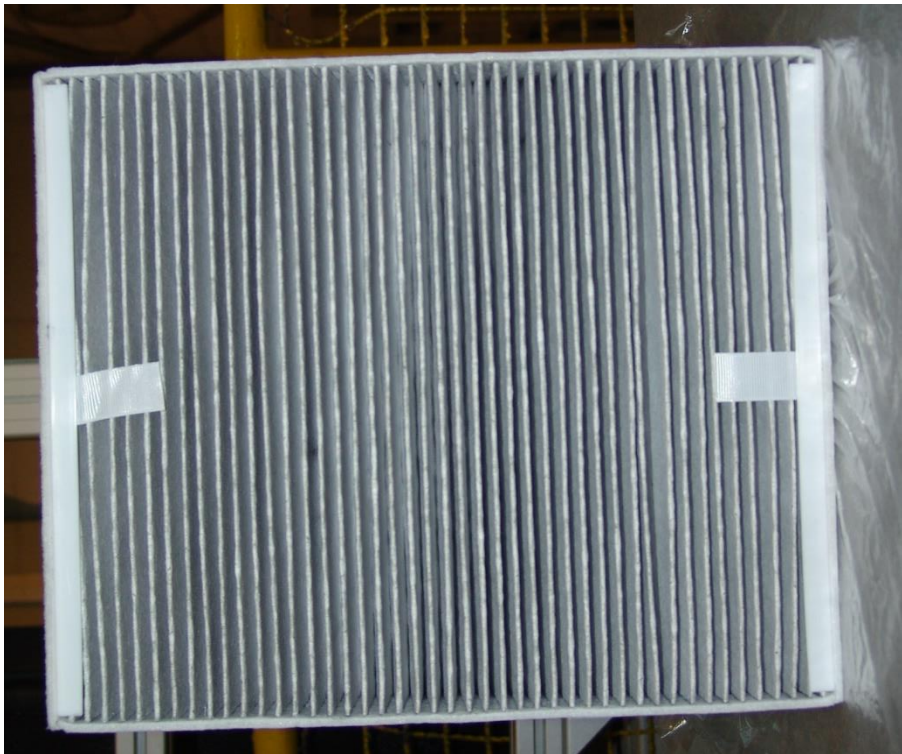


Figure 2: Downstream side of the Pleated Combi Filter Element – "Roger Dual Filter H12"

Table 1: Description of the testing object

Characteristic	Value
Designation	"Roger Dual Filter H12"
Type	Combi filter (HEPA and activated carbon filter)
Length	322 mm
Width	268 mm
Depth	45 mm
Filter area	Not indicated Lab-measurement: approx. 0.09 m ²
No. of pleats	42
Filter material	Not indicated
Serial-No.	Not indicated
Drawing-No.	Not indicated

Note: All technical data and general information according to client's information.

2.2 Test conditions and procedure

Boundary condition of the test:

- Test volume flow: 290 m³/h
- Dust concentration: 75 ± 5 % mg/m³
- Test dust: A2 fine (ISO 12103-1)
- Air temperature: 23 ± 2 °C
- Air humidity: 50 ± 3 %
- Drying for 24 h in a climate cabinet at 60 °C.
- Equilibration inside the test channel at rated volume flow for 15 min

The determination of the differential pressure loss curve and the dust holding capacity were not part of the order.

2.3 Measurement equipment

Measurement equipment installed for the test:

- Particle counter: "Welas 300" of Palas
- Particle disperser: "RBG 2000" of Palas
- Differential pressure: "ManoAir 500" of Schildknecht
- Rel. humidity/Temperature: "SD700" of Extech Instruments
- Dilution device: "VKL-10" of Palas
- Volume flow: "Inlet Nozzle" of Westenberg

3 Test results

Test conditions:

- Air temperature: 21 °C
- Relative air humidity: 48 %
- Air pressure (ambient): 1028 hPa
- Air volume flow: 290 m³/h
- Dust concentration: 75 ± 3,75 mg/m³
- Repeat measurements: 3
- Duration of measurement: 1 min each measurement
- Initial differential pressure: 79 Pa

Table 2: Fractional efficiency of the clean filter

X_m	Fractional efficiency	X_m	Fractional efficiency
µm	%	µm	%
0,255	100,00	2,212	100,00
0,295	99,07	2,555	100,00
0,341	99,53	2,950	100,00
0,393	100,00	3,407	100,00
0,454	100,00	3,934	100,00
0,525	100,00	4,543	100,00
0,606	100,00	5,247	100,00
0,700	100,00	6,059	100,00
0,808	100,00	6,996	100,00
0,933	100,00	8,079	100,00
1,077	100,00	9,330	100,00
1,244	99,05	10,774	100,00
1,437	100,00	12,442	100,00
1,659	100,00	14,367	100,00
1,916	100,00	16,591	100,00

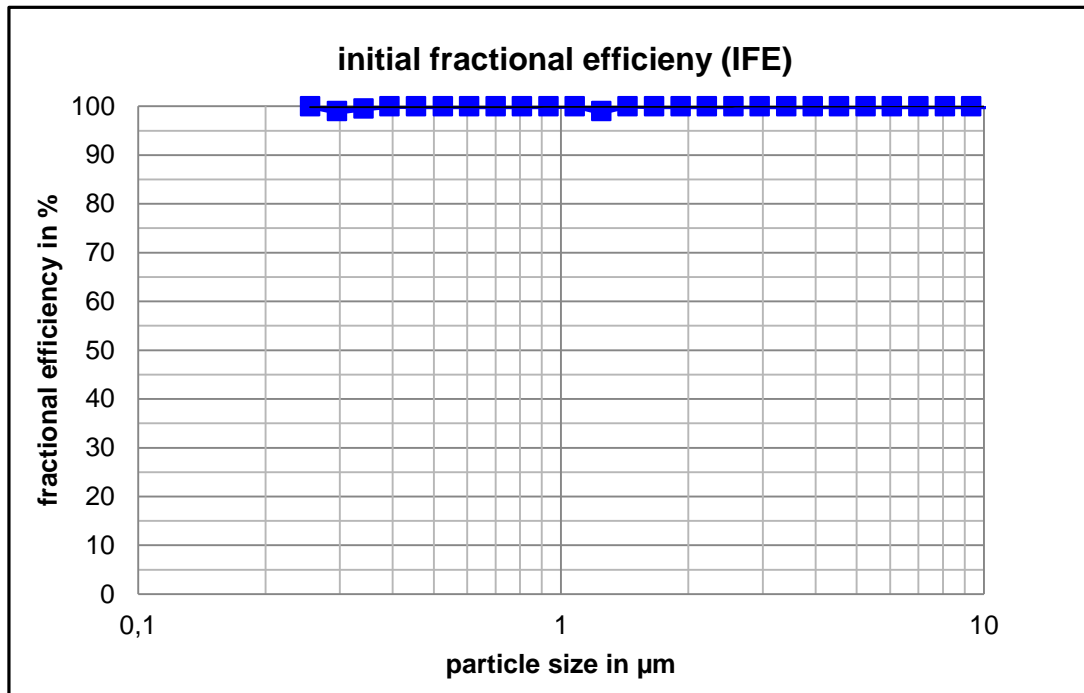


Figure 3: Fractional efficiency of the clean filter

Essen, 1 December 2020

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