

TEST REPORT

| | | | | | |
|--------------------|--|---------|--------------------|-----------|------------|
| Report Number | 200430-01 | Project | Quality Evaluation | Retention | Permanent |
| Pages | 3 | Level | 3 Level Info | Date | 4/30/2020 |
| Division | R&D Center | Title | Researcher | Name | Kiyoon Kim |
| Test Project | HEPA Filtration Test Report of Omni Air (RSC) | | | | |
| Related Technology | Product Sealing Technology and HEPA Filtering Technology | | | | |

1. Purpose : To measure the efficacy of product sealing and HEPA filtration

2. Test Method and Condition

2-1) Sample : the main body of RSC, Fabric filter, and HEPA filter(13 level)

2-2) Power: DC POWER SUPPLY 14.4V

2-3) Mode : Max (DUTY : 90%)

<Pcitures>



< RSC MAIN BODY >



< Fabric Filter >



<HEPA Filter (13 degree) >

3. Test Result

| Result of Dust Filtration Test | | | | | |
|--------------------------------|------------------------|------------------|------------|-------------|----------|
| d _{CLASS_MIN} | d _{CLASS_MAX} | d _{GEO} | intake air | exhaust air | sums |
| [μm] | [μm] | [μm] | [#] | [#] | [%] |
| 0.3 | 0.4 | 0.3 | 3134038209 | 254810 | 99.99186 |
| 0.4 | 0.5 | 0.4 | 1680236594 | 114195 | 99.99319 |
| 0.5 | 0.6 | 0.5 | 1263084944 | 79792 | 99.99367 |
| 0.6 | 1.0 | 0.8 | 2095209174 | 89333 | 99.99573 |
| 1.0 | 1.3 | 1.1 | 770619790 | 16538 | 99.99785 |
| 1.3 | 2.0 | 1.6 | 918690021 | 17296 | 99.99811 |
| 2.0 | 2.5 | 2.2 | 333919143 | 4528 | 99.99864 |
| 2.5 | 3.0 | 2.7 | 181232121 | 1751 | 99.99903 |

* Size of test dust: 0.3[μm]

4. Conclusion

The dust filtration efficiency test results in 99.99% dust collection rate measured on a dust size of 0.3 [μm]. Confirmed that RSC is sealed well enough to filter particles as small as 0.3μm under the HEPA13 level filter criteria.

※ Test Equipments

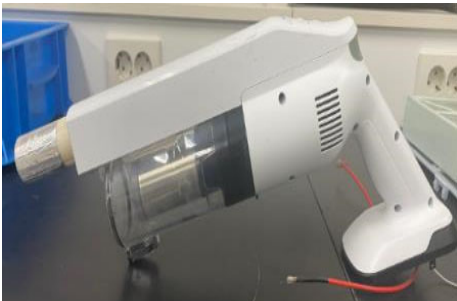
- 1) Test Machine : TOPAD Dust Emission Tester
- 2) Test Sample : RSC main unit, Fabric Filter, and HEPA Filter(13 level)



TOPAD Dust Emission Tester



Under Testing



< RSC MAIN BODY >



< HEPA Filter >



< Fabric Filter >



< Dust for Test Use >

※ Test Procedures

- 1) Clip the dust input jig onto the SET.
- 2) Check if the fabric filter and hepa filter are installed.
- 3) Secure the product to the Dust Emission Tester equipment.
- 4) Put a certain amount of DUST (ISO A2 FINE) into the Dust Emission Tester equipment.
- 5) After operating the equipment, check the result value.

※ Dust Emission Test Data Sheet

Reset



Test Filtration Efficiency acc. to IEC 60312-1; A5.11

Test Identification

| | | | |
|-------------------|-----------------|--------------------|-------------|
| Operator: | op | Date: | 2020-04-23 |
| File name: | Untitled | Time: | 오전 11:30:26 |
| Particle counter: | LAP340 | Ambient pressure: | 102.0kPa |
| Dilution: | 1: 10000 / 1:10 | Ambient temp.: | 23.7°C |
| Test voltage: | 109 VAC 50Hz | Relative humidity: | 21.1% |
| Comment: | | | |

Test Device

| | | | |
|---------------|--------------|---------------------|--|
| Type: | RSC MVT HEPA | SN: | |
| Manufacturer: | 200408 | Device data: | |
| State: | test | Acc. to type plate: | |

Filter equipment

| | | | |
|-------------------|--|---------------|--|
| Dust bag: | | Manufacturer: | |
| Motor protection: | | Manufacturer: | |
| Exhaust filter: | | Manufacturer: | |

Test Results

| | | | | |
|---------------------|----------------------|---------------------|---|-----------------|
| Volumetric air flow | 8.6l/s | l / s | DRC | 99.99717 |
| Dust type | ISO A2 FINE | | calculated values for particle size range dMIN - dMAX | |
| Dust feed | 2.063g | g in 10 min | d _{MIN} | d MIN 0.5 µm |
| Dust concentration | 400mg/m ³ | mg / m ³ | d _{MAX} | d MAX 5.0 µm |

Individual test data

| Test phase | Start time [hh:mm:ss] | Duration [hh:mm:ss] | DRC [%] | Q [l/s] | T _{EXHAUST} [°C] |
|--------------|-----------------------|---------------------|----------|---------|---------------------------|
| Background | 11:31:37 | 0:02:03 | | 8.5 | 27.5 |
| Conditioning | 11:34:10 | 0:09:39 | | 6.3 | 28.5 |
| Measurement | 11:44:20 | 0:09:29 | 99.99717 | 6.3 | 28.5 |

statistic values measurement

| Particle registration and evaluation | | | | | DRC-values |
|--------------------------------------|------------------------|--------------------|--|-------------|---|
| adjusted size ranges | | geometric diameter | statistic evaluated particle sums for 5 individual test runs | | for statistical evaluated particle sums |
| d _{CLASS MIN} | d _{CLASS MAX} | d _{GEO} | intake air | exhaust air | |
| [µm] | [µm] | [µm] | [#] | [#] | [%] |
| 0.3 | 0.4 | 0.3 | 3134038209 | 254810 | 99.99186 |
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| 0.5 | 0.6 | 0.5 | 1263084944 | 79792 | 99.99367 |
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