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DEVICE

DAMPA ApS
Clip In ST 15 Tex
Report No. DA 1607-837

Statement of
Qualification
Particle Emission

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Statement of Qualification

Customer

DAMPA ApS
Højeløkkevej 4a
5690 Tommerup
Denmark

Component tested

Category: Cleanroom Facilities

Subcategory: Wall, Ceiling, Floor

Product name: Clip In 600 x 600 ST 15 Tex
(manufacturing date: 16/6/2016; color: RAL 9010; serial number: 404710;
batch number: 110985)

Random sampling of particle emissions (airborne) at representative sites

Standards/Guidelines: VDI 2083-9.1; ISO 14644-1
The norms stated generally refer to the version valid at the time of the tests.

Test devices: Optical particle counter:
LasAir II 110 and LasAir III 110 with measuring ranges ≥0.1 µm, ≥0.2 µm, ≥0.3 µm, ≥0.5 µm, ≥1.0 µm and ≥5.0 µm

Test environment parameters:

- Cleanroom Air Cleanliness Class (according to ISO 14644-1): ISO 1
- Airflow velocity: 0.45 m/s
- Airflow pattern: vertical laminar flow
- Temperature: 22 °C ± 0.5 °C
- Relative humidity: 45 % ± 5 %

Test procedure parameters: The ceiling system was subjected to stress as follows:

- Structure-borne noise: approx. 5 to 50 Hz
- Oscillation velocity (Ø): v = 4 µm/s
- Oscillation acceleration (Ø): a = 3 mm/s²
- Deflection of the system (Ø): s = 0.03 µm

Test result / Classification

When operated under the specified test conditions, the ceiling system Clip In 600 x 600 ST 15 Tex is suitable for use in cleanrooms fulfilling the specifications of the following Air Cleanliness Class according to ISO 14644-1:

Test parameter(s)	Air Cleanliness Class
Structure-borne noise = approx. 5 to 50 Hz	4
Overall result	**4**

It must be pointed out, that according to ISO 14644-1 cleanrooms classes 1 to 5 have a high filter occupancy, with the result that large-surface ceiling systems cannot be used in some cases. Cleanrooms with a horizontal displacement flow form an exception to this.

Extra care needs to be taken while installing the ceiling tiles to avoid damage to their coated surfaces as this might have negative impact on the particle emission behavior. Accessories used to install the ceiling system can influence the cleanroom suitability as well. Therefor particle emission behavior should be reassessed in the respective assembly situation.

The measuring devices used for the qualification tests are calibrated at regular intervals; their results can be traced back to national and international standards. In cases where no national standards exist, the test procedure implemented complies with the technical regulations and norms applicable at the time of the test. The relevant documentation can be viewed on request at any time.

For further information about the test environment and parameters, please refer to the Fraunhofer IPA test report.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

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Place, date of first document issued

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Place, current date

on behalf of
Frank Bürger, Project Manager Fraunhofer IPA

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