IPA

Cleanroom (atmospheric)

valid until: November 28, 2030

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TESTED®
DEVICE

Butzbach GmbH
Mono TG
Report No. BU 2511-1687

DUPLICATE

Statement of
Qualification

Single product
Particle Emission
in Cleanroom
(atmospheric)

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Statement of Qualification · Single product

Customer

Butzbach GmbH Industrietore
Weiherstrasse 16
89293 Kellmünz
Germany

Tested product

Category: Cleanroom Facilities

Subcategory: Wall/Ceiling/Floor/Door

Product name: Novosprint Mono Tight
(manufacturing date: 10/2025; color: yellow; total width: 2935 mm; total height: 2480 mm; weight: 231 kg; article number: 1016443)

Random sampling of particle emissions (airborne) at representative sites in cleanroom under atmospheric conditions

Standards/guidelines: ISO 14644-1, -14
The norms stated generally refer to the version valid at the time of the tests.

Test equipment: 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
- Room temperature: 22 °C ± 0.5 °C
- Relative humidity: 45 % ± 5 %

Test procedure parameters:

- Cycles per minute: n = 1
- Maximum opening speed: v_o = 1.5 m/s
- Opening time: t_o = 2.5 s
- Maximum closing speed: v_c = 1 m/s
- Closing time: t_c = 3.5 s
- Pause open/close: b = each 27 s

Test result / Classification

The industry door Novosprint Mono Tight is suitable for use under the specified test parameters (room temperature: 22 °C ± 0.5 °C; relative humidity: 45 % ± 5 %) in cleanrooms of the following Air Cleanliness Classes according to ISO 14644-1:

Test parameter(s)	Air Cleanlines Class
Opposite side of the drive mechanism Cycles: n = 1/min v_o = 1.5 m/s; v_c = 1.0 m/s	5
Side of the drive mechanism Cycles: n = 1/min v_o = 1.5 m/s; v_c = 1.0 m/s	5
Control unit	3
Overall result	**5**

Please note: Transport damages, incorrect installation, oil leakage, aging behavior, corrosion etc. can influence the test result.

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.

Detailed information and parameters of the test environment can be found in the Fraunhofer IPA test report.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

Business unit
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-- — Place, current date

on behalf of
Dr.-Ing. Frank Bürger, head of business unit Testing and Certification

This document only applies to the named product in its original state and is valid for a period of 5 years from the date the first document was issued. The document can be verified under **www.tested-device.com**.

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