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**TESTED[®]
DEVICE**

Gerflor GmbH Floor Covering
MIPOLAM BIOCONTROL
Report No. GE 0802-427

DUPLICATE

Statement of
Qualification



Fraunhofer Institut
Produktionstechnik und
Automatisierung

Statement of Qualification

Manufacturer of object to be tested:

Gerflor Mipolam GmbH
Mülheimerstrasse 27
D-53840 Troisdorf

Component tested:

Floor Covering

Type:

MIPOLAM BIOCONTROL

Tests performed:

Measurement of particle emission (airborne) while frictional loaded.
Measurement of molecular emission (airborne) using gas chromatography in combination with mass spectrometry TD-GC/MS and gas impinger in combination with ion chromatography IC.
Electrostatic discharge measurements at representative points.
 Discharge resistance according to DIN EN 61340-4-1.
 Walking test according to DIN EN 61340-4-5.
 Assessment of the **resistance to chemical** to representative cleaning-, disinfection- and process agents over the time period of 24 hours.
 Assessment of the **surface cleanliness behavior** amongst representative cleaning methods.
 Assessment of the surfaces concerning **adhesion of micro organisms**.
 Assessment for presence of **metabolizable carbon-based products**.

Test parameters:

Reel-on-disc test versus stainless steel; single measuring track 250 mm, relative speed 150 mm/s, unidirectional rotation, number of revolutions 1500.
 Assessment of the outgassing behavior relative to anions, ammonium nitrogen compounds and volatile organic compounds (VOC).
 Measurement of the discharge resistance between an electrode and the central grounding point of the specimen.
 Used measuring electrodes according to DIN EN 61340-4-1 and ESD-footwear according to DIN EN 61340-5-1.
 Applying of test fluid on the specimen.
 Utilization of typical surface techniques (TX106 and TX160 by Basan) to determine its cleaning properties of the surfaces.
 Cleaning by wiping with ultra pure water and 70 % Propan-2-ol.
 Introduction of test object into a mineral salt agar inoculated with typical mould fungi or bacteria without the presence of any source of carbon.

Test results / classification:

Material pairing	Air cleanliness class (in accordance with ISO 14644-1)
MIPOLAM BIOCONTROL vs. Stainless steel	ISO Class 4

An outgassing behavior is detected at the specimen.
 Regarding to the ESD requirements to electrostatic conductible equipments the specimen can be categorized as being isolating (discharge resistance).

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The walking test results in a body voltage below 100V.

The surface is resistant to representative cleaning-, disinfection- and process agents. It is partial resistance to the test reagents diethyl ether (undiluted), ammoniac (25 %) and sulfuric acid (5 %). The specimen was not resistant to the test reagents acetone (undiluted), caustic soda solution (20 %) and butyl acetate (undiluted).

By using representative cleaning techniques, an improvement of 82.79 % (cleaning technique TX1065) resp. 85.66 % (cleaning technique TX160) on the surface can be achieved.

Due to its surface properties (low degree of surface roughness), the floor covering can be cleaned effectively, enabling the majority of microorganisms present on the surface to be inactivated or removed using a chemical cleaning process.

The test object can be categorized as being inert or fungistatic. It is resistant against bacteria.

Standards used for the qualification:

ISO 16000-6,-9,-11
DIN EN 61340-4-1; DIN EN 61340-4-5; DIN EN 61340-5-1
DIN EN ISO 2812-1
VDI 2083 Part 1, 4 and 9.1; ISO 14644-1
ISO 2812-1, cEG-GMP
ISO 846 Method A and C

Test environment:

Cleanroom of Air Cleanliness Class ISO Class 1 (according to ISO 14644-1)
Air flow velocity: 0.45 m/s
Air flow guidance: vertical unidirectional air flow from ceiling to floor (raised floor)
Temperature: $22\text{ }^{\circ}\text{C} \pm 0,5\text{ }^{\circ}\text{C}$ ($71.6\text{ }^{\circ}\text{F} \pm 0.9\text{ }^{\circ}\text{F}$)
Relative humidity: $45\% \pm 5\%$

The measuring equipment used for the qualification is regularly calibrated and is based on national and international standards. In cases where no national standards exist, the meaning procedure used corresponds with technical regulations and norms valid at the moment in time. The documents drawn up for this procedure are available for viewing.


Fraunhofer Institute
for Manufacturing Engineering
and Automation IPA

Department Ultraclean Technology
and Micromanufacturing

Nobelstrasse 12
D-70569 Stuttgart

Stuttgart, August 18th 2008

Place, date

i. A. 
Signature of project manager