



Fraunhofer

TESTED[®] DEVICE

SCHNEEBERGER GmbH
Monorail BM15-F-2G
Report No. SC 0902-474

DUPLICATE

Statement of
Qualification

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Manufacturer of object tested: SCHNEEBERGER GmbH
Gräfenau
D-75339 Höfen / Enz

Component tested: Profiled guideway

Type: Monorail BM15-F-2G

Tests performed: Random sample measurements of particle emission (airborne) at representative points at the two following versions of the Monorail BM15-F-2G

1) Monorail BM15-F-2G-0567-G0-QL on guide rail: 00332649.1-957.1 with carriers 957.1-1.1 and 957.1-1.2; lubricant: Isoflex Topas NCA 52

2) Monorail BM15-F-2G-0567-G0-QL on guide rail: 00332643.1-957.2 with carriers 957.2-2.1 and 957.2-1.2; lubricant: Isoflex Topas NCA 52; system burned, 300,000 cycles

Test parameters: Stroke length: 390 mm
Set of parameters 1 : $v_1 = 0.5 \text{ m/s}$; $a_1 = 1.0 \text{ m/s}^2$
Set of parameters 2 : $v_2 = 2.0 \text{ m/s}$; $a_2 = 5.0 \text{ m/s}^2$
Set of parameters 2 : $v_3 = 20.0 \text{ m/s}$; $a_3 = 20.0 \text{ m/s}^2$

Test results / classification: When the specimens are being operated at the above mentioned test parameters, they are suitable for use in cleanrooms fulfilling the air cleanliness specifications according to ISO 14644-1.

Type	Air Cleanliness Class (in accordance with ISO 14644-1)		
	$v_1 = 0.5 \text{ m/s}$	$v_2 = 2.0 \text{ m/s}$	$v_3 = 20 \text{ m/s}$
1) Monorail BM15-F-2G-0567-G0 new	ISO Class 5	ISO Class 6	ISO Class 6
2) Monorail BM15-F-2G-0567-G0 burned	ISO Class 5	ISO Class 6	ISO Class 6

Standards / guidelines used for the qualification: VDI 2083 Part 1, 4 and 9.1; ISO 14644-1

Test parameters of the cleanroom 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: $22^\circ\text{C} \pm 0.5^\circ\text{C}$ ($71.6^\circ\text{F} \pm 0.9^\circ\text{F}$)

Relative humidity: $45\% \pm 5\%$

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

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