



# Fraunhofer

## TESTED<sup>®</sup> DEVICE

Tsubakimoto Chain Co.  
Flatveyor ZP Type R100  
**Report No. TS 2310-1469**

### Single product Particle Emission

### Qualification Certificate

This is to certify that the product mentioned above, provided by

**Tsubakimoto Chain Co.**  
Kyoto, Japan

has been awarded a Fraunhofer certificate TESTED DEVICE  
bearing the report number TS 2310-1469.

The cable system Flatveyor ZP Type R100 (color: white) was  
assessed in compliance with ISO 14644-14. When operated under  
the specified test conditions, it is suitable for use in cleanrooms  
fulfilling the specifications of the following Air Cleanliness Classes  
according to ISO 14644-1:

Test parameter(s)	Air Cleanliness Class
$v_1 = 0.5 \text{ m/s}; a_1 = 1.0 \text{ m/s}^2$	1
$v_2 = 1.0 \text{ m/s}; a_2 = 2.0 \text{ m/s}^2$	1
$v_3 = 2.0 \text{ m/s}; a_3 = 4.0 \text{ m/s}^2$	2
<b>Overall result</b>	<b>2</b>

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

TS 2310-1469  
Report No. first document

Stuttgart, November 10, 2023  
Place, date of first document issued

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Report No. current document

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Place, current date

on behalf of   
Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA

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](http://www.tested-device.com)**.

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