



**Fraunhofer**

**TESTED<sup>®</sup>  
DEVICE**

U.I. Lapp GmbH  
ÖLFLEX ROBUST FD  
**Report No. LA 2509-1671**

DUPLICATE

Statement of  
Qualification

Single product  
Outgassing Behavior  
VOC/SVOC

|                |                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------|
| Customer       | U.I. Lapp GmbH<br>Schulze-Delitzsch Strasse 25<br>70565 Stuttgart<br>Germany                        |
| Tested product |                                                                                                     |
| Category:      | Energy Supply                                                                                       |
| Subcategory:   | Cable Systems                                                                                       |
| Product name:  | ÖLFLEX ROBUST FD 5G1,5<br>(manufacturing date: week 25/2025; color: black; article number: 0026523) |

Emission measurements with purge-and-trap thermodesorption method and gas chromatography combined with mass spectrometry (TD-GC/MS)

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standards/guidelines:      | ISO 14644-8, -15<br>The norms stated generally refer to the version valid at the time of the tests.                                                                                                                                                                                                                                                                                                               |
| Test equipment:            | Measuring station: .....PerkinElmer Clarus 600, Clarus SQ8, ATD 650                                                                                                                                                                                                                                                                                                                                               |
| Test procedure parameters: | <ul style="list-style-type: none"><li>Retention range (VOC): ..... C6 to C16</li><li>Outgassing test temperatures: ..... 23 °C</li><li>Duration of preconditioning: .....&gt; 10h</li><li>Flow rate purge gas: ..... 0.01 m³/h</li><li>Flow rate sampling gas: ..... 10l/h</li><li>Duration of sampling:..... 1 h</li><li>Air change rate:..... 1/h</li><li>Emission cell material:.....stainless steel</li></ul> |

Test result / Classification

The outgassing behavior of the cable system ÖLFLEX ROBUST FD 5G1,5 at the stated temperature was investigated according to ISO 14644-15. Based on the outgassing rates determined for the specific equipment, the following material classification was made for the corresponding Contaminant Category:

| Contaminant Category (x)<br>Kontaminantenfamilie (x) | SER <sub>y</sub> 23°C <sup>1)</sup><br>[g/unit · s] | ISO-ACC <sub>m</sub> Class (x)<br>ISO-ACC <sub>m</sub> -Klasse (x) |
|------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------------|
| VOC                                                  | 4.9 x 10 <sup>-10</sup>                             | -9.3                                                               |
| SVOC <sup>2)</sup>                                   | 5.3 x 10 <sup>-12</sup>                             | -11.3                                                              |
| Sum of VOC and SVOC<br>Summe aus VOC und SVOC        | 5.0 x 10 <sup>-10</sup>                             | --                                                                 |
| Refractories<br>Feuerfeste Materialien <sup>3)</sup> | 3.9 x 10 <sup>-12</sup>                             | --                                                                 |
| Siloxanes Siloxane <sup>4)</sup>                     | 2.3 x 10 <sup>-12</sup>                             | --                                                                 |

<sup>1)</sup> The emission rate is calculated using the detected mass based on the response of the standard, the analyzed unit and the sampling duration  
Die Emissionsrate wird anhand der nachgewiesenen Masse auf der Grundlage der Reaktion des Standards berechnet, der analysierten Probenfläche und der Dauer der Probenahme.  
<sup>2)</sup> SVOC are airborne SVOC  
SVOC sind luftgetragene SVOC.  
<sup>3)</sup> Refractories are compounds containing elements other than C, H and O (for example S, P, N, Si,...).  
Feuerfeste Stoffe sind Verbindungen, die andere Elemente als C, H u. O enthalten (z. B. S, P, N,Si,...).  
<sup>4)</sup> Siloxanes and other Si-containing organic substances. Siloxanes also count as refractories.  
Siloxane u. andere Si-haltige organische Stoffe. Siloxane zählen auch zu den feuerfesten Materialien.

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.

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|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Fraunhofer Institute for Manufacturing Engineering and Automation IPA | LA 2509-1671<br>Report No. first document                                              | Stuttgart, November 13, 2025<br>Place, date of first document issued |
| Business unit<br>Testing and Certification                            | --<br>Report No. current document                                                      | --<br>Place, current date                                            |
| Nobelstrasse 12<br>70569 Stuttgart<br>Germany                         | on behalf of<br>Dr.-Ing. Frank Bürger, head of business unit Testing and Certification |                                                                      |