

Attestation of Leakage Rate
Nr. IS-AN5-MUC-2512-10188980-006



Gebr. Müller Apparatebau GmbH & Co. KG
Fritz-Müller-Straße 6 - 8
74653 Ingelfingen

we hereby confirm that the butterfly valve series Tugela® R470 / R471 / R477 / R478 of the above-mentioned company with regard to the properties according

- TA-Luft (07-2002), § 5.2.6.3 / § 5.2.6.4 & Neufassung der TA-Luft (12-2020)
- VDI 2440 (11-2000), § 3.3.1.3 / § 4.3.1.4
- VDI 2440 (6-2021), § 6.3.1.3
- DIN EN ISO 15848-1 (07-2017)

has been verified and approved in accordance with TA-Luft. Details can be found in the corresponding test report with the A-No. 3311102 butterfly valve series Tugela® R470 / R471 / R477 / R478.

The product fulfills the following requirements under the max. allowable operating conditions for the test medium helium defined by the manufacturer:

Tightness or compliance with the specific leakage rate as defined in TA-Luft (07-2002), § 5.2.6.4 and new version of TA-Luft (12-2020), § 5.2.6.3. and VDI 2240

$$\leq 1 \times 10^{-4} \text{ mbar} \times \text{l} \times \text{s}^{-1} \text{ m}^{-1} \text{ and } \leq 0,01 \text{ mg} \times \text{s}^{-1} \text{ m}^{-1}$$

Compliance and assessment based on the requirements of the TA-Luft and DIN EN ISO 15848-1

Housing seal: $\leq 50 \text{ ppmv}$

Classification in the tightness class: BH $\leq 10^{-4} \text{ mg} \times \text{s}^{-1} \text{ m}^{-1}$

Product description:

- Butterfly valve Tugela® R470 / R471 / R477 / R478
- 470 (free shaft end)
- 471 (pneumatically driven)
- 477 (manually driven)
- 478 (electrically driven)



The product receives the marking:

ISO FE – BH – C03 – SSA0 – t (-40 °C/+230 °C) – PN16 – ISO 15848-1

C03:	2500 mechanical cycles (full stroke)
SSA0:	Number of readjustments: 0
Temperature classes:	-40 °C to +230 °C
Nominal pressure:	According to product brochure pressure / temperature

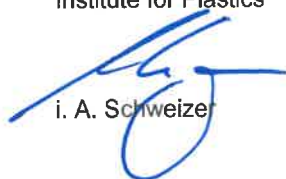
- Management instructions for installation, testing and maintenance of the sealing systems
- Type testing according to guideline VDI 2440 and DIN EN ISO 15848-1

The attestation is based on the test programme of TA-Luft and DIN EN ISO 15848-1. This attestation includes the verification of flange gaskets and fittings with regard to tightness / leakage rate. This was proven by initial testing.

This confirmation is valid from December 2028.

Munich, 2 December 2025

TÜV SÜD Industrie Service GmbH
Institute for Plastics


i. A. Schweizer

