

wfk certificate

This is confirmation for

Villeroy & Boch AG
Saaruferstraße
66693 Mettlach

that in an investigation (WL 4093A/23 of 23.01.2024), which was carried out by wfk-Institut für Angewandte Forschung GmbH, under the test conditions stipulated,

the potential for savings in terms of time and costs was investigated when cleaning the **TwistFlush[e³]** WC by using a strongly adhering plum-jam soiling and a cleaning procedure stipulated for daily cleaning compared to a WC with a traditional bowl rim. In addition, the flushing performance of TwistFlush[e³] was investigated compared to the more stringent conditions of DIN EN 997 or following Maximum Performance (MaP) Testing, whereby employees of wfk-Institut für Angewandte Forschung GmbH assessed flushing results, which were undertaken in the Client's flushing laboratory by the Client's staff. Furthermore, the water-saving potential of TwistFlush[e³] was calculated compared with a conventional WC on the basis of the flushing volumes declared by the manufacturer using the example of a usage model for a German company with 6,400 employees for a period of one year (TwistFlush[e³]: 4.5 L, versus a conventional WC: 6.0 L).

In view of the above-mentioned investigation, wfk-Institut für Angewandte Forschung GmbH consents to the use of the following statements with footnotes for advertising purposes by the customer¹:

The **cleaning duration** for TwistFlush[e³] when using a strongly adhering plum-jam soiling and a cleaning procedure stipulated for daily cleaning was **50 % lower*** compared to a WC with a traditional bowl rim.

The **annual cost saving** was calculated from the 55 seconds of time saved for the cleaning of TwistFlush[e³] compared to a conventional WC using the example of a German company with 6,400 employees. This was based on an hourly rate of € 29.70 for a cleaner in a German company with a minimum number of 144 WCs and 6,400 employees, taking account of a proportion of 66 % WCs (vs. urinals) and daily cleaning on 250 working days. **The cost saving calculated totalled € 16,344.00* with 6,400 employees.**

Furthermore, an **assessment of the flushing performance** of TwistFlush[e³] was carried out compared to the more stringent conditions in DIN EN 997 or following Maximum Performance (MaP) Testing, whereby employees of wfk-Institut für Angewandte Forschung GmbH assessed flushing results, which were undertaken in the Client's flushing laboratory by the Client's staff. On the basis of these results, **very good flushing performance** was certified for the TwistFlush[e³] WC with a flushing volume of 4.5 L and 6.0 L*.

The calculation of the **water saving potential** was made on the basis of the flushing volumes declared by the manufacturer for TwistFlush[e³] at 4.5 L compared to a conventional WC at 6.0 L. Using the example of a usage model for a **“German company with 1,000 employees”** and taking account of 3.1 visits to the toilet per day per employee, 220 working days per year and a proportion of 66% WCs (vs. urinals), an **annual water saving potential of 675.180 L** was calculated*.

*wfk-Institut für Angewandte Forschung GmbH / WL 4093A/23

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The certificate is valid from 01.03.2024 until 28.02.2027.²

Krefeld, 23.02.2024



Dr. Jürgen Bohnen
Managing Director



Dipl.-Ing. Anke Ophüls
Project Manager

¹ Consent in accordance with Chapter 4 Paragraph 2 of investigation report WL 4093A/23. No responsibility is assumed by wfk – Institut für Angewandte Forschung GmbH, Krefeld, for the legal permissibility of the content, wording and use of the advertising statement with footnote in the jurisdictions affected.

² The validity of the certificate limits the period of consent by wfk-Institut für Angewandte Forschung GmbH for the appropriate and legally permissible use of the certificate by the customer. However, the investigation results apply only to the samples tested and their features at the time of the investigation in accordance with Chapter 4 Paragraph 1 of investigation report WL 4093A/23. Certificates for products or procedures lose their validity with immediate effect if the products or procedures are changed in any way whatsoever by the Client.