



**Engineering progress
Enhancing lives**

RAUTITAN drinking water installation

Reliable cavity-free connection –
hygiene without compromise.



Expert assessment: bacterial growth potential and cavity-free spaces

REHAU – RAUTITAN with compression sleeve jointing technology

Scope

Development of a hygiene test facility and testing the potential bacterial growth on the RAUTITAN compression sleeve jointing technology.

Hygiene test facility

The hygiene test rig consisted of four test lines with 16 test pieces using the REHAU RAUTITAN system and was installed as a circulating ring with a thermostatically controlled constant temperature of 30 °C. The test rig was designed as a closed loop, operating at a constant pressure and generating a constant flow of 100 l/h with a maximum velocity of 1 m/s over the total test period of 104 days. The tests took place at the test lab of Fraunhofer UMSICHT. EVIAN mineral water was used as the test medium. All system components were DVGW certified.

Testing institute

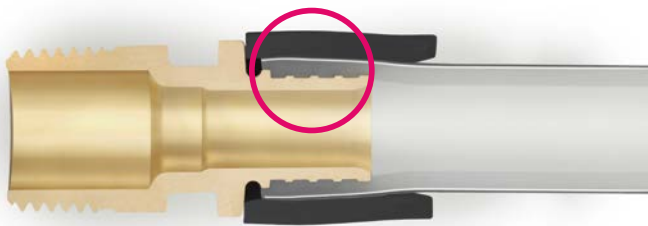
Fraunhofer-Institut Environmental, Safety and Energy Technology UMSICHT – Oberhausen

Test period

Test start date: 23 April 2015, test finish date: 4 August 2015

Analysis

The scientific assessment was performed by taking microbiological samples on all accessible connections according to recognized analytical protocols. The determination of the total cell count of the water samples was determined by carrying out three decimal dilutions with buffer solution. From the original and the diluted samples 0.1 ml was taken from each and transferred onto its own culture medium. Each culture medium was incubated at 30 °C. The colonies were counted after 72 hours (CFU per millilitre).



**Cavity-free
spaces
with
0 CFU/cm²**



Result

Overall, all joints showed sterility compared to germs in the water circulation.

Conclusion – Fraunhofer UMSICHT

The tested RAUTITAN fittings showed a high tightness, which effectively prevents bacterial contamination. According to the previous bacterial tests, such as those listed above, the REHAU compression sleeve joint can be described as a cavity-free joint.