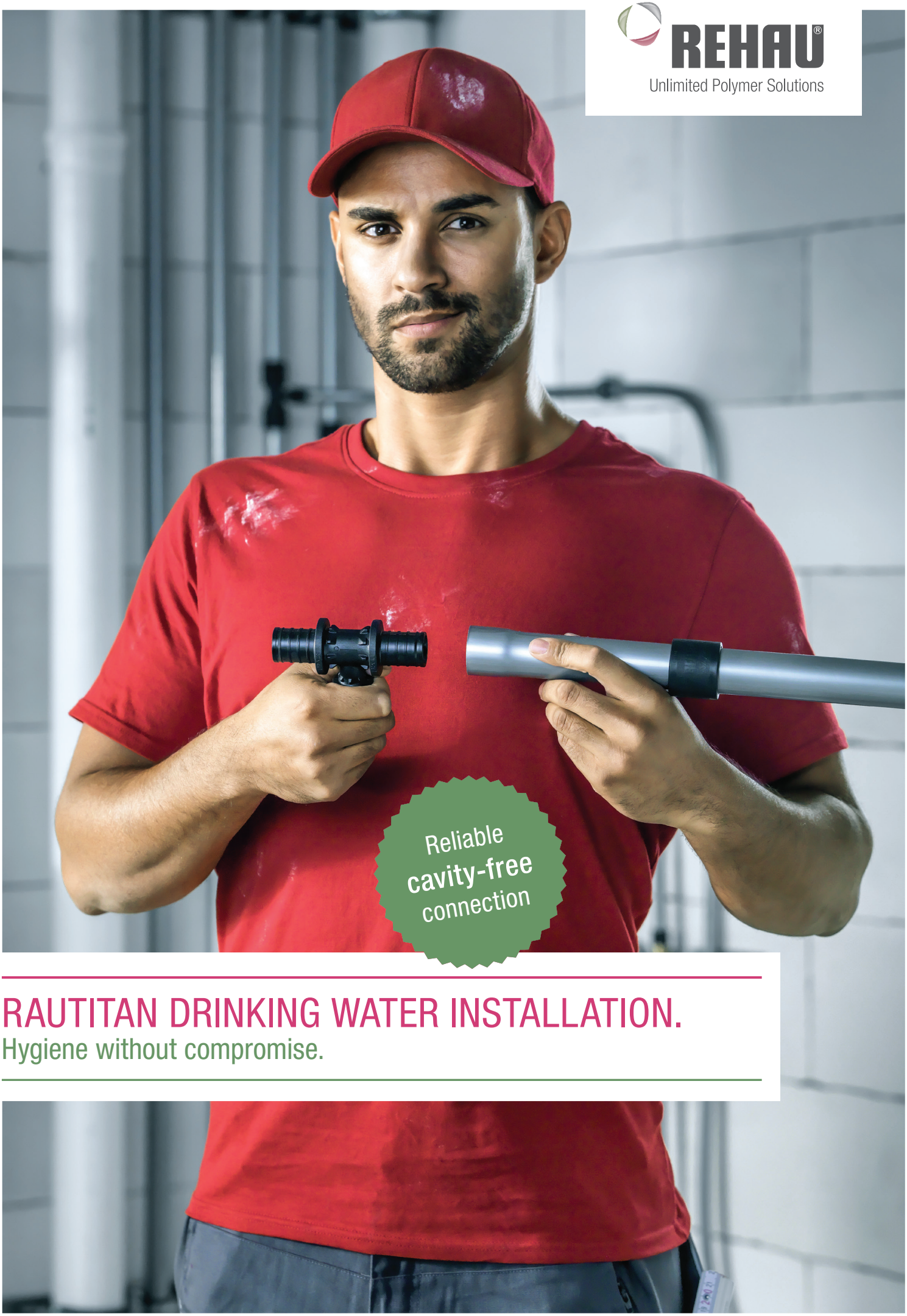
REHAU®
Unlimited Polymer Solutions



RAUTITAN DRINKING WATER INSTALLATION.

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.

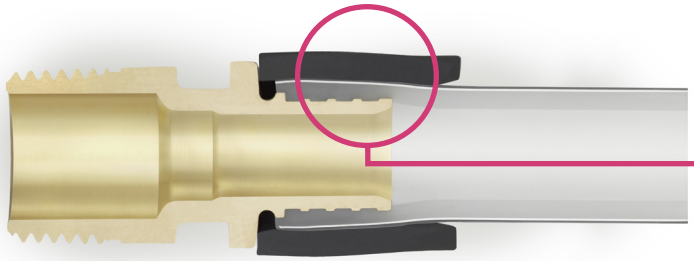
Testing Institute
Fraunhofer-Institut Environmental, Safety and Energy Technology UMSICHT - Oberhausen

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^{0}C.The test rig was designed as a closed loop, operating at a constant pressure and generating a constant flow of 100l/h with a maximum velocity of 1m/s over the total test period of 104 days. The test took place at the test lab of Fraunhofer UMSICHT. EVIAN Mineral water was used as the test medium. All system components were DVGW certified.

Test Period
Test Start Date: 23. April 2015, Test Finish Date: 04. 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 0.1ml was taken each and transferred onto its own culture medium. Each culture medium was incubated at 30^{0}C. The colonies were counted after 72 hours (CFU per millilitre).

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



Cavity-free spaces with 0 CFU / cm^2

Conclusion - Fraunhofer UMSICHT
The tested RAUTITAN fittings showed a high tightness, which effectively prevents bacterial contamination. According to the bacterial tests the REHAU compression sleeve joint can be described as a cavity-free joint.

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DHI00426 EN 01.2016