



Fraunhofer Institut
Bauphysik

Acoustic Test Facility Valves

Technical Data

Test Facility for Valves P11

Facility for measurements:

Volume 55,8 m³

The reverberation times of the room for measurements are almost constant in the building acoustic relevant frequency range.

Wall for measurements:

Building material masonry of pumice stone (100 mm)
with plaster on one side

Thickness 115 mm

Mass per unit area ca. 120 kg/m²

Surface 11,7 m²

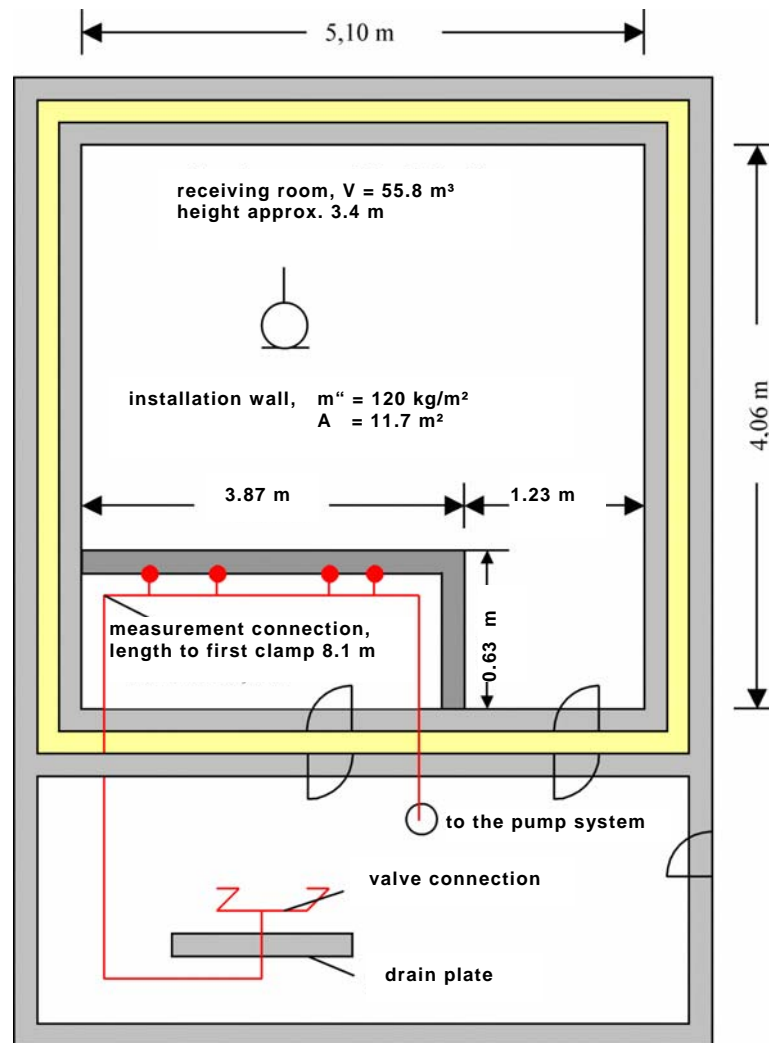
Wall with valves:

The wall with valves is decoupled from the wall for measurements concerning the structure-borne sound, so that excitation of the wall for measurements is solely built up by means of measurement connection.

Measurement connection:

The length of the measurement connection between the valves and the first clamp on the wall for measurements is 8,1 m.

The test facility for valves of the testing center accredited according to DIN EN ISO/IEC 17 025 complies with requirements of DIN EN ISO 3822 „Laboratory test on noise emission from appliances and equipment used in water supply installations“.



The valve to be tested is mounted to the provided water connection at the drain plate and operated by a flow pressure of 0.3 or 0.5 MPa. The flow pressure is calibrated by means of a regulated pump system in a closed water circuit. The water- and structure-borne noise generated by the valves is transmitted to the installation wall by means of the measurement connection (in this case a heavy steel pipe with 25 mm nominal size) via four rigid clips and then reflected from the installation wall as air-borne noise into the receiving room. The mean sound pressure level in the receiving room serves as parameter.

To achieve reproducible and comparable results, a standardized installation noise measurement tool is used, which is directly connected to the measurement connection instead of the valve. The measurements are transferred into the invariant valve noise level L_{apv} , independent of the kind of test facility by means of the standardized installation noise measurement tool. Then the valves are classified in valve groups according to DIN 4109, Table 6 and according to the sound characteristics on the basis of this invariant valve noise level.

As the sound levels generated by valves are frequently very low, test facilities for valves must be adequately sound insulated. On the basis of the house-in-house construction, the IBP test facility can guarantee this to a very high degree, so that also low-noise valves can be tested without any problems. Besides drain valves, all other types of water installations can be tested. The IBP is a licensing testing institution for appliances and equipment of water installations in Germany and issues test reports as well as general building supervision certificates.