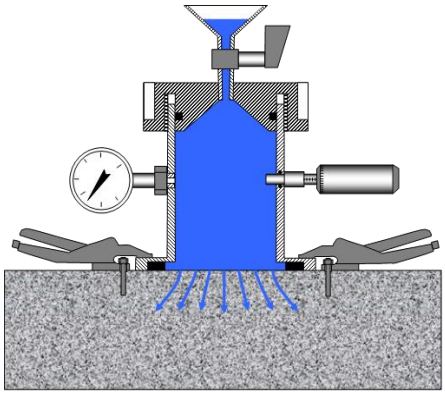
NDTitans in action

Case 3.1 Water Permeation evaluated by GWT, Germanns Waterpermeabity Test



Example 1. Masonry Permeability

After finishing 2000 m^2 brick walls in a newly constructed high-profile insurance buildings main office, it was observed that water penetrated the walls when it rained and there was a wind pressure on the walls.

First it was believed that the penetration of rainwater was related to highly permeable mortar joints.

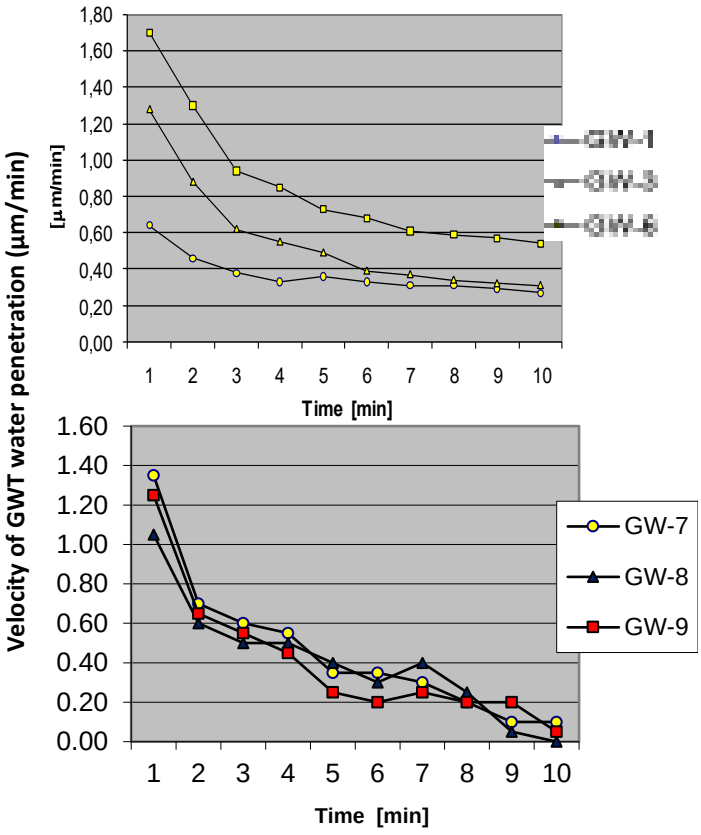
Testing with the GWT was performed as illustrated. The pressurized water penetrated very quickly the walls, in fact it was not even possible to establish any constant water pressure on the surface.

Separate testing was made on the bricks. They were highly permeable. The mortar joints were not the problem. The bricks that had been burned with higher heat than normally, to achieve the "right" color of the bricks, specified by the architect. The increased temperature during production had caused the bricks to become highly permeable.

The walls were applied a "water-proof" invisible sealer and re-tested to make sure rain would not penetrate at high wind pressures. sealer every year

Example 1. Water tightness of sewer pipes,

Correlations have been established between the speed of the GWT piston travel and the depth of water penetration using EN 12390-8 "Testing Hardened Concrete, Part 8: Depth of Penetration of Water under Pressure". It has been found that the definition "watertight" concrete of <50 mm penetration depth (EN 12390-8) 72 hours pressure test relates to a GWT water flux of < 0.32 µm/min [1)] after 10 minutes.



As will be seen, all sewer pipes passed the watertight requirement Report prepared by **NDTitan Andrzej Moczko**

1) *Moczko, A. & Moczko, M.: "GWT-New Testing System for In-Situ Measurement of Concrete Water Permeability", Elsevier, Procedia Engrg. 153 (2016), 483-489*