Concrete, component and method tests

Concrete, component and method tests

Vertical-compression test on a DN500 reinforced-concrete pipe

Products subject to mandatory technical approval are required to undergo strict quality monitoring. IKT, as an officially designated test, monitoring and certification centre, validates the following, for example:

- Pipes
- Manholes
- Special shapes

in **concrete**, **reinforced concrete** and **vitrified clay**, including the associated pipe joints and sealing elements and agents.
IKT also acts as a test centre for the "**Güteschutz Beton NRW**" (BGB) concrete quality assurance organisation.

Self- and third-party supervision

Deformation of manhole joints under vertical compressive load

IKT test centre offers its customers the following services for self- and third-party monitoring to European Standards:

- Concrete pipes, reinforced-concrete pipes, and shapes
  DIN EN 1916 and DIN EN 1201
- Concrete and reinforced-concrete prefabricated manholes/manhole components
  DIN EN 1917 and DIN V 4034
- Elastomer sealants
  DIN EN 681 and DIN 4060
- Paving stones
  DIN EN 1338
- Paving slabs
  DIN EN 1339
- Kerbstones
  DIN EN 1340

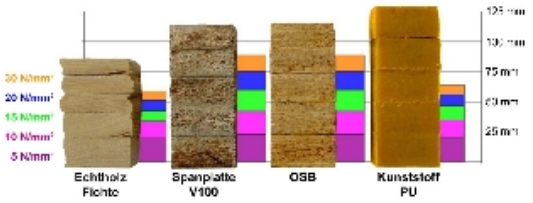
- Surround stones and water-permeable paving stones
  BGB code for non-standardised concrete products

Large and diverse range of tests possible

Deformation of manhole joints under vertical compressive load

- Elastomeric pressure-transmission elements
- Vertical deformation under dynamic traffic loads is a vital factor
  in accordance with the DIN V 4034, Part 1 manholes standard.

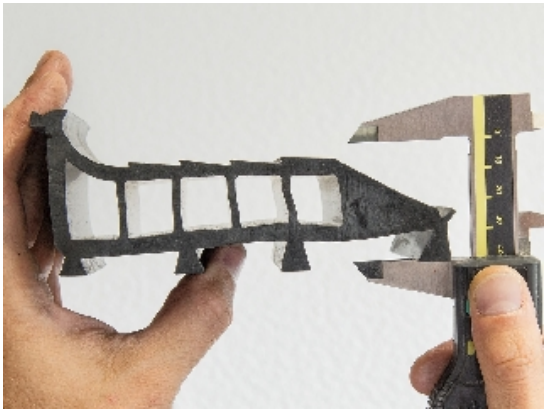
Pressure-transmission elements for pipe jacking



Testing pressure-transmission elements for pipe jacking

- Deformation behaviour of pressure-transmission elements during pipe jacking as specified in accordance with DWA Standard A161

Sealing width of elastomeric sections for concrete and reinforced-concrete pipes



Testing elastomeric sections for concrete and reinforced-concrete pipes

- Determination of sealing width, contact pressure distribution and maximum deformation
- Knowledge of contact pressure distribution is important for the development of sealing sections and of pipes
- Measurement by means of pressure-sensitive films
- in accordance with DIN EN 1916

1:1 scale method tests

1:1 scale method validation tests; here:

injection method for sewer laterals

- Injection tests on the medium-format test stand
- Injection tests for the repair of sewer laterals
- Checking of tightness against extraneous water by means of flooding of the test stand
- Service-life two months
- Tests on buried conduits

Modified vertical-compression test on large-calibre pipes

Modified vertical-compression test on large-calibre pipes

- Vertical and horizontal test forces are transmitted into a pipe simultaneously
- Highly authentic moment/normal force loads
- Actual cracking performance is reliably simulated
- Important for the assessment of crack widths and

crack lengths in on-site acceptance inspection of large-calibre pipes

Tightness testing of DN1600 jacking pipes

Tightness testing of a pipe string: DN1600, reinforced concrete, length 11 m, filled with 22 m³ of water and pressurised to 10 m w.g.

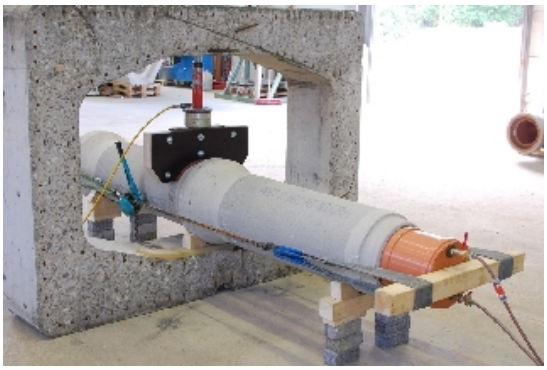
- Measurement of water uptake
- Visual checking of tightness
- Test pressures up to 2.5 bar
- in accordance with DIN EN 1916 and DIN EN 1201

Vertical-compression tests on DN1600 jacking pipes

Vertical-compression tests on DN1600 jacking pipes

- Exposure to vertical compressive loads
- Measurement of crack widths
- Measurement of ultimate compressive strength
- Checking of concrete cover and reinforcement
- in accordance with DIN EN 1916 and DIN EN 1201

Shear-load tests on DN300 pipes



Test apparatus: Will the socket stay tight even under shearing load?

- Tightness testing under shearing load in the pipe joint
- Visual checking of tightness
- in accordance with DIN EN 1916 and DIN EN 1201

Determination of longitudinal flexural strength on DN300 pipes

Determination of longitudinal flexural strength on DN300 pipes

- Bending load in the pipe-length direction
- Taking account of inadequate support
- in accordance with DIN EN 1916 and DIN EN 1201

Strength in compression of concrete cubes

Testing strength in compression of concrete cubes

- Quality Assurance for finished components and in-situ concrete
- in accordance with DIN EN 12390

Measurement of concrete and reinforced-concrete pipes

Measurement of concrete and reinforced-concrete pipes

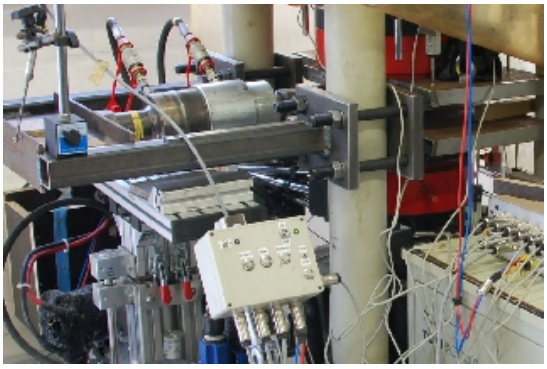
- Checking of dimensional tolerances
- Also important for tightness
- in accordance with DIN EN 1916 and DIN EN 1201

Determination of external abrasion on cast pipes

Determination of external abrasion on cast pipes

- Resistance of external coatings
- Suitability for trenchless installation methods
- No applicable standards

Shear strain of pressure-transmission elements under exposure to vertical and horizontal loads



Shear strain of pressure-transmission elements under exposure to vertical and horizontal loads

- Low-shear-resistance pressure-transmission elements increase the load acting on the pipe joint
- Shear strains as a function of jacking loads
- Fundamental research

Measurement of temperature in buried sheathing pipes

Measurement of temperature in buried sheathing pipes

- Fluid-conducting line with radiant heat loss
- Effects on sheathing pipe often neglected
- Long-term investigations on buried sheathing pipes

Tightness testing of buried fibre-optics splitters

Tightness testing of buried fibre-optics splitters

- Expansion of fibre-optics networks necessary
- Installation of the “last mile” also in the pavement
- Splitter water-tightness important!
- Analysis of suitability of splitters for buried installation

Contact

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