Concrete technical testing services

Contesta Oy provides a wide range of testing and research services based on in-depth expertise on concrete technology. In its line of business, Contesta Oy is the leading privately owned company in Finland. As of September 2001, we have continued the operations of the concrete laboratory of Fortum Technology (formerly IVO) in Vantaa, and, as of December 2004, the business of the materials testing laboratory of Consolis Technology Oy (formerly Addtek R&D Oy) in Parainen.

We provide testing, quality assurance, condition assessment, and development services for construction and stone materials and products, as well as for new building and renovation projects. Our clients include the construction-sector industries, companies and the public sector.

We operate as an *approved testing laboratory* under the Finnish Building Code. For the Vantaa laboratory, the essential parts of the testing functions have been *accredited.* Furthermore, we act as *a notified testing laboratory,* having also a lisence to use an international ILAC MRA accreditation mark.

Contesta Oy is a member of the Concrete Association of Finland, the Finnish Facade Association, the Building Construction Division of the Confederation of the Finnish Construction Industries, and the Eurolab-Finlad. In addition to our membership in these organizations, Contesta's personnel with wide range of expertise and experience is actively involved in the business of the organizations.

Concrete technical testing services

Compliance and approval tests of concrete structures, hardened concrete, concrete products, and building materials as an:

- Approved testing laboratory under the Finnish Building Code.
- Accredited testing laboratory T195 *).
- Notified body No. 1138 under the Construction Products Directive *).

Compliance tests of concrete and structures

- Compliance tests of concrete on Class 1 and 2 structures with standard and core specimens.
- Compliance tests for injection grouts and jointing mortars.
- Tests of frost-resistance, water impermeability and other durability properties.
- Compliance tests relating to the construction of structures and the inspection of finished structures.
- Official testing arising from unsatisfactory quality in load bearing structures.
- Core specimen drilling and grading strength calculations.

Approval tests for building materials

- Attestation of conformity tests for cement and adhesives for ceramic tiles *).
- Quality control tests for fly ash, silica, and slag.
- Product declaration and "SILKO"-tests for special mortars and concretes, repair materials, admixtures and steel fibres in concrete.
- Concrete aggregate tests.

Concrete mix design and initial tests

- Mix design for normal and special concretes.
- SFS and SFS-EN standards tests on fresh and hardened concrete.

Concrete and stone product testing

- Concrete kerb units, roof tiles, paving blocks, and flags.
- Expanded clay aggregate and concrete blocks.
- Natural stone products.

FINAS
Finnish Accreditation Service
T195 (EN ISO/IEC 17025)

ilac-MRA

*) Method lists;
see web sites www.finas.fi, www.contesta.fi.

Concrete structures condition assessments

Condition assessment determines the correct repair measures

A professionally performed condition assessment is a means to investigate the condition of building facades and balconies, car parks and bridges, swimming centre, water supply and sewage disposal structures, as well as power plant and industrial structures.

The aim is to determine the present condition of the structures and the extent, type, cause, and significance of possible damage to the technical functioning of the structures, to the extent agreed with the customer commissioning the assessment.

Condition assessment includes a detailed damage survey and field and laboratory tests

Assessment is based on visual observations made on site at the object and on using technical research equipment. If necessary, core specimens are drilled, or other samples taken for laboratory tests and analysed as agreed in the contract.

The information collected in the condition assessment and the conclusions drawn from it are assembled to create a comprehensive condition assessment report for the customer.

Our condition assessment service includes:

- Damage surveys and field tests.
- Core specimen drilling and versatile laboratory testing.
- Sampling and laboratory testing for environmentally detrimental substances (asbestos, lead, PCB...).
- Condition assessment reports and statements.
- Assessment of the remaining service life of structures.
- Infrared survey of buildings.

Thin-section analysis brings hard facts on structural condition

The investigation of the condition of and potential damage in old concrete structures, the selection of the correct type and extent of repairs, and ensuring a sufficient service life all require information on the microstructure of concrete.

A versatile tool in the investigation of the microstructure of concrete is so-called thin-section analysis, which allows us to detect damage that has started in a structure, but which is still outwardly invisible. In new building projects, thin-section analysis makes quality assurance more reliable.

Microscopic analysis of a thin section from aconcrete sample can reveal, for instance:

- Carbonation (risk of steel corrosion).
- Air void structure (frost resistance).
- Types of fracture (causes of damage).
- Other hidden risks of damage (e.g. pore fillers).

Thin-section analysis can be used to investigate the microstructure of samples of not only concrete, but also of mortars, stones, paint and coating surfaces, bricks, ceramic tiles, and other building materials.

A 0.025-mm thick slice, a thin section, taken from a concrete sample, supports condition assessment in old structures and quality assurance in new building projects.

Concrete technology expert services

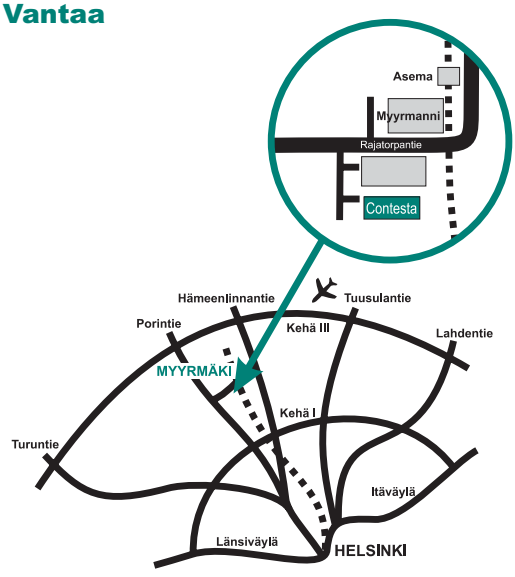
Research support for product development and decision-making

We provide our customers with research, investigations, product development, and quality assurance services relating to concrete materials technology and to applied concrete technology.

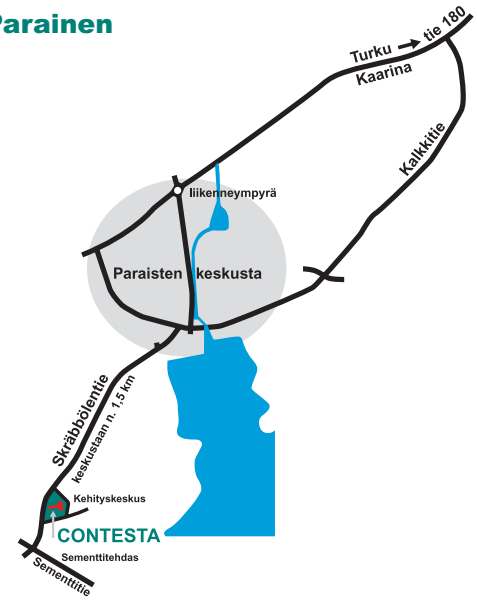
Our services include:

- Research and development services relating to concrete materials technology and concrete products.
- Electron microscopy and image analysis services for construction materials.
- Production quality control and assurance services at the factory, on site, and in the laboratory.
- Site-specific quality planning and moisture management programmes for concrete construction.
- Concrete work declaration and contract document preparation and control services.
- Expert statements for fire, floor damage, and similar claims and damage reports.
- Production control and reception inspections of prefabricated concrete units.
- Development services for the utilization of power-plant by-products.
- Concrete technical investigations relating to the final disposal of nuclear waste.
- Measurement services for flatness tolerances in test specimen surfaces, specimen moulds and testing machine platens.
- Petrography analyses for concrete aggregates and sieve size inspection services for aggregate sieves.
- Repair, maintenance and calibration services for air content meters for concrete.

Vantaa



Parainen



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Expertise that gets beneath the surface

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