



CONCRETE TESTING

CTS' team of experienced technicians provide one of the UK's most comprehensive range of concrete testing services to clients across the UK.

Whether evaluating new mix designs, testing for compliance, assessing the condition of in-situ concrete or investigating reasons for failure, CTS offer a full range of on-site and off-site tests.

When using fresh concrete, understanding the mechanical and physical properties helps to determine its workability, stability, and hardened state strength, along with testing for durability and long-term properties.

Alongside testing concrete, CTS also carry testing of the individual components of cement, aggregates, and water. Understanding the components and the quality of concrete delivered to site and through structural engineering ensures that concrete that is often used to support heavy loads is tested to make sure its strength and durability are sufficient.

With the main criteria for checking strength compliance of concrete being the testing of concrete cubes, beams, or cylinders, it is imperative that the production of test samples is carried out correctly in accordance with British Standards, by trained personnel. By utilising CTS's skilled technicians, you can be assured that the concrete used is fully compliant with industry standards and that the results obtained are delivered in accordance with accredited quality standards.

Alongside strength testing of cubes, beams and cylinders, CTS utilises temperature maturity and equivalent age comparisons to determine the early age strength of concrete through the monitoring of early-age temperature gain. This allows the early age strength of in-situ concrete to be monitored and allows the progression of the project at the earliest possible time while ensuring safety and quality is maintained.



CTS help to assure compliance with all technical and quality aspects throughout a structure's life.

- Pre-construction – to understand the concrete composition and its ability to deliver the requirements of the design and comply with specifications.
- During construction - to assess the acceptability of the fresh state of concrete and ensure compliance with the hardened state strength requirements.
- Post-construction – to investigate potential failure in concrete, including non-destructive testing, surveying and routine checking.

*Please visit our website for links to our full UKAS schedule.



Fresh concrete tests include:

- Determination of slump - BS EN 12350-2
- Determination of flow - BS EN 12350-5
- Determination of compacting factor - BS1881-103
- Determination of air content - BS EN 12350-7
- Degree of compactability - BS EN 12350-4
- Bauer filtration test - In-house method
- Determination of bleeding rate of concrete - ASTM C232
- Column segregation resistance - ASTM C1610
- Fibre content (fresh sample) - BS EN 14488-7 & BS EN 14721
- V funnel - BS EN 12350-9
- L-Box testing - BS EN 12350-10
- Sieve segregation - BS EN 12350-11
- J ring testing - BS EN 12350-12
- Slump flow, T500 and Visibility Stability Index (VSI) - BS EN 12350-8
- Static segregation using column technique - ASTM C1610

Physical, mechanical, and chemical tests on hardened concrete help to prove compliance with contract specifications of final products, as well as to gain assurance for the quality of materials used.

Hardened concrete tests include:

- Compressive strength of concrete cubes - BS EN 12390-3
- Compressive strength of concrete cylinders - BS EN 12390-3
- Flexural strength of concrete beams - BS EN 12390-5
- Tensile strength of concrete cylinders - BS EN 12390-6
- Compressive strength of concrete cores - BS EN 12504-1
- Residual flexural strength of concrete beams - BS EN 14651 & BS EN 14488
- Barcelona test - In-house method
- Fibre content (hardened sample) - BS EN 14488-7
- Hardened Specimen Visual Stability Index (HVSI) - In-house method

Other concrete testing services include:

- Concrete maturity (early age strength determination)
- 3m beam concrete pavements (MOT Straight Edge Assessment)
- Macro texture (concrete)
- Water penetration in concrete
- Water absorption in concrete
- Crack monitoring
- Freeze thaw – hardened concrete
- Determination of secant modulus of elasticity
- Drying shrinkage
- Collection of sprayed concrete panels and beam cutting
- Determination of mix proportions and cement content
- Pendulum test (slip/skid)
- Pull-out testing
- Rebar scanning
- Schmidt hammer surveys
- Structural investigation surveys
- Pavement investigation surveys
- Supply data logging temperature equipment