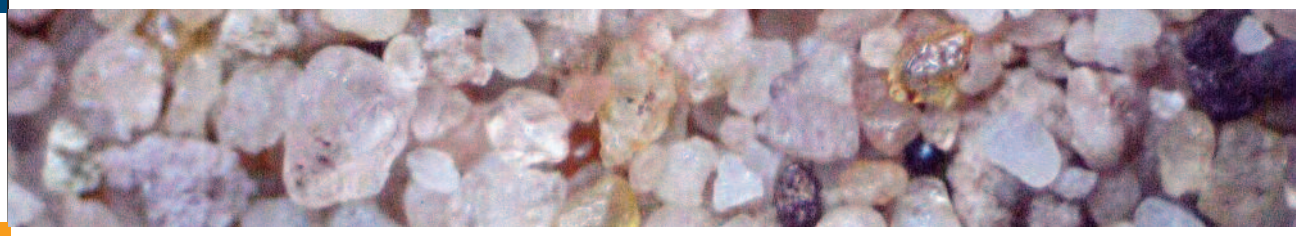
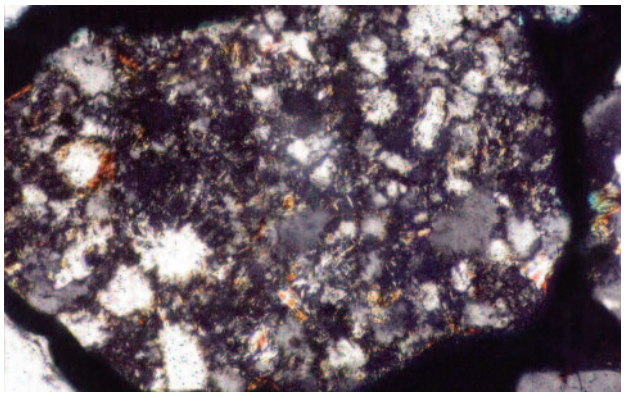
kiwa
Partner for progress



Concrete and other Construction Materials

Identifying the cause of problems & failures via Thin Section Petrography



Petrography is a generic term for the systematic microscope based examination and investigation of test samples in hand specimen, thin or polished section form. For cement type building and construction materials, petrography is often vital in identifying the cause or causes of in service problems and material failures. Assisted where necessary by supportive instrumental methods including XRD, SEM/EDX and XRF, petrography becomes a powerful forensic tool in helping the construction and associated industries to understand the overall condition of a structure and exposures and changes affecting the construction materials employed on the build.

Example scenarios:

- Assessment of the extent of fire damage to an industrial steel reinforced concrete support frame to identify the necessary extent of repair
- Identification of alkali silica reaction as the cause of cracking to aircraft servicing platform and runway thresholds to a major UK RAF Base
- Identification of the cause of significant in service failure of the surface/near surface zone of a ground bearing concrete floor slab to a major commercial warehouse

Kiwa CMT Testing have the experience and expertise to advise on specialist investigations and are happy to provide support and guidance for our clients including detailed costings and testing and examination schedules.

**Kiwa:
the home of independent, high quality testing**

UKAS TESTING

CHAS Accredited Contractor

Constructionline

CMT

How can we help?

Our testing services incorporate a full scope of sampling, examination and investigative techniques and overall reporting for hardened concrete, cementitious materials, stone, and aggregates. Issues addressed include:

- General assessment of condition
- Cement type
- Aggregate type
- Sulphate ‘attack’ (both ettringite and thaumasite forms)
- Alkali Silica Reaction (ASR)
- Identification of cement replacement materials (GGBFS, PFA)
- Quantitative assessment of constituent proportions and binder type
- Segregation and ‘bleeding’
- Compaction and voidage
- Cause of cracking
- Microcracking assessment
- Microporosity
- Corrosion of steel reinforcing (extent & cause)
- Aggregate type and reactivity
- Identification of reaction products and contamination
- Carbonation and deleterious chemical reactions in HAC concrete
- Effects of fire/elevated temperature
- Freeze/thaw effects

Other Services:

As an inspection, testing and investigation company with over 35 years of service to the construction, civil engineering, environmental and associated industries. Kiwa CMT Testing provides our clients with a comprehensive scope of laboratory and site testing and investigative operations, under the following headings:

- Contaminated Land
- Offsite Disposal
- Chemical Analysis
- Concrete & Mortar
- Building Products
- Geotechnical Investigations
- Lighting Column Testing
- Structural Investigations
- Sports Stadia Barrier Testing

We provide key on-site and off-site investigative, consultative and testing services. For our clients we are ‘The Obvious Choice’.

How to contact us

Please call us on +44 (0)1332 383333 or email:cmtenquiries@kiwa.co.uk and we will get straight back to you. Why? Because we like to help.

www.kiwa.co.uk

Kiwa CMT Testing
Unit 5 Prime Park Way
Prime Enterprise Park
Derby.
DE1 3QB

Telephone: +44 (0) 1332 383333
Fax: +44 (0) 1332 602607
Email cmtenquiries@kiwa.co.uk
Web: www.kiwa.co.uk