

## Concrete Petrography

Identifying the cause of problems and failures within concrete and cementitious materials 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 based 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.

Petrographic examination is carried out to ASTM C856 and BS/ BSEN Protocols

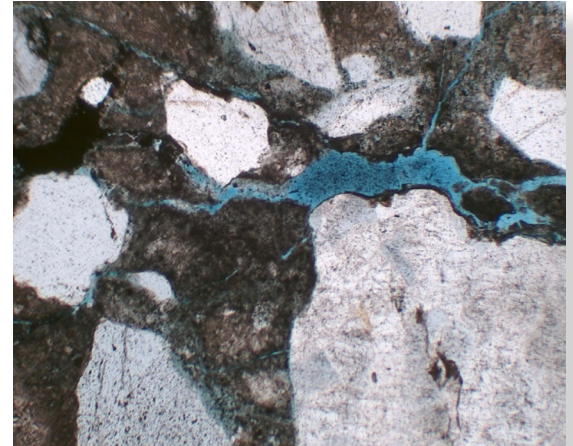
Our testing services incorporate a full scope of sampling, examination and investigative techniques and overall reporting for hardened concrete, cementitious materials, stone and aggregates.

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

Our accreditations speak for themselves

We are also CHAS accredited and Constructionline registered so you know you can depend on our credentials.



For advice and Services on any issues relating to Hardened Concrete please contact

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or alternatively you can speak to any member of the Chemistry department on the same number.

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