Moisture sensitivity testing of class AB and B mundic concretes

The ‘Mundic problem’

Some domestic properties in the South West of England built using concrete blocks have been afflicted with the ‘mundic problem’. This is caused primarily by the use of sulfide-bearing mine wastes as the concrete aggregate within this region between 1920 and the early 1950s. Oxidation of pyrite and other sulfides within these aggregates results in:

- bulk expansion of concrete
- sulfate and acid attack on the cement paste.
- in extreme cases the concrete may become completely unserviceable.

Building Societies and other lending institutions require petrographic screening of the concrete in domestic properties before they are deemed suitable for mortgage purposes.

How BRE can help

BRE, as part of a government funded program, was previously involved in the development of a simple microscopic method for:

- identifying potentially deleterious aggregates
- recognising incipient aggregate-related degradation

This simple screening procedure has allowed 80% of previously mortgage-blighted properties to be released onto the housing market. The remaining 20% of Class AB & B properties, those properties being in good structural condition but affected by mortgage blight can, in some circumstances now be helped with a simple moisture sensitivity test also developed by BRE.

Moisture sensitivity testing

The moisture sensitivity test, recently introduced by the RICS, establishes the likely potential expansion of concrete containing the potentially deleterious aggregate, which has not expanded significantly under normal conditions to cause structural damage (class AB & B properties). BRE researched the original test method and can now conduct the test on a regular basis for surveyors concerned.

The BRE report of the testing is received by the surveyor concerned in a simple format, indicating whether the material tested has passed or failed. It also includes the expansion data for the property concerned. This test procedure will potentially enable the release of a significant number of currently mortgage-blighted houses back onto the property market.

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