

- Class C (unchanged) – Those that are found to be clearly unsound from examination.

A large number of properties have been examined and the results indicate some 80% have passed in Class A at the preliminary screening stage and about 5% have gone to Class C.

The remaining 15% have undergone Stage Two examination and many have been regraded to Class A or A/B.

For Class C materials it is recommended that examination is made by a Structural or Civil Engineer.

### **Currently:**

- Class A1 - A3 are mortgageable (subject to lender)
- Class B and C are unmortgageable

## **Who can carry out testing for mundic block?**

The Council does not provide a testing service and we are not able to recommend anyone. However, there are a number of companies within Cornwall who can undertake the testing for you. If you search the internet for 'Mundic block testing Cornwall' a list of companies will be provided.

The Council accepts no liability for any works or reports undertaken or provided by any of these firms.

If you want help or advice on how to produce information in alternative formats or interpreter services please phone **01872 322594** or email **equality@cornwall.gov.uk**.

If you would like this information in another format please contact:

**Cornwall Council  
County Hall  
Treyew Road  
Truro TR1 3AY**

Telephone: **0300 1234 100**

Email: **enquiries@cornwall.gov.uk**

**www.cornwall.gov.uk**

# **Mundic Block**

A guide advising what is mundic block and how can you test for it

Many properties in the South West of England are built from concrete blocks laid onto mass concrete foundations. The main reason for the use of concrete blocks in this area is that suitable raw materials to form and mould conventional red clay bricks were not available.

Blocks were produced from waste rock worked from mining, quarrying and free supplies of beach gravel. The mine waste rock was of a coarse aggregate with fine mix aggregates produced from beach sand, china clay waste or mine processing residue.

The production of the blocks using these materials took place from the turn of the twentieth century until the 1950s when mass production of widespread concrete blocks became common. This did not totally eradicate the use of local materials in block and foundation construction until the early 1960s

Some of these local materials used as aggregates in concrete construction can cause deterioration and mechanical weakening of the building.

## Types of materials used

### Sulphide Minerals

Often found in mine or quarried rock. These can oxidise under damp atmospheric conditions with the production of sulphuric acid. This attacks the cement causing weakness and expansion - commonly called 'Mundic Decay'.

### Fine Grained Rocks

These are formed by sediments laid down on the floor of oceans and can be quite soft. They can change volume and delaminate under attack from moisture fracturing the cement of the concrete. This effect is called 'Killas'

### Furnace Residue

Clinker, Coking Breeze and Slag from metal smelters, gasworks and laundries. If the coal has not been adequately burnt it can expand when wet causing cracking.

### Reactive Silica

Such as flint found in beach gravel generally found in mass concrete.

## Testing for mundic block

The test consists of a two-stage analysis and a stage three performance assessment.

### Preliminary Screening Test

The screening test involves making a number of 50 mm diameter drill holes where a "core" is taken from the external walls, samples of foundations and, where accessible, internal walls and the chimney.

The examination will identify that the concrete is made up of suitable materials and hence Class A.

In some cases, after the Preliminary Stage 1 when concrete cannot be placed into 'A' or 'C', it is recommended that further testing is carried out.

### Stage 2

The stage 2 examination will identify and classify results that cannot be defined by the above test and determine Class 'B'.

### Stage 3

The stage 3 examination will assess the performance of the aggregate material with the core samples previously taken.

It can be applied to 'Class B' material following the stage two investigation when, in the opinion of the surveyor and the petrographer, they are satisfied that the property's structural condition and examined core material do not indicate visible deterioration.

Tests are carried out in laboratory conditions to simulate extreme weathering.

## Results (for testing carried out after 2015)

- Class A1 (formerly Class A) - Sound concrete satisfactory condition.
- Class A2 (formerly Class A/B) - Concrete considered sound subject to adequate protection and maintenance.
- Class A3 (new classification) - The development of a Stage 3 Expansion Testing that was formerly designated as Class B, would have formerly been classified as Class A/B but will now be designated as A3.
- Class B (unchanged) - Concrete contains more than 30% possible problem aggregates although appearing sound could cause potential problems.