

# Sulphate Attack



Microscopic view of Sulphate crystals in concrete

**Project:**  
Sulphate Attack  
**Location:**  
Various  
**Consulting Engineer:**  
Alan Wood & Partners

## Description:

Sulphate attack is a chemical reaction, affecting the concrete in the floor construction of properties. Sulphates present in contaminated hardcore, together with a source of moisture it reacts with the cement in the concrete causing it to expand and crack.

The expansive force of the chemical reaction can displace the external and sleeper walls leading to the opening of skirting board joints, the bouncing of timber floors, cracking and displacement of brickwork as the above photo and the disruption of concrete floors and sub-floors. It can take anything for 10 to 20 years for the physical defects mentioned above to manifest themselves.

With sulphate attack the correct solution is to remove all defective concrete and contaminated hardcore and replace both. This is very disruptive and costs can be substantial. Sulphate attack is not normally covered by buildings insurance as it tends to be excluded by means of a clause exempting all forms of chemical attack. However, where it is possible to prove that an escape of water such as a cracked drain has triggered the reaction the insurance claim may be successful.

Alan Wood & Partners have the expertise to identify the problem, to recover samples and to test the concrete to prove the presence of sulphate attack. We also are able to advise and co-ordinate any remedial action that may be required, advising on insurance issues where appropriate.