



## Certification Performance Criteria Guidance

### B4.1 Mineral Consolidation

#### Revision A

##### Performance Criteria

Certifiers shall satisfy themselves that the design of the foundations allows for the presence of shallow mine workings, the collapse of which could result in surface movements that will cause settlement of the foundations, where this has been revealed in the ground investigation.

##### Background

Standard 1.1 requires that the building must not be subject to deformations which would make the building unfit for its intended use, unsafe, or cause damage to other parts of the building or to fittings or installed equipment. Where ground movements arising from the collapse of abandoned mineral workings or quarrying operations are predicted that will cause such deformations then measures must be taken that will limit these movements. Normally these will take the form of a mineral consolidation scheme.

The Certifier is not required to certify the design of the mineral consolidation scheme as this is work that does not require a building warrant. However, the Certifier is required to ensure that the effect of such work such is taken into account in the design of the building and its foundations.

##### Guidance

The Certifier must demonstrate that the risk to the stability of the building arising from abandoned mineral workings has been assessed and, where necessary, suitable consolidation measures have been or will be introduced.

The Certifier should review drawings, specifications, reports, etc. detailing the works undertaken including any subsequent testing or drawings and specifications relating to works to be undertaken to see that the design of the building and its foundations will satisfy Standard 1.1.

CIRIA Special Publication 32 'Construction over abandoned mine workings' provides guidance to engineers regarding the techniques for consolidation of old mine workings and remedial measures for mine shafts. The publication further describes where structural techniques can be applied to accommodate surface effects from mining and also provides a sample specification for mining consolidation.

The above publication has been under review for a number of years with the view to producing a new Abandoned Mine Workings Manual. Although the new Manual is still to be produced the principal funders, the Coal Authority and CIRIA have made available draft chapters for guidance in advance of its publication. These can be found on the CIRIA web site.

General sources of information on the scale and nature of problems arising from mining instability is available from the following sources:

- British Geological Survey
- The Coal Authority.
- Local Authority records

### Examples of Major Non-conformances

Absence of or grossly inadequate evidence of the Certifier's review of the effect of shallow mine workings on the design of the foundations.

Failure to adequately demonstrate how the design of the foundations has taken account of the fact that mineral consolidation measures were not adopted where a significant settlement risk to the building has been identified.

Failure to demonstrate that the extent of the mineral consolidation works has been identified or defined.

Failure to demonstrate that the mineral consolidation measures undertaken or to be undertaken have been assessed and that these are taken into account in the design of the foundations.

### Examples of Improvement Issues

Insufficient evidence of the Certifier's review of the effect of shallow mine workings on the design of the foundations.

Failure to indicate the extent of any mineral consolidation works on the warrant plans.

March 2022