

Surface Development Guideline 1 – Pothole subsidence risk

Requirements, information and guidance for development
on properties above shallow non-active coal mine workings

SUBSIDENCE
ADVISORY NSW

Contents

1. Introduction	3
2. Surface Development Guidelines	3
3. Objective of Guideline 1	3
4. Areas where this guideline applies	4
5. Allowable residential construction.....	4
6. Other allowable additions and improvements	5
7. Who assesses development applications on Guideline 1 properties.....	6
8. Proposed developments that do not comply with the guideline.....	6
9. Certification requirements.....	6
10. How this guideline was developed	6
11. Disclaimer	6

1. Introduction

Subsidence Advisory NSW (SA NSW) is the NSW Government agency responsible for regulating and administering the mine subsidence compensation system in NSW.

SA NSW has developed and applied surface development guidelines (Guidelines) in accordance with the *Coal Mine Subsidence Compensation Act 2017*, to support, inform, and guide prospective home builders, property developers, local councils and other stakeholders to mitigate or eliminate the risk of damage to surface structures from mine subsidence within proclaimed mine subsidence districts.

In areas within active mining leases, the development guidelines are designed to effectively balance the interests of property owners and coal mine proprietors, providing mitigation measures against subsidence damage without imposing unreasonable costs and restrictions on the landowner or unreasonably sterilising coal resources.

2. Surface Development Guidelines

One of eight guidelines has been applied to each property within a mine subsidence district. The guideline applied depends on the subsidence risks at each property as detailed below:

Guideline 1.	Non-active mine workings at risk of pothole subsidence
Guideline 2.	Non-active mine workings possible subsidence risk
Guideline 3.	Non-active mine workings remote subsidence risk
Guideline 4.	Active mining areas - high predicted subsidence impact
Guideline 5.	Active mining areas – moderate predicted subsidence impact
Guideline 6.	Active mining areas – minimal predicted subsidence impact
Guideline 7.	On Application
Guideline 8.	No Restrictions

3. Objective of Guideline 1

This guideline explains what home builders and property developers must do in relation to obtaining approval for their development under the:

- *Coal Mine Subsidence Compensation Act 2017* (the Act)
- *Coal Mine Subsidence Compensation Regulation 2017* (the Regulation)

Compliance with this guideline is a requirement for person planning to develop property within a mine subsidence district that has been assigned **Guideline 1**.

The purpose of this guideline is to:

- prevent or minimise damage to a residential building should a pothole occur at any point under the residence
- ensure the residential building remains safe to persons inhabiting the residence should subsidence occur

- ensure that when residential construction in pothole affected areas occurs, compliance with the Act and Regulation is as simple and inexpensive for the home builder as practicable.

4. Areas where this guideline applies

Areas subject to **Guideline 1** are identified on the NSW Planning Portal at www.planningportal.nsw.gov.au/find-a-property.

Guideline 1 is applied to properties in mine subsidence districts assessed by SA NSW as being at risk of a localised depression or hole (pothole) forming on the surface up to five metres in diameter. SA NSW's assessments are based on the geometry of the workings, the thickness of the coal seam and the nature of the overlying strata.

5. Allowable residential construction

Guideline 1 applies to applications for a single residential building that (a) is not a dual occupancy or unit development and (b) conforms with the following description. Commercial buildings or applications for more than one residential building will be assessed on merit.

The following residential construction is permitted within areas subject to **Guideline 1**:

Option 1

A single storey timber or steel framed residence with light weight cladding and perimeter footing system designed to incorporate the following:

- a) Reinforced concrete footings, of minimum dimensions 400 mm wide and 500 mm deep, reinforced with four N16 bars top and bottom, 50 mm cover from top and 65 mm cover from bottom, with R10 diameter m.s. closed tie stirrups at 250mm. Strip footings are to be extended 2.8m each way or 4m in one direction. All other footing specifications not detailed above will be designed and constructed in accordance the current edition of AS 2870 for the appropriate site classification (ignoring class "P") AS3600, the NCC Building Code of Australia Volume 2, any other relevant applicable Australian Standards and good engineering practice.
- b) Maximum height of foundation brickwork of 1.5 m. Masonry is to be articulated in accordance with the current editions of Australian Standards AS3700 and AS4773.
- c) Infill slabs on ground only permitted in garages and of maximum area of 50m² and not used to support load bearing walls.

Or

Option 2

A single storey brick veneer or two storey timber or steel framed residence with lightweight cladding designed in accordance with the following conditions / constraints;

- a) Designed to engineering principles by a qualified structural engineer to accommodate a pothole of maximum diameter of 5m forming at any point underneath the building

structure. The structure should be capable of both spanning and cantilevering over a 5m diameter depression.

- b) Design drawings shall be submitted to SA NSW for acceptance prior to construction with written certification from a qualified structural engineer that the improvements will remain “safe, readily repairable and any damage from mine subsidence shall be limited to slight damage in accordance with AS2870 (Damage Classification), in the event of a 5m diameter pothole forming at any point under the building”. If applicable, in addition, it should be designed to accommodate any predicted ground movements that may be associated with founding on reactive clay soils.
- c) Maximum height of foundation brickwork of 1.5 m. All masonry is to be articulated, in accordance with the current editions of Australian Standards AS3700 and AS4773.
- d) Infill slabs on ground only permitted in garages and of maximum area of 50m² and not used to support load bearing walls.
- e) Certification by a qualified structural engineer upon completion, that the structural integrity of the improvements complies with the Subsidence Advisory NSW's approval, given under this building application, and that the improvements have been constructed in accordance with the approved design drawings.
- f) Masonry is to be articulated, in accordance with the current editions of Australian Standards AS3700 and AS4773.

In the above cases, the following is not permitted:

- Basements
- Raft slab foundations – note: infill slabs not structurally connected to the building are permitted in garages only.
- Cavity masonry or masonry internal walls

In both of the above cases, concrete is not to be placed in the footing excavations before an officer of SA NSW has inspected the reinforcement steel when in position. A minimum of forty eight hours' notice is to be given to SA NSW prior to the inspection being required.

6. Other allowable additions and improvements

Detached structures which will be approved by SA NSW on **Guideline 1** affected properties without the requirement for engineering measures to control pothole risk are:

- Detached garages (must be uninhabitable space and limited to a maximum footprint of 50m²)
- Cabanas
- Retaining walls less than 1m high

The following detached structures will be approved by SA NSW on **Guideline 1** properties subject to them being designed to accommodate a 5m diameter pothole:

- Concrete swimming pools
- Granny flats
- Retaining walls greater than 1m high

7. Who assesses development applications on Guideline 1 properties

Due to the complexity involved in the assessment of development in pothole affected areas, SA NSW assesses all applications for development (both complying and non-complying) on properties that have been assigned **Guideline 1**.

8. Proposed developments that do not comply with the guideline

Proposed improvements that do not comply with the guideline for the property must be assessed by SA NSW risk engineers on merit.

Depending on the type of construction and nature of the mine workings, SA NSW may require specific engineering design measures being applied to the improvement, further geotechnical investigation to better understand the subsidence risk or stabilisation of the mine workings.

SA NSW generally processes applications that comply with the guidelines within five working days. Applications assessed on merit may require additional time.

9. Certification requirements

Following construction, a certifier must be engaged to certify that an improvement has been constructed in accordance with **Guideline 1**. A copy of this certification must be provided to SA NSW.

10. How this guideline was developed

SA NSW's development guidelines were developed by SA NSW in consultation with an expert reference group comprising of structural engineers, mining experts and key mining and development industry stakeholders.

11. Disclaimer

Please note SA NSW's surface development guidelines are subject to change.