

# Residential guidelines for designers

When building within proximity to  $\leq 225\text{mm}$  sewer gravity mains

## Introduction

This document provides guidelines for the structural protection of the Water Corporation's sewer assets where building or construction activities are carried out in their proximity. This document was prepared as a guide to assist designers and builders with their design. It seeks to promote a consistent and methodical approach towards building and construction works in proximity to the Water Corporation's sewer services.

However, it is important to appreciate that this document is provided only as a guide to designers in identifying the minimum requirements of the Water Corporation for protection of its sewer services. The document does not seek to cover all aspects of the design process and does not replace the need for compliance with any regulatory requirement for the design. These are clear responsibilities of the designer, and the issue of this document does not reduce or transfer those responsibilities.

Review Section 8 of our [Technical Guidelines - For safely working near Water Corporation assets](#) to find out about our technical requirements for different types of work, there may be more than one section that is relevant to your works.

## Purpose of these guidelines

This Guidelines document is to be used for self-assessment when identifying the requirements to protect the Water Corporation's sewer assets from the effects of building and construction activities. It is intended to maintain adequate access to Water Corporation sewer assets whilst assisting the protection of your proposed works from any future damage.

These guidelines can only be applied to the following building or construction activities within the proximity of our sewer mains.

- A Single Residential Building.
- A Single Storey Addition/Alteration to an existing residential building.
- A below Ground Swimming Pool, spa or tank.
- Sheds.
- Retaining Walls.

**Important information for anyone building near Water Corporation sewer mains**

## Is there a sewer main near your property?

Before you start work, you must check if there are any Water Corporation assets – such as water, sewerage or drainage pipelines. You can determine the approximate location of our assets by accessing free plans from Before You Dig Australia online or by calling 1100.

These plans enable designers, builders, site supervisors to assess what is in the ground and determine what steps, if any, need to be taken to protect our services. It is not always reasonable to expect to receive plans one day and start work the next. Sufficient time must be allowed to plan and prepare for the protection of Water Corporation services. The appropriate actions will depend on the material type and depth of the service located near the proposed working area.

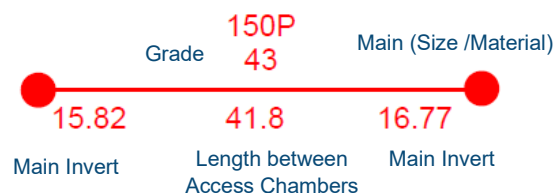
Please carefully read and fully understand these plans and any other information provided to ensure that your building or construction activities do not damage our pipelines.

An onsite inspection will be required to establish the exact location of all underground assets in the vicinity of the construction. This should be performed through potholing using a hand shovel, before using heavy machinery.

More information about locating our pipelines can be found in Section 4 of our [Technical Guidelines](#).

## How to determine sewer main size and material

To determine the size and material of a nearby sewer main, please refer to the text running parallel to the main located on our maps, as shown below. This text identifies the size of the main (in millimetres) and its main material. For example: 150P equals 150mm and un-plasticised Polyvinyl Chloride.



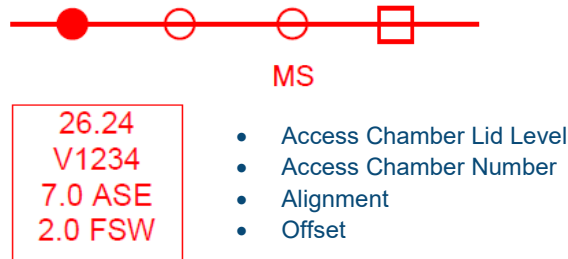
Sewer mains are constructed from many different materials for different circumstances. Common materials used today are PVC and MDPE; however there are many other materials in use.

### Common sewer main material abbreviations:

<b>AC</b>	Asbestos Cement	<b>PVC</b>	Polyvinyl Chloride
<b>CI</b>	Cast Iron	<b>RA</b>	Resin Aggregate
<b>DI</b>	Ductile Iron	<b>RC</b>	Reinforced concrete
<b>MDPE</b>	Medium Density Polyethylene	<b>S</b>	Mild Steel Cement Lined
<b>P</b>	Un-plasticised Polyvinyl Chloride	<b>VC</b>	Vitrified clay

## How to calculate sewer main alignment

To calculate a sewer main alignment you need to locate the nearest access chamber (manhole) to the property represented on our plans by the symbols below. Each Access or Maintenance chamber will have a Square or Circle nearby providing this chambers details.



A – Along – The distance along a boundary from an intersection of boundaries. (E.g. 7.0m along boundary SE direction)

F – From – The distance at right angles from boundaries. (E.g. 7.0m along boundary. (E.g.2.0m from SW direction)

When there is an \*located next to any of the distances or lid levels it means the distance or lid level is an estimate only and has not been confirmed. In this scenario it is necessary to have a site survey completed to determine the exact location of the main before any planning or construction begins.

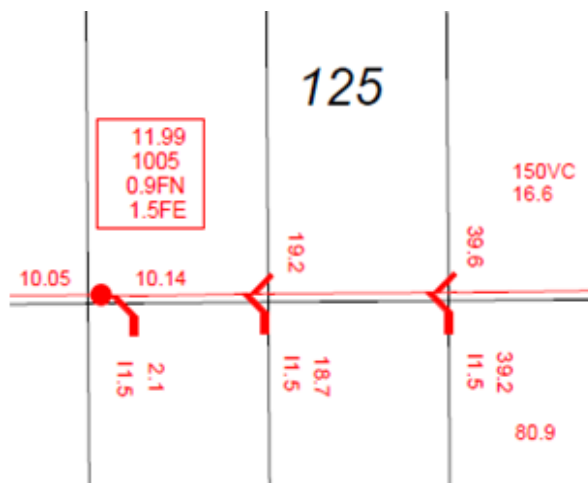
## How to calculate sewer main depth

To determine the depth of a nearby sewer main you will need to locate the nearest access chamber and its details closest to your property.

(Access chamber lid level) – (sewer main invert) = sewer main depth

For example for Lot 125 the sewer main located at the rear of the property is approx. 1.85m deep

$(11.99) - (10.14) = 1.85\text{m deep}$



## Building within proximity of our sewer mains

When building near Water Corporation sewer mains, it is the responsibility of the certifying structural engineer to design suitable footings and structural support for the proposed works. Water Corporation staff will not advise on specific aspects of structural design.

Once a sewer main has been identified near your property and the material type, size and depth have been determined, and you have reached the design stage to construct a building or below ground swimming pool within proximity of our sewer main the following diagram and table can be used to determine the minimum horizontal clearance between the sewer main and proposed structure with or without piles.

It is the designer's responsibility to ensure that ground conditions are acceptable for the final design. In all cases, other than exempted structures, the footing design (e.g. piles or foundations) must extend at least to a level of 300mm below the zone of influence or to the refusal in unexcavated solid rock. The structural engineer responsible for the proposed work shall confirm in writing that this has been achieved.

### Single story building designs – For further information please refer to diagram 1

Sewer main depth (meters)	Minimum horizontal clearance between sewer main building (with piles)	Horizontal clearance from sewer main where no piles are required	
		PVC	OTHER
1.0 – 2.0m	600mm	1.5m	1.5 – 2.5m**
2.1 – 3.0m	600mm	1.5m	2.5m
3.1 – 4.0m	1.0m	1.5 – 2.5m*	2.5m
4.1 – 5.0m	1.0m	2.5m	2.5m
5.1m+	1.5m	2.5m+	2.5m+

\*Please refer to Graph 1 of the full Technical Guidelines for exact horizontal clearance.

\*\*Please refer to Graph 3 of the full Technical Guidelines for exact horizontal clearance.

### Below ground swimming pools and spas - For further information please refer to Diagram 2.

Sewer main depth (meters)	Minimum horizontal clearance between sewer main and edge of proposed pool / spa (with piles)	Horizontal clearance from sewer main where no piles are required (dependant on edge of pool)	
		PVC	OTHER
1.0 – 2.0m	900mm	1.0m	1.0m
2.1 – 3.0m	900mm	2.0m	2.0 – 3.0m**
3.1 – 4.0m	1.0m	2.0m	3.0m
4.1 – 6.0m	1.0m	2.5 – 3.0m*	3.0m
6.1m+	1.5m	3.0m+	3.0m+



Diagram 1

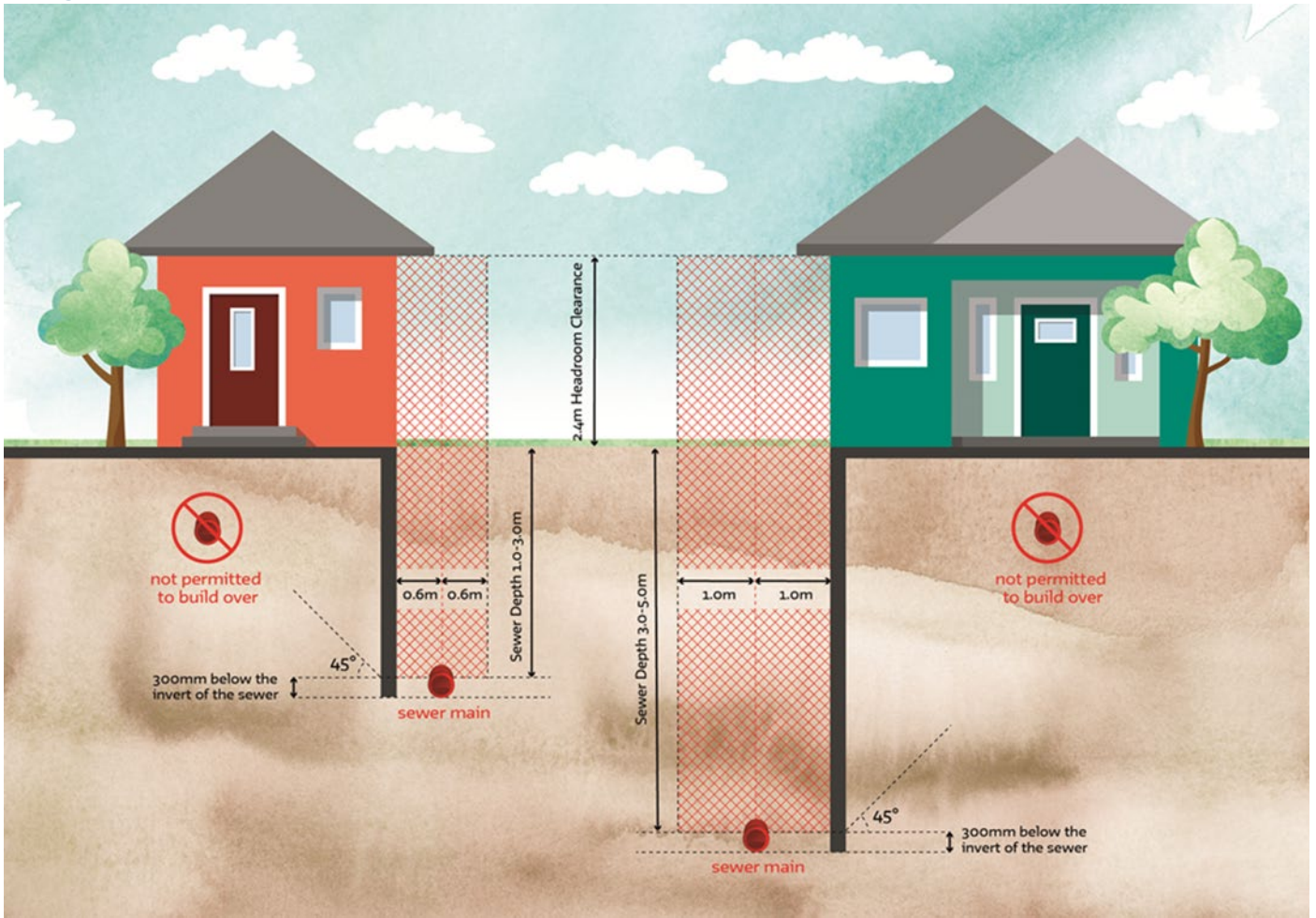


Diagram 2

