

**PREPARING THE TEST AREA:**

Conduct all native soil identification tests on a freshly exposed, damp, hand trimmed area of the trench wall in the pipe zone. Take care that the soil in the exposed test area is not compacted or loosened during trench excavation. If the soil in the trench floor and wall is very dry at the time the trench is opened then flood the test area and allow time for the water to be absorbed by the soil before it is trimmed and tested.

**IDENTIFYING CLAY SOILS:**

A lump of clay soil will be difficult to break when dry. It will be sticky and need some effort to mould with the fingers when wet. Clay will not wash off easily. Individual clay particles are hard to see.

**TESTING CLAY SOILS:**

Clay soils are best tested in the wall of the trench. The fist, the thumb or the thumbnail are used to determine the consistency (strength) of the clay (see table.)

**IDENTIFYING CLEAN SAND SOILS:**

The individual grains of sand will be visible to the eye. A lump of clean sand, if it can be picked up at all, will crumble with very little effort. Clean sand washes off easily.

**TESTING CLEAN SAND SOILS:**

Clean sand soils are best tested in the floor of the trench by pushing with the whole body weight on one foot. The depth of the depression left by the boot is related to the density of the sand (see table). Take care to ensure that the sand in the trench floor was not compacted or loosened during the excavation of the trench or the trimming of the test area.


**TESTING ROCK:**

The recommended field identification tests for rock rely on observing the ease with which the rock can be dug with a pick, and estimating the spacing of the joints in the rock. (Joints are commonly called cracks or breaks). The spacing between joints is important because the allowable bearing pressure on rock is usually controlled by the joints in it, rather than the inherent strength of the block of rock. Joints may be tightly closed (like hairline cracks), but can also be open (filled with air) or filled with soft clay or other soil.

SOIL CLASSIFICATION		FIELD IDENTIFICATION TEST	▲ AHBP kPa
CLAY SOILS	VERY SOFT	EASILY PENETRATED 40 mm WITH FIST.	< 50 *
	SOFT	EASILY PENETRATED 40 mm WITH THUMB.	< 50 *
	FIRM	MODERATE EFFORT NEEDED TO PENETRATE 30 mm WITH THUMB.	< 50 *
	STIFF	READILY INDENTED WITH THUMB BUT PENETRATED ONLY WITH GREAT EFFORT.	50
	VERY STIFF	READILY INDENTED WITH THUMBNAIL.	100
	HARD	INDENTED WITH DIFFICULTY BY THUMBNAIL.	200
SAND & GRAVEL	LOOSE CLEAN SAND	TAKES FOOTPRINT MORE THAN 10 mm DEEP.	< 50 *
	MEDIUM-DENSE CLEAN SAND	TAKES FOOTPRINT 3 mm TO 10 mm DEEP.	50
	DENSE CLEAN SAND OR GRAVEL	TAKES FOOTPRINT LESS THAN 3 mm DEEP.	100
ROCK	BROKEN OR DECOMPOSED ROCK	DIGGABLE. HAMMER BLOW "THUDS". JOINTS (BREAKS IN ROCK) SPACED AT LESS THAN 300 mm APART.	100
	SOUND ROCK	DIGGABLE. HAMMER BLOW "THUDS". JOINTS (BREAK IN ROCK) SPACED AT MORE THAN 300 mm APART.	200
UNCOMPACTED FILL DOMESTIC REFUSE		OBSERVATION AND KNOWLEDGE OF THE SITE HISTORY.	< 50 *

**LEGEND**

- ▲ AHBP Allowable horizontal bearing pressure for:
  - 10mm movement.
  - Centre of thrust 800mm below the natural surface level.
  - High water table.
- \* Special geotechnical assessment required

		NOTES : BASED ON FORMER WSAА DRAWING SEW-1200		Full Size A1		DRAWN: DESIGN OFFICE		CHECKED: D. MOSELEY		 <p>City of Townsville Ph: (07) 4727 9000 www.townsville.qld.gov.au</p>		<p>SOIL CLASSIFICATION GUIDELINES AND ALLOWABLE BEARING PRESSURES FOR BULKHEADS</p>		<p>STANDARD DRAWING SEWERAGE</p>	
				Not to Scale		Design Engineer Approved: Original signed by P. TURL		Date: 26/07/2012							
						Manager Approved: Original signed by P. MENDIOLEA		Date: 26/07/2012							
A ORIGINAL ISSUE															
No.	DATE	DESCRIPTION		AP'D											
		REVISIONS													