

Appendix 14.3

Soil Suitability Tests

The soils are generally stoneless clay or silty clay topsoils. Whilst the climate is relatively dry, these soils become plastic when wet and are susceptible to structural damage if moved when wet.

Guidance on handling soils is set out in the worksheets attached to the Institute of Quarrying Good Practice Guide for Handling Soils, 2022.

This sets out consistency and examination tests. Sandy soils usually require an examination test, but clayey soils can be assessed by the consistency test.

If you can roll soil into a ball or a sausage easily and the soil holds that shape, it is too wet to travel over or move soils. This is illustrated in the photograph below.

Indication of When Soils are Too Wet (not taken at this site)



If the soils once rolled then cannot be held in this manner and break or crumble, as shown below, they are likely to be suitable for being handled. See the test methodology that follows.

The Examination and Consistency tests from the IQ document are reproduced below.

Soils Suitable



Examination and Consistency Tests

Box A.3 - Test for Dry and Friable Soils

Soil tests are to be undertaken in the field. Samples shall be taken from at least five locations on the soil handling area and at each soil horizon to the full depth of the profile to be recovered/replaced. The tests shall include visual examination of the soil and physical assessment of soil consistency.

i) Examination

- If the soil is wet, films of water are visible on the surface of soil particles or aggregates (e.g. clods or peds) and/or when a clod or ped is squeezed in the hand it readily deforms into a cohesive 'ball' means **no soil handling to take place**
- If the sample is moist (i.e. there is a slight dampness when squeezed in the hand) but it does not significantly change colour (darken) on further wetting, and clods break up/crumble readily when squeezed in the hand rather than forming into a ball means **soil handling can take place**
- If the sample is dry, it looks dry and changes colour (darkens) if water is added, and it is brittle means **soil handling can take place**

ii) Consistency

First Test

Attempt to mould soil sample into a ball by hand:

- Impossible because soil is too dry and hard or too loose and dry means soil handling can take place
- Impossible because the soil is too loose and wet means no soil handling to take place
- Possible - GO TO SECOND TEST

Second Test

Attempt to roll ball into a 3mm diameter thread by hand:

- Impossible because soil crumbles or collapses means **soil handling can take place**
- Possible means **no soil handling to take place**

NB: It is impossible to roll most coarse loamy and sandy soils into a thread even when they are wet. For these soils, the Examination Test alone is to be used.