

## Assessing soil texture by hand

(based on keys produced by the Field Studies Council, Rural Development Service and ADAS)

**This first section deals with peat and peaty soils. If your soil is not peaty, start at 6**

1	Is the soil very black, loose and with a low density?	Yes No	<b>P</b> (peat) 2
2	Is the soil grey to black; does it bind to form a ball which breaks readily? (soil may be granular)	Yes No	3 4
3	Is the soil also sandy?	Yes No	<b>SP</b> (sandy peat) <b>LP</b> (loamy peat)
4	Is the soil grey; does it bind to form a ball that holds together firmly and feels smooth?	Yes No	<b>PL</b> (peaty loam) 5
5	Is the soil dark coloured but the mineral component dominant?	Yes No	Start at 6 but add "O" (organic) to the mineral soil texture 6

**Start here for soils that are not peaty. The soil should be damp, not waterlogged or dry – add some moisture if needed.**

6	Can you roll the soil into a ball?	Easily With great care No	7 <b>LS</b> (loamy sand) <b>S</b> (sand)
7	What happens when the ball is pressed between thumb and forefinger?	Flattens without falling apart Tends to break up	8 <b>SL</b> (sandy loam)
8	On further moistening, can the ball be rolled into a thick (5mm) cylinder?	Yes No, collapses	9 <b>SL</b> (sandy loam)
9	On further moistening, can the ball be rolled into a thin (2mm) cylinder?	Yes No, collapses	10 <b>SL</b> (sandy loam)
10	Can the thread be bent into a horseshoe without cracking?	Yes No	12 11
11	On remoulding with further moisture, what is the general feel of the soil?	Smooth & pasty	<b>ZL</b> (silt loam)

		Round & abrasive	<b>SZL</b> (sandy silt loam)
12	Can a ring of 25mm diameter be formed by joining the two ends of the thread? (If necessary, remould with more moisture)	Yes	14
		No	13
13	On remoulding with further moisture, what is the general feel of the soil?	Very gritty	<b>SCL</b> (sandy clay loam)
		Moderately tough	<b>CL</b> (clay loam)
		Doughy	<b>ZCL</b> (silty clay loam)
14	Without rewetting, can the surface be polished with the thumb?	Yes, a high polish	15
		Yes, but gritty particles are noticeable	<b>SC</b> (sandy clay)
		No	13
15	On wetting thoroughly, how does the soil stick one's fingers together	Very strongly	<b>C</b> (clay)
		Moderately strongly	<b>ZC</b> (silty clay)

**For sands or sandy soils assess how coarse the sand grains are.**

16	Sand grains the size of granulated sugar	Coarse sand
	Sand grains the size of castor sugar	Medium sand
	Sand grains smaller (difficult to see, but soil feels abrasive and sounds abrasive when held up to ear)	Fine sand

**The following textural descriptions for each class can help confirm the decision from the key:**

**S – Sands** do not stain the fingers when wet. They feel gritty, lacking cohesion when wet and are loose when dry. Any water squirted onto the surface quickly disappears and the surface returns to matt.

**LS – Loamy Sands** feels gritty but when moist can form a weak fragile ball, but are not sticky. The ball quickly collapses. Unlike sands the surface will retain a glistening wet look when water is applied.

**SL – Sandy Loams** feel gritty, but easily mould to form an easily deformed ball. Rolling causes the soil to break into short threads. The wet soil is slightly sticky, unlike loamy sands.

**SZL – Sandy Silt Loams** when moist mould more easily than sandy loams because of the silt content. They feel equally gritty and soapy. The wet soil clings to fingers.

**ZL – Silt Loams** when moist form an easily deformed ball, but the soapy feel of the silt predominates. The wet soil clings to fingers.

**CL – Clay Loams** usually easily moulded and rolled into threads. Balls are moderately robust and depending on the clay content either smear or ruck. Stickier than sandy loams and sandy silt loams, but are not as sticky as clays.

**SCL – Sandy Clay Loams** are distinctly more sticky than a sandy loam, but still gritty. The moist soil moulds into a deformable coherent ball which smears when rubbed. The sand particles are usually visible in the smeared surface.

**ZCL – Silty Clay Loams** have a smooth soapy feel. The moist soil forms an easily deformed ball. The soil smears slightly. When wet, silty clay loams are more sticky than silt loams, but like silt loams, they cling to the fingers.

**C – Clays** mould to form durable balls, which are difficult to deform. The soil smears to give a polished surface. The soil can be rolled into long threads provided it is sufficiently moist. Wet clays are very sticky but do not adhere to fingers. They do not feel smooth and soapy.

**SC – Sandy Clays** bind together strongly. Deformation of a ball is difficult. Sand is obvious on the smeared surface. When wet it is very sticky.

**ZC – Silty Clays** are similar to clays but feel smoother and more buttery when moist. They adhere to the fingers and are very sticky.