

# DARK SANDY CLAY LOAM OVER HARD BROWN CLAY

**General Description:** *Medium thickness hard setting dark sandy loam to sandy clay loam overlying a brown mottled coarsely structured sandy clay, grading to coarse grained alluvium*

**Landform:** Very gently undulating alluvial plains

**Substrate:** Hard massive clayey sand alluvium.

**Vegetation:**



**Type Site:** Site No.: CL049

1:50,000 sheet: 6628-4 (Gawler)

Hundred: Port Gawler

Annual rainfall: 425 mm

Sampling date: 11/12/06

Landform: Flat plain

Surface: Hard setting, no stones.

## Soil Description:

Depth (cm)	Description
0-13	Dark brown hard fine sandy clay loam with moderate granular structure. Abrupt to:
13-35	Brown, dark brown and dark grey mottled very hard sandy medium clay with strong very coarse prismatic structure. Clear to:
35-65	Strong brown, light yellowish brown and brown very hard sandy medium clay with strong very coarse angular blocky structure. Clear to:
65-90	Light yellowish brown, brown and dark yellowish brown mottled very hard massive sandy clay loam. Gradual to:
90-125	Very pale brown, dark yellowish brown and greyish brown mottled very hard massive clayey sand.



**Classification:** Mottled, Eutrophic, Brown Chromosol: medium, non-gravelly, clay loamy / clayey, moderate

## Summary of Properties

**Drainage:** Imperfectly drained. Water perches on top of the clayey subsoil for periods of up to several weeks following heavy or prolonged rainfall.

**Fertility:** Inherent fertility is moderately high, as indicated by the exchangeable cation data. Levels of all tested nutrient elements are adequate at sampling site.

**pH:** Neutral throughout. Surface pH is higher than subsoil due to lime dust.

**Rooting depth:** Strong root growth in the topsoil, but greatly reduced in the subsoil to 65 cm, with a few roots persisting to 125 cm.

### Barriers to root growth

**Physical:** The hard coarsely structured clayey subsoil confines roots to the surfaces of the aggregates, greatly reducing the efficiency of water use and nutrient uptake

**Chemical:** There are no apparent chemical barriers.

**Water holding capacity:** Approximate values of total and readily available water are:  
80 mm and 35 mm for hardy crops (eg vines), with a potential root depth of 65 cm  
30 mm and 15 mm for vegetable crops with a potential root depth of 20 cm.

**Seedling emergence:** Moderate to high restriction due to hard setting, sealing surface.

**Workability:** The surface soil shatters if worked too dry, and puddles if worked too wet.

### Erosion Potential

**Water:** Low.

**Wind:** Low.

## Laboratory Data

Depth cm	pH H <sub>2</sub> O	pH CaCl <sub>2</sub>	CO <sub>3</sub> %	EC 1:5 dS/m	ECe dS/m	Org.C %	Avail. P mg/kg	Avail. K mg/kg	Cl mg/kg	SO <sub>4</sub> -S mg/kg	Boron mg/kg	React Fe mg/kg	Trace Elements mg/kg (EDTA)				Sum cations cmol (+)/kg	Exchangeable Cations cmol(+)/kg				Est. ESP
													Cu	Fe	Mn	Zn		Ca	Mg	Na	K	
0-13	7.6	7.3	1.4	0.50	4.08	1.96	60	668	43	472	2.4	761	3.95	141	125	9.63	18.1	15.3	1.26	0.16	1.42	0.9
13-35	6.5	5.7	0	0.20	1.58	0.52	10	455	12	127	1.0	652	2.36	73	89.5	0.47	13.3	8.35	3.62	0.16	1.18	1.2
35-65	6.8	6.5	0	0.18	1.33	0.26	10	204	6	120	0.8	497	1.54	50	43.7	0.05	10.7	5.03	4.78	0.34	0.53	3.2
65-90	7.0	6.4	0	0.09	0.84	0.17	5	136	6	37.9	0.5	371	1.16	28	18.1	0.17	6.1	2.64	2.88	0.28	0.33	4.6
90-125	7.1	6.5	0	0.05	0.58	0.12	4	113	6	21.1	0.4	376	0.42	25	46.8	0.06	3.0	1.23	1.40	0.15	0.23	5.0

**Note:** Sum of cations, in a neutral to alkaline soil, approximates the CEC (cation exchange capacity), a measure of the soil's capacity to store and release major nutrient elements.

ESP (exchangeable sodium percentage) is derived by dividing the exchangeable sodium value by the CEC, in this case estimated by the sum of cations.