

## TE4: Basic, Argic, Bleached-Orthic Tenosol

### General description of the soil

This sandy Tenosol has a strongly bleached A2e horizon overlying a weakly developed B2t (tenic B horizon). A prominent feature is the occurrence of clay lamellae within the A2e and B horizons (i.e. Argic).

<b>Distribution:</b>	Known mainly from the Southern Mallee Region of South Australia, and probably occurring in contiguous parts of western Victoria.
<b>Typical land use:</b>	Grazing of perennial pastures.
<b>Common variants:</b>	The lamellae may have a variable distribution within the profile.
<b>World Reference Base:</b>	Arenic Luvisol.
<b>Other names:</b>	These soils have probably been called Siliceous Sands or Earthy Sands.

### Environment and location of the example profile

<b>Landform:</b>	Low to moderate dunes on sand plain.
<b>Parent material or substrate:</b>	Aeolian sand.
<b>Drainage class:</b>	Rapidly drained.
<b>Surface condition:</b>	Loose.
<b>Site disturbance:</b>	Cleared and cultivated for improved pastures.
<b>Native vegetation:</b>	Mallee and heath shrub.

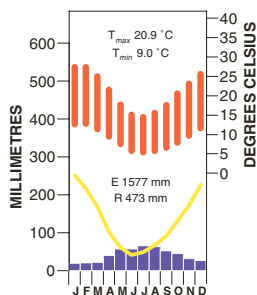


Bands of clay lamellae (most likely due to dust deposits) are a feature of this sandy soil from south-eastern South Australia.

### Site location



### Site climate



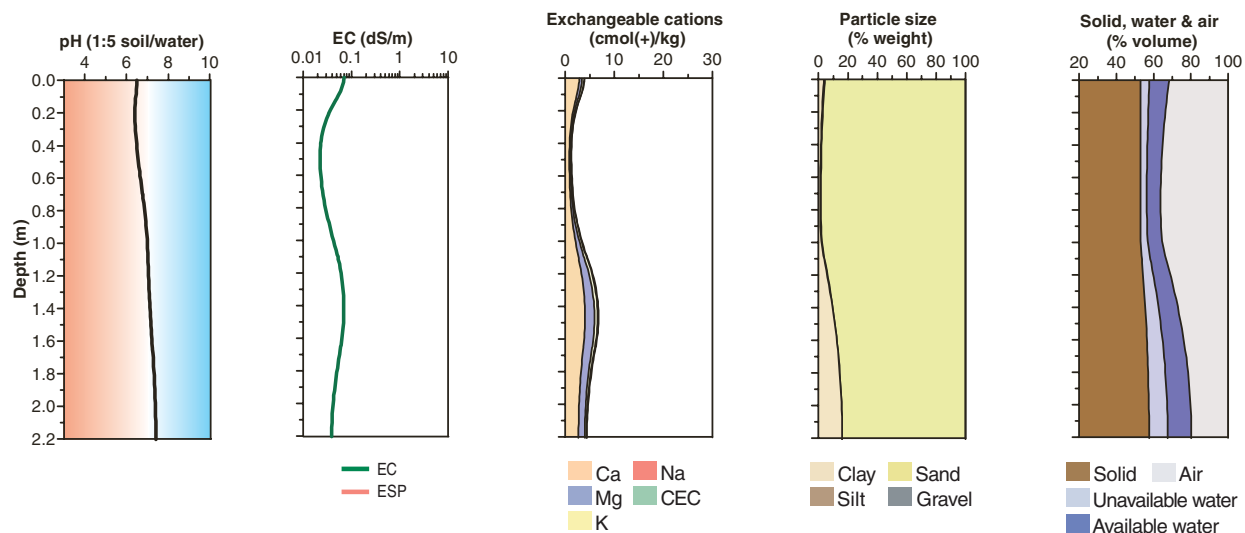
### Soil morphology

Horizon	Depth (m)	Colour	Mottles	Texture	Structure			Consistence	Coarse fragments	Segregations	Boundary
					Grade	Shape	Size				
A11p	0.00–0.13	dark greyish brown (10YR 4/2)	–	sand	single grain	–	–	loose (dry)	–	–	abrupt
A12p	0.13–0.22	brown (10YR 5/3)	–	sand	single grain	–	–	weak (dry)	–	–	clear
A21e	0.22–0.70	light yellowish brown (10YR 6/4)	–	sand	single grain	–	–	weak (dry)	–	–	diffuse
A22e	0.70–1.10	light yellowish brown (10YR 6/4)	–	sand	single grain	–	–	weak (dry)	–	2–10% clay lamellae (6–20 mm) (sandy clay loam texture)	sharp
B2t	1.10–1.65	strong brown (7.5YR 5/6)	–	sandy loam	massive	–	–	firm (dry)	–	20–50% clay lamellae (>60 mm) (sandy clay texture)	diffuse
BC	1.65–2.20	brownish yellow (10YR 6/6)	–	loamy sand	massive	–	–	firm (dry)	–	20–50% clay lamellae (>60 mm) (sandy clay texture)	

### Soil chemical and physical properties

Horizon	Sample Depth (m)	pH H <sub>2</sub> O <sup>A</sup>	pH CaCl <sub>2</sub> <sup>B</sup>	Elect. Cond. dS/m <sup>A</sup>	CaCO <sub>3</sub> % <sup>B</sup>	Org. C % <sup>D</sup>	Extr. P mg/kg <sup>A</sup>	Tot. P %	Tot. K %	Cation exchange properties <sup>E</sup>							ESP %	Bulk dens. Mg/m <sup>3</sup>	Particle size % <sup>A</sup>					
										cmol(+)/kg									CEC	ECEC	CS	FS	Silt	Clay
										Ca	Mg	K	Na	H+Al	CEC	ECEC								
A11p	0.00–0.13	6.5	5.8	0.07	< 1	0.7	17			2.9	0.5	0.4	0.1		4		–		59	38	1	3		
A12p	0.13–0.22	6.3	5.6	0.03	< 1	0.2	12			1.5	0.3	0.2	0.1		2		–							
A21e	0.22–0.40	6.4	5.8	0.02	< 1	< 0.1	8			0.7	0.2	0.2	0.1		1		–							
A21e	0.40–0.70	6.6	6.2	0.02	< 1	< 0.1	7			0.6	0.2	0.2	0.1		1		–		57	41	< 1	1		
A22e	0.70–1.10	7.0	6.5	0.03	< 1	< 0.1	11			1.2	0.3	0.3	0.1		2		–							
B2t	1.10–1.65	7.1	6.5	0.08	< 1	< 0.1	< 2			4.5	2.3	0.8	0.2		8		–		49	38	< 1	13		
BC	1.65–2.20	7.4	6.7	0.04	2	< 0.1	< 2			2.7	1.3	0.3	0.1		5		–							

Key profile properties



General qualities of the soil

<b>Infiltration:</b>	Rapid.
<b>Available water store:</b>	Small to moderate depending on the depth of roots.
<b>Permeability:</b>	High to very high.
<b>Physical root limitations:</b>	No apparent restrictions.
<b>Erosion hazard:</b>	Mainly wind erosion. Very high when exposed by cultivation or overgrazing.
<b>Nutrient availability:</b>	Fertility is usually low due to erosion, low organic matter, low fertiliser rates, leaching, and lack of permanent pasture. Phosphorus, nitrogen, copper and zinc are the most likely deficiencies.
<b>Toxicities:</b>	None apparent.



Aerial view of sand plains and dunes near Keith, South Australia

Acknowledgements: Soil image, soil description and laboratory data: Department of Water, Land and Biodiversity Conservation, South Australia. Site MM103 from McCord (1995). Landscape image: MapLand, South Australia.