

**ENGINEERED NATURAL SURFACE**

**(SURFACE OPTION No. S 01)**



**DESCRIPTION**

Shaped and compacted existing in-situ soil material to form a basic surface for traffic.

Camber (crossfall) of about 3 - 7% away from the road centre line to disperse rainwater sideways.

Side drainage must be provided to ensure rain water flows away from the road. Alternatively the level of the road surface should be raised above surrounding ground on embankment.

Generally suitable for low and light traffic flows where the in-situ (existing in place) soil material has a CBR of about 15 or more\*.

*Note: Also known as 'Engineered Earth Road'.*

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> <li><input type="checkbox"/> Lowest cost option for basic access; where weak or problem sections of a route can be identified and treated with more durable surface options.</li> <li><input type="checkbox"/> Suitable for light traffic and low flows.</li> <li><input type="checkbox"/> No imported materials (haulage) required.</li> <li><input type="checkbox"/> Simple equipment can be used to shape the camber, or this can be achieved with labour and handtools.</li> <li><input type="checkbox"/> Easy to maintain using labour or simple, low cost, grading equipment (such as agricultural tractor and towed grader).</li> <li><input type="checkbox"/> Can be used as an intermediate surface in a planned and resourced 'stage construction' strategy.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Some (weaker/problem) soils not suitable.</li> <li><input type="checkbox"/> Only appropriate for light and low traffic (usually less than 50-100 motor vehicles equivalent per day).</li> <li><input type="checkbox"/> High maintenance requirements (but usually less than gravel in financial terms).</li> <li><input type="checkbox"/> Reshaping in dry weather, without moisture or consolidation/compaction, will seriously affect performance.</li> <li><input type="checkbox"/> May be impassable in wet weather (may need to be closed during rain).</li> <li><input type="checkbox"/> Unlikely to be practical to maintain economically in high rainfall areas (&gt;2,000mm/year).</li> <li><input type="checkbox"/> May need to be protected from heavy vehicles by access restrictions.</li> <li><input type="checkbox"/> Dust pollution in dry weather.</li> <li><input type="checkbox"/> Rain water erosion on gradients (erosion usually serious if gradient more than 6%).</li> </ul>

\* The strength of the in-situ soil may be assessed using simple low cost equipment such as the Dynamic Cone Penetrometer (DCP).