SECTION 81: TYPES OF SUFACING

1804. The type of surface to be provided depends upon:

a. Load class of vehicles
b. Intensity of traffic expected.
c. Required life of road.
d. Nature of the sub grade.
e. Materials available.

1805. Surfacing may be divided into the following types:

a. Expedients for temporary routs
b. Improvised surfacing.
c. Prefabricated surfacing.
d. Permanent and semi- permanent surfacing:
e. Stabilized soil.
f. Water bound surfacing.
g. Tar or bitumen bound surfacing.
h. Concrete or cement bound roads.
j. Paving's.

1806. The types most commonly applicable to military work are summarized in Table 18.1.

1807. Concrete and cement bound reads must be cured, normally for 7 days, before traffic is allowed on them paving are extremely slow to lay and need a lot of skilled labor. These types are not therefore in Table 18.1 but are dealt with in Chapter 23 and Section 137, respectively.

TABLE 18.1 -TYPES OF SURFACING MOST COMMONLY USED ON MILITARY ROADS

Ser No	Type	Sub division	Description	Remakes
(a)	(b)	(c)	(d)	(e)
1.	Improvised	a. Corduroy b. Slab and plank c. Wheel track d. ZPM chain-	 see section 106 see section 106	These are all expedients for temporary improvement of load bearing

		link, wire netting e. Fascines, bamboo, grass and reeds		capacity and are suitable only for hasty work on tactical routes.
2.	Prefabricated	a. PBS b. Metal mesh c. Channel track d. PSP	See section 107 Obsolescent, See Section 108	PBS forms a waterproof membrane. It can be used for temporary work under metal surfacing. which provided a veering surface but it is quickly damaged by punctures
3.	Stabilized	-	See Section 8p0	Stabilization improves the bearing capacity and especially with bituminous or cement stabilization the waterproof quality of the surface.
4.	Water bound	a. Sand clay b. Gravel c. Macadam	Fine gravel and sand aggregate, with clay binder (see section 79) Coarse gravel and sand aggregate with clay binder (see section 81) Crushed stone or large gravel with screenings or sand as the binder (see section 82)	Water bound surfacing are not suitable for roads carrying heavy traffic for long periods, but are readily improved by surface dressing.

5.	Tar or bitumen bound	a. surface dressing b. sand bitumen mix c. Grouted macadam d. Coated macadam	Binder is sprayed on an existing surface or base, covered with chippings and rolled (see section 88) Can be laid with either hot or cold binder or by the wet sand process and either by plant mixing or mix in place (see section 91) Aggregate spread on top of a ½ in layer of sand or stone dust and compacted. Liquid binder applied to fill interstices and surface blinded with chippings (see section 89) Stone or gravel aggregate coated mechanically with tar or bitumen before spreading (see section 90)	Used to seal and protect macadam compacted soil or concrete. Can double the life of water bound roads. Thickness 3 ins to 6 ins maximum in one layer 4 ins. Suitable only on good sub grades. Either hot binder or emulsion can be used. Normal thickness 2 to 3 ins. Max aggregate sixe ½ in less than thickness of layer. Normal thickness 2 to 4 ½ ins but wearing course from ½ in to 1 ½ ins thick can also be laid using appropriate aggregate.

Note. Neither concrete nor cement bound surfacing not paving's are included in this table. They are dealt with in chapter 23 and section 137 respectively.