

**SECTION 128-WINTER PRECAUTIONS**

2727. General. Heavy snowfall, severe front, and sudden thaw are all liable to disrupt traffic, and may serious damage the road and its drainage system, preparations for bad weather should always be mad in advance.

- a. Recondition surfaces by surface dressing,
- b. Ensure the shoulders are maintained in the best possible condition.
- c. Overhaul the drainage system
- d. Establish stocks of material, especially for gritting and for rapid repair work, Note that stockpiles in the open may become frozen and unusable.
- e. Mark the edges of culverts etc with poles to guide road gangs if heavy snow falls.
- f. Organize plant and labor gangs for immediate action and arrange relief crews for 24 hour working.
- g. Erect snow fences where need, and arrange for roads subject to drifting to be patrolled by snow ploughs in windy weather, Drifting can be minimized by the continuous use of graders as soon as snow fall starts.

2728. Snow fences:- Snow drifts are to be expected in flat areas, in cuts near large open spaces, and in the lee of wind barriers such as buildings,. Fences should be sited on the windward side of the road and set at right angles to the probable wind direction; the are normally placed from 100 to 150 ft from the roadway, but in sever conditions two parallel lines may be needed to cover a distance of 3300 ft from the road, their length should be 200 ft longer than the anticipated length of drift. Basic arrangements of fences for different wind directions are shown in Figure27.6.

The best of fencing comprises metal posts of T-steel or angle iron, about 6 ft long, and set at about 25 ft inter-vales; o these a wooden slat tense firmly wired on the wind-ward side, slats may be 11/2''×1/4'' x 4ft long spaced at 3.5 in centers , bound with several rows of twisted wire. This type of fence can be made up in rolls, Posts sure best driven before the ground freezes and must always be braced. The bottom of the fence should be from 3 to 6 ins above ground level. Improvised fences can be made of local materials such as logs, branches, brushwood, heather,

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straw and coarse grass; very stout framing is essential and materials must be very well wired on.

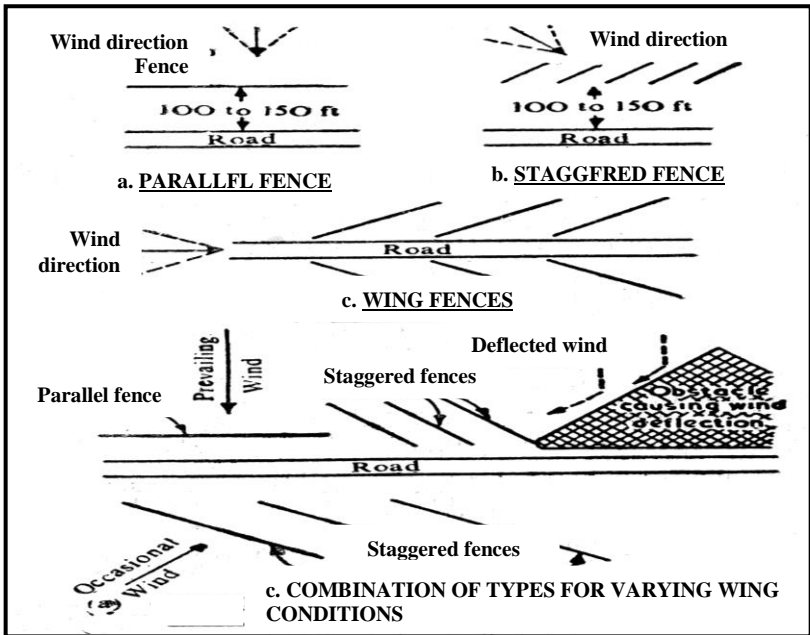


Figure 27-6: Siting of Snow Fence.

2729. Snow removal:- Speed is essential to prevent inter-ferrous with traffic and to stop ice formation, Gangs must be ready to get into action as soon as the snow is 2 ins deep, and operations must continue until clearing is completed.

All trucks used for snow clearance should carry a load of coarse sand, cinders, chipping or slag screenings. For clearing light snowfalls and at the beginning of heavier falls, 2.5 to 50 ton trucks equipped with one way blades should move at speeds between 15 and 25 mph. Graders can also be used.

For heavy snowfalls and to widen traffic lanes, 5 to 10 ton trucks are better, they may be equipped with either straight or b blades and can operate at about 15 mph. To break through heavy drifts B-shaped ploughs are needed, and tractors may be necessary. It is most important that shoulders should be cleared of snow. If they are insulated by snow cover, freeing will first occur beneath the wearing surface, and

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ice lenses may form and give rise to frost heave. If shoulders are cleared, freeing will first occur under them as they are not protected by a pavement, and this will tend to draw subsoil water away from the carriageway subgrade.

2730. Ice control. If wet snow of slush freezes, it becomes very difficult to displace. Mid day thaw and night freezing can cause dangerous icing, especially if banks of cleared snow are left too near the road.

Prompt and complete snow removal is the best way of preventing ice formation. Sodium chloride or calcium chloride will prevent wet snow sticking if applied as soon as snowfall starts, icing in culverts can be reduced by placing bags of salt at inlets. Heavy icing may have to be cleared by steam jets. Once ice has formed, gritting is essential, especially on curves, gradients, and steep camber. Grit should be sharp, and preferably dark in color. It is more effective if previously treaded with calcium chloride or sodium chloride at 40 to 75 lb per cu yd. but sodium chloride is ineffective below about 10°F.

2731. Spring Shaw. The greatest damage is caused by the trapping of water which is thawing out in the upper layers of the subgrade. If this water is unable to escape through the still frozen lower layers the subgrade will become saturated and the road may collapse.

Save c flooding may be caused by the release of great quantities of water from melting snow and ice.

2732. Measures to reduce damage include:-

- a. Closing the road altogether for the critical period (two or three days), or prohibiting animal traffic and restricting the weight and speed of permitted vehicles.
- b. Instituting mobile patrols to give warning of early indications of damage.
- c. Clearing any accumulation of snow or ice in culverts and ditches.
- d. Opening temporary ditches at critical points to relieve overloading at drifts and snow banks, and at the toe of embankments.
- e. Clearing shoulders with ploughs or graders when snow begins to melt, so as to prevent erosion, Patching with stone or gravel, or bridging soft spots with timber, corduroy, or PBP.