

No. PL-83 (1)/74

Dated the 2nd April, 1974

To

Chief Engineers/Additional Chief Engineers of all State Public
Works Departments and Union Territories dealing with National Highway works

Subject : Proper construction of water bound macadam sub-base/base courses

Water bound macadam has been the mainstay of road pavements in India. With the probable shortage of bitumen in due course, this position is likely to be reinforced further.

2. Essential principles of construction structurally sound water bound macadam are well-known and have been embodied in the IRC Standard on this subject (IRC : 19-1966), as well as the Ministry's Specification for Road and Bridge Works. Despite this, it has been noticed in certain cases that water bound macadam sub-base/base courses have not been laid properly and this has led to weaknesses in the crust and premature failures. Generally, these defects have been traced to non-compliance with the specifications. To avoid undue pavement distress on this account, it is emphasised that the prescribed specifications should be scrupulously followed on National Highway works in future. The following points may specially be kept in view :
 - (i) Coarse aggregates should strictly conform to the stipulated gradings and quality for hardness and other characteristics;
 - (ii) Screenings/gravel/moorum/kankar modules and binding material to fill voids in the aggregates should be predominantly non-plastic, with PI never exceeding 6;
 - (iii) The prescribed quantities of screenings and binding material should be added such as to fill properly all voids in the body of the WBM layer uniformly and to avoid forming a thick layer of the same at the top;
 - (iv) The water bound macadam layers should be compacted thoroughly till the coarse aggregates are well-bonded and firmly set to their full depth, and
 - (v) At the time of application of bituminous tack coat and wearing surface, the WBM surface should be thoroughly cleaned of dust and other extraneous matter till the skin of stone aggregates gets exposed for proper bond.
3. It is requested that these points may be brought to notice of all officers in your department engaged on National Highway works.