

East Coast Railway  
**(Engineering Department)**

Office of the Chief Engineer  
Annexe(East) Bldg., Rail Vihar,  
CSP/Bhubaneswar-23

**CE's CIRCULAR No.17**

Sub :-Maintenance of grouting of substructure.

1.0 A large number of bridges on the East Coast Railway are more than 60 years old. The substructures of these bridges are made of stone masonry/brick masonry/laterite stones in lime/cement mortar or in mass cement concrete. Due to ageing, such masonry tends to show signs of leaching of mortar and weathering of masonry. In view of this, it is necessary to render regular maintenance inputs to the substructure of these old masonry bridges, to enable them to serve the demands of traffic over the decades to come.

2.0 In above direction, periodic cement pressure grouting is a cost effective option. Now a days, ready to use non-shrink chloride free cementitious grout material is available in the market. This grout material has excellent fast setting and free-flow property. There is however no need to go in for the high early strength cementitious grout, that are also available in the market at a higher cost, for the present application. Divisions are accordingly advised to plan and carry out systematic maintenance grouting of substructure of old masonry bridges with cementitious grout material at intervals of 5 (five) years.

3.0 Holes of 10 to 20mm diameter shall be drilled to 1.0 m to 1.5 m center to center in a square grid pattern and staggered manner upto 225 mm or D, where D=Thickness of one Brick/Stone/Laterite + ½(Joint Mortar thickness), whichever is more. The holes shall be done with electrical drill or mechanical non-vibratory drills, preferably core cutting type drills. The spacing of holes can be suitably modified as per site requirement.

4.0 The equipment and procedure for grouting shall be in accordance with para 209 of Indian Railways Bridge Manual.

5.0 All concerned are advised to note and take necessary action.

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20

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