

East Central Railway

Office of the
General Manager(Engg.)/Hajipur



PCE's Circular No.- 36 /2009/Works

Sub. : Addition/Alteration to Railway Structures.

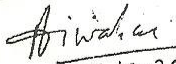
No shortcuts should be adopted while doing the works of modification/ addition/alteration of Railway structures and all such works should be executed following the sound engineering practices. The following steps shall be taken in all such cases:

1. The completion plan/ drawing of the structure shall be obtained. If the completion plan/ drawing is not available, new drawings should be generated based on physical verification and adopting technologically advanced techniques.
2. The existing structure shall be thoroughly examined for any cracks/ symptom of failure etc. Falseworks may be removed if required.
3. The adequacy of strength of the structure shall be checked vis a vis the proposed loading due to additional construction. The strength evaluation of old structure is of utmost importance. This can be done in various ways i.e. destructive, partially destructive or non-destructive physical test of structure, structural systems/ sub systems to determine critical responses under one or more loading conditions. The purpose of performance testing is the evaluation of service, cracking or ultimate load capacity, degree of safety, reliability, stiffness or flexibility etc. Strength evaluation should be conducted for structure which shows the following features:
 - a) Distressed structure that show signs of damage due to overload, fire, vibration etc.

- b) Deteriorated structures that show signs of damage through material degradation such as corrosion, excessive cracking of the concrete, spalling etc.
 - c) Structures suspected of containing under strength materials or to be sub standard in design or construction.
 - d) Structures where the capacity to hold loads applied in the future is in doubt because the original design or construction data is not available.
 - e) Change in use of the structure where the new usage would apply loads in excess of the original design loads.
 - f) To assess structures undergoing repair, retrofit or strengthening.
4. The construction material shall not be heaped over the structure. If it is unavoidable, the corresponding loading and effect thereof shall be ascertained beforehand.
 5. In case the structure is found suitable for addition/alteration, drawing for the proposed alteration shall be prepared and got approved from H.Q.
 6. The work should be started only after the approval of the drawing from H.Q.

Staff involved in the work should be encouraged to give his free opinion. It is desirable that the site engineers are well versed with the provisions of relevant IS codes such as IS: 456, IS:800, SP34 etc. The relevant provisions of these codes should be strictly adhered at the time of execution of works so that no doubt is left over the post construction behaviour of the structure.

This issues with the approval of PCE.

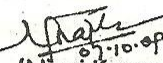

07.10.2009
(R.P. Diwakar)
Chief Engineer/Works

Docket No. W-2/118/09/Works Policy/ 791

Date- 07 . 10 .2009

Copy-

1. CAO/Con/N/MHX, CAO/Con/S/MHX for information pl.
2. DRM/DNR, DHN, MGS, SPJ & SEE for information pl.
3. Sr. DEN/Co-ord./DNR, DHN, MGS, SPJ & SEE for information and necessary action pl.
4. All HOD/ Engg. Deptt./ECR/HJP


07.10.09
(Niraj Kumar)
Dy.CE/Works