

**GOVERNMENT OF INDIA (भारत सरकार)**  
**MINISTRY OF RAILWAYS (रेल मंत्रालय)**  
**RAILWAY BOARD (रेलवे बोर्ड)**

No. 2016/TK-II/22/11/68/71292/Bhanpuri

New Delhi, dated. 17.01.2022

**Executive Director(Track-II),  
RDSO  
Lucknow.**

**Executive Director(QA/Civil)  
RDSO  
Lucknow.**

**Sub:** Improving record keeping & supervision of sleeper plants.

**Ref :** Railway Board letter no.2016/TK-II/22/11/68/71292/Bhanpuri dated 24.09.18.

Railway Board vide above referred letter has advised Zonal Railways to ensure proper record keeping for PSC sleeper production process in CSPs and to devise methods for flow of information regarding sleeper production from CSPs to Zonal headquarters duly digitizing the records of CSPs.

In order to ensure above using technology, following measure are proposed to be used:

1. To install IP based CCTV camera monitoring system for remote monitoring of sleeper production in CSPs of Zonal Railways. The live feed from these cameras to be installed at various critical location of CSPs (to be decided by RDSO) is to be provided to concerned Zonal Railways and RDSO.
2. To install sensors to automatically measure and record various parameters of design mix such as w/c ratio, moisture content of aggregates etc, production process such as stressing, vibration, curing etc and testing parameters such as cube strength, SBT test etc and to automatically transmit these parameters to Zonal headquarter continuously. A tentative list of items to be measured along with existing provisions of STR is as under:
  - Bench counting sensors.
  - Sensors for measuring extension of HTS wires
  - Sensors to measure RPM and time of vibration done for each bench.
  - Sensors for measuring moisture content of fine aggregates and adjust water content of mix (being measured as per provision of STR) automatically to ensure proper w/c ratio.
  - Sensor based mechanism system to remotely measure record and report weight of every ingredient such as Coarse aggregates, fine aggregates, Cement, water, Admixtures in each batch of Concrete used for Sleeper production.

- Temperature of Steam used in curing and Steam characteristics to be measured and to be captured in the overall system being used at the centralized location.
  - RDSO may further add anything to improve the system in consultation with all stakeholders.
3. Zonal hqrs shall have a control centre for round the clock remote monitoring of all CSPs using above data and live feeds of cameras, thereby, minimizing the requirement of physical inspections of CSPs as one or two supervisors/officers in control centre can monitor all the CSPs of a Zonal Railway.

Accordingly, RDSO is advised to incorporate the above provision in the STR urgently so that same can be implemented along with next centralized sleeper procurement tender (CS-174).

  
**(Rajiv Kumar Tanwar)**  
**Director/Track(Mod)**  
**Railway Board**

Copy to: PCEs/All Zonal Railways for information and necessary action for implementing the above guidelines in present contract (CS-172) if CSPs are voluntarily willing to implement the same immediately.

2016/Track-II/22/11/68/71292/Bhanpuri/SECR

974093/2021/O/o DDTK-II

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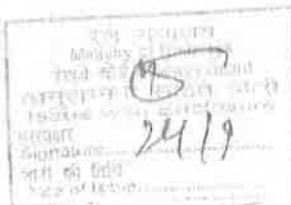
New Delhi, dt. 24.09.18

**Principal Chief Engineer,  
All Zonal Railways**

**Sub: Improving record keeping & supervision of sleeper plants.**

Proper supervision and record keeping of pre-stressed concrete sleepers at all stages of production viz- inspection & testing of raw material, production process and inspection & testing of final product i.e. PSC sleeper is key to quality PSC Sleepers. Indian Railway has well placed system of quality control through field staff for checks at all aforesaid stages. However, time and again failure/lapses have come to light. In one of the vigilance checks it has been found that the records as stipulated in Schedule of Technical Requirement (STR) have either not been maintained or are not available. Also there is slackness in follow up action on short comings pointed during various inspections including those by plant supervisor. Firm also ignored the shortcomings pointed out by the plant supervisor. In this regard attention is drawn to following points:

- (i) Stringent contractual provisions are available in the contract agreement (Clause no 6.7 and its sub-clauses of SCC), which empowers Zonal Railway to take action in cases of non-compliance of contract conditions.
- (ii) Zonal Railways are advised to devise methods for flow of information from CSP to Zonal Head Quarter so that action in terms of contract conditions is taken in cases of non-compliance. For improving the record keeping and for monitoring the follow-up and compliance of shortcoming pointed out in various inspections, Zonal Railways are advised to go for digitization of records of CSPs and update them at least once in fortnight. The Digital data should be maintained at two levels: one at CSP and other at HQ and should be monitored by Chief Engineer dealing with concrete sleeper. Exception statement, if any, should be put up to PCE of Zonal Railway on monthly basis.
- (iii) SECR has procured additional proving ring to cross check the calibration of proving ring of plant to improve their effectiveness. This appears to be an effective measure and therefore all other Zonal Railways are also advised to procure additional proving ring to cross check the proving ring in the plant to improve its effectiveness. This measure can be taken in addition to the provisions contained in corrigendum no 6 to the specification entailing testing of sleepers outside sleeper plants.



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