



## East Central Railway

Office of the  
General Manger (Engg)/Hajipur

### PCE's CIRCULAR No- 18/2007/WORKS

#### Sub: -QUALITY OF FLOORING WORK

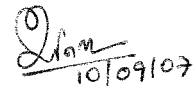
1. Various types of flooring materials like vetrified tiles, ceramic tiles, mosaic tiles, granite tiles, marble stone, chequered tiles, kota stone tiles etc are being used while executing the flooring works on this railway. However it is observed that field officers and supervisors are not well conversant with the relevant IS code based on which materials are required to be tested before acceptance. List of relevant IS codes and other specifications based on which sampling and testing of the materials supplied by the contractors are to be done before acceptance by the AENs are laid down as under:

S. No	Type of flooring	Relevant I.S. Code.	Subject of I.S.Code.
1	Cement Concrete flooring (plain / coloured / Terrazzo) tiles (General purpose and Heavy Duty types)	IS: 1237-1980	Specification for C.C Flooring tiles.
2	Chequered tiles.	IS: 13801-1993	Chequered cement concrete tiles-Specification.
3.	Ceramic tiles.	IS: 13712-2006 IS: 13630 (Pt.1 to 15)-2006 IS: 15622-2006	Definitions, classifications, characteristics & marking. Method of test, sampling & basis for acceptance. Pressed ceramic tiles-Specification.
4.	Marble tiles	IS: 1130-1969	Specification for Marble (Blocks, slabs & tiles).
5	Granite tiles.	IS: 14223 (Pt.I) 1995	Polished building stones-Specifications. Part -1: Granite.
6	Bitumen mastic flooring	IS: 1195-2002 IS: 1196-1978	Bitumen-mastic for flooring-Specification. For laying Bitumen mastic flooring.
7	Pre-cast Concrete blocks for paving	IS:15658-2006	Pre-cast Concrete blocks for paving-Specification.
8	Cement concrete flooring (Other than heavy duty flooring).	IS: 2571-1970	Code of practice of laying In-Situ Cement concrete flooring.
9	Terrazzo (Marble Chips) flooring.	IS: 2114-1984	Code of practice for laying In-Situ terrozzo flooring.
10	Brick flooring	IS: 5766-1970	Code of practice for laying burnt clay brick flooring.
11	Flag, stone flooring	IS: 3622-1997	Specification for sand stone (Slabs & tiles)

**Note-**

- (a) In addition N.E.Railway's Standard specifications will be followed for above mentioned Flooring works except for item No.6 & 8 for which Eastern Railway's Standard specifications will be followed till standard specifications is finalised for E.C.Railway.
- (b) **For Vitrified tiles and Kota stone tiles flooring instructions will be issued separately.**
- (c) **Sub-Base-** In order to ensure stability of the floor structure a sub-base is required to be provided over well-compacted earth filling of plinths for all the above floorings. For building floors one layer of well burnt bricks over 100mm thick compacted sand layer is to be provided as sub base. In case of floorings of Platform/Concourse/Pathway etc sub base will consists of 75 mm thick stone ballast over one layer of well burnt brick over 100 mm thick compacted sand layer. **The required slope in floor topping to be given at the sub base stage itself.**
- (d) **Base Course-**Above floorings (Except Item No-10) when laid on ground floor, a base course of lean concrete mix 1:4:8 (Cement, Course Sand, Stone Aggregate 40mm nominal size) is to be provided between flooring and well compacted sub-base. The minimum thickness of Base-Course will be 100 mm for building floors as well as floors of Platform/Concourse/Pathway etc.
- (e) **Cushioning Layer-** In RCC Slab of upper floors in order to provide proper slope in floor topping a cushioning layer of minimum thickness of 40 mm of concrete mix 1:3:6 (Cement, Course Sand, Stone Aggregate 20 mm nominal size) is to be provided over slab.

2. While framing special condition and or specification to be included in the tender/contract agreement for such works, a para with caption "**Sampling, Testing and Acceptance of Materials**" should invariably be included in which reference of relevant IS codes and other standard specifications should be made. All the field Supervisors and Officers associated with execution should also be well conversant with provisions of these codes and specifications and should check/test-check the works following the same.

  
10/09/07

**[A.K. Dubey]**  
**Chief Engineer /Works**

Docket No- W-2/118/09/Works Policy/10

Date- 10.09.07  
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Copy-

1. CAO/Con/N, 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.
4. All HOD/Engg Deptt/ECR

  
10/09/07

Dy Chief Engineer/Works  
For General Manager (Engg)