रेलपथ जलनिकास / TRACK DRAINAGE

1. उद्देश्य / Purpose

The purpose of drainage system is to collect, transport, and dispose of the water through an outfall or outlet.

2.0 ट्रैक ड्रेनेज का महत्व / Importance of Track Drainage

2.1 Water is the enemy of track, and drainage of track is the single most important factor for the proper maintenance of track.

2.2 Good drainage of Track can be ensured by :-

(i) Maintenance of proper slope of formation and clean ballast so that rain water flows out of the track easily and quickly.

(ii) Proper drainage arrangements so that water does not stand near the track and flows away from the track readily.

2.3 Drainage of track on embankments takes place as long as the cess level is maintained and the ballast is clean. However in cuttings and in yards where free and quick flow of water away from track is not possible, a well planned drainage system must be provided.

2.4 While doing track renewal / doubling, drainage arrangements should completed along with the track work.

2.5 Growth of vegetation in track indicates clogging of ballast and lack of adequate track drainage. Such stretches should be overhauled or deep screened.

2.6 About 25 to 50 mm below the rail foot shall be kept clear of any ballast, earth or cinder on all lines inside and outside the yards to enable surface flow, avoid corrosion and failure of track circuits.

2.7 All drains, shall be cleaned and repaired as a part of annual through packing not only on run-through lines but also on all other running and non-running lines in yards.

3.0 मध्य-खंड में जल निकास / Drainage in Mid-section

3.1 Side drains along the track shall be provided in cuttings and Zero fill locations, where the cess level

is not above the ground level.



3.2 All drains must be given adequate grade to enable free flow of the collected water.

3.3 On Group 'A' route essentially and on other routes preferably side drains shall be lined except where the drains are cut in rocky strata.

3.4 To take the full flow of side drains adequate openings should be provided under level crossings trolley refuges and OHE masts where these exist in cuttings. The foundation of new OHE masts should not be permitted in the vicinity of the track blocking the drainage.

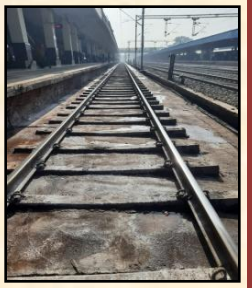
3.5 Wherever necessary, catch water drains shall be provided in cutting. Their size may be kept according to the volume of the water catered for.



3.6 Surplus ballast in the shoulders retards drainage and encourages vegetation growth. All such ballast shall be taken out of track and stacked in small heaps along- side.

4.0 स्टेशन यार्ड में जलनिकास / Drainage in Station Yards

4.1 Every station yard shall have a network of cross and longitudinal drains, whether earthen or masonry, such that the storm water is led away in the least possible time.



Arrangements for surface drainage at water columns and carriage watering points washing hydrants shall be efficiently maintained. The water must be adequately trapped and led away in a pipe or lined drain.

4.2 Every yard should have a Master Plan for Drainage. The drainage plan shall show reduced level of rails at suitable intervals from which the cess level can be derived and levels of outfalls drain crossings and other obligatory points determined.

4.3 Planning of Yard Drainage

While planning yard drainage the following guide lines shall be kept in view:-

(a) Surface drains shall generally be open for ease of cleaning and inspection. While designing drains in yard, velocity range of 0.5 -1.0 M/Sec. for Kutcha drains and 1.0 – 2.0 M/Sec. for Pucca drains may be adopted.

(b) Longitudinal drains between two tracks should be saucer shaped. However, drains with vertical sides may be provided wherever saucer drains are not practicable.

(c) In the case of large size drains and in some particular situations in yards, drain covers may have to be provided.

(d) Normally, the drain top shall not be above the cess level for effective drainage of ballast bed. However, if a drain with higher top level has to be provided to retain ballast, weep-holes shall be provided at the assumed cess level and the drain designed so as to flow above bottom level weep holes. Weep-holes generally get choked. A preferable alternative is to provide 4 cm wide vertical weep slits at about one meter intervals, right from the top of the drain down upon the cess level.

(e) Wherever outfall is available at either end of the yard, longitudinal drain shall be provided with slope in opposite direction from the middle of the yard. This will ensure minimum size and depth of the drains.

5.0 प्लेटफार्मों का जलनिकास / Drainage of Platforms

5.1 All end platforms shall normally be sloped away from the track.

5.2 All drains from platform shelters, tea stalls, toilets, water taps or other sullage generation points shall be pipes and normally discharge on the non track side of the end platform. If necessary longitudinal covered drains may be provided on the platform.

5.3 In the case of island platforms, all drains shall discharged on the side of the less important track and not towards the run through line. Wherever a situation exists to the contrary, the drainage shall be modified to conform.

5.4 If an island platform has run through lines on both the sides a longitudinal covered drain should run on the platform taking the affluent from all the points on the platform. It should cross the track at only one point at the end of the platform by a suitable arrangement.

5.5 Whenever a cross drains discharges towards a track, it should be in a pipe discharging directly into the drain between the track.

5.6 All drains emanating from the platform must be provided with suitable double grating, well fixed in position. so that any material likely to clog the drain is retained on the grating.

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हमारा उद्देश्य /OUR OBJECTIVE

To upgrade maintenance technologies and methodologies and achieve improvements in productivity and performance of all railway assets and manpower which inter alia would cover reliability, availability for use, utilisation and efficiency.

DISCLAIMER

The information contained in this pamphlet does not supersede any existing provisions laid down in RDSO & Railway Board instructions. This document is not statutory & instructions given in it are for the purpose of guidance only.

भारत सरकार - GOVERNMENT OF INDIA
रेल मंत्रालय - MINISTRY OF RAILWAYS

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