

**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS  
(RAILWAY BOARD)**

No. 2022/GS/IR/Cable laying policy

Dt. 29.03.2023

To,

**General Managers  
All Indian Railways,**

Sub: Guidelines for S&T cable laying in Ducts.

Ref.: Board's letter No. 2023/W-I/Genl/CAO/C/Conference.Pt.7, dated 16.03.2023.

Zones have been advised to provide proper quality pre-fabricated/precast cable ducts to avoid cable cuts in future vide above referred letter item No. 10 (vii).

In continuation of the same, kindly find enclosed herewith guidelines for S&T cable laying in ducts at Annexure "A" ( 3 pages). Zones are requested to plan their projects in accordance with these guidelines.

This issues with concurrence of Associate Finance and approval of Board (MI).



**(Sudeep Shrivastava)**  
**Executive Director/Gati Shakti (S&T)**  
Railway Board,  
Rly. 030-44320

**Copy to:**

**C/-DG/RDSO/Lucknow:** RDSO is requested to issue necessary specifications for the duct and chamber for S&T cable laying in accordance with the enclosed guidelines within one month.

**C/- CMD-IRCON, RVNL, RITES, RAILTEL, DFFCIL** for information and necessary action please.

**Guidelines for S&T Cable Laying in DUCT**

**I Cable Laying in New Projects**

- 1) Cables shall be laid as per the approved plan/GAD in pre-fabricated/ precast ducts close to track on both sides at suitable location. However, in block section, the duct shall be laid beyond embankment unless unavoidable.
- 2) The path of duct shall be kept parallel to the track alignment and any zig-zag path of duct shall be avoided.
- 3) Duct and chamber work shall be done under the supervision of Engineering Department.
- 4) Laying of cables in all works shall be done by S&T Department.
- 5) In cases where duct and chamber is constructed in Engineering contract, the duct and chamber constructed shall be handed over to S&T after joint inspection confirming quality and alignment.
- 6) Routine maintenance of ducts and chamber shall be done by S&T Department. However, any major repair/replacement activity of duct and chamber shall be done under the supervision of Engineering Department.
- 7) The duct and chamber shall be laid after surface has been properly leveled.
- 8) The ducts and chambers shall be as per following norms :
  - Inner dimension of duct shall normally be kept 300 mm x 300 mm. The top of the duct cover shall normally be 300 mm below the surface of soil.
  - At suitable intervals, not more than 500 m along the duct and at each location of track crossing, a chamber shall be provided with a lid & locking arrangement.
  - The size of the chamber shall preferably be 1200 mm x 1200 mm x 1500 mm (depth). Further, proper arrangements should be made so that there is no water logging in the duct and chamber.

- Chamber cover shall normally be kept 100 mm below the surface of soil. In theft prone areas, depth of chamber cover can be increased depending on the local conditions.
  - If there are more numbers of cables to be laid in large yards, then more than one duct may be placed side by side based on requirement of S&T department.
- 9) Provision for cable duct shall invariably be made in the GAD for all platforms, stations, culverts and bridges. No drawing for stations or bridges shall be approved without the provision of cable duct.
- 10) In places where laying of cable duct is not possible due to site conditions, cable shall preferably be laid by HDD method or as feasible.
- 11) Following may normally be ensured while laying cables :
- a) Cables may be tied together at every 50m or so meter by suitable tie/GPS tape after laying & before closing of cable duct.
  - b) Entry and exit of cable in chamber shall be properly sealed to avoid theft and entry of rodents. Sealing through bitumen/suitable compound can be done at the entry & exit of cable chamber to arrest cable theft.
  - c) Partial sand filling of duct after cable laying may be considered to deter theft.
  - d) RFID marker or GPS tapes shall be provided along with the cables in duct at regular interval as per requirement and at every diversion to ensure identification of the cable route.
  - e) GIS mapping of entire duct shall be made available to all concerned stakeholders.
  - f) Cable route markers where ever provided above the ground, shall be of concrete.
  - g) Cable at the track crossing and road crossing shall be laid in HDPE pipe or concrete duct of specified/approved cross section and strength.

- h) In station section, Location box shall normally be kept on or adjacent to the duct route.
  - i) For extending the cable for derivation at Location box, Signals, LC gates, SSP, SP etc. duct of 300mm x 100 mm or HDPE pipe of specified diameter shall be used.
  - j) HDPE pipe may also be laid in duct to blow OFC in future, where ever considered necessary.
  - k) All entry points of cable in building must be secured through suitable measures.
- 12) Zones shall finalize drawings for cable duct as per above guidelines and site requirements. Specifications of pre-fabricated/ precast ducts and chambers shall be issued by RDSO in accordance with these guidelines ensuring adequate strength, no water logging, safety of cables from rodents and fire, durability, maintainability etc.
- 13) Digital Integrated Signalling and Telecom Cable route shall be prepared and made available online by Zonal Railways over Railnet.
- 14) After availability of online integrated S&T cable routes plans, the same shall be uploaded as utility layer on PM Gati Shakti BISAG portal.

## **II Additional steps for protection of cables in new projects:**

Existing cables shall be protected as per latest directions/policies/JPO issued by Railway Board. In addition following precautions shall be taken in new projects:

- 1) Executing agency for works shall survey the route along with open line using 'cable route tracer (Scanner/Metal detector)' to identify the existing old functional cables en-route in the section. Necessary provision may be made in the contract, if needed.
- 2) Cable route/zone identified through scanner or as per approved plans for existing cable shall be marked (White chalk / Lime) on site by executing agency, in presence of open line staff before the start of excavation or digging work.

