

The ballast less track of Metro Railways Calcutta is basically rails laid over R.C. concrete bed by means of bearing plate and rubber pads.

The track bed known as second pour or levelling pour concrete was laid on the raft of the box of the Tunnel at a later date. When track was opened for service, it was noticed that with the increase in traffic density and speed above 50 kmph, the track was sinking in certain stretches of about 500 m in length, between Kalighat and Jatin Das Park Station.

Thorough investigations were made and found that there was a fine gap due to separation between the raft and second pour concreting. The underside of the track bed was being pulverised due to constant hammering action of the wheels and thus the track was sinking.

Metro Railways decided not to suspend the traffic for strengthening the track, but to execute the work during the daily maintenance period which was between 00.00hrs. and 0.5.00 hrs.

So their requirements were as follows:

1. Material should be injectable
2. Should have low viscosity and free slowing properties.
3. Should set and gain compressive strength of at least 250 kg/cm² within four hours.

Experimenting with various materials the Railways authorities selected **CICO EPOXCRETE 2:1** and **CICO EPOXYCRETE** epoxy based grouts 2:1:2 which satisfied all the requirements.

Resicrete 2:1 & 1:2 were injected and the result was found to be excellent by Metro Authorities. The **CICO** Group has been further entrusted the restrengthening of -23 KM of the track beds.