

PROJECT DESCRIPTION EARTH- AND TRAFFIC ROUTE CONSTRUCTION RAILWAY EMBANKMENT

Project: WFDC (Western Dedicated Freight Corridor)
Location: Rewari - Iqbalagadh, India
Year: 2016

Shear failure and plastic deformation design of railway embankment over soft soil



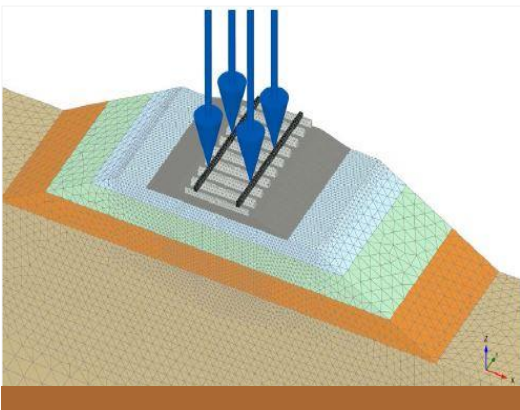
PROJECT DESCRIPTION

The existing railroad routes of Howrah-Delhi on the Eastern Corridor and Mumbai-Delhi on the Western Corridor had an operation rate varying from 115 % to 150 %. To upgrade the infrastructure on future demand for international trade has led to the concept of dedicated freight corridors. The western dedicated freight corridor (WFDC) covers a distance of about 1.468 km from Mumbai to Delhi. The design for the 626 km long section between Rewari and Iqbalgarh requires construction of 112 major bridges, 1.188 minor bridges and 20 stations with supply equipment. The use of geogrid reinforcement for embankment stabilisation.



PROJECT FACTS

- 32.5 to axle load, train speed up to 100 km/h and
- 800 GMT within the next 10 to 15 years
- Overall distance 1.500 km
- Section considers 112 major bridges, 1188 minor bridges, 20 stations with supply equipment
- Stiffness modulus of subgrade $ES = 18 \text{ MN/m}^2$
- Allowable stresses on blanket layer $< 500 \text{ kPa}$ and on top of subgrade $< 300 \text{ kPa}$



OUR SERVICE

- Design of geogrid reinforced railway track according to Guidelines and Specifications for Design and Formation for Heavy Axle loads, Report Nr. RDSO /2007/GE:0014
- In accordance with RDSO formation stresses are analyzed by three dimensional Finite element analyses
- Progressive shear failure and the excessive plastic deformations and strains are analyzed by the AAR-Method, developed by Li and Selig