

Stabilised graded strip around the runway with no disturbance to underground utilities



Mumbai International Airport Ltd. 14-32 Runway

Mumbai, India

The strip on either side of the runway needed to be graded to reduce impact to the aircraft and passengers should the aircraft go off the runway. Mechanical stabilisation was proposed to the graded strip to improve the soil strength.

CLIENT'S CHALLENGE

The graded strip beside the runway endured low strength and required deep soil replacement to achieve a minimum CBR of 15% to provide a safe platform in case the aircraft skids off the runway. The client needed a rapid solution due to time constraints and also needed to reduce the potential damage to underground utilities and services due to soil replacement.

TENSAR SOLUTION

After a careful review of the site condition, Tensar proposed a layer of mechanically stabilised layer (MSL) for the soil replacement to enhance the strip. This solution has reduced the excavation depth for soil replacement, which helped to avoid damaging the underground utilities and reduced runway downtime.

B E N E F I T S

- **Quick and simple installation**
ensuring timely delivery within the limited timeframe
- **Reduced construction time and cost**
compared to conventional solutions
- **Reduced earthwork activities**
by reducing the depth of soil replacement
- **No disturbance to the underground utilities**
ensuring uninterrupted flight operations

Tensar®

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PROJECT DETAILS

Constructed in
2023

Client
Mumbai International Airport Limited

Contractor
**New India Infra Buildtech Limited,
Delhi**

Consultant
Ramboll Consultants Pvt Ltd



Multiaxial geogrid installation for the graded strip beside the runway

**Roads, Pavements &
Trafficked Area | No. 505**

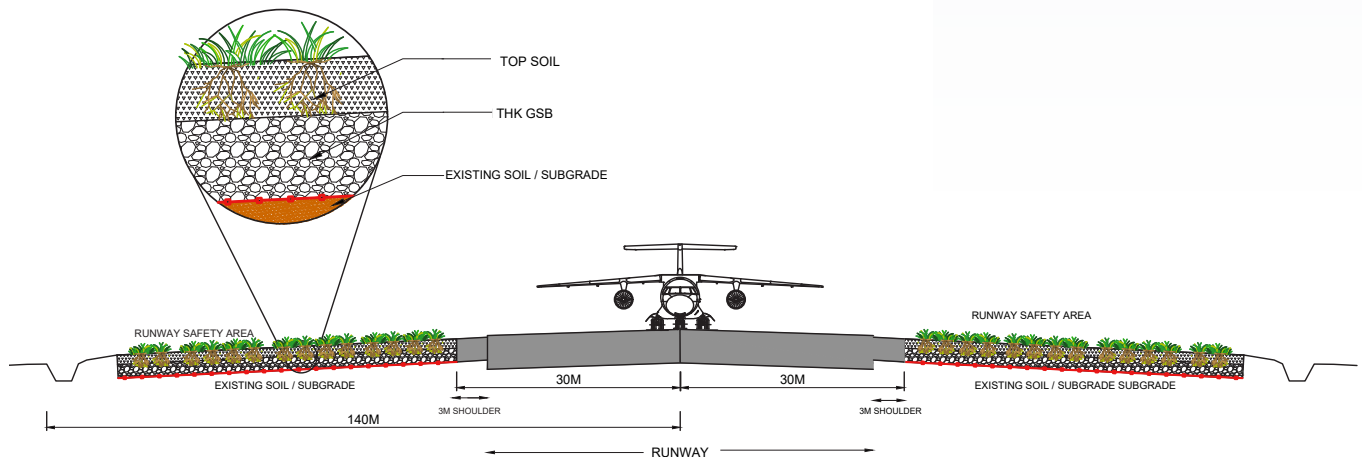
PROJECT BACKGROUND

Chhatrapati Shivaji Maharaj International Airport is the primary international airport serving Mumbai, Maharashtra, India. As per the information given by consultant, the new guideline implemented by DGCA in 2022 requires an area comprising around 140m from the centre of runway to be strengthened. This zone known as graded strip / grass safety open area needed to have an effective CBR of 15 % and requires enhancement in strength so the airplane wheel should not be bogged into the soil if it skids off runway.

The existing subsoil surrounding the runway for the present project was clayey and had low CBR. The conventional removal and replacement of soil was not possible due to utilities underneath at shallow depth. It was not possible to disturb the utilities due to the live cables being crucial for flight operations. Being one of the busiest airport in India, the time window available for the construction activity was very limited.

Tensar proposed a MSL using multiaxial geogrid to stabilise the strip while minimising the depth of soil replacement. This helped to achieve the targeted CBR without exposing underground utilities, ensuring no damage to the utilities which would hindered the airport operation. Furthermore, the reduced earthwork activities also helped to ensure timely construction and allowed the runway to be back in operation as soon as possible.

CROSS-SECTION:



Completed airport runway in 2023.

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