

## 2. Development of Compressed Section Shield Tunneling Method (Part 3) - Pullout Test of Anchors for Fixing Inner Reinforcing Members -

Saburo Okuno, Takeshi Asano, Masahiko Tanaka

The compressed section shield tunneling method has a construction speed and environmental impact equivalent to those of the ordinary shield tunneling method and besides a similar economic efficiency to that of the mountain tunnel method.

Compressed section segments used in this method were decided to be reinforced by inner reinforcing members that have been used in rectangular and oval section segments to reduce stresses on the segments and joints. The stress reducing effects of the inner reinforcing members were confirmed in preliminary analysis. As a next step, a full-scale pullout test was conducted to determine the detailed structures of anchors for fixing the inner reinforcing members to the segments.

The test clarified the load carrying capacity and pullout states of the anchors, enabling the anchorage zones to be designed.

**Key words** : shield tunneling method, road tunnel, compressed section, inner reinforcing members, full-scale pullout test