

**Load-bearing Mechanism of Beam-column Joints of Rigid Frame Viaducts Subjected
to Horizontal Forces in Two Directions**

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In order to clarify the load-bearing mechanism and load-bearing capacity of the joint under two-way loading, we investigated the beam-column joint of a ridged frame viaduct by finite element analysis. The inner radius of axial rebars in the transverse beam affected the load-bearing capacity of the joint, since a compressive strut was formed at the bending inner radius of the bend when the load angle was around 0° . The tie reinforcing bars at in the joint had the effect of increasing the load-bearing capacity by up to 10% in any loading direction. In addition, when the torsional moment of the longitudinal beam was considered, the horizontal force was shared at each fulcrum, but it did not affect the joint bearing force.