The 2022 World Congress on
The 2022 Structures Congress (Structures22)
16-19, August, 2022, GECE, Seoul, Korea

Seismic Performance Evaluation of Post-Tensioned RC Exterior Beam-Column Connections

Donghyuk Jung[1], Sanghee Kim[2] and *Thomas Kang[3]

[1] *Department of Architectural Engineering, Pusan National University, Busan, Korea*
[2] *Department of Architectural Engineering, Kyonggi University, Suwon, Korea*
[3] *Department of Architecture and Architectural Engineering, Seoul National University, Seoul, Korea*
[3] tkang@snu.ac.kr

ABSTRACT

In this study, seismic performance of post-tensioned monolithic exterior beam-column connections was experimentally evaluated. A total of six full-scale beam-column connections which included three normal and three high strength specimens were tested under lateral cyclic loading. Test results revealed that post-tensioning effectively confined the joint area and delayed severe concrete damage, enabling the specimens to deform up to 5% drift ratio. Furthermore, shear capacity of the post-tensioned joints was greatly increased up to more than 60% in both normal and high strength specimens. Post-tensioning was also effective in enhancing energy dissipation and maintaining lateral stiffness, especially in the high strength specimens.

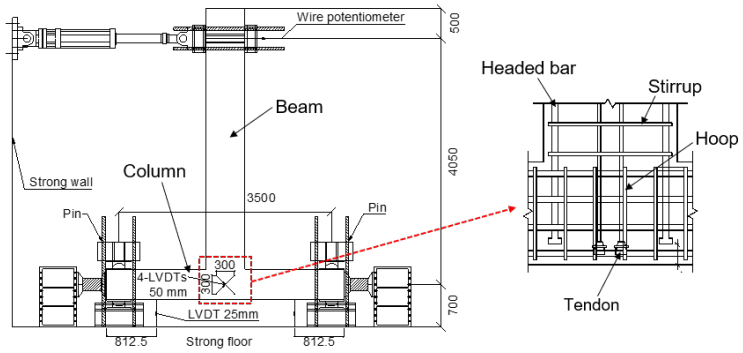

Fig. 1 Lateral cyclic loading test of post-tensioned RC beam-column connections.

REFERENCES

[1] Assistant professor
[2] Assistant professor
[3] Professor

Park, R., & Thompson, K. J. (1977). Cyclic load tests on prestressed and partially prestressed beam-column joints. *PCI Journal*, 22(5), 84-110.