

Apai Benchapong 2011: Experimental Study on Fixed-end Column Buckling of Cold-formed Steel Rectangular Tube Section Under Concentric Compression. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Assistant Professor Kitjapat Phuvoravan, Ph.D. 143 pages.

The research presents research on the buckling behavior of cold-formed steel rectangular tubular columns which is subjected to compression between fixed ends. The effects of imperfect sections from manufacturing process have been taken into consideration in the test specimens. The effect of imperfection is amplified in order to better investigate the behavior by making one side of rectangular specimen curved. All the experimental results are compared with the compressive design strength according to the AISI. The distributions of stress in the test specimens were also studied at the instances of local buckling and post-local buckling. From the studies, it is shown that the considered pattern of geometry imperfection from manufacturing process can increase the column strength. Nonetheless, the failure mode is similar to that of perfect columns.

---

Student's signature

---

Thesis Advisor's signature