

Axial Capacity: Brute Force Method

Beginner's Guide to the Steel Construction Manual
http://www.bststructuralengineering.com

Input Data

Table with 2 columns: Property Name and Value. Properties include Required Pn (800 kips), Fy (50 ksi), (KL)x (30 ft), (KL)y (6 ft), Slenderness limit (300). Includes a note for Local Buckling Criteria: SCM B5, E7.

Computed Constants

Table with 2 columns: Property Name and Value. Properties include .44Fy (22 ksi), Case 3, 2p (13.49), Case 10, 2p (35.88).

Sections sorted by weight: Lightest to Heaviest

Main data table with columns for Section, Summary, Section Properties (Area, Tm, b/2t, h/Lm, rx, ry), General Slenderness Ratios (KL/r)x, (KL/r)y, Control, Unstiffened (Act/Limit, Qc), Stiffened (Act/Limit, Fc, f, 1.49sqrt(Lb), b, br, Ar, Qs, Q), Slenderness (Act/Limit, Fc), and Compressive Strength (FCM E3, E7) (Fcr, .44QFy, Fy/1.67, .44QFy, Fcr, Pn). The table lists 216 different steel sections with their respective properties and capacity values.

