

400S250-54 (50ksi) (Standard Punch)

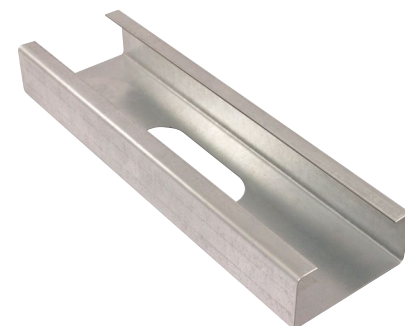
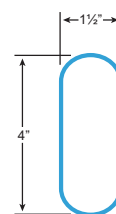
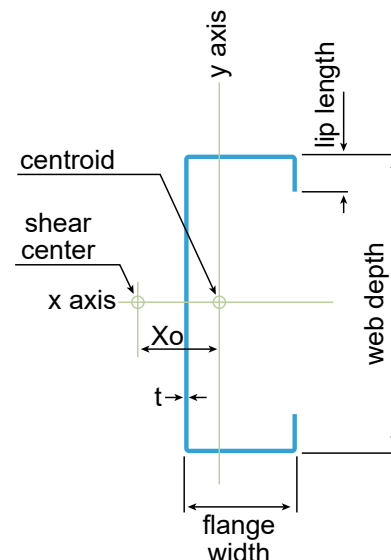
Product Description: 4" Stud 16GA (2-1/2" Flange, 54 mil)

Coating: G60 (standard), G90 (special order)

Specification Section: 05.40.00 (Cold-Formed Metal Framing)

GEOMETRIC PROPERTIES			
Web Depth	4 in.	Yield Strength, F_y	50 ksi
Flange Width	2.5 in.	Design Thickness	0.0566 in.
Lip Length	0.625 in.	Min. Steel Thickness	0.0538 in.

GROSS PROPERTIES		
Area (in ²)	Total cross-sectional steel area	0.556
Weight (lb/ft)	Linear weight per foot	1.89
I_x (in ⁴)	Moment of inertia about the x-axis	1.512
S_x (in ³)	Section modulus about the x-axis	0.756
R_x (in)	Radius of gyration about the x-axis	1.649
I_y (in ⁴)	Moment of inertia about the y-axis	0.490
R_y (in)	Radius of gyration about the y-axis	0.938
EFFECTIVE PROPERTIES		
I_x (in ³)	Effective moment of inertia (x-axis)	1.505
S_x (in ³)	Effective section modulus (x-axis)	0.592
M_a (in-k)	Allowable bending moment-effective section modulus	17.71
M_{ad} (in-k)	Allowable bending moment-distortional buckling	17.74
V_a (lb)	Allowable shear force in web	3372
$V_{a_{net}}$ (lb)	Allowable strong axis shear at punchout	1223
TORSIONAL PROPERTIES		
$J \times 1000$ (in ⁴)	St. Venant torsional constant	0.594
C_w (in ⁶)	Warping constant	1.821
X_o (in)	Distance from shear center to centroid	-2.124
m (in)	Distance from shear center to mid-plane of web	1.244
R_o (in)	Polar radius of gyration	2.848
Beta	Torsional Flexural Constant	0.444



First punchout is centered 12" from beginning of member; subsequent punchouts are 24" on center (o.c.). Center of last punchout is no less than 12" from end of member.

CODES AND STANDARDS:

Super Stud products comply with the applicable provisions of the following:

- International Building Code (IBC): 2006–2024
- AISI S100-16 (2020) w/S2-20 (effective properties include cold-work strength increase)
- Sheet Steel: ASTM A1003/A1003M; ASTM A653/A653M
- Galvanized Coating: ASTM A653/A653M

Structural Members:

- ASTM C955; AISI S240
- Installed per ASTM C1007

Additional Standards:

- AISI S201; AISI S202

3rd Party Certification

For LEED Letter requests please submit through: www.buysuperstud.com