

## Strong Axis Shear Strength Buckling Modifier Summary

SCM Section	Shear Area	$\lambda$	$\lambda_p$	$\lambda_r$	Buckling Modifier, Inelastic Range $\lambda_p < \lambda \leq \lambda_r$	Buckling Modifier, Elastic Range $\lambda_r < \lambda$	
G2.1(a)	Rolled I-shaped w/o TFA	$ht_w$	$h/t_w$	$2.24 \sqrt{E/F_y}$	----	Not Considered – Use G2.1(b)	Not Considered – Use G2.2
G2.1(b)	All I-shaped and Channels w/o TFA	$ht_w$	$h/t_w$	$1.10 \sqrt{k_v E/F_y}$	----	$C_{v1} = \frac{\lambda_p}{\lambda}$	Not Considered – Use G2.2
G2.2	Interior Web Panels with $a/h \leq 3$ , and with TFA	$ht_w$	$h/t_w$	$1.10 \sqrt{k_v E/F_y}$	$1.37 \sqrt{k_v E/F_y}$	$C_{v2} = \frac{\lambda_p}{\lambda}$	$C_{v2} = \frac{1.51 k_v E}{\lambda^2 F_y}$
				----	----	$\left[ C_{v2} + \frac{1 - C_{v2}}{1.15 \sqrt{1 + (a/h)^2}} \right]$ or $\left[ C_{v2} + \frac{1 - C_{v2}}{1.15 \left[ a/h + \sqrt{1 + (a/h)^2} \right]} \right]$	
G2.3	End Web Panels with $a/h \leq 3$ , and with TFA	$ht_w$	$h/t_w$	$1.10 \sqrt{k_v E/F_y}$	$1.37 \sqrt{k_v E/F_y}$	$C_{v2} = \frac{\lambda_p}{\lambda}$	$C_{v2} = \frac{1.51 k_v E}{\lambda^2 F_y}$
				----	----	$\left[ C_{v2} + \beta_v \left( \frac{1 - C_{v2}}{1.15 \sqrt{1 + (a/h)^2}} \right) \right]$	
G3	Single Angles and Tees	$bt$	$b/t$	$1.10 \sqrt{1.2E/F_y}$	$1.37 \sqrt{1.2E/F_y}$	$C_{v2} = \frac{\lambda_p}{\lambda}$	$C_{v2} = \frac{1.812E}{\lambda^2 F_y}$
G4	Rect. HSS, Box, Other	$2ht$	$h/t$	$1.10 \sqrt{5E/F_y}$	$1.37 \sqrt{5E/F_y}$	$C_{v2} = \frac{\lambda_p}{\lambda}$	$C_{v2} = \frac{6E}{\lambda^2 F_y}$

Where:

1. TFA = Tension Field Action
2. For webs without transverse stiffeners,  $k_v = 5.34$
3. For webs with transverse stiffeners,  $k_v = 5 + \frac{5}{(a/h)^2}$
4. The Buckling Modifier equals 1.0 whenever  $\lambda < \lambda_p$
5. Shear Strength:  $V_n = 0.6F_y(\text{Shear Area})(\text{Buckling Modifier})$