SidePlate Prequalified Connection Limits

as of 7/1/2021

Criteria \ Connection		SidePlate SMF Field Bolted IAPMO 525 [a]	SidePlate SMF Field Bolted AISC-358 [b]	SidePlate SMF Field Bolted AISC-358 HCAI	SidePlate SMF Field Welded AISC-358 HCAI	Notes
Beam Limitations	Beam Types	Rolled Wide flange, HSS & Built-up	Rolled Wide flange, HSS & Built-up	Rolled Wide flange, HSS & Built-up	Rolled Wide flange, HSS & Built-up	
	Max. Beam depth	W48x HSS14x	W44x HSS14x	W44x	W40x	SidePlate is the only Moment Frame Connection that allows W40x and W48x beams.
	Max. Beam weight	529 lb/ft	400 lb/ft	400 lb/ft	302 lb/ft	SidePlate can be used with larger beams than any other Moment Frame Connection.
	Span-to-depth Ratio [1]	$L_h/d > 3.5$ or $L/d > \sim 6.2$	$L_h/d > 4.0$ or $L/d > \sim 6.7$	$L_h/d > 4.5$ or $L/d > \sim 7.0$	$L_h/d > 5.0$ or $L/d > \sim 7.4$	SidePlate can be used in smaller spans when compared to any other Moment Frame Connection.
	Protected zone	Yes $0.67d_b$	Yes $0.67d_b$	Yes $0.67d_b$	Yes $0.83d_b$	
	Lateral bracing	50ry From the end of the side plates	50ry From the end of the side plates	50ry From the center of the columns	50ry From the center of the columns	SidePlate requires less lateral bracing because the side plates provide lateral bracing to the beam. Hinge lateral bracing is eliminated with SidePlate.
	Flange Thickness	No limits	2.5 in.	2.5 in.	2.5 in.	SidePlate can be used with almost any beam section available.
Column Limitations	Column Types	Rolled Wide flange, HSS, Built-up, Cruciform, BOX	Rolled Wide flange, HSS, Built-up, Cruciform, BOX	Rolled Wide flange, HSS, Built-up BOX	Rolled Wide flange, Built-up BOX	Box sections with SidePlate are permitted to use PJP welds without continuity plates. HSS or BOX sections with SidePlate Field-Bolted connections may be permitted to have width-to-thickness ratio up to 21.
	Max. Column depth	W44x Built-up Box width < 36"	W44x Built-up Box width < 33"	W44x Built-up Box width < 33"	W44x Built-up Box width < 24"	
	Max. Column weight	No Limits	No Limits	No Limits	No Limits	
Connection Limitations	Extension of the side plates	$0.65d_b$ to $1.7d_b$	$0.65d_b$ to $1.7d_b$	$0.65d_b$ to $1.5d_b$	$0.77d_b$ to $1.0d_b$	SidePlate provides an increased stiffness between the face of the columns and the end of the side plates of approximately 3 times the beam moment of Inertia.
	Beam flange width	$b_{bf} + 1.0$ in. $< b_{cf}$	$b_{bf} + 1.0$ in. $< b_{cf}$	$b_{bf} + 1.0$ in. $< b_{cf}$	$b_{bf} + 1.1 * t_{bd} + 1/2$ in $< b_{cf}$	
	Panel Zone	100% Rigid	100% Rigid	100% Rigid	100% Rigid	SidePlate is the only available Moment connection that provides a 100% rigid panel zone

(1) L_h refers to Span between plastic hinges and L refers to the span between columns flanges

(a) Based on IAPMO 525 with Sate of California (CBC) and City of Los Angeles (LABC) Supplements

(b) Based on AISC 358-16, Supplement 2

Phasing out this legacy connection