

SidePlate Prequalified Connection Limits

12/6/2018

Criteria		Connection	SidePlate SMF Field Bolted IAPMO 525 ^a	SidePlate SMF Field Bolted AISC-358 ^b	SidePlate SMF Field Welded AISC-358 ^{OSHDP}	Notes
Beam Limitations	Beam Types		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	W40x	SidePlate is the only Moment Frame Connection that allows W40x and W48x beams.
	Max. Beam weight		529 lb/ft	400 lb/ft	302 lb/ft	SidePlate can be used with larger beams than any other Moment Frame Connection.
	Span-to-depth Ratio¹		$L_r/d > 3.5$ or $L/d > \sim 6.2$	$L_r/d > 4.0$ or $L/d > \sim 6.7$	$L_h/d > 5.0$ 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 0.83d _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	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.	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, 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 < 24"	
	Max. Column weight		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	0.77d _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		$b_{bf} + 1.0 \text{ in.} < b_{cf}$	$b_{bf} + 1.0 \text{ in.} < b_{cf}$	$b_{bf} + 1.1 * t_{bf} + 1/2 \text{ in.} < b_{cf}$	
	Panel Zone		100% Rigid	100% Rigid	100% Rigid	SidePlate is the only available Moment connection that provides a 100% rigid panel zone

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

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

(b) Based on AISC 358-16, Supplement 1