

# CONEXIÓN VIGUETA IPE 200 A VIGA IPE

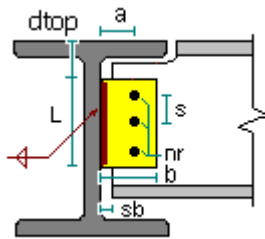
## Data

Connection name : SP BG  
Connection ID : 7V

Family: Beam - Girder (BG)  
Type: Single plate

## GENERAL INFORMATION

### Connector



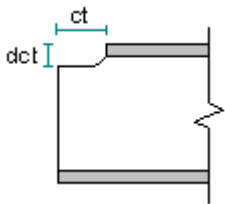
## MEMBERS

### Beam

#### General

Beam section : IPE 200  
Beam material : A572 Gr50  
sb: Beam setback : 12.7 mm  
Beam to girder alignment : Top  
Horizontal angle (deg) : 0  
Vertical angle (deg) : 0  
Braced : No

#### Coped



dct: Top cope depth : 30 mm  
ct: Top cope length : 70 mm  
dcb: Bottom cope depth : 0 mm  
cb: Bottom cope length : 0 mm

### Girder

#### General

Girder section : IPE 300  
Girder material : A572 Gr50

## SINGLE PLATE

### Connector

Section : PL 9.5x90x146  
b: Width : 90 mm  
L: Length : 146 mm  
Plate type : Standard  
tp: Plate thickness : 9.5 mm  
Material : A36  
Plate position on beam : Center  
Bolts : 5/8" A325 N  
nr: Bolt rows : 3  
nc: Bolt columns : 1  
s: Pitch - longitudinal center-to-center spacing : 43 mm  
Lev: Vertical edge distance : 30 mm  
Leh: Horizontal edge distance : 40 mm

## Results

Family: Beam - Girder (BG)  
Type: Single plate  
Design code: AISC 360-16 LRFD

Description	Ru [kN]	Pu [kN]	Load type
DL	14.80	3.74	Design

Dimensions	Unit	Value	Min. value	Max. value	Sta.	References
<u>Shear plate</u>						
Length	[mm]	146.00	79.50	149.50	✓	p. 10-104
Number of bolts		3	2	12	✓	p 10-102
Distance from the bolt line to the weld line	[mm]	50.00	--	88.90	✓	p 10-102
Minimum plate or beam web thickness	[mm]	5.60	--	9.52	✓	Table 10-9
Vertical edge distance	[mm]	30.00	22.22	--	✓	Tables J3.4, J3.5
Horizontal edge distance	[mm]	40.00	31.75	--	✓	p. 10-103
Vertical center-to-center spacing (pitch)	[mm]	43.00	42.33	134.40	✓	Sec. J3.3, Sec. J3.5
<u>Beam</u>						
Vertical edge distance	[mm]	27.00	22.22	--	✓	Tables J3.4, J3.5
Horizontal edge distance	[mm]	37.30	31.75	--	✓	p. 10-103
<u>Support</u>						
Weld size	[1/16in]	6	4	--	✓	p. 10-87
Weld length	[mm]	146.00	38.10	--	✓	Sec. J2.2b

Verification	Unit	Capacity	Demand	Ctrl EQ	Ratio	References
<u>Shear plate</u>						
Bolts shear	[KN]	128.83	15.27	DL	0.12	Tables (7-1..14)
Bolt bearing under shear load	[KN]	169.39	14.80	DL	0.09	Eq. J3-6, p. 7-18
Shear yielding	[KN]	206.56	14.80	DL	0.07	Eq. J4-3
Shear rupture	[KN]	151.89	14.80	DL	0.10	Eq. J4-4
Block shear	[KN]	203.72	14.80	DL	0.07	Eq. J4-5
Bolt bearing under axial load	[KN]	249.03	3.74	DL	0.02	Eq. J3-6, p. 7-18
Tension yielding	[KN]	309.84	3.74	DL	0.01	Eq. J4-1
Tension rupture	[KN]	253.16	3.74	DL	0.01	Eq. J4-2
Tear out under axial load	[KN]	221.37	3.74	DL	0.02	Eq. J4-5
Plate (support side)						

Global critical strength ratio	0.15
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