JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 75S41-0.8 Single

Section Dimensions:

Web Height =	75.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	0.800 mm

Steel Properties:

Fy =	500.00 Mpa
Fu =	520.00 Mpa
Fya =	500.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
136.4	10.5014	109.2	3420.1	128253	30.6605	32027	15.3215

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
120522	2119	634.5	660.4	4463	1878	994	297.5

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
29105	39800463	-848.539	19.789	47.863	0.513

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
1218984.7	2712	1333.1	757.2	-734.2	734.2	-757.2	-1333.1

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
1427	3875	1125	4126

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.853 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.877 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 75S41-1.0 Single

Section Dimensions:

Web Height =	75.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	1.000 mm

Steel Properties:

Fy =	500.00 Mpa
Fu =	520.00 Mpa
Fya =	500.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
169.6	13.0520	135.5	4224.1	158405	30.5643	39308	15.2255

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
153143	2849	853.1	898.3	8738	2910	1253	375.3

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
56522	48567304	-842.530	19.658	47.605	0.514

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
966277.7	3682	1319.4	752.7	-727.3	727.3	-752.7	-1319.4

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
2179	6015	1856	6515

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.852 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.877 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 75S41-1.2 Single

Section Dimensions:

Web Height =	75.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	1.200 mm

Steel Properties:

Fy =	500.00 Mpa
Fu =	520.00 Mpa
Fya =	500.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
202.3	15.5727	161.5	5008.2	187807	30.4679	46309	15.1294

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
184296	3639	1089.5	1150.7	12583	3453	1509	451.9

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
97111	56888206	-836.519	19.526	47.348	0.516

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
797842.5	4745	1305.8	748.1	-720.5	720.5	-748.1	-1305.8

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
3071	8584	2767	9427

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.851 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.877 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 75S41-1.5 Single

Section Dimensions:

Web Height =	75.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	1.500 mm

Steel Properties:

Fy =	500.00 Mpa
Fu =	520.00 Mpa
Fya =	500.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
250.7	19.2975	199.7	6147.2	230520	30.3230	56294	14.9847

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
228277	4963	1486.1	1548.9	19405	4188	1879	562.7

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
188029	68562263	-827.503	19.328	46.962	0.519

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
629461.3	6564	1285.5	741.3	-710.3	710.3	-741.3	-1285.5

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
4664	13218	4469	14765

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.850 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.877 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 89S41-0.8 Single

Section Dimensions:

Web Height =	89.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	0.800 mm

Steel Properties:

Fy =	495.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
147.6	11.3635	120.4	4259.0	189524	35.8298	33946	15.1638

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
179583	2559	758.6	787.7	3723	2170	1000	296.4

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
31494	56750839	-801.908	18.987	50.104	0.603

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
1399291.0	3128	1503.7	935.5	-837.3	837.3	-935.5	-1503.7

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
1382	3798	1027	3926

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.879 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.881 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 89S41-1.0 Single

Section Dimensions:

Web Height =	89.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	1.000 mm

Steel Properties:

Fy =	500.00 Mpa
Fu =	520.00 Mpa
Fya =	500.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
183.6	14.1296	149.5	5265.9	234332	35.7289	41670	15.0666

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
228556	3444	1031.4	1081.9	7305	3380	1264	378.4

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
61189	69353134	-796.017	18.857	49.857	0.605

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
1109778.6	4240	1489.4	930.3	-829.7	829.7	-930.3	-1489.4

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
2137	5963	1737	6297

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.878 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.881 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 89S41-1.2 Single

Section Dimensions:

Web Height =	89.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	1.200 mm

Steel Properties:

Fy =	500.00 Mpa
Fu =	520.00 Mpa
Fya =	500.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
219.1	16.8658	178.3	6250.1	278129	35.6278	49098	14.9691

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
273328	4419	1323.1	1390.9	12583	4812	1526	457.0

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
105175	81355333	-790.127	18.727	49.609	0.607

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
916804.9	5478	1475.2	925.1	-822.1	822.1	-925.1	-1475.2

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
3018	8516	2614	9147

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.878 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.881 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 89S41-1.5 Single

Section Dimensions:

Web Height =	89.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	1.500 mm

Steel Properties:

Fy =	500.00 Mpa
Fu =	520.00 Mpa
Fya =	500.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
271.7	20.9140	220.7	7684.2	341947	35.4756	59696	14.8225

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
339362	6067	1816.5	1882.1	19661	5943	1910	572.0

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
203779	98269488	-781.292	18.533	49.238	0.610

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
723883.3	7607	1454.1	917.3	-810.8	810.8	-917.3	-1454.1

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
4593	13125	4260	14385

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.877 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.881 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 150S41-0.8 Single

Section Dimensions:

Web Height =	150.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	0.800 mm

Steel Properties:

Fy =	500.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
196.4	15.1198	169.2	8529.0	639676	57.0658	39755	14.2262

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
618862	5101	1527.5	1360.2	2161	2161	1007	301.5

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
41905	177386568	-652.187	16.219	64.173	0.840

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
2144696.6	5726	2330.6	1789.0	-1209.9	1209.9	-1789.0	-2330.6

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
1283	3699	722	3386

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.934 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.889 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 150S41-1.0 Single

Section Dimensions:

Web Height =	150.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	1.000 mm

Steel Properties:

Fy =	500.00 Mpa
Fu =	520.00 Mpa
Fya =	500.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
244.6	18.8250	210.5	10573.8	793032	56.9439	48803	14.1263

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
781297	7203	2156.8	1881.6	4232	4232	1278	382.7

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
81522	217476307	-646.858	16.098	63.959	0.841

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
1702579.7	8137	2313.6	1780.7	-1199.3	1199.3	-1780.7	-2313.6

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
1987	5774	1309	5513

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.934 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.889 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 150S41-1.2 Single

Section Dimensions:

Web Height =	150.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	1.200 mm

Steel Properties:

Fy =	500.00 Mpa
Fu =	520.00 Mpa
Fya =	500.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
292.3	22.5002	251.5	12583.9	943792	56.8216	57507	14.0261

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
934785	9728	2912.8	2449.6	7333	6256	1550	464.1

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
140311	255937565	-641.535	15.977	63.744	0.843

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
1407865.3	11065	2296.7	1772.4	-1188.7	1188.7	-1772.4	-2296.7

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
2828	8271	2063	8141

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.934 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.889 + 0.053x/h <= 1.0

JADRO STEEL LLP

2007 North American Specification ASD
DATE: 30-10-2023

SECTION DESIGNATION: 150S41-1.5 Single

Section Dimensions:

Web Height =	150.00 mm
Top Flange =	41.00 mm
Bottom Flange =	41.00 mm
Stiffening Lip =	10.00 mm
Inside Corner Radius =	1.500 mm
Punchout Width =	34.04 mm
Punchout Length =	34.04 mm
Design Thickness =	1.500 mm

Steel Properties:

Fy =	350.00 Mpa
Fu =	420.00 Mpa
Fya =	350.00 Mpa

Gross Properties

A(gross)	Weight	A(net)	Sxx	Ixx	Rx	Iyy	Ry
(mm^2)	(N/m)	(mm^2)	(mm^3)	(mm^4)	(mm)	(mm^4)	(mm)
363.2	27.9570	312.2	15534.6	1165093	56.6375	69928	13.8756

Effective Properties

Ixx(defl)	Sxx	Ma-xx	Ma-x(dist)	Vag	Vanet	Syy	Ma-y
(mm^4)	(mm^3)	(N-m)	(N-m)	(N)	(N)	(mm^3)	(N-m)
1165093	14771	3096.1	2686.3	14382	9762	2007	420.6

K-phi for Distortional Buckling = 0.00 N*mm/mm

Torsional Properties

Jx1000	Cw	Xo	m	Ro	Beta
(mm^4)	(mm^6)	(mm)	(mm)	(mm)	
272404	310655108	-633.557	15.797	63.423	0.845

Warping Torsional Properties

a	Sxx(lip)	Wn(1)	Wn(2)	Wn(3)	Wn(4)	Wn(5)	Wn(6)
(mm^3)	(mm^3)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)	(mm^2)
1113195.6	16994	2271.5	1760.0	-1172.9	1172.9	-1760.0	-2271.5

Web Crippling - Allowable Loads, Pa (N)

End Bearing Length = 1.00 (mm)
Interior Bearing Length = 3.50 (mm)

Cond. 1 (E1F)	Cond. 2 (I1F)	Cond. 3 (E2F)	Cond. 4 (I2F)
3037	8953	2457	9112

Punchout Reduction Factor Cond. 1, Rc(E1F) = 0.933 + 0.083x/h <= 1.0
Punchout Reduction Factor Cond. 2, Rc(I1F) = 0.889 + 0.053x/h <= 1.0