
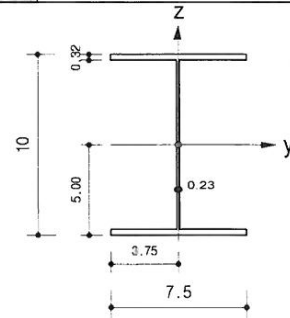


Certified by :

	Company		Project Title	
	Author		File Name	C:\...\골조용-최종.mgb

1. Design Information

Design Code : KSSC-LSD09
 Unit System : tonf, cm
 Member No : 33
 Material : SS400 (No:1)
 (Fy = 2.39633, Es = 2090.42)
 Section Name : SC1 (No:1001)
 (Built-up Section).
 Member Length : 62.2424



2. Member Forces

Axial Force Fxx = -1.0760 (LCB: 2, POS:1)
 Bending Moments My = -26.182, Mz = 0.00000
 End Moments Myi = -26.182, Myj = 0.00000 (for Lb)
 Myi = -26.182, Myj = 0.00000 (for Ly)
 Mzi = 0.00000, Mzj = 0.00000 (for Lz)
 Shear Forces Fyy = 0.00000 (LCB: 1, POS:1)
 Fzz = -0.4207 (LCB: 2, POS:1)

Depth	10.0000	Web Thick	0.23000
Top F Width	7.50000	Top F Thick	0.32000
Bot.F Width	7.50000	Bot.F Thick	0.32000
Area	6.95280	Asz	2.30000
Qyb	61.4555	Qzb	7.03125
Iyy	128.201	Izz	22.5095
Ybar	3.75000	Zbar	5.00000
Syy	25.6402	Szz	6.00253
ry	4.29404	rz	1.79930


3. Design Parameters

Unbraced Lengths Ly = 62.2424, Lz = 62.2424, Lb = 62.2424
 Effective Length Factors Ky = 1.00, Kz = 1.00
 Moment Factor / Bending Coefficient
 Cmy = 0.85, Cmz = 0.85, Cb = 1.00

4. Checking Results

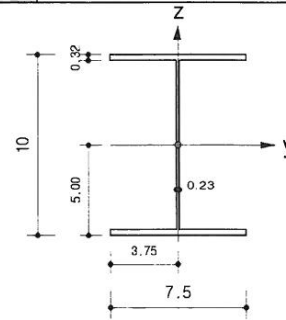
Slenderness Ratio
 KL/r = 62.5 < 200.0 (Memb:14, LCB: 1)..... 0.K
 Axial Strength
 Pu/phiPn = 1.0760/14.1477 = 0.076 < 1.000 0.K
 Bending Strength
 Muy/phiMny = 26.1825/60.2498 = 0.435 < 1.000 0.K
 Muz/phiMnz = 0.0000/12.9457 = 0.000 < 1.000 0.K
 Combined Strength (Compression+Bending)
 Pu/phiPn = 0.08 < 0.20
 Rmax = Pu/(2*phiPn) + [Muy/phiMny + Muz/phiMnz] = 0.473 < 1.000 0.K
 Shear Strength
 Vuy/phiVny = 0.000 < 1.000 0.K
 Vuz/phiVnz = 0.141 < 1.000 0.K

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1. Design Information

Design Code : KSSC-LSD09
 Unit System : tonf, cm
 Member No : 37
 Material : SS400 (No:1)
 (Fy = 2.39633, Es = 2090.42)
 Section Name : SG1 (No:2001)
 (Built-up Section).
 Member Length : 238.517



2. Member Forces

Axial Force Fxx = -0.0836 (LCB: 3, POS:1/2)
 Bending Moments My = 8.36624, Mz = 0.00000
 End Moments Myi = -1.3307, Myj = -0.2883 (for Lb)
 Myi = -11.273, Myj = 8.85362 (for Ly)
 Mzi = 0.00000, Mzj = 0.00000 (for Lz)
 Shear Forces Fyy = 0.00000 (LCB: 1, POS:1)
 Fzz = 1.29051 (LCB: 2, POS:1)

Depth	10.0000	Web Thick	0.23000
Top F Width	7.50000	Top F Thick	0.32000
Bot.F Width	7.50000	Bot.F Thick	0.32000
Area	6.95280	Asz	2.30000
Qyb	61.4555	Qzb	7.03125
Iyy	128.201	Izz	22.5095
Ybar	3.75000	Zbar	5.00000
Syy	25.6402	Szz	6.00253
ry	4.29404	rz	1.79930


3. Design Parameters

Unbraced Lengths Ly = 108.182, Lz = 238.517, Lb = 238.517
 Effective Length Factors Ky = 1.00, Kz = 1.00
 Moment Factor / Bending Coefficient
 Cmy = 1.00, Cmz = 1.00, Cb = 1.00

4. Checking Results

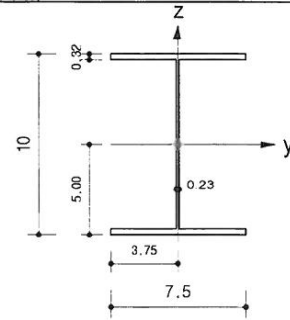
Slenderness Ratio
 KL/r = 132.6 < 200.0 (Memb:37, LCB: 2)..... 0.K
 Axial Strength
 Pu/phiPn = 0.08356/6.38183 = 0.013 < 1.000 0.K
 Bending Strength
 Muy/phiMny = 8.3662/43.3843 = 0.193 < 1.000 0.K
 Muz/phiMnz = 0.0000/12.9457 = 0.000 < 1.000 0.K
 Combined Strength (Compression+Bending)
 Pu/phiPn = 0.01 < 0.20
 Rmax = Pu/(2*phiPn) + [Muy/phiMny + Muz/phiMnz] = 0.199 < 1.000 0.K
 Shear Strength
 Vuy/phiVny = 0.000 < 1.000 0.K
 Vuz/phiVnz = 0.434 < 1.000 0.K

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1. Design Information

Design Code : KSSC-LSD09
 Unit System : tonf, cm
 Member No : 90
 Material : SS400 (No:1)
 (Fy = 2.39633, Es = 2090.42)
 Section Name : SB1 (No:3001)
 (Built-up Section).
 Member Length : 270.000



2. Member Forces

Axial Force Fxx = 0.00353 (LCB: 2, POS:J)
 Bending Moments My = -36.270, Mz = 2.51516
 End Moments Myi = -4.5391, Myj = -36.270 (for Lb)
 Myi = 0.00000, Myj = -36.270 (for Ly)
 Mzi = -0.8950, Mzj = 2.51516 (for Lz)
 Shear Forces Fyy = -0.0693 (LCB: 2, POS:J)
 Fzz = 0.64260 (LCB: 2, POS:J)

Depth	10.0000	Web Thick	0.23000
Top F Width	7.50000	Top F Thick	0.32000
Bot.F Width	7.50000	Bot.F Thick	0.32000
Area	6.95280	Asz	2.30000
Qyb	61.4555	Qzb	7.03125
Iyy	128.201	Izz	22.5095
Ybar	3.75000	Zbar	5.00000
Syy	25.6402	Szz	6.00253
ry	4.29404	rz	1.79930


3. Design Parameters

Unbraced Lengths Ly = 270.000, Lz = 49.5000, Lb = 49.5000
 Effective Length Factors Ky = 1.00, Kz = 1.00
 Moment Factor / Bending Coefficient
 Cmy = 1.00, Cmz = 1.00, Cb = 1.00

4. Checking Results

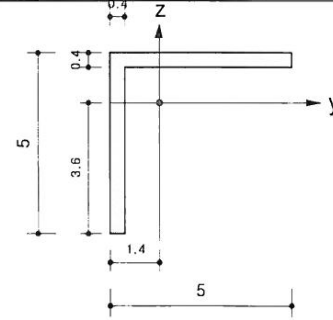
Slenderness Ratio
 KL/r = 65.5 < 200.0 (Memb:91, LCB: 1)..... 0.K
 Axial Strength
 Pu/phiPn = 0.0035/14.9951 = 0.000 < 1.000 0.K
 Bending Strength
 Muy/phiMny = 36.2703/60.2498 = 0.602 < 1.000 0.K
 Muz/phiMnz = 2.5152/19.3344 = 0.130 < 1.000 0.K
 Combined Strength
 Combined Stress
 Pu/phiPn = 0.00 < 0.20
 Rmax = Pu/(2*phiPn) + [Muy/phiMny + Muz/phiMnz] = 0.732 < 1.000 0.K
 Shear Strength
 Vuy/phiVny = 0.011 < 1.000 0.K
 Vuz/phiVnz = 0.216 < 1.000 0.K

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1. Design Information

Design Code : KSSC-LSD09
 Unit System : tonf, cm
 Member No : 42
 Material : SS400 (No:1)
 (Fy = 2.39633, Es = 2090.42)
 Section Name : Br (No:3002)
 (Rolled : L 50x4).
 Member Length : 134.931



2. Member Forces

Axial Force Fxx = -0.2548 (LCB: 2, POS:1/2)
 Bending Moments My = 0.06689, Mz = 0.00000
 End Moments Myi = 0.00000, Myj = 0.00000 (for Lb)
 Myi = 0.00000, Myj = 0.00000 (for Ly)
 Mzi = 0.00000, Mzj = 0.00000 (for Lz)
 Shear Forces Fyy = 0.00000 (LCB: 1, POS:1)
 Fzz = -0.0023 (LCB: 1, POS:1)

Depth	5.00000	Web Thick	0.40000
Top F Width	5.00000	Top F Thick	0.40000
Area	3.89200	Asz	1.33333
Qyb	6.48750	Qzb	6.48750
Iyy	9.06000	Izz	9.06000
Ybar	1.37000	Zbar	3.63000
Syy	2.49000	Szz	2.49000
rp	0.98826		


3. Design Parameters

Unbraced Lengths Ly = 134.931, Lz = 134.931, Lb = 134.931
 Effective Length Factors Ky = 1.00, Kz = 1.00
 Moment Factor / Bending Coefficient
 Cmy = 1.00, Cmz = 1.00, Cb = 1.00

4. Checking Results

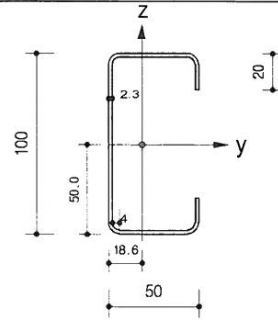
Slenderness Ratio
 KL/r = 136.5 < 200.0 (Memb:42, LCB: 2)..... 0.K
 Axial Strength
 Pu/phiPn = 0.25481/3.54347 = 0.072 < 1.000 0.K
 Bending Strength
 Muu/phiMnu = 0.0473/10.9427 = 0.004 < 1.000 0.K
 Muv/phiMnv = 0.04730/5.93183 = 0.008 < 1.000 0.K
 Combined Strength (Compression+Bending)
 Pu/phiPn = 0.07 < 0.20
 Rmax = Pu/(2*phiPn) + [Muu/phiMnu + Muv/phiMnv] = 0.048 < 1.000 0.K
 Shear Strength
 Vuy/phiVny = 0.000 < 1.000 0.K
 Vuz/phiVnz = 0.001 < 1.000 0.K

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1. Design Information

Design Code : AIK-CFSD98
 Unit System : tonf, mm
 Member No : 176
 Material : SS400 (No:1)
 (Fy = 0.02396, Es = 20.9042)
 Section Name : p1 (No:3003)
 (Built-up Section).
 Member Length : 2385.17



2. Member Forces

Axial Force Fxx = 0.08261 (LCB: 1, POS:J)
 Bending Moments My = -29.476, Mz = 5.64704
 End Moments Myi = -29.405, Myj = -29.476 (for Lb)
 Myi = -29.405, Myj = -29.476 (for Ly)
 Mzi = -3.1423, Mzj = 5.64704 (for Lz)
 Shear Forces Fyy = -0.0037 (LCB: 1, POS:J)
 Fzz = 0.10999 (LCB: 1, POS:J)

Depth	100.000	Thickness	2.30000
Width	50.0000	Rounding	4.00000
Lip Depth	20.0000		
Area	510.504	Asz	290.749
Qyb	4046.79	Qzb	886.163
Iyy	789597	Izz	185287
Ybar	18.5528	Zbar	50.0000
Syy	15791.9	Szz	5892.02
ry	39.3281	rz	19.0512

3. Design Parameters

Unbraced Lengths Ly = 2385.17, Lz = 2385.17, Lb = 2385.17
 Effective Length Factors Ky = 1.00, Kz = 1.00
 Moment Factor / Bending Coefficient
 Cmy = 1.00, Cmz = 1.00, Cb = 1.00

4. Checking Results

Slenderness Ratio
 KL/r = 125.2 > 120.0 (Memb:104, LCB: 2)..... N.G
 Axial Strength
 Tu/Ta = 0.08261/7.32538 = 0.011 < 1.000 0.K
 Bending Strength
 Muy/May = 29.476/174.561 = 0.169 < 1.000 0.K
 Muz/Maz = 5.6470/84.4078 = 0.067 < 1.000 0.K
 Combined Strength
 Combined Stress
 Tu/Ta = 0.01 < 0.15
 Rmax = Tu/Ta + My/May + Mz/Maz = 0.247 < 1.000 0.K
 Shear Strength
 Vuy/Vay = 0.004 < 1.000 0.K
 Vuz/Vaz = 0.057 < 1.000 0.K