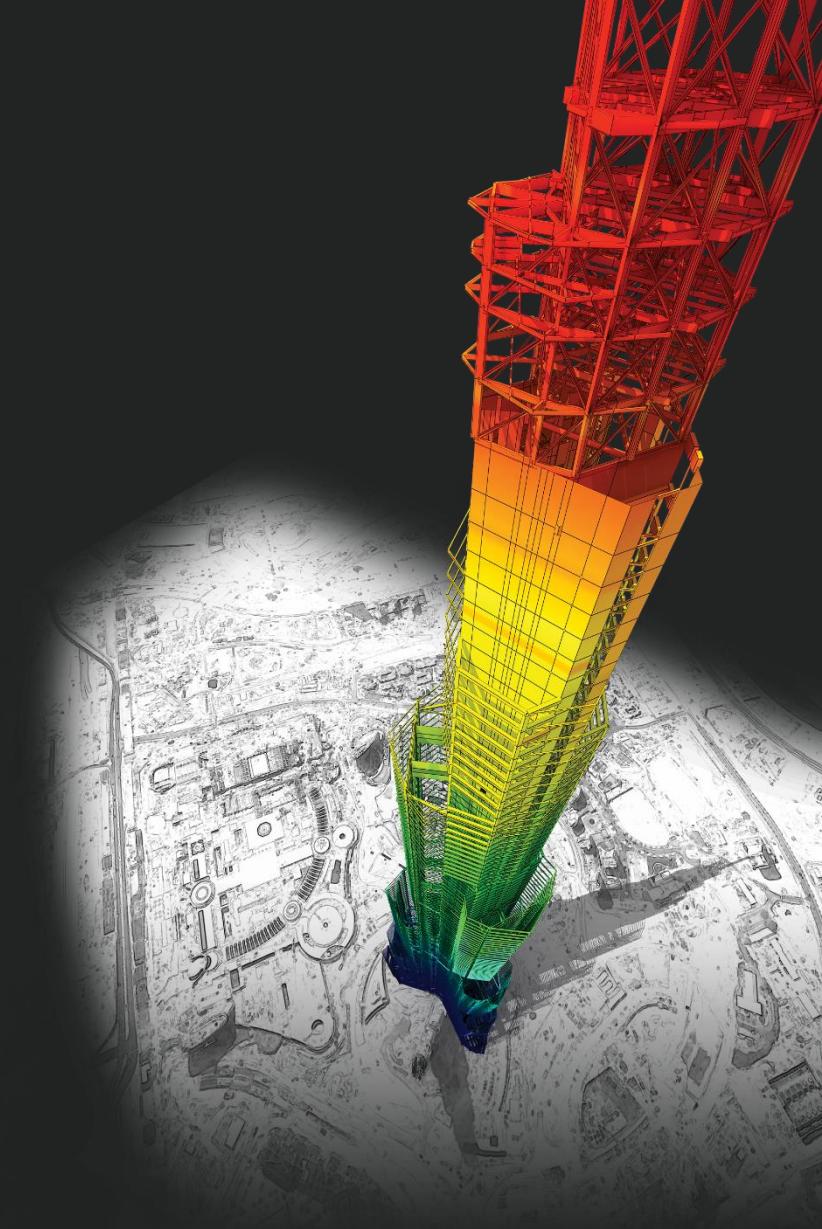


如何看 Calculation Report 的 Force

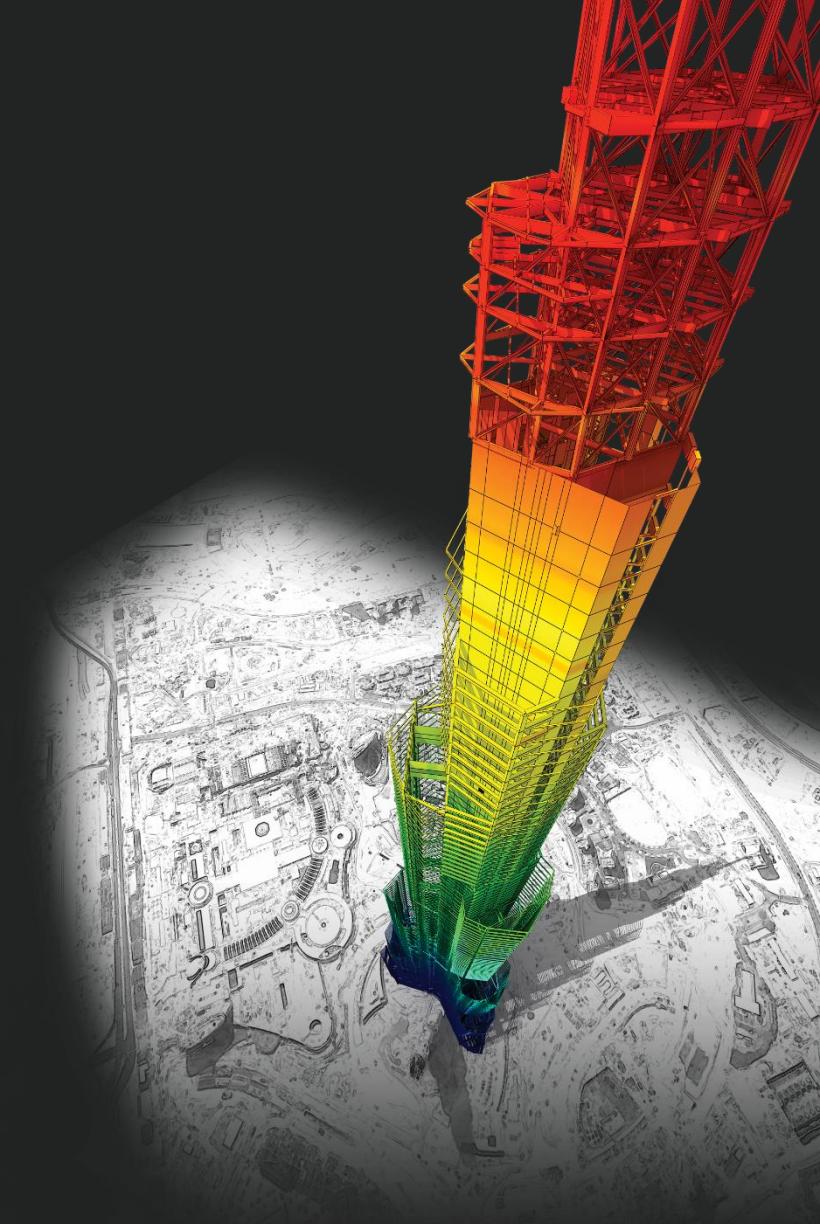


DESIGN OF General Structures
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問題

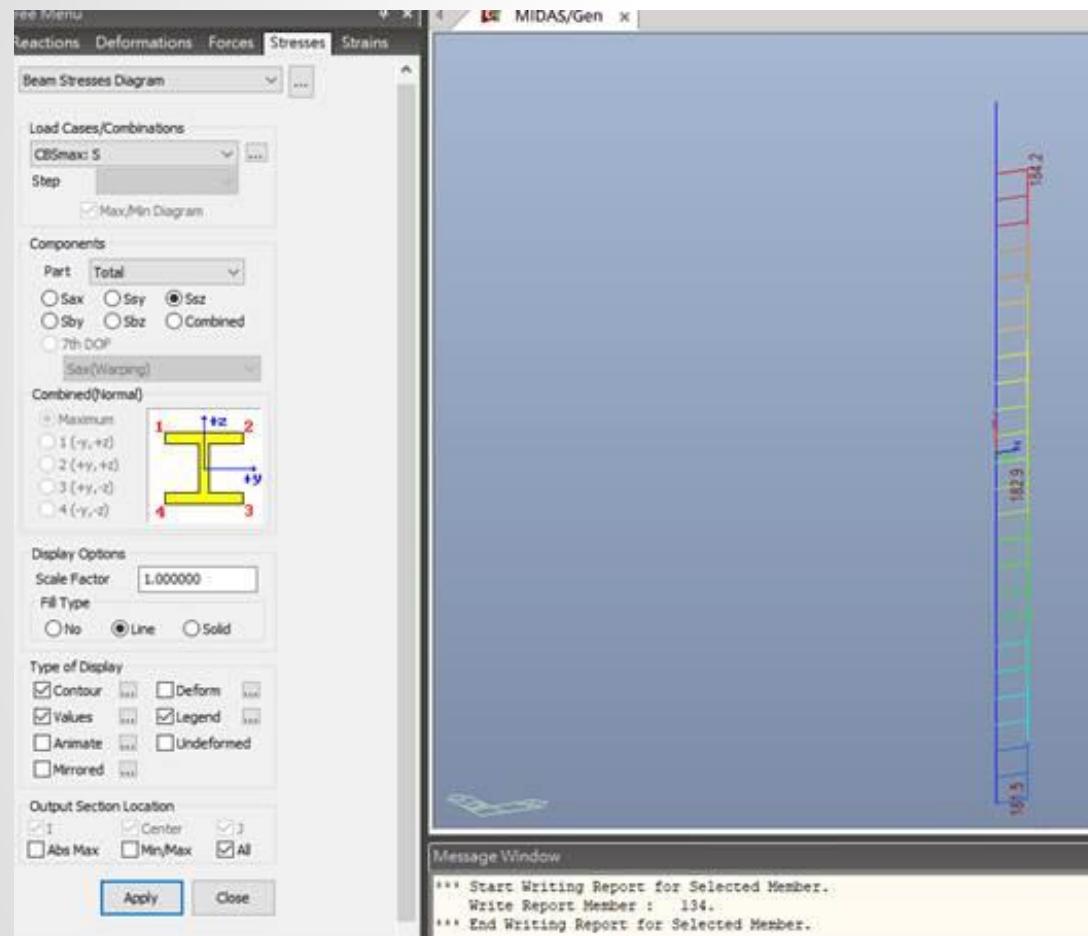


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問題

下圖的桿件為梁剪應力圖(Ssz)



圖上的應力值怎麼跟報表計算的不相同

```
=====
[[[*]]] CHECK SHEAR STRESSES.
=====

midas Gen - Steel Code Checking [ TWN-ASD96 ] Gen 2023
=====

( ). Calculate allowable shear stress in local-y direction (Fvy).
[ TWN-ASD96 Specification 7.5 ]
- . Fvy = 0.40*Fy = 10124.205 tonf/m^2.

( ). Calculate shear stress in local-y direction (fy).
( LCB = 37, POS = J )
- . Applied shear force : Fyy = -4.62 tonf.
- . fy = Fyy / Asy = 132.405 tonf/m^2.

( ). Check ratio of shear stress (fy/Fvy).
fyv      132.405
- . --- = ----- = 0.013 < 1.000 ---> O.K.
Fvy      10124.205

( ). Calculate allowable shear stress in local-z direction (Fvz).
[ TWN-ASD96 Specification 7.5 ]
- . DTR = h/tw = 48.33 < 100/SQRT[Fy] ---> (7.5-1)
- . Fvz = 0.40*Fy = 10124.205 tonf/m^2.

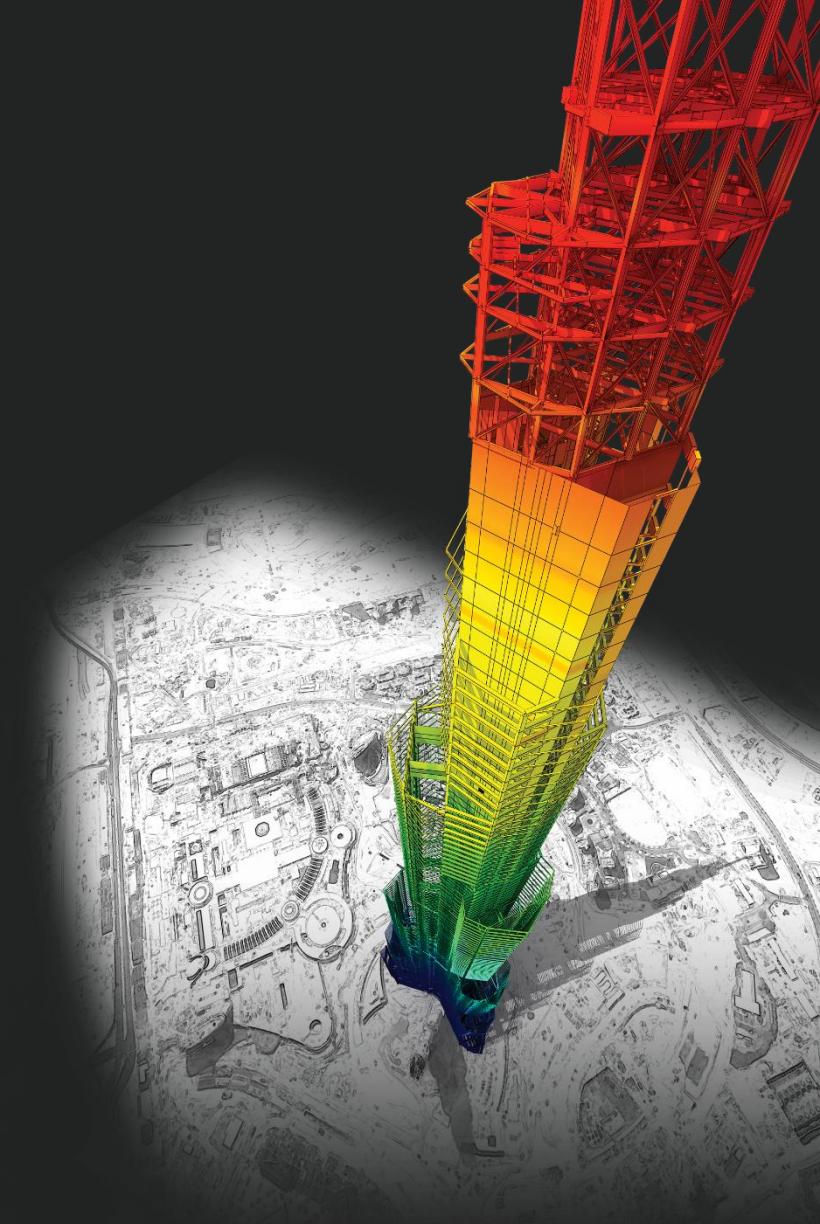
( ). Calculate shear stress in local-z direction (fvz).
( LCB = 5, POS = J )
- . Applied shear force : Fzz = 9.21 tonf.
- . fvz = Fzz / Asz = 264.469 tonf/m^2.

( ). Check ratio of shear stress (fvz/Fvz).
fvz      264.469
- . --- = ----- = 0.026 < 1.000 ---> O.K.
Fvz      10124.205
```

回答



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回答

如果您要看 Member 的 Design Force，您不能看 Beam Stress Diagram 的 Value。

在 Design > Force/Property > Steel/Cold Formed Design > Steel Member Design Force，您可以看 Member 的 Design Force。

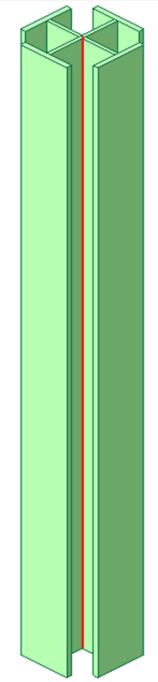
比如說，我要看 Element 1 的 Design Force。

所以在 Design > Force/Property > Steel/Cold Formed Design > Steel Member Design Force > 輸入 Element 1 > 按 OK。您可以看 Steel Code Check Detail Calculation 的 Value 跟 Steel Member Design Force 的 Value 一樣。

The screenshot shows the MIDAS Gen 2023 software interface. The top menu bar includes View, Structure, Node/Element, Properties, Boundary, Load, Analysis, Results, Pushover, Design, Seismic Evaluation, Query, and Tools. The 'Design' tab is selected. A search dropdown menu is open, showing options like 'Steel/Cold Formed Steel Design', 'Steel Member Design Forces', 'Cold Formed Steel Member Design Forces', 'Effective Section Properties', and 'Section Grade Table'. Below the search dropdown, a sub-menu titled '輸入 Element 1。' (Input Element 1) is displayed, containing a 'Records Activation Dialog' window. This dialog has fields for 'Node or Element' (set to 'Element') and 'Part Number' (with '1' entered). It also includes a 'Select Type' dropdown with options like TRUSS, BEAM, PLANE STRESS, PLATE, WALL, and Add Wall Opening. Buttons for 'OK' and 'Cancel' are at the bottom. To the right of the dialog is a large table titled 'Steel Member Design Forces' with various columns: Memb, Part, LCom Name, Type, Fx (tonf), Fy (tonf), Fz (tonf), Mx (tonf*cm), My (tonf*cm), and Mz (tonf*cm). The table lists numerous elements, each with specific coordinate values and force/moment components. A red arrow points from the 'Element' input field in the dialog to the '1' entry in the table, indicating the correspondence between the input and the resulting data.

Memb	Part	LCom Name	Type	Fx (tonf)	Fy (tonf)	Fz (tonf)	Mx (tonf*cm)	My (tonf*cm)	Mz (tonf*cm)
1 J	sLCB1	Max	-276.1056	-2.6849	-17.9580	0.0000	5882.6591	1180.7388	
1 J	sLCB1	Max	-284.3778	-2.6849	-17.9580	0.0000	-3378.2646	-313.9314	
1 J	sLCB2	Max	-57.3348	-2.1974	0.7557	0.0000	3557.2208	831.9265	
1 J	sLCB2	Max	-65.6070	-1.7461	0.9641	0.0000	4000.6655	-265.7681	
1 J	sLCB3	Max	-54.4270	-2.1847	1.0916	0.0000	3516.0668	833.3330	
1 J	sLCB3	Max	-62.6993	-1.7334	1.2999	0.0000	4132.6989	-257.2671	
1 J	sLCB4	Max	-347.9698	-3.6327	-35.2037	0.0000	7775.6498	1220.0640	
1 J	sLCB4	Max	-356.2420	-3.1814	-35.5023	0.0000	-10455.8894	-676.6629	
1 J	sLCB5	Max	-345.3915	-3.6258	-35.1925	0.0000	7772.9121	1205.7386	
1 J	sLCB5	Max	-353.6638	-3.1745	-35.4911	0.0000	-10452.8609	-687.1354	
1 J	sLCB6	Max	-121.6720	-2.4931	-17.2528	0.0000	5639.1629	246.4937	
1 J	sLCB6	Max	-129.9443	-2.7180	-17.6720	0.0000	-3366.2051	-1204.0059	
1 J	sLCB7	Max	-121.6720	-2.4931	-17.2528	0.0000	5639.1629	246.4937	
1 J	sLCB7	Max	-129.9443	-2.7180	-17.6720	0.0000	-3366.2051	-1204.0059	
1 J	sLCB8	Max	-382.1865	-3.4718	-17.2225	0.0000	5774.3794	2436.5506	
1 J	sLCB8	Max	-390.4587	-3.2636	-17.6406	0.0000	-3215.0599	561.7364	
1 J	sLCB9	Max	-382.1865	-3.4718	-17.2225	0.0000	5774.3794	2436.5506	
1 J	sLCB9	Max	-390.4587	-3.2636	-17.6406	0.0000	-3215.0599	561.7364	
1 J	sLCB10	Max	-103.4554	-2.0719	6.8411	0.0000	2820.7093	1172.0359	
1 J	sLCB10	Max	-111.7276	-2.0719	6.8411	0.0000	6348.6836	18.6162	
1 J	sLCB11	Max	-110.4324	-2.2105	6.2949	0.0000	3001.4309	1230.7907	
1 J	sLCB11	Max	-118.7047	-2.2105	6.2949	0.0000	6247.7078	0.1992	
1 J	sLCB12	Max	5.0646	-2.1175	-12.3808	0.0000	4929.2749	-628.9625	
1 J	sLCB12	Max	-3.2077	-2.1175	-12.3808	0.0000	-1455.5033	-1807.7564	
1 J	sLCB13	Max	-1.9124	-2.2561	-12.9270	0.0000	5109.9964	-570.2077	
1 J	sLCB13	Max	-10.1847	-2.2561	-12.9270	0.0000	-1556.4791	-1828.1734	
1 J	sLCB14	Max	-422.6962	-3.6032	-33.8187	0.0000	7578.9674	1610.8162	
1 J	sLCB14	Max	-430.9684	-3.6032	-33.8187	0.0000	-9861.3265	-395.0877	
1 J	sLCB15	Max	-429.6732	-3.7418	-34.3649	0.0000	7759.6890	1669.5710	
1 J	sLCB15	Max	-437.9454	-3.7418	-34.3649	0.0000	-9962.3043	-413.5046	
1 J	sLCB16	Max	-530.1674	-3.6035	-16.4653	0.0000	5691.3708	3344.5855	
1 J	sLCB16	Max	-538.4397	-3.6035	-16.4653	0.0000	-2799.7594	1338.5227	
1 J	sLCB17	Max	-537.1444	-3.7421	-17.0115	0.0000	5872.0923	3403.3203	
1 J	sLCB17	Max	-545.4167	-3.7421	-17.0115	0.0000	-2900.7352	1320.1058	
1 J	sLCB18	Max	-205.8379	-2.4961	-9.3406	0.0000	4581.1962	1157.2880	
1 J	sLCB18	Max	-214.1102	-2.4961	-9.3406	0.0000	-235.7425	-232.3060	
1 J	sLCB19	Max	-300.5714	-2.9984	-23.7569	0.0000	6270.9065	1203.4016	

回答



Steel Code Check Detail Calculation

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MIDAS/Text Editor - [静力分析修改風力&天車載重&軌道載重20220301.acs]
File Edit View Window Help
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midas Gen - Steel Code Checking [ TWN-ASD96 ] Gen 2023
Load Comb = 17
MEMBER NO = 1, ELEMENT TYPE = Beam
LOADCOMB NO = 17, MATERIAL NO = 2, SECTION NO = 128
UNIT SYSTEM : mm

SECTION PROPERTIES : Designation = CT 445x550x35x55
Shane = M2T . Section. (Built-up)
Part M>
Depth = 92.000, Flg Width = 55.000
Web Thick = 3.500, Flg Thick = 5.500
Part T>
Depth = 44.500, Flg Width = 55.000
Web Thick = 3.500, Flg Thick = 5.500
Area = 1.76650e+03, Asy = 7.2533e+02, Asz = 7.27083e+02
Ybar = 4.62500e+01, Zbar = 4.60000e+01, Qyb = 1.39534e+03, Qzb = 1.40295e+03
Syy = 3.13263e+04, Szz = 3.15030e+04, Zyy = 4.04647e+04, Zzz = 4.06856e+04
Iyy = 1.44101e+06, Izz = 1.45702e+06, Iyz = 0.00000e+00
ry = 2.85612e+01, rz = 2.87194e+01
J = 1.46304e+04, Cwp = 5.73868e+08

DESIGN PARAMETERS FOR STRENGTH EVALUATION :
Ly = 5.95700e+02, Lz = 5.95700e+02, Lu = 5.95700e+02
Ky = 1.00000e+00, Kz = 1.00000e+00

MATERIAL PROPERTIES :
Fy = 2.55105e+00, Es = 2.03890e+03, MATERIAL NAME = A36

FORCES AND MOMENTS AT (J) POINT :
Axial Force Fxx = -537.144e+02
Shear Forces Fyy = -3.74208e+00, Fzz = -1.70115e+01
Bending Moments My = 5.87209e+03, Mz = 3.40332e+03
End Moments Myi = -2.90074e+03, Myj = 5.87209e+03 (for Lb)
Myi = -2.90074e+03, Myj = 5.87209e+03 (for Ly)
Mzi = 1.32011e+03, Mzj = 3.40332e+03 (for Lz)

Axial Force (Fx): -537.144 tonf (at J-end)
Shear Force (Fy): -3.742 tonf (at J-end)
Myi = -2900.74 tonf.cm Myj = 5872.09 tonf.cm
Mzi = 1320.11 tonf.cm Mzj = 3403.32 tonf.cm

```

Element No. 1

Axial Force (Fx): -537.144 tonf (at J-end)

Shear Force (Fy): -3.742 tonf (at J-end)

Myi = -2900.74 tonf.cm

Mzi = 1320.11 tonf.cm

Myj = 5872.09 tonf.cm

Mzj = 3403.32 tonf.cm

Design > Force/Property > Steel/Cold Formed Design > Steel Member Design Force

Memb	Part	LCom Name	Type	Fx (tonf)	Fy (tonf)	Fz (tonf)	Mx (tonf*cm)	My (tonf*cm)	Mz (tonf*cm)
1 J	sLCB1	Max	-276.1056	-2.6849	-17.9580	0.0000	5882.6591	1180.7388	
1 I	sLCB1	Max	-284.3778	-2.6849	-17.9580	0.0000	-3378.2646	-313.9314	
1 J	sLCB2	Max	-57.3348	-2.1974	0.7557	0.0000	3557.2208	831.9265	
1 I	sLCB2	Max	-65.8070	-1.7461	0.9641	0.0000	4000.6655	-265.7681	
1 J	sLCB3	Max	-54.4270	-2.1847	1.0916	0.0000	3516.0668	833.3300	
1 I	sLCB3	Max	-62.5993	-1.7334	1.2999	0.0000	4132.6989	-257.2671	
1 J	sLCB4	Max	-347.9698	-3.6327	-35.2037	0.0000	7775.6498	1220.0640	
1 I	sLCB4	Max	-356.2420	-3.1814	-35.5023	0.0000	-10455.8894	-676.6629	
1 J	sLCB5	Max	-345.3915	-3.6258	-35.1925	0.0000	7772.9121	1205.7386	
1 I	sLCB5	Max	-353.6638	-3.1745	-35.4911	0.0000	-10452.8609	-687.1354	
1 J	sLCB6	Max	-121.6720	-2.4931	-17.2528	0.0000	5639.1629	246.4937	
1 I	sLCB6	Max	-129.9443	-2.7160	-17.6720	0.0000	-3366.2051	-1204.0059	
1 J	sLCB7	Max	-121.6720	-2.4931	-17.2528	0.0000	5639.1629	246.4937	
1 I	sLCB7	Max	-129.9443	-2.7160	-17.6720	0.0000	-3366.2051	-1204.0059	
1 J	sLCB8	Max	-382.1865	-3.4718	-17.2225	0.0000	5774.3794	2436.5506	
1 I	sLCB8	Max	-390.4587	-3.2636	-17.6406	0.0000	-3215.0599	561.7364	
1 J	sLCB9	Max	-382.1865	-3.4718	-17.2225	0.0000	5774.3794	2436.5506	
1 I	sLCB9	Max	-390.4587	-3.2636	-17.6406	0.0000	-3215.0599	561.7364	
1 J	sLCB10	Max	-103.4554	-2.0719	6.8411	0.0000	2820.7093	1172.0359	
1 I	sLCB10	Max	-111.7276	-2.0719	6.8411	0.0000	6348.6836	18.6162	
1 J	sLCB11	Max	-110.4324	-2.2105	6.2949	0.0000	3001.4309	1230.7907	
1 I	sLCB11	Max	-118.7047	-2.2105	6.2949	0.0000	6247.7078	0.1992	
1 J	sLCB12	Max	5.0646	-2.1175	-12.3808	0.0000	4929.2749	-628.9625	
1 I	sLCB12	Max	-3.2077	-2.1175	-12.3808	0.0000	-1455.5033	-1807.7564	
1 J	sLCB13	Max	-1.9124	-2.2561	-12.9270	0.0000	5109.9964	-570.2077	
1 I	sLCB13	Max	-10.1847	-2.2561	-12.9270	0.0000	-1556.4791	-1826.1734	
1 J	sLCB14	Max	-422.6962	-3.6032	-33.8187	0.0000	7578.9674	1610.8162	
1 I	sLCB14	Max	-430.9684	-3.6032	-33.8187	0.0000	-9861.3285	-395.0877	
1 J	sLCB15	Max				0.0000	7759.6890	1689.5710	
1 I	sLCB15	Max				0.0000	-9962.3043	-413.5046	
1 J	sLCB16	Max				0.0000	5691.3708	3344.5655	
1 I	sLCB16	Max	-538.4367	-3.6035	-16.4653	0.0000	-2799.7594	1338.5227	
1 J	sLCB17	Max	-537.1444	-3.7421	-17.0115	0.0000	5872.0923	3403.3203	
1 I	sLCB17	Max	-545.4167	-3.7421	-17.0115	0.0000	-2900.7352	1320.1058	
1 J	sLCB18	Max	-205.8379	-2.4961	-9.3406	0.0000	4581.1962	1157.2880	
1 I	sLCB18	Max	-214.1102	-2.4961	-9.3406	0.0000	-235.7425	-232.3060	
1 J	sLCB19	Max	-300.5714	-2.9984	-23.7569	0.0000	6270.9065	1203.4016	

看 Load Combination 17

I-end:

Axial Force (Fx): -545.417 tonf

Shear Force (Fy): -3.742 tonf

Myj = -2900.74 tonf.cm

Mzj = 1320.11 tonf.cm

J-end:

Axial Force (Fx): -537.144 tonf

Shear Force (Fy): -3.742 tonf

Myj = 5872.09 tonf.cm

Mzj = 3403.32 tonf.cm

Force 的 Value 一樣。

Thank You



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