

S-FRAME is integrated with S-CONCRETE beams, columns, and walls!

**S-FRAME Results**

**Loads (Factored)**

No.	N (kN)	V (kN)	M <sub>x</sub> (kNm)	M <sub>y</sub> (kNm)	M <sub>z</sub> (kNm)	Axis
1	-1945.85	0	-2.128202	0	2.984438	0
2	-1945.85	0	-2.128202	-73.017625	2.984438	73.388225
3	-1945.85	0	-2.128202	0	2.984438	0
4	-1945.85	0	-2.128202	-73.254414	2.984438	5.977747
5	-1945.85	0	-2.128202	45.388877	2.984438	11.963483
6	-1945.85	0	-2.128202	45.762243	2.984438	19.288224
7	-1945.85	0	-2.128202	-73.017625	2.984438	73.388225
8	-1945.25	0	-4.828847	0	-1.447978	0
9	-1945.25	0	-4.828847	-28.388225	-1.447978	-48.027969
10	-1945.25	0	-4.828847	0	-1.447978	0
11	-1945.25	0	-4.828847	-2.249207	-1.447978	-2.184827
12	-1945.25	0	-4.828847	-74.488114	-1.447978	-4.339375
13	-1945.25	0	-4.828847	-73.729271	-1.447978	4.453402
14	-1945.25	0	-4.828847	-28.388225	-1.447978	-48.027969
15	-1945.85	0	-4.957013	0	1.705793	0
16	-1945.85	0	-4.957013	-78.421581	1.705793	18.552723
17	-1945.85	0	-4.957013	0	1.705793	0

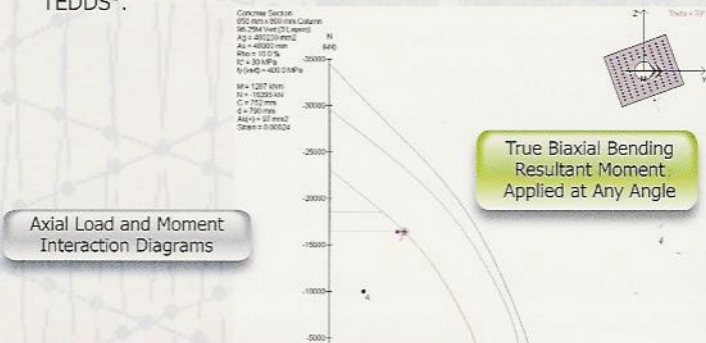
**S-CONCRETE Code Check & Design**

**S-CONCRETE Detailing (Completed Project)**

### Beam and Column Sections

- ACI 318-05, 02, & 99, CSA-A23.3-04 & 94, BS 8110:1997 & 1985, UBC 1997, CP65:1999.
- Import loads from S-FRAME® or P-FRAME®.
- Interactive and automated design.
- Visual editor (click/drag to make changes).
- International range of reinforcing bars.
- Axial Load, flexure, shear and torsion design.
- Slenderness effects calculations (if applicable).
- CSA shear & torsion (simple or general method).
- Generate reports with pictures & numerical results.
- Export detailed drawings to AutoCAD®.
- Export drawings and numerical results to Microsoft Word® and TEDDS®.

- Columns with holes.
- Composite columns.
- Rectangular or circular ties or spiral.
- Multiple bar layers.
- Bar spacing and steel area checks.



Circular Column

Rectangular Column with Hole

- Beams with any number of stirrup legs.
- Multiple bar layers.
- Different bar sizes per layer.
- Specify face steel.
- Bar and stirrup spacing checks.
- Crack control and steel area checks.

T-Beams

Rectangular Beams (including Concrete Joists)

L-Beams

Slab Bands

**Results Report**

**Beam and Torsion Information**

Concrete Section: 650 mm x 900 mm Column  
 Ag = 480200 mm<sup>2</sup>  
 Agc = 400000 mm<sup>2</sup>  
 I<sub>c</sub> = 30190000 mm<sup>4</sup>  
 I<sub>yc</sub> = 40000000 mm<sup>4</sup>  
 I<sub>xc</sub> = 12071000 mm<sup>4</sup>  
 I<sub>yc</sub> = 10295100 mm<sup>4</sup>  
 I<sub>xc</sub> = 7521000 mm<sup>4</sup>  
 d = 790 mm  
 d<sub>eff</sub> = 650 mm  
 Green = 0.00024

**Design Information**

ax = 450 mm  
 av = 552 mm  
 As (Tens) = 2650 mm<sup>2</sup>  
 Av = 255 mm<sup>2</sup>

**General Section Data and Theta Values**

Beta = 0.174, Theta = 35.0° for Vc  
 m = 0.00006 for Vc

**Design of Corner Bars/Torsion**

Length = 1.00  
 Top Bar = 25.2 mm  
 Bottom Bar = 15.5 mm  
 Minimum = 15.0 mm  
 Status = Adequate

**Maximum Shear & Torsional Stress**

Stress = 2.278 MPa  
 Maximum = 4.875 MPa  
 Status = Adequate

**Leisitional Steel Reinforcement**

Reinforcement	Force	As	Required	Theta	Least Case	Status
Top Bars	853.7 kN	2650.0 mm <sup>2</sup>	2452.1 mm <sup>2</sup>	35.0°	1	Adequate
Bottom Bars	0.0 kN	1330.0 mm <sup>2</sup>	0.0 mm <sup>2</sup>	0.0°	1	Adequate

**Add Pictures to the Report!**

**S-FRAME Wall Integration Line Results**

**S-CONCRETE Loads Spreadsheet**

Zone	Y1 (mm)	Y2 (mm)	V1 (kN)	M1 (kNm)	V2 (kN)	M2 (kNm)	Load Type	Active Count
1	0	1000	1000	2000	10	200	Wind	1
2	1000	2000	1000	2000	10	200	Wind	1
3	2000	3000	1000	2000	10	200	Wind	1
4	3000	4000	1000	2000	10	200	Wind	1
5	4000	5000	1000	2000	10	200	Wind	1
6	5000	6000	1000	2000	10	200	Wind	1

**S-CONCRETE Code Check & Design**

**S-CONCRETE Detailing (Completed Project)**

**True Biaxial Bending**

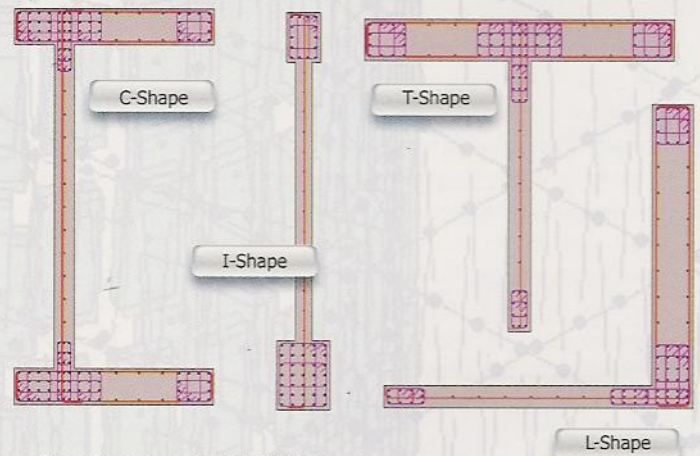
## Shear Wall Sections

- ACI 318-05, 02, & 99, CSA-A23.3-04 & 94, BS 8110:1997 & 1985, UBC 1997, CP65:1999.
- Import loads from S-FRAME® or P-FRAME®.
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- Visual editor (click/drag to make changes).
- International range of reinforcing bars.
- Axial Load, flexure, shear and torsion design.
- Slenderness effects calculations (if applicable).
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**Sectional Loading**

**Panel Loading**

Panel	Y1 (mm)	Y2 (mm)	V1 (kN)	M1 (kNm)	V2 (kN)	M2 (kNm)	Load Type	Active Count
1	0	1000	1000	2000	10	200	Wind	1
2	1000	2000	1000	2000	10	200	Wind	1
3	2000	3000	1000	2000	10	200	Wind	1
4	3000	4000	1000	2000	10	200	Wind	1
5	4000	5000	1000	2000	10	200	Wind	1
6	5000	6000	1000	2000	10	200	Wind	1



- Complex zones of reinforcing.
- Sectional and panel loading.
- Zone reinforcing checks.
- Panel reinforcing checks.
- Bar spacing checks.
- Anchorage checks.

## Earthquake resistant design (ACI and UBC)

- Boundary element size and detailing evaluation.
- Concrete confinement (zone ties and configuration).
- Curtains of reinforcing, steel area and steel ratios.
- Anchorage conditions (i.e. hooks).
- Bar spacing requirements.

## Seismic Provisions CSA-A23.3 ( $R_d=1.0, 1.5, 2.0$ or $3.5$ )

- Ductility/stability requirements.
- Curtains of reinforcing, steel area and steel ratios.
- Anchorage and development length including hooks.
- Simplified or general method of shear design.
- Concrete confinement (zone ties & configuration).
- Bar spacing requirements.

For inquires, please contact:



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