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Attachment 1: SIMPLE CASE / SERVICE LIMIT Design STAAD PRO Input & Output

Attachment 2: SIMPLE CASE / ULTIMATE LIMIT Design STAAD PRO Input & Output

Attachment 3: LIFTING CASE Design STAAD PRO Input & Output

Attachment 4: SEISMIC CASE Design STAAD PRO Input & Output

Attachment 5: SPREADER BAR Design STAAD PRO Input & Output

Attachment 6: MEMBER PROPERTY FOR CONTAINER

Attachment 7: MEMBER PROPERTY FOR SPREADER BAR

Attachment 8: Certificate for Professional Engineer License

1 GENERAL

1.1 This design standard specifies the minimum loading to be used in the design of buildings, equipment, structures and their foundations

1.2 All designs are to be carried out using Units (kg, m, cm, mm).

2 REFERENCES

Design Loads shall be in accordance with the latest revisions at the time of contract award and amendments of the following Standards and Codes of Practice. Where conflicts exist between Standards and Codes of Practice, the more stringent shall govern.

2.1 National/International Codes

AISC	American Institute of Steel Construction (AISC 1989 / ASD & LRFD) Fy = 2400 ksc (yield strength steel)
IBC 2006/2009	International building code
ASCE 7-2005	American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures

3 DEAD LOADS

3.1 Buildings

The following dead loads shall be included in the design of Buildings:

3.1 Self-weight of structural elements.

- Framing, walls, floors, roofs, suspended ceilings, finishes,

3.2 Equipment Loads Zone 1 ; $8,000 / (0.665 \times 7.557) = 1,591$	Ground Floor - 1,591 kg/m ²
3.3 Equipment Loads Zone 2 ; $347.5 / (1.06 \times 0.60) = 547$	Ground Floor - 547 kg/m ²
3.4 Equipment Loads Zone 3 ; $400 / (1.06 \times 0.60) = 629$	Ground Floor - 629 kg/m ²
3.5 Equipment Loads Zone 4 ; $500 / (0.85 \times 0.85) = 692$	Ground Floor - 692 kg/m ²
3.6 Equipment Loads Zone 5 ; $800 / (0.85 \times 0.85) = 1,107$	Ground Floor - 1,107 kg/m ²
3.7 Equipment Loads Zone 6 ; $800 / (0.85 \times 0.85) = 1,107$	Ground Floor - 1,107 kg/m ²

3.8 Roofs and Access Areas

Sheeted roofs with access for maintenance only	- 30 kg/m ²
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4 LIVE LOAD

4.1 Genral Loads Zone	Ground Floor - 300 kg/m ²
4.2 Roofs and Access Areas	

Sheeted roofs with access for maintenance only	- 50 kg/m ²
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5 WIND LOAD

5.1 Wind Loads For Simple case; wind speed 40 m/s (144 km/h)	- 100 kg/m ²
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6 SEISMIC LOAD

6.1 Zone V (Moderate seismic) in Mercalli Intensity Scale $S_s = 1.06$, $S_1 = 0.092$

Instrumental Intensity	Acceleration (g)	Velocity (cm/s)	Perceived Shaking	Potential Damage
I	< 0,0017	< 0,1	Not Felt	None
II – III	0,0017 – 0,014	0,1 – 1,1	Weak	None
IV	0,014 – 0,039	1,1 – 3,4	Light	None
V	0,039 – 0,092	3,4 – 8,1	Moderate	Very Light
VI	0,092 – 0,18	8,1 – 16	Strong	Light
VII	0,18 – 0,34	16 – 31	Very Strong	Moderate
VIII	0,34 – 0,65	31 – 60	Severe	Moderate to Heavy
IX	0,65 – 1,24	60 – 116	Violent	Heavy
X+	>1,24	>116	Extreme	Very Heavy

Staad pro input

Edit :

Seismic Parameters

Type : IBC 2006
☐ Include Accidental Load

Parameter	Value	Unit
Longitude		
S_s	1.06	
S_1	0.092	
TL	0.072	seconds
Importance factor (I)	1	
Response Modification Factor X (RX)	3	
Response Modification Factor Z (RZ)	6	
Site class (SCL)	4	
F_a	1.076	
F_v	2.4	
* CT Value (CT)		

Long-Period Site Coefficient at 1.0s-Period (F_v)

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Case	Description
1 (simple)	DL = Self-weight of structural elements
	DL = Equipment Loads Zone 1 - 1,592 kg/m2
	DL = Equipment Loads Zone 2 - 547 kg/m2
	DL = Equipment Loads Zone 3 - 629 kg/m2
	DL = Equipment Loads Zone 4 - 629 kg/m2
	DL = Equipment Loads Zone 5 - 1,107 kg/m2
	DL = Equipment Loads Zone 6 - 1,107 kg/m2
	LL = Ground Floor - 300 kg/m2
	DL = Roof Floor - 30 kg/m2
	LL = Roof Floor - 50 kg/m2
2 (Lifting)	DL = Self-weight of structural elements
	DL = Equipment Loads Zone 1 - 1,592 kg/m2
	DL = Equipment Loads Zone 2 - 547 kg/m2
	DL = Equipment Loads Zone 3 - 629 kg/m2
	DL = Equipment Loads Zone 4 - 629 kg/m2
	DL = Equipment Loads Zone 5 - 1,107 kg/m2
	DL = Equipment Loads Zone 6 - 1,107 kg/m2
3 (seismic)	Zone V (Moderate seismic) in Mercalli Intensity Scale
	DL = Self-weight of structural elements
	DL = Equipment Loads Zone 1 - 1,592 kg/m2
	DL = Equipment Loads Zone 2 - 547 kg/m2
	DL = Equipment Loads Zone 3 - 629 kg/m2
	DL = Equipment Loads Zone 4 - 629 kg/m2
	DL = Equipment Loads Zone 5 - 1,107 kg/m2
	DL = Equipment Loads Zone 6 - 1,107 kg/m2