

IS 1904:1987	Code of Practice for Structural Safety of Buildings: Foundation
IS 2911 (Part1- Sec1 to 4) : 2010	Code of Practice for Design and Construction of Pile Foundation
IS 2911 (Part 3) : 1980	Design and Construction of under reamed Piled Foundation
IS 3370 : 2009 (Part I,II)	Concrete Structures for Storage of Liquids
IS 3370-1967 (Part IV)	Concrete Structures for Storage of Liquids
IS 1786	Specification for High Strength Deformed Bars
IS 2950: 1981	Design and Construction of Raft Foundation
IS 2911 (Part 3): 1980	Design and Construction of under reamed Piled Foundation
SP 16	Design Aids for Reinforced Concrete Structures
SP 34	Concrete Reinforcement and Detailing
NBC-2016	National Building Code of India

SUPERIMPOSED DEAD & LIVE LOADS

The following table defines the minimum superimposed dead and live load at key areas is being used in the structural design. The live load used is in compliance with the minimum requirements of the relevant Indian Standards.

During the course of the design, floor loading plans shall be produced that more accurately reflect the magnitude and location of specific loads. Note that the load table does not include self-weight of the structure.

Floor Usage	LL (kN/m ²)	Concentrated LL (kN)	SDL* (kN/m ²)
Exhibition Hall Floors (Except A6 Halls Ground Floor Slab)	10.0	-	2.0
Exhibition Hall A6, Ground Floor Slab	20.0	-	2.0
Exhibition Pre-Function Area	5.0	-	1.5
Exhibition Hall Roof	2.0	-	2.0
Conventional Centre Floors	5.0	-	2.0
Conventional Centre Roof	2.0	-	2.0
Common Lobby/ Corridors / Stairs/Stores	4.0	4.5	1.5
Toilets & Bath Rooms	2.0	-	1.5
Service Areas	4.0	4.5	1.5
Communal/Multi-purpose Area	4.0	6.7	1.5
Lift Motor rooms	7.5	4.5	1.5

Inaccessible Roof	0.75	-	-
Basement Roof Non Tower Area	15.0		
Heavy Exhibit area as marked	20.0 ⁽¹⁾		
Loading and unloading area	10.0		

⁽¹⁾ Area as per highlighted in plan drawings

Legend

LL : Live Load

SDL: Superimposed Dead Load

* The SDL loads, which include finishes / ceilings / services, will be progressively reviewed and updated in subsequent stages as details are available from architectural and building services drawings.

WIND LOADS

Wind loads will be computed based on IS 875: Part 3 – Code of Practice for Design Loads for Buildings and Structures. A basic wind velocity of 47m/s (50 years return period) will be adopted for the design. Modification factors to modify the basic wind velocity to take into account the effects of terrain, local topography, size of structure, etc., will be included as below.

Key Wind Load Design Parameters	Adopted Values	Remarks
Basic Wind Speed	V = 47m/s	Basic wind speed for New Delhi
Probability Factor	k ₁ = 1.07	For Important buildings & structures
Terrain Factor	K ₂ = 0.93 @10 m ht.	For Terrain category 2 & Class C structures
Topographic Factor	K ₃ = 1.0	For terrain slope less than 3°

SEISMIC LOADS

Delhi is regarded as a high seismicity region and is specified as Zone IV in the IS 1893.

The Following parameters will be used for seismic design:

Key Wind Load Design Parameters	Adopted Values	Remarks
Seismic Zone	IV	High Seismic Zone
Zone Factor	Z = 0.24	Effective peak ground acceleration in 'g'
Importance Factor	I = 1.5 I = 1.2	Convention centre and Exhibition halls Admin building , Basement and other structures
Type of Soil	Type III	Soft Soil (As per Soil Report)
Response Reduction Factor	R = 4	Convention centre and Exhibition halls