

6. ANALYSIS OF DIFFERENT CONCRETE FRAME WITH DIFFERENT SEISMIC ZONE

6.1.1 CONCRETE MOMENT RESISTING FRAME (C1) & WITH LOW SEISMIC ZONE (Z1):

All exposed concrete frames are reinforced concrete (not steel frames encased in concrete). A fundamental factor governing the performance of concrete moment-resisting frames is the level of ductile detailing. Large spacing of ties in columns can lead to a lack of concrete confinement and shear failure. Lack of continuous beam reinforcement can result in hinge formation during load reversal. The relatively low stiffness of the frame can lead to substantial non-structural damage. Column damage due to pounding with adjacent buildings can occur.

In this case **BASIC SCORE** is: 4.4

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS NO IRREGULARITIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.4

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.1.2. CONCRETE MOMENT RESISTING FRAME (C1) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **greater than 7** additional score is: 1.0

IF THERE IS NO IRREGULARITIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.4

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.1.3. CONCRETE MOMENT RESISTING FRAME (C1) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -1.5

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.4

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.1.4 CONCRETE MOMENT RESISTING FRAME (C1) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is : 4.4

If no of storey is **greater than 7** additional score is: 0.4

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will added to the basic score is -1.5

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.4

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.1.5. CONCRETE MOMENT RESISTING FRAME (C1) & WITH LOW SEISMIC ZONE (Z1):

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In this case **BASIC SCORE** is : 4.4

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.8

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.4

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.1.6 CONCRETE MOMENT RESISTING FRAME (C1) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **greater than 7** additional score is: 0.4

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will added to the basic score is -0.8

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.4

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.1.7 CONCRETE MOMENT RESISTING FRAME (C1) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **less than 7** additional score is: 0.4

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will added to the basic score are -1.5 for vertical Irregularities & -0.8 for horizontal irregularities

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.4

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.1.8 CONCRETE MOMENT RESISTING FRAME (C1) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **greater than 7** additional score is: 1.0

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will added to the basic score are -1.5 for vertical Irregularities & -0.8 for horizontal irregularities.

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.4

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.2.1. CONCRETE MOMENT RESISTING FRAME (C1) & WITH MODERATE SEISMIC ZONE (Z2):

All exposed concrete frames are reinforced concrete (not steel frames encased in concrete).A fundamental factor governing the performance of concrete moment-resisting frame sis the level of ductile detailing. Large spacing of ties in columns can lead to a lack of concrete confinement and shear failure. Lack of continuous beam reinforcement can result in hinge formation during load reversal. The relatively low stiffness of the frame can lead to substantial non-structural damage. Column damage due to pounding with adjacent buildings can occur.

In this case **BASIC SCORE** is: 3.0

If no of storey is **less than 7** additional score is: 0.2

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.2.2. CONCRETE MOMENT RESISTING FRAME (C1) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.0

If no of storey is **greater than 7** additional score is: 0.5

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.4

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.2.3. CONCRETE MOMENT RESISTING FRAME (C1) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.0

If no of storey is **less than 7** additional score is: 0.2

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -2

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.2.4 CONCRETE MOMENT RESISTING FRAME (C1) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is : 3.0

If no of storey is **greater than 7** additional score is: 0.5

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -2

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.2.5. CONCRETE MOMENT RESISTING FRAME (C1) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is : 3.0

If no of storey is **less than 7** additional score is: 0.2

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.2.6. CONCRETE MOMENT RESISTING FRAME (C1) & WITH MODERATE SEISMIC ZONE (Z2): .

In this case **BASIC SCORE** is: 3.0

If no of storey is **greater than 7** additional score is: 0.5

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.2.7. CONCRETE MOMENT RESISTING FRAME (C1) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.0

If no of storey is **less than 7** additional score is: 0.2

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will add to the basic score are -2 for vertical irregularities & -0.5 for horizontal irregularities

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.2.8. CONCRETE MOMENT RESISTING FRAME (C1) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.0

If no of storey is **greater than 7** additional score is: 0.5

IF THERE IS ONLY HORIZONTAL IRREGULATIES: Additional score will add to the basic score are -2 for vertical irregularities & -0.5 for horizontal irregularities

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

In this case **BASIC SCORE** is : 3.0

6.3.1. CONCRETE MOMENT RESISTING FRAME (C1) & WITH HIGH SEISMIC ZONE (Z3):

All exposed concrete frames are reinforced concrete (not steel frames encased in concrete).A fundamental factor governing the performance of concrete moment-resisting frame sis the level of ductile detailing. Large spacing of ties in columns can lead to a lack of concrete confinement and shear failure. Lack of continuous beam reinforcement can result in hinge formation during load reversal. The relatively low stiffness of the frame can lead to substantial non-structural damage. Column damage due to pounding with adjacent buildings can occur.

In this case **BASIC SCORE** is : 2.5

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -1.2

6.3.2. CONCRETE MOMENT RESISTING FRAME (C1) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 2.5

If no of storey is **greater than 7** additional score is: 0.8

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -1.2

6.3.3 CONCRETE MOMENT RESISTING FRAME (C1) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 2.5

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -1

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -1.2

6.3.4 CONCRETE MOMENT RESISTING FRAME (C1) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is : 2.5

If no of storey is **greater than 7** additional score is: 0.8

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -1

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -1.2

6.3.5. CONCRETE MOMENT RESISTING FRAME (C1) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is : 2.5

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -1.2

6.3.6. CONCRETE MOMENT RESISTING FRAME (C1) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 2.5

If no of storey is **greater than 7** additional score is: 0.8

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -1.2

6.3.7. CONCRETE MOMENT RESISTING FRAME (C1) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 2.5

If no of storey is **less than 7** additional score is: 0.4

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will add to the basic score are -1 for vertical irregularities & -0.5 for horizontal irregularities

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -1.2

6.3.8. CONCRETE MOMENT RESISTING FRAME (C1) & WITH HIGH SEISMIC ZONE (Z3): .

In this case **BASIC SCORE** is: 2.5

If no of storey is **greater than 7** additional score is: 0.8

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will add to the basic score are -1 for vertical irregularities & -0.5 for horizontal irregularities

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -1.2

If no of storey is **less than 7** additional score is: 0.2

6.4.1. CONCRETE SHEAR WALL FRAME (C2) & LOW SEISMIC ZONE (Z1):

Concrete shear-wall buildings are usually cast in place, and show typical signs of cast-in place concrete. Shear-wall thickness ranges from 6 to 10 inches. These buildings generally perform better than concrete frame buildings. They are heavier than steel frame buildings but more rigid due to the shear walls. Damage commonly observed in taller buildings is caused by vertical discontinuities, pounding, and irregular configuration.

In this case **BASIC SCORE** is: 4.8

If no of storey is **less than 7** additional score is: -0.2

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENSE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.4.2. CONCRETE SHEAR WALL FRAME (C2) & LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is : 4.8

If no of storey is **greater than 7** additional score is: 0.0

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENSE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.4.3. CONCRETE SHEAR WALL FRAME (C2) & LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** i: 4.8

If no of storey is **less than 7** additional score is: -0.2

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -2.0

(a) If soil is **DENSE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.4.4. CONCRETE SHEAR WALL FRAME (C2) & LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is : 4.8

If no of storey is **greater than 7** additional score is: 0.0

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will added to the basic score -2

(a) If soil is **DENSE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.4.5. CONCRETE SHEAR WALL FRAME (C2) & LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is : 4.8

If no of storey is **less than 7** additional score is: -0.2

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will added to the basic score is -0.8

(a) If soil is **DENSE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.4.6. CONCRETE SHEAR WALL FRAME (C2) & LOW SEISMIC ZONE (Z1):

.In this case **BASIC SCORE** is: 4.8

If no of storey is **greater than 7** additional score is: 0.0

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will added to the basic score -0.8

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.4.7. CONCRETE SHEAR WALL FRAME (C2) & LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.8

If no of storey is **less than 7** additional score is: -0.2

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will add to the basic score are -2 for vertical irregularities & -0.8 for horizontal irregularities

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.4.8. CONCRETE SHEAR WALL FRAME (C2) & LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.8

If no of storey is **greater than 7** additional score is: 0.0

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will add to the basic score are -2 for vertical irregularities & -0.8 for horizontal irregularities

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.5.1. CONCRETE SHEAR WALL FRAME (C2) & MODERATE SEISMIC ZONE (Z2):

Concrete shear-wall buildings are usually cast in place, and show typical signs of cast-in place concrete. Shear-wall thickness ranges from 6 to 10 inches. These buildings generally perform better than concrete frame buildings. They are heavier than steel frame buildings but more rigid due to the

shear walls. Damage commonly observed in taller buildings is caused by vertical discontinuities, pounding, and irregular configuration.

In this case **BASIC SCORE** is: 3.6

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.8

(b) If soil is **STIFF CLAY** (soil type D): -1.2

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.5.2. CONCRETE SHEAR WALL FRAME (C2) & MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is : 3.6

If no of storey is **greater than 7** additional score is: 0.8

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.8

(b) If soil is **STIFF CLAY** (soil type D): -1.2

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.5.3. CONCRETE SHEAR WALL FRAME (C2) & MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.6

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -2.0

(a) If soil is **DENCE SOIL** (soil type C): -0.8

(b) If soil is **STIFF CLAY** (soil type D): -1.2

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.5.4. CONCRETE SHEAR WALL FRAME (C2) & MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is : 3.6

If no of storey is **greater than 7** additional score is: 0.4

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -2.0

(a) If soil is **DENCE SOIL** (soil type C): -0.8

(b) If soil is **STIFF CLAY** (soil type D): -1.2

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.5.5. CONCRETE SHEAR WALL FRAME (C2) & MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.6

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

(a) If soil is **DENCE SOIL** (soil type C): -0.8

(b) If soil is **STIFF CLAY** (soil type D): -1.2

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.5.6. CONCRETE SHEAR WALL FRAME (C2) & MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is : 3.6

If no of storey is **greater than 7** additional score is: 0.8

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

- (a) If soil is **DENCE SOIL** (soil type C): -0.8
- (b) If soil is **STIFF CLAY** (soil type D): -1.2
- (c) If soil is **SOFT SOIL** (soil type E): -1.6

6.5.7 CONCRETE SHEAR WALL FRAME (C2) & MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.6

If no of storey is **less than 7** additional score is: 0.4

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will add to the basic score -2 for vertical irregularities & -0.5 for plan irregularities

- (a) If soil is **DENCE SOIL** (soil type C): -0.8
- (b) If soil is **STIFF CLAY** (soil type D): -1.2
- (c) If soil is **SOFT SOIL** (soil type E): -1.6

6.5.8 CONCRETE SHEAR WALL FRAME (C2) & MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is : 3.6

If no of storey is **greater than 7** additional score is: 0.8

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT:

Additional score will add to the basic score -2 for vertical irregularities & -0.5 for plan irregularities

- (a) If soil is **DENCE SOIL** (soil type C): -0.8
- (b) If soil is **STIFF CLAY** (soil type D): -1.2
- (c) If soil is **SOFT SOIL** (soil type E): -1.6

6.6.1. CONCRETE SHEAR WALL FRAME (C2) & HIGH SEISMIC ZONE (Z3):

Concrete shear-wall buildings are usually cast in place, and show typical signs of cast-in place concrete. Shear-wall thickness ranges from 6 to 10 inches. These buildings generally perform better than concrete frame buildings. They are heavier than steel frame buildings but more rigid due to the shear walls. Damage commonly observed in taller buildings is caused by vertical discontinuities, pounding, and irregular configuration.

In this case **BASIC SCORE** is: 2.8

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.6.2. CONCRETE SHEAR WALL FRAME (C2) & HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 2.8

If no of storey is **greater than 7** additional score is: 0.6

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.6.3. CONCRETE SHEAR WALL FRAME (C2) & HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is : 2.8

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -1.5

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.6.4. CONCRETE SHEAR WALL FRAME (C2) & HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is : 2.8

If no of storey is **greater than 7** additional score is: 0.6

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -1.5

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.6.5. CONCRETE SHEAR WALL FRAME (C2) & HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 2.8

If no of storey is **less than 7** additional score is: 0.4

6.6.5. IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.6.6. CONCRETE SHEAR WALL FRAME (C2) & HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is : 2.8

If no of storey is **greater than 7** additional score is: 0.6

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.6.7. CONCRETE SHEAR WALL FRAME (C2) & HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 2.8

If no of storey is **less than 7** additional score is: 0.4

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT:

Additional score will added to the basic score -1.5 for vertical irregularities & 0.5 for horizontal irregularities

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.6.8. CONCRETE SHEAR WALL FRAME (C2) & HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 2.8

If no of storey is **greater than 7** additional score is: 0.6

IF THERE IS ONLY HORIZONTAL IRREGULATIES: Additional score will added to the basic score -1.5 for vertical irregularities & 0.5 for horizontal irregularities

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.6

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.7.1. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH LOW SEISMIC ZONE (Z1):

Concrete columns and beams may be full wall thickness and may be exposed for viewing on the sides and rear of the building. Usually masonry is exposed on the exterior with narrow piers (less than 4 ft wide) between windows. Portions of solid walls will align vertically. This type of construction was generally built before 1940 in high-seismicity regions but continues to be built in other regions. Infill walls tend to buckle and fall out-of-plane when subjected to strong lateral out-of plane forces. Veneer masonry around columns or beams is usually poorly anchored and detaches easily.

In this case **BASIC SCORE** is: 4.4

If no of storey is **less than 7** additional score is: -0.4

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.7.2. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **greater than 7** additional score is: -0.4

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.7.3 CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **less than 7** additional score is: -0.4

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -2

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.7.4. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **greater than 7** additional score is: -0.4

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -2

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.7.5. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **less than 7** additional score is: -0.4

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is 0.8

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.7.6. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **greater than 7** additional score is: -0.4

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will added to the basic score is -0.8

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.7.7. CONCRETE FRAME WITH UNREINFORCED MASONRY INFILL WALLS (C3) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is: 4.4

If no of storey is **less than 7** additional score is: -0.4

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will added to the basic score -2.0 for vertical & -0.8 for horizontal irregularities respectively.

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.7.8 CONCRETE FRAME WITH UNREINFORCED MASONRY INFILL WALLS (C3) & WITH LOW SEISMIC ZONE (Z1):

In this case **BASIC SCORE** is : 4.4

If no of storey is **greater than 7** additional score is: -0.4

IF THERE IS ONLY HORIZONTAL IRREGULATIES: Additional score will added to the basic score -2.0 for vertical & -0.8 for horizontal irregularities respectively.

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.8

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.8.1 CONCRETE FRAME WITH UNREINFORCED MASONRY INFILL WALLS (C3) & WITH MODERATE SEISMIC ZONE (Z2):

Concrete columns and beams may be full wall thickness and may be exposed for viewing on the sides and rear of the building. Usually masonry is exposed on the exterior with narrow piers (less than 4 ft wide) between windows. Portions of solid walls will align vertically. This type of construction was generally built before 1940 in high-seismicity regions but continues to be built in

other regions. Infill walls tend to buckle and fall out-of-plane when subjected to strong lateral out-of-plane forces. Veneer masonry around columns or beams is usually poorly anchored and detaches easily.

In this case **BASIC SCORE** is: 3.2

If no of storey is **less than 7** additional score is: 0.2

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -2.0

6.8.2. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.2

If no of storey is **greater than 7** additional score is: 0.4

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.8.3 CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is : 3.2

If no of storey is **less than 7** additional score is: 0.2

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -2.0

- (a) If soil is **DENCE SOIL** (soil type C): -0.6
- (b) If soil is **STIFF CLAY** (soil type D): -1.0
- (c) If soil is **SOFT SOIL** (soil type E): -1.6

6.8.4. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.2

If no of storey is **greater than 7** additional score is: 0.4

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -2.0

- (a) If soil is **DENCE SOIL** (soil type C): -0.6
- (b) If soil is **STIFF CLAY** (soil type D): -1.0
- (c) If soil is **SOFT SOIL** (soil type E): -1.6

6.7.5. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.2

If no of storey is **less than 7** additional score is: 0.2

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

- (a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.8.6. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.2

If no of storey is **greater than 7** additional score is: 0.4

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score -0.5

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.8.7 CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.2

If no of storey is **less than 7** additional score is: 0.2

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will added to the basic score -2 for vertical irregularities & -0.5 for plan irregularities.

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.8.8 CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH MODERATE SEISMIC ZONE (Z2):

In this case **BASIC SCORE** is: 3.2

If no of storey is **greater than 7** additional score is: 0.4

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will added to the basic score -2 for vertical irregularities & -0.5 for plan irregularities.

(a) If soil is **DENCE SOIL** (soil type C): -0.6

(b) If soil is **STIFF CLAY** (soil type D): -1.0

(c) If soil is **SOFT SOIL** (soil type E): -1.6

6.9.1. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH HIGH SEISMIC ZONE (Z3):

Concrete columns and beams may be full wall thickness and may be exposed for viewing on the sides and rear of the building. Usually masonry is exposed on the exterior with narrow piers (less than 4 ft wide) between windows. Portions of solid walls will align vertically. This type of construction was generally built before 1940 in high-seismicity regions but continues to be built in other regions. Infill walls tend to buckle and fall out-of-plane when subjected to strong lateral out-of plane forces. Veneer masonry around columns or beams is usually poorly anchored and detaches easily.

In this case **BASIC SCORE** is: 1.6

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.4

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.9.2 CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 1.6

If no of storey is **greater than 7** additional score is: 0.8

IF THERE IS NO IRREGULATIES: No additional score will added to the basic score

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.4

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.9.3 CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 1.6

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -1.0

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.4

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.9.4. CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 1.6

If no of storey is **greater than 7** additional score is: 0.8

IF THERE IS ONLY VERTICAL IRREGULATIES:

Additional score will add to the basic score is -1.0

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.4

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.9.5 CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 1.6

If no of storey is **less than 7** additional score is: 0.4

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.4

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.9.6 CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is: 1.6

If no of storey is **greater than 7** additional score is: 0.8

IF THERE IS ONLY HORIZONTAL IRREGULATIES:

Additional score will add to the basic score is -0.5

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.4

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.9.7 CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is : 1.6

If no of storey is **less than 7** additional score is: 0.4

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will added to the basic score -1.0 for vertical & -0.5 for plan irregularities.

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.4

(c) If soil is **SOFT SOIL** (soil type E): -0.8

6.9.8 CONCRETE FRAME WITH UNREINFORCED MASONARY INFILL WALLS (C3) & WITH HIGH SEISMIC ZONE (Z3):

In this case **BASIC SCORE** is : 1.6

If no of storey is **greater than 7** additional score is: 0.8

IF THERE ARE VERTICAL & HORIZONTAL IRREGULATIES PRESENT: Additional score will added to the basic score -1.0 for vertical & -0.5 for plan irregularities.

(a) If soil is **DENCE SOIL** (soil type C): -0.4

(b) If soil is **STIFF CLAY** (soil type D): -0.4

(c) If soil is **SOFT SOIL** (soil type E): -0.8