

Review on Effect of Confinement on Column

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Abstract – In this paper present a various styles of confining material like welded wire mesh, FRP, Fiber glass fly mesh, Ferrocement, welded spot stirrups. This project is high lighting the study of the various forms of effective confining material on RC Rectangular column by improving the confining quality. It also adds the various properties of concrete column.

Longitudinal and Lateral reinforcements are essential for RC columns. While the concrete core is subjected to radial compression within the horizontal direction, either the big spacing or close spacing between ties ends up in lack of confinement of concrete core.

Key Words: Various materials such as WWM, CFRP, Galvanized steel wire mesh, Ferrocement.

1. INTRODUCTION

Reinforced concrete are generally used for construction aimed toward all activities in housing industry. Column transfer the load from beam to slab and slab to foundation level. Column supports high compressive force in all structures. Sometimes column may damage because of earthquake, disasters, excess loading and fire also, reason for it have limited strength & ductility of the concrete. Sometimes failure of column can results in collapse of this structure. Lateral and longitudinal reinforcement are gives extra strength to column and also increase performance of column. Transverse reinforcement in column like spirals, hoops, links are plays more significant role for increasing its strength and also provides safety, specially after they are subjected to earthquake forces & lateral Loads RC Columns are load bearing element of all structures.

2. AIM

Properly design and detailed confining transverse reinforcements prevent buckling of longitudinal bars, Avoid Shear failure and supply sufficient Ductility.

3. OBJECTIVE

1. To achieve compressive strength of column.
2. To column confined with various confinement and increasing its strengths
3. To increase load carrying capacity (axial load and bending moment)
4. Experimental analysis of the load carrying capacity of the column
5. To study the efficiency of confinement utilized in the oblong cross section of column.

4. SLENDERNESS RATIO

Slenderness ratio is that the ratio of the length of a column and therefore the least radius of gyration of its Irritated section.

For RCC Column

When the ratio of the operative length to its least lateral dimension is a smaller amount than or capable 12 it's

Termed as short column ii) When the ratio of the Effective length to its minimum lateral dimension surpasses

It's called as long column.

Effective length to its minimum lateral

Slenderness ratio (λ) = $L_e / r = KL / r$

Where, L = definite length of the column member

L_e = KL , effective length

r = appropriate radius of gyration

5. Type of column confining use various

Confinement

1. Welded wire mesh

Welded wire meshes are consisting grid of parallel longitudinal wire with same spacing welded to cross hair at required spacing.

- **Uses**

1. It increases its ultimate load capacity
2. Improves ductility.
3. Increases large energy dissipation



Fig -1: Welded wire mesh

2. Galvanized steel wire mesh

Galvanized don't seem to be metal or alloy, this are a process during which Zink coating are applied to steel for prevent to its rusting.

- **Uses**

1. Increases large energy dissipation
2. Use for Building & construction project

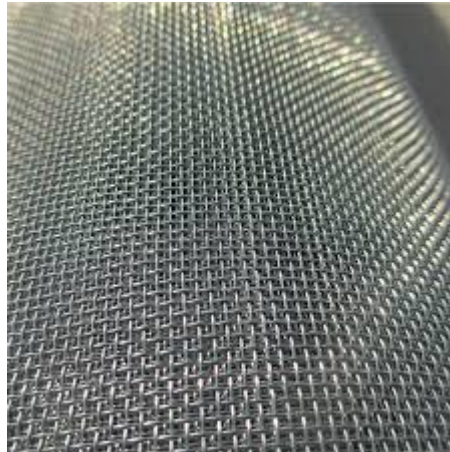


Fig -2: Galvanized steel wire mesh

3. Ferrocement

This are generally made from mortar & steel wire mesh and customarily it's cast in very thin section. So making it possible to present any desired shape. It's composite material of steel wire mesh & mortar. Differing types of meshes are used for produce of ferrocement sheets, reckoning on applications requirements.

- **Uses**

1. Increases the final word load carrying capacity
2. Increases its the strength
3. Lateral deflections are minimized.



Fig -3: Ferrocement

4. FRP (Fiber Reinforced Polymers)

The use of Fiber Reinforced Polymers (FRP) to wrap concrete columns has been generally investigated and has become a really successful method to boost their structural performances. It's been recognize that FRPs, thanks to the presence of an organic resin. The chance of reinforcing concrete elements by externally applying fiber reinforced polymer (FRP).



Fig -4: FRP

6. CONCLUSION

In this paper Rectangular, Circular column is taken into account having differing types of confinement reinforcement.

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