**Testing Of Cubes- 7 Days**

| *Sr No.* | *Wt. of cube (KG)* | *Load (KN)* | *Strength (MPa)* | *Av. Strength (Mpa)* |
|---|---|---|---|---|
| 1 | 8.710 | 960 | 39.63 | |
| 2 | 8.840 | 1000 | 41.35 | 40.70 |
| 3 | 8.990 | 980 | 41.13 | |

**Testing Of Cubes- 7 Days**

| *Sr No.* | *Wt. of cube (KG)* | *Load (KN)* | *Strength (MPa)* | *Av. Strength (Mpa)* |
|---|---|---|---|---|
| 1 | 8.840 | 890 | 42.25 | |
| 2 | 8.715 | 920 | 43.68 | 44.15 |
| 3 | 8.790 | 980 | 46.53 | |

**Testing Of Cubes-28 Days**

| *Sr No.* | *Wt. of cube (KG)* | *Load (KN)* | *Strength (MPa)* | *Av. Strength (Mpa)* |
|---|---|---|---|---|
| 1 | 8.785 | 1050 | 44.21 | |
| 2 | 8.807 | 1130 | 41.09 | 42.55 |
| 3 | 8.830 | 1170 | 42.36 | |

**Testing of Cubes-28 Days**

| *Sr No.* | *Wt. of cube (KG)* | *Load (KN)* | *Strength (MPa)* | *Av. Strength (Mpa)* |
|---|---|---|---|---|
| 1 | 8.840 | 940 | 44.63 | |
| 2 | 8.715 | 980 | 46.53 | 46.94 |
| 3 | 8.790 | 1050 | 49.83 | |

**Table 3.7:** Compression test for 2% Natural fiber (BAGASSE)

| *Material* | *S.S.D Mix* | *Mois-ture* | *Absor-btion* | *Corrected Mix* | *Mix for- 0.026M$^3$* |
|---|---|---|---|---|---|
| | (Kg) | % | % | FOR 1M$^3$ | |
| *W/C* | 0.37 | | | | |
| *Cement* | 475 | | | 475 | 12.35 |
| *Fly ash* | 0 | | | 0 | 0 |
| *Crushed Sand* | 826 | _ | 3.81 | 794.53 | 20.66 |
| *10MM AGG* | 425 | - | 1.24 | 419.73 | 10.91 |
| *20MM AGG* | 643 | - | 1.24 | 635.03 | 16.51 |
| *Water* | 167 | | | 211.71 | 5.5 |
| *Admixure* | 3.6 | | | 3.6 | 0.094 |
| *BAGGASS 2%* | | | | 0.9 | 0.2375 |

**Table 3.8:** Flexure Test for 2% Natural fiber

| *Material* | *S.S.D Mix* | *Mois-ture* | *Absor-btion* | *Corrected Mix* | *Mix for- 0.026M$^3$* |
|---|---|---|---|---|---|
| | (Kg) | % | % | FOR 1M$^3$ | |
| *W/C* | 0.37 | | | | |
| *Cement* | 475 | | | 475 | 12.35 |
| *Fly ash* | 0 | | | 0 | 0 |
| *Crushed Sand* | 826 | _ | 3.81 | 794.53 | 20.66 |
| *10MM AGG* | 425 | - | 1.24 | 419.73 | 10.91 |
| *20MM AGG* | 643 | - | 1.24 | 635.03 | 16.51 |
| *Water* | 167 | | | 211.71 | 5.5 |
| *Admixure* | 3.6 | | | 3.6 | 0.094 |
| *BAGGASS 2%* | | | | 0.9 | 0.2375 |

**Testing Of Cubes-28 Days**

| *Sr. No.* | *Load (KN)* | *Strength (MPA)* |
|---|---|---|
| 1 | 32.20 | 58.37 |

**Testing Of Cubes- 7 Days**

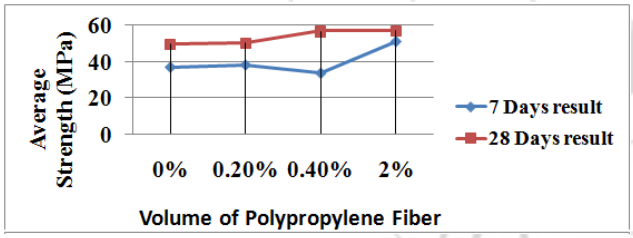
| *Sr. No.* | *Wt. of cube (KG)* | *Load (KN)* | *Strength (MPa)* | *Av. Strength (Mpa)* |
|---|---|---|---|---|
| 1 | 8.710 | 850 | 42.22 | |
| 2 | 8.840 | 1000 | 44.44 | 43.40 |
| 3 | 8.990 | 980 | 43.55 | |

**Testing Of Cubes-28 Days**

| *Sr No.* | *Wt. of cube (KG)* | *Load (KN)* | *Strength (MPa)* | *Av. Strength (Mpa)* |
|---|---|---|---|---|
| 1 | 8.785 | 1250 | 55.55 | |
| 2 | 8.807 | 1300 | 57.77 | 57.77 |
| 3 | 8.830 | 1350 | 60.0 | |

## 4. Result Analysis

### 4.1 Compressive Strength Analysis of Polypropylene Fiber Reinforced Concrete




### 4.2 Compressive Strength Analysis of Natural Fiber Reinforced Concrete

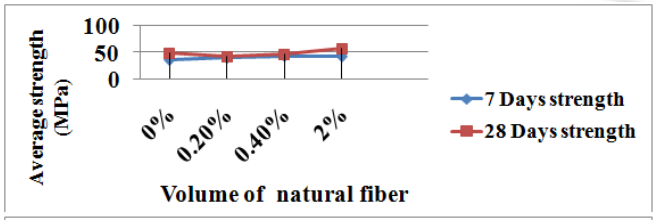


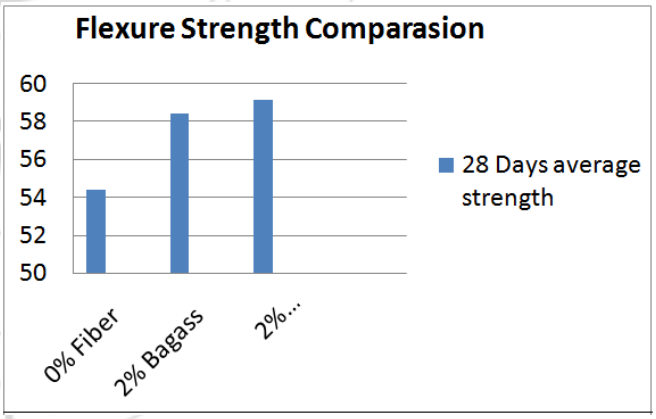

**Table 3.9:** Flexure test for 2% Polypropylene fiber (PPF)

| *Material* | *S.S.D Mix* | *Mois-ture* | *Absor-btion* | *Corrected Mix* | *Mix for-0.026M$^3$* |
|---|---|---|---|---|---|
| | (Kg) | % | % | FOR 1M$^3$ | |
| ***W/C*** | 0.37 | | | | |
| ***Cement*** | 365 | | | 365 | 12.41 |
| ***Fly ash*** | 85 | | | 85 | 2.89 |
| ***Crushed Sand*** | 826 | _ | 0.8 | 819.39 | 20.66 |
| ***10MM AGG*** | 425 | - | 1.24 | 419.73 | 14.27 |
| ***20MM AGG*** | 643 | - | 1.24 | 635.03 | 21.59 |
| ***Water*** | 167 | | | 187.85 | 6.4 |
| ***Admixure*** | 3.6 | | | 3.6 | 0.122 |
| ***PPF 2%*** | | | | 0.9 | 0.2375 |

**Testing of Cubes-28 Days**

| *Sr. No.* | *Load (KN)* | *Strength (MPA)* |
|---|---|---|
| 1 | 32.20 | 59.09 |

### 4.3 Flexure Strength Comparison




## 5. Conclusion

### I. Polypropylene Fiber Reinforced Concrete

1. We are concluding that the early compressive strength can be achieved by using 0.2% of polypropylene fibers and maximum compressive strength can be achieved by using 2% of polypropylene fibers.
2. We are concluding that the both early flexural strength and maximum flexural strength can be achieved by using 2% of polypropylene fibers.

### II. Natural Fiber Reinforced Concrete

1. W may conclude that the early compressive strength and flexural strength can be achieved by using 2% of steel fibers.

2. Strength of natural fiber reinforced concrete decreases if volume fraction of fibres is increased beyond 2%.

**III. Economy Considerations**

1. We may conclude that cost of concrete mix is increased by 10% using 2% natural fibers and by 1% using 0.4% polypropylene fibers.
2. Use of PPF could be advised over natural fibres in the applications where tensile and flexural properties of concrete are focused
3. Use of natural fibers is recommended for light structures or where tensile n flexure strength is not more important.

## 6. Future Scope & Limitations

1. We can use combination of two or more fibers to improve various mechanical properties of concrete.
2. Natural fibers which we have used here that is sugarcane waste (bagasse) is a waste product causing pollution to the nearby society so we can use that waste as fiber and we can control the pollution and can use it in construction industry in efficient way.
3. We can minimize the disposal problem of sugarcane waste.

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