

CONCLUSION

The pycnometer tests reveal that the specific gravity of the pond ash obtained from Rajghat Power Station to be 2.42. This is in the normal range i.e., 1.66 – 2.55.

The results of grain size analysis reveal that the material pond ash is not a well-graded material. The material mainly lies in the range silty sand and silty loam.

The standard proctor tests conducted on pond ash with varying amounts of Polypropylene fibers (0.5%, 1%, 1.5%, 2% and 2.5%) reveal that every time the polypropylene fiber content is increased the Optimum Moisture Content rises. Also, the dry density is found to be improved. The pattern of percentage change of dry density, however, is irregular but is sure to decrease with increasing fiber content. An increase in OMC was also observed with increase in fiber content. With the increase in fiber content pond ash seemed to get increasingly stable. The same trend was observed during Heavy Compaction Tests also showing an improvement in properties of pond ash. The plot of moisture content versus dry density under heavy compaction were found to shift towards left and rise higher than those in light compaction as expected.

The CBR tests reveal that CBR value increases every time the fiber content is raised and the increment recorded is greater in unsoaked than that in soaked CBR tests. It is also observed that dry density obtained in CBR tests is lower than that obtained from Proctor tests.

The rate analysis carried out on pond ash with and without fiber reinforcement and its comparison with Delhi silt to be used as sub-grade in pavement construction evidently speaks of pond ash as a better material to be used for road works. It has shown significant savings when rate analysis was done for road works. The rates of items were obtained from the publications of Ministry of Surface Transport. The net savings observed while using only pond ash was less when compared to pond ash

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reinforced with 0.5 % polypropylene fibers. This was due to high CBR value of reinforced pond ash which causes a reduction in required pavement thickness. It is also observed that with increase in traffic (in msa) net savings increases.