CHAPTER 8

COST ANALYSIS

8.1 GENERAL

Cost is an important criterion in every material transaction. This chapter deals with the cost of coated flyash based papercrete building brick. The cost for the production of 1 lakh brick is calculated. From that estimate, the cost of one brick is calculated. Similarly, the cost of all the ingredients, cement, flyash, sand and waste papers is also calculated. In addition to that, the expenses to be incurred for internal water proofing admixtures, Powder water proof 105, SBR Latex Polymer and 2 coats of external coating materials, Prime seal 604 and Rain coat are calculated. Finally, the cost of the individual flyash based papercrete building brick is compared to the conventional building bricks and the results are described here. Consequently, the cost of all the ingredients and individual conventional building bricks existing in the month of January 2013 rates in Tiruchengode Taluk, Namakkal District, TamilNadu, India is estimated.

8.2 CEMENT

Normally, cement is used as a binding material in the mix and for the experimental study discussed in the thesis 43 grade ordinary Portland cement is used. Unit weight of cement is 1440 kg/m$^3$ and its market rate stands at Rs. 300 per 50kg bag.
8.3 FLYASH

Flyash was used as filling material in the mix and its proportion was higher next to paper. Its unit weight is 694 kg/m$^3$ and it is freely available in Mettur Thermal Power Plant. Only the transport charges of flyash were considered in the cost analysis.

8.4 SAND

River sand was used as one of the ingredients in the mix but it was used in the least percentage, which is half of the weight of cement. Its unit weight is 1548 kg/m$^3$ and its cost at the site is Rs.1000/m$^3$.

8.5 PAPER

As mentioned earlier, paper is the major constituent in the mix proportion. It is freely available everywhere. In the cost analysis, Rs.2.50/kg is considered as the cost in the preparation of paper pulp from waste paper.

8.6 ADMIXTURES

Powder water proof 105 and SBR Latex polymer was used as internal and external water proofing material respectively. In the cost analysis, Rs.70/kg and Rs.200/liter is considered as the cost in the preparation of paper pulp from waste paper.

8.7 PRODUCTION CHARGES

In the production process, the usage of tools and plants and labour charges had been included. In the process, labourers were needed at the time of manufacture of bricks and coating of bricks. Of this, 10% and 5% of the
total cost is considered for labour and T&P charges respectively in the cost calculation.

8.8 COMPARISON WITH CONVENTIONAL BRICKS

Flyash based papercrete building bricks were compared with conventional bricks, which are available in market. Based on January 2013 market value, the rates of the conventional clay bricks and flyash bricks were Rs.10,500/- and Rs.11,700/- per 3000 bricks respectively. A comparison of the cost of bricks is illustrated in Figure 8.1.

![Figure 8.1 Cost of brick](image)

8.9 CONCLUDING REMARKS

From the cost analysis of individual brick, coated flyash based papercrete brick was more than 28% in relation to the cost of conventional clay brick and it was also more than 12% of the cost of flyash brick. The cost of flyash based papercrete brick was worked out as rupees 4.50/- per brick and it is marginally costlier than conventional bricks.