ABSTRACT

The extraction of marble and its processing as marble blocks is most common in several states of India. But its extensive growth has put adverse impact on the environment because of the production of huge amount of marble sludge in processing industries. This experimental study highlights the impact of use of marble waste on the properties of light transmitting concrete (LTCM) . The basic objective of this experimental program is to replace river sand in concrete by an optimum combination of quarry dust and marble powder and to determine improvement in light transmittance in concrete by use of marble waste as aggregate. Six proportions of mix (by varying the percentage replacement of fine aggregate with marble waste from 0-100% by weight) were prepared to investigate the compressive strength, flexural strength ,permeability and ultrasonic pulse velocity. The result shows all these properties were improved for complete substitution of fine aggregate with marble powder. The study was further carried out with 75% and 100% substitution of fine aggregates to determine improvement in the light transmittance of LTCM. It was observed that light transmittance increased to 44% for 100%marble powder compared to control mix prepared with 100% quarry dust and 0% marble powder.