

ABSTRACT

EXPERIMENTAL STUDY ON WATER HYACINTH INCORPORATED IN PAVEMENT BLOCKS

An alternative to asphalt and concrete pavements, interlocking concrete paver blocks (ICPB) are brick-like pieces of concrete that are frequently used as outdoor flooring. Throughout the world, concrete paving blocks are among the most used building materials. They work well for constructing roads, pavements, and parking lots because they are simple to install, robust, long-lasting, affordable, weatherproof, and fireproof. The base and sub-base layers' composition determines their quality; these layers must be appropriately designed for diverse uses utilizing a Portland cement and water mixture with different kinds of fine aggregates.

When compared to the other components of concrete, cement is thought to be the most costly and one of the primary sources of carbon dioxide, which is the primary contributor to global warming. In concrete, cement is substituted as a supplemental cementitious material (SCM) to lower carbon dioxide emissions. Research has been done on lowering construction costs by using locally accessible materials to partially or completely replace cement, which has been shown to be effective in addressing the needs of concrete in construction.

Water hyacinth (WH) and other invasive aquatic weeds are seriously harming India's economy and environment. One practical way to address pollution and preserve natural resources for future generations is to recycle such aquatic wastes into sustainable, energy-efficient materials.

The purpose of this study is to partially replace cement in pavement blocks with water hyacinth, a plentiful but underutilized aquatic plant. The samples prepared are put through a number of tests in order to determine their characteristics.

Key words: Interlocking concrete paver blocks, Water hyacinth, Cement, Supplementary cementitious material