

Flooring Solution for Sports Courts Such as Ecological Mortar

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Abstract : As the society develops, the accumulation of solid waste in landfills, in the environment, and the depletion of the raw material increases. In this way, there is relevance in researching the interaction between the environmental management and civil construction; therefore, this project has for scope the analysis and the effects of the rubber microparticles use as a small aggregate added to the sand, producing an ecological mortar for the pavement constitution, from the mixture of a paste, composed of Portland cement and water, and its application in sports courts. It was used the detailed reutilization of micro rubber in its most primordial, micro form, highlighting the powder pattern as the additional balancing of the mortar, analyzing the evolution of the mechanical properties. Percentages of 5, 10 and 15% rubber were used based on the total mass of the trace, where there is no removal of aggregates or cement, only increment of the rubber. The results obtained through the mechanical test of simple compression showed that the rubber, added to the mortar, presents low mechanical resistance compared to the reference trait, the study of this subject is vast of possibilities to be explored. In this sense, we seek sustainability and innovation from the use of an ecological material, thus adding value and reducing the impact of this material on the environment. The manufacturing process takes place from the direct mixing of cement paste and rubber, whether manually, mechanically or industrially. It results in the production of a low-cost mortar, through the use of recycled rubber, with high efficiency in general properties, such as compressive strength and friction coefficient, allowing its use for the construction of floors for sports courts with high durability. Thus, it is possible to reuse this micro rubber residue in other applications in simple concrete artifacts.

Keywords : civil construction, ecological mortar, high efficiency, rubber

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