

## ABSTRACT

Title: ***Mechanical behavior characterization of tire derived aggregate***

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The main goal of this dissertation is the characterization of the mechanical behaviour of tire derived aggregate for civil engineering applications, through the rehearsal of probes of this material by means of triaxial apparatus. The triaxial apparatus allows applying a confinement stress on the probes to be rehearsed and, by this way, obtaining resistant and deformational parameters of this material.

The development of this work has consisted of five stages: study of the existent bibliography about tire derived characterization for knowing its basic properties, preparation of tire derived samples heeding its unusual characteristics, triaxial apparatus assembly and adaptation to tire derived samples, rehearses realization to characterize the material and results comparison between our study and the existent bibliography.

Firstly, the triaxial apparatus has been assembled and calibrated, adapting it to the characteristics of tire derived aggregate, and probes has been prepared with the purpose of being rehearsed.

Once the equipment has been prepared, it has been realised four triaxial rehearse types: confined compression rehearses on dry samples, confined compression rehearses on saturated samples, decreasing confinement stress maintaining vertical stress rehearses on saturated samples and load – unload rehearses on saturated samples. Rehearses has been realized for two different granulometric sizes, UPC 7 and UPC 25. For obtaining results we have measured vertical deformations, applied charge, confinement pressure, volumetric changes and pores pressure.

Finally, after obtaining some geotechnical derived aggregate parameters, the results have been compared with other authors' results, for checking rehearsals. As well as checking results, has been also studied the influence between this results and some issues like particle size or confinement pressure.