

## Plan Overview

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*A Data Management Plan created using DMPTool*

**Title:** Mortar with the addition of sisal fibers applied to the manufacture of cisterns

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**Funder:** São Paulo Research Foundation (fapesp.br)

**Template:** UNICAMP-GENERIC: Aplicável a todas as áreas

### **Project abstract:**

This project proposes the study of mortars containing waste rubber, vermiculite and sisal fibers, intended for the production of pre-molded plates used in the construction of low-cost cisterns. The National Program to Support Rainwater Harvesting and Other Social Technologies (Cisternas Program), financed by the Ministry of Social Development since 2003 (by Law N° 12.873/2013 and regulated by Decree N° 8.038/2013) promoting access to water for human consumption and food production through the implementation of simple, low-cost social technologies. In this sense, it is intended to characterize mortar traits through physical and mechanical tests, such as: water absorption, void ratio and specific mass, compressive strength, tensile strength by diametral compression, tensile strength in bending, dynamic elasticity module, tenacity and microstructural analysis. Next, we intend to simulate, through a computational package based on the finite element method, specifically the ABAQUS *Simulia*, the structural behavior of cisterns built with pre-molded mortar plates with the addition of sisal fibers, in order to evaluate the maximum storage capacity of these cisterns. The main technological contributions of this project are the composition of a low cost mortar, of simple production, destined to the conformation of pre-molded plates that aim at the construction of cisterns with a capacity varying between 16 m<sup>3</sup> and 52 m<sup>3</sup>, volume range that would serve cisterns family, school and water production.

**Start date:** 11-01-2022

**End date:** 11-01-2024

**Last modified:** 07-05-2022

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## **Mortar with the addition of sisal fibers applied to the manufacture of cisterns**

Informações quantitativas e qualitativas acerca do desempenho da argamassa, tanto no estado fresco do concreto, como no estado endurecido.

Os dados serão obtidos por meio de leituras realizadas em Máquina universal de ensaios, equipamentos de laboratório, anotados em tabelas (Excel, word). E analisados por meio de gráficos, correlações, substituições em equações de acordo com Normas.

Os dados não referem-se a seres humanos e, desta forma, este estudo não passou por aprovação do Comitê de Ética em Pesquisa da UNICAMP

Os dados serão compartilhados por meio de relatórios e artigos científicos a serem desenvolvidos durante a pesquisa, com publicação em periódicos nacionais e internacionais.

Serão disponibilizados no repositório da UNICAMP.

Segue os formatos em que os dados resultantes serão armazenados e exemplos de softwares que poderão ser utilizados para manipulação.

DOC/DOCX - Microsoft Word, Libre Office

XLS/XLSX - Microsoft Excel, Libre Office

PDF - Adobe Acrobat

JPEG/TIFF/PNG Photoshop, GIMP, (Imagens de microscopia eletrônica de varredura- MEV )

Durante realização da pesquisa, os dados serão armazenados em repositório próprio da instituição e Drives virtuais da pesquisadora (Google Drive e One Drive).

Após a publicação dos resultados, os registros serão conservados no repositório da UNICAMP.

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