

MC Pool – Modular Concrete Pool

Summary

The MC-Pool – Modular Concrete Pool project aimed to develop an innovative concept (new product and new process) of modular pools, prefabricated in concrete, more economical, faster to execute, more durable, more thermo-efficient, and more eco-efficient, compared to the traditional solution, executed in situ in reinforced concrete.

In this project, the advantages of prefabricated swimming pools in fiberglass (or other materials), namely in terms of speed of execution and low costs, were combined with the advantages of construction in reinforced concrete, that is, greater strength and durability, while also being concerned with improving the thermal behaviour and reducing the environmental impact of the product. This concept also benefits from the advantages associated with

pre-manufacturing, that is, ensuring greater quality control in the factory, reduced material waste and ease of producing identical pieces, making the final product competitive in commercial terms.

The project was organised in five tasks:

- Typology and design of MC-Pools.
- Development of advanced cementitious materials.
- Structural characterization of the MC-Pool.
- Prototype production.
- Promotion and dissemination of results.

Pre-wall production



Pre-wall test



Prototype assembly



Prototype

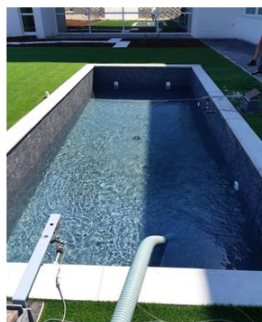


Figure 1. Production of the pre-walls and the prototype.

Project Reference

POCI-01-0247-FEDER-033534

Leading Institution

Vigobloco (Portugal)

Partners

IST-ID – Associação do Instituto Superior Técnico para a Investigação e o Desenvolvimento (Portugal), IPC – Instituto Politécnico de Coimbra (Portugal)

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Funding

COMPETE 2020, Portugal 2020

Period

2018-2021

Total

346 735.49€

CERIS

50 677.83€

Project Website

www.vigobloco.pt/i-d/mc-pool-modular-concrete-pool

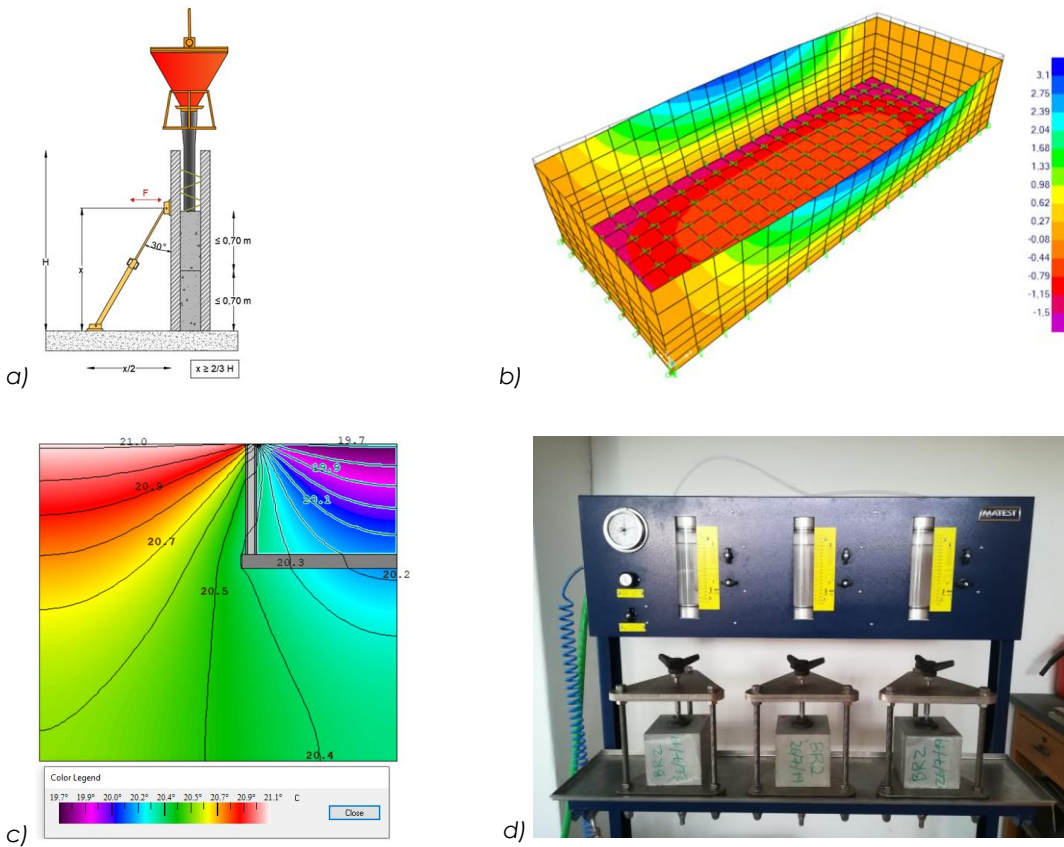


Figure 2. a) Casting the core of pre-walls; b) Deformation analysis; c) Temperature analysis; d) Test of water penetration under pressure.