



A MATTER OF STRENGTH – MEASURING THE GLAZE-BISCUIT ADHERENCE IN PORTUGUESE TILES

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ABSTRACT

We point the capital importance of the local adherence between the glaze and the biscuit in Portuguese tiles (*azulejos*), present a system developed at LNEC to measure it in the laboratory, discuss some of its possible uses and systematize the test outcomes. We finally demonstrate the system through results obtained.

KEYWORDS: azulejos; glaze adherence; adherence measurement; pull-off test

1. INTRODUCTION

Heritage Portuguese azulejos (glazed ceramic tiles) are an important asset of the cultural heritage of Portugal. They were used in Portuguese architecture as decorative wall coverings since the 16th century and eventually became so closely related to it, that one cannot be understood without the other.

Azulejos were manufactured by the majolica technique in which a white glaze containing the decorative pigments was fired over a ceramic body. The most important characteristic in terms of azulejo durability is the adherence between the glaze and the biscuit. Once the adherence is lost, the glaze will soon fall off and the art value will be lost with it.

2. GLAZE ADHERENCE (TEXTOS COMPLETOS NO LIVRO DE ACTAS)

3. MEASURING THE GLAZE ADHERENCE

4. A PRACTICAL PULL-OFF TEST RIG FOR AZULEJOS

5. TEST RESULTS

5.1. Establishing the azulejo condition as to the glaze adherence

5.2. Comparing treatments

5.3. Assessing the fracture

6. CONCLUDING REMARKS

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