

PREPARATION OF ITEMS FOR A PROFICIENCY TESTING SCHEME OF TEXTILES

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INTRODUCTION

One of the fundamental stages in planning and developing an interlaboratory comparison exercise is the selection and preparation of the samples to be distributed to the participating laboratories. In case of composition tests on textile materials, it is essential (i) to correctly identify the nature of the fibres which composes the fabric and (ii) to check the homogeneity and stability of the each test sample.

IDENTIFICATION OF FIBRES

The LCG organised a PT in 2016. LCG was assisted by the University of A Coruña to identify the nature of the textile fibers using several complementary techniques specified in ISO/TR 11827 standard (e.g. Scanning Electron Microscopy, and Infrared Spectroscopy). The fibers were compared with standard fabrics which were supplied by the Institute of Textile Research and Industrial Cooperation of Terrassa (INTEXTER).

HOMOGENEITY OF PROFICIENCY TEST ITEMS

A homogeneity study of the fabrics was performed by the LCG according the requirements established in ISO/IEC 17043, from four selected testing specimens analysed in duplicate for every fabric. The estimate of within-sample standard deviation s_w and between-sample standard deviation s_b were calculated according the ISO 13528. As the reproducibility limit, R , of these methods is ± 1 percentage point for a confidence level of 95 %, the corresponding fitness for purpose σ_{PT} is 0.361, where $R = 1.96\sqrt{2} \sigma_{PT}$.

PROFICIENCY TESTING SCHEME

Five PT samples were distributed and analyzed according the requirements set by parts 3, 4, 7, 11 and 12 of ISO 1833 related to the quantitative chemical analysis of textiles. Laboratories from 12 countries reported results. The statistical treatment of results was performed according to ISO 13528. The reference value was established by consensus, while the uncertainties were evaluated using the Naji Plot. The |Z-score| values obtained by the LCG were satisfactory.

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