



BSI Standards Publication

Recycled pulps — Estimation of stickies and plastics

Part 3: Determination and identification by applying near-infrared measurement

National foreword

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A list of organizations represented on this committee can be obtained on request to its committee manager.

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Foreword

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This document was prepared by Technical Committee ISO/TC 6, *Paper, board and pulps*.

A list of all parts in the ISO 15360 series can be found on the ISO website.

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Introduction

Tacky particles, commonly named stickies, are a major issue in paper recycling since they can affect the processes as well as the quality of the recycled products. Therefore, a variety of test methods have been developed over decades. Existing laboratory test procedures for sticky contaminants in pulps made from paper for recycling or in recycled papers require an elaborate sample preparation to increase the concentration of these sticky contaminants by screening the pulp through a slotted plate and analysing the rejects. With the test procedure and equipment based on this document, the content of sticky contaminants can be determined at a laboratory handsheet or at the paper by means of near-infrared (NIR) measurement but also on filter paper where stickies have been concentrated and deposited with existing test procedures.

The approach to the measurements specified in this document is different from established test methods because the amount and chemical composition of polymeric substances are determined by applying NIR measurements. The content of these substances, which are typical constituents of adhesives are assigned as stickies. This is a further major difference from existing methods, which typically analyse the sticky behaviour, but not the chemical composition. The results determined by applying the method specified in this document correlate very well with established sticky measurement techniques, e.g. ISO 15360-2 or INGEDE Method 4.^[1] The measurement procedure in this document also enables to simultaneously analyse polymeric substances without tacky behaviour, typically called “plastics” in other methods.

The method described here can be implemented by any system that combines particle size measurement and NIR analysis. For example, “3DStick”^[2,3] involves laser triangulation to determine size and location of particles and subsequent NIR to determine chemical composition. Alternatively, direct camera imaging in the NIR spectrum has been used to both locate and identify the chemical composition of particles.^[4] This method can prove valuable for online measurement in systems that generate dry sheet samples^[5].