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QUALITY ENGINEERING
LABORATORY BÜBLINGEN

Title:

RESISTANCE TO ABRASION

1.0 INTRODUCTION

1.1 SCOPE

- 1.1.1 This document establishes the method for determining resistance to abrasion of 7 and 9 point card stock.
- 1.1.2 This test provides a measurement of the susceptibility of the surfaces of data processing card stock to the action of standardized abrasive surfaces (Dry Test). The test gives an indication of the surface wear to be expected when data processing cards are repetitively processed through IBM data processing equipment. This method is not applicable to surfaces which are waxed or treated with similar materials that would fill in the pores of the abrasion tester wheels.

1.2 REFERENCES

1.2.1 Specifications

IBM 894502 - Data Processing Card Stock 7 Point
IBM 894507 - Data Processing Card Stock 9 Point

1.2.2 Standards

TAPPI T402 - Conditioning Paper and Paperboard for Testing

1.3 AUTHORIZATION

- 1.3.1 This document is authorized by the Manager of Quality Assurance - Consumables.

1.4 TEST EQUIPMENT/MATERIAL

- 1.4.1 Taber Abraser - Model 140 (Equipped with CS-10 Calibrase Wheels)

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1.4.2 Specimen Template - A translucent plastic disc, 4 inches in diameter and .125 inches thick, scribed with a center hole of .3125".

1.4.3 Analytical Balance

2.0 PROCEDURE

2.1 SAMPLE PREPARATION

2.1.1 The test sample shall consist of six specimens.

2.1.2 Environment for conditioning and testing shall be in accordance with TAPPI T402 ($73 \pm 3.5^{\circ}\text{F}$ and $50 \pm 2\%$ RH for a minimum of two hours).

2.1.3 Prepare six specimens for each sample to be tested; three for tests on the felt side and three for tests on the wire side of the paper.

2.1.4 Each specimen shall consist of a 4" diameter disc with a hole approximately $5/16$ " in diameter in the center. The template is used as a guide in cutting these samples. If the test specimen is to be prepared from cards only $3\ 1/4$ " wide, it shall be cut from two cards abutted at their long sides. The scribe center line of the template shall be placed over the abutted edges of the cards.

2.1.5 Trace a pattern of the template and template hole on the two cards (One half on each card).

2.1.6 Cut out specimen from the tracing and identify it near the center hole as "felt" or "wire" side.

3.0 TEST INSTRUCTIONS

NOTE: Refer to applicable specification (Reference 1.2.1) for actual value(s) to be tested.

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- 3.1 Carefully brush the surface and edges of the test specimen, holding it by the edges.
- 3.2 Weigh it to the nearest 1 mg.
- 3.3 Clamp it into position on the table of the Abrasion Tester.
- 3.4 Reset the Abrasion Tester Counter to zero.
- 3.5 Set each abrasive wheel to a pressure weight of 1000 grams.
- 3.6 Carefully lower the wheels on the specimen.
- 3.7 Turn the starting switch to "on" position and with the vacuum unit functioning, allow the turn-table to make 100 revolutions. Raise the abrasion wheels from the specimen on the 100th revolution.

NOTE: Dust accumulating during the test should be brushed from abrasion wheels and specimen as the table is revolving.

- 3.8 After 100 revolutions the specimen shall be removed from the turn-table brushed clean and reweighed to the nearest 1 mg.
- 3.9 Repeat the procedure with each specimen.

4.0 REPORTING

- 4.1 The abrasion loss in milligrams, for the wire and felt side specimens, shall be averaged and reported separately.