REPORT

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Handled by, department
Ellen Holmström
Chemistry and Materials Technology
+46 10-516 53 12, ellen.holmstrom@sp.se

Hewlett-Packard
Richard Anderson
16399 West Bernardo Drive San Diego
CA 92127 USA

Testing of one Ink "HP C8750A black Ink" in accordance with ISO 11798

(1 appendix)

Commissioner

Hewlett-Packard

Test object

One Ink

Commission

To test if documents prepared with the Ink meet the requirements in ISO 11798.

Date of delivery

December 7, 2006

Date of testing

December 8, 2006 - January 11, 2007

Specification

The test sample consisted of documents prepared with an Ink designated "HP C8750A black Ink" with an Inkjet designated HP CM 8060.

For the investigation, documents were prepared and sent to SP by the commissioner as follows:

Single sided documents on archival paper svenskt arkiv 80.

Samples were prepared with the settings "normal plain paper" and "glossy mode".

Testing

Testing has been performed in accordance with ISO 11798. The following properties have been tested:

Properties of the image

Property	Test method	Number of test samples
Optical density	ISO 11798, Clause 6.1	4
Appearance	ISO 11798, Clause 6.2	4
Lightfastness	ISO 11798, Clause 6.3	2
Water resistance	ISO 11798, Clause 6.4	4
Transfer of recording	ISO 11798, Clause 6.5	5
Resistance to wear	ISO 11798, Clause 6.6	4
Resistance to heat	ISO 11798, Clause 6.7	2

Properties of the document

Property	Test method	Number of test samples
Tensile energy absorption	ISO 1924-2	10

Statements on uncertainties of measurement are given in Appendix 1. The requirement has been compared to the reported mean value.

Testing was performed by SP Chemistry and Materials Technology.

Test results

Characteristics of the recording "normal plain paper"

Property	*Paper*	Results
Colour of recording	svenskt arkiv 80 E	black
Optical density	svenskt arkiv 80 E	>1,0
Appearance	svenskt arkiv 80 E	well defined recording with even colour strength
Lightfastness	svenskt arkiv 80 E	optical density >1,1
Water resistance	svenskt arkiv 80 E	optical density >1,1 no discoloration of the paper, no visible defects on the recording
Transfer of recording	svenskt arkiv 80 E	no transfer of recording, no blocking (sticking)
Resistance to wear	svenskt arkiv 80 E	meets the requirements

E = single sided documents

Characteristics of the recording "glossy mode"

Property	*Paper*	Results
Colour of recording	svenskt arkiv 80 E	black
Optical density	svenskt arkiv 80 E	>1,0
Appearance	svenskt arkiv 80 E	well defined recording with even colour strength
Water resistance	svenskt arkiv 80 E	optical density 1,04, no discoloration of the paper, no visible defects on the recording
Transfer of recording	svenskt arkiv 80 E	no transfer of recording, no blocking (sticking)
Resistance to wear	svenskt arkiv 80 E	meets the requirements
Resistance to heat	svenskt arkiv 80 E	optical density 1,07

Properties of documents, kept at 23 °C and 50 % RH

Tensile energy absorption

Material*	Paper	Tensile energy absorption (joule/m^2)	
		Mean value	Standard deviation
Reference, machine direction	svenskt arkiv 80	109,4	12,2
Sample, machine direction	svenskt arkiv 80	131,7	10,6
Reference, cross direction	svenskt arkiv 80	169,4	18,1
Sample, cross direction	svenskt arkiv 80	167,8	8,6

* Reference paper is the untreated paper from the same position on the paper reel as the paper used for the preparation of the sample.

Change of Tensile energy absorption in the machine direction: 20,4 %
Change of Tensile energy absorption in the cross direction: -0,9 %

Properties of documents, kept at 90 °C and 50 % RH for 12 days

Tensile energy absorption

Material*	Paper	Tensile energy absorption (joule/m^2)	
		Mean value	Standard deviation
Reference, machine direction	svenskt arkiv 80	102,7	9,9
Sample, machine direction	svenskt arkiv 80	119,6	11,9
Reference, cross direction	svenskt arkiv 80	159,4	18,2
Sample, cross direction	svenskt arkiv 80	153,8	13,2

Change of Tensile energy absorption in the machine direction: 16,5 %
Change of Tensile energy absorption in the cross direction: -3,5 %

Appendix 1

Uncertainty of measurement

Object	Property	Method	Uncertainty of measurement, due to test method[1]	Uncertainty of measurement [2]
Paper	Folding endurance, machine direction	ISO 5626 (Köhler-Molin)	± 0,04	± 0,06
Paper	Folding endurance, cross direction	ISO 5626 (Köhler-Molin)	± 0,04	± 0,07
Paper	Tensile energy absorption, machine direction	SCAN-P 38:80/ISO 1924-2	± 1,6	± 7,8
Paper	Tensile energy absorption, cross direction	SCAN-P 38:80/ISO 1924-2	± 2,1	± 11,6
Recording	Optical density, black recording	ISO 5-3	± 0,02 in the ranges 0,4 - 0,5 and 0,8 - 0,9	
Recording	Optical density, coloured recording	ISO 5-3	± 0,03	
Paper	Optical density	ISO 5-3	± 0,02	± 0,02

1) Uncertainty of measurement of the method
2) Uncertainty of measurement including normally obtained standard deviation at testing

The reported uncertainty is an expanded uncertainty based on the standard uncertainty multiplied by a coverage factor of k = 2, which provides a level of confidence of approximately 95 %.

Evaluation

The tested Ink designated "HP C8750A black Ink" with Inkjet designated HP CM 8060 meets the requirements in ISO 11798 in the following combinations:

paper	*single/ double sided*
svenskt arkiv 80	single sided

SP Technical Research Institute of Sweden
Chemistry and Materials Technology – Surface Technology

Magnus Palm
Technical Manager

Ellen Holmström
Technical Officer

Appendix 1 Uncertainty of measurement