

DIN 33870-1:2013-12 (E)

Office machines - Requirements and tests for the preparation of refilled toner modules for electrophotographical printers, copiers and facsimile machines - Part 1: Monochrome; with CD-ROM

Contents		Page
Foreword		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	6
4	Remanufacturing process	8
4.1	General	8
4.2	Documentation	9
4.3	Remanufacturing	9
5	Requirements	10
5.1	General	10
5.2	Health-related properties	10
5.3	Influence of the toner cartridge on the printer (durability test)	11
5.4	Start-up behaviour	11
5.5	Yield count (YC)	11
5.6	Properties of prints	11
5.6.1	General	11
5.6.2	Black prints	11
5.6.3	Fade	11
5.6.4	Toner adhesion	13
5.6.5	Grey page uniformity	13
5.6.6	Background	13
5.6.7	Ghosting	13
5.6.8	Toner miscibility	13
6	Sampling	13
7	Testing	14
7.1	Test equipment	14
7.1.1	Test device	14
7.1.2	Test templates	14
7.1.3	Test paper	14
7.1.4	Colour measurement device	14
7.1.5	Adhesive tape	14
7.2	Preparation of samples and test equipment	14
7.3	Creating test and reference prints	15
7.4	Procedure	15
7.4.1	Test conditions	15
7.4.2	Mechanical function (durability test)	15
7.4.3	Start-up behaviour	16
7.4.4	Yield	16
7.5	Print properties	18
7.5.1	Colour reproduction	18
7.5.2	Fade	18
7.5.3	Toner adhesion	19

7.5.4	Grey page uniformity	19
7.5.5	Background	19
7.5.6	Ghosting	19
7.5.7	Toner miscibility	19
8	Health and safety	19
8.1	General	19
8.2	Material safety data sheet	19
8.3	AMES test	20
9	Test report	20
10	Marking	20
10.1	General	20
10.2	Toner cartridge	20
10.3	Packaging	21
10.4	Instruction manual	22
10.5	Internet	22
Annex A (normative) Test template A - ISO/IEC 19752, Annex C, Standard test page		23
Annex B (normative) Test template B - Determination of the print quality		24
Annex C (normative) Form sheet C for evaluation of the tests		26
Bibliography		31
Tables Table 1 -- Calculation example for fade		12
Table 2 -- Evaluation of the calculation example for fade		13
Table 3 -- Use of test templates in the course of testing (10 000 pages)		17
Table 4 -- Use of test templates in the course of testing (10 001 20 000 pages)		17
Table 5 -- Use of test templates in the course of testing (> 20 001*) pages)		18