

Metamorfoze Preservation Microfilming Guidelines

Blueprints & Technical drawings

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Metamorfoze Preservation Microfilming Guidelines, Blueprints & Technical drawings, April 2006.

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These guidelines have been written for the making of preservation microfilms of blueprints and technical drawings. These guidelines should be seen as a supplement to the *Metamorfoze Preservation Microfilming Guidelines, Version III, February 2006*.

Introduction

Two methods are currently used to establish the correct shutter time and quantity of light for the filming of library and archive material. Either the density of the paper or the light reflected is measured. The shutter time or the quantity of light for an exposure is then determined, so that irrespective of the original density all originals are recorded on the film with the same density. This is possible because the differences in density between just white types of paper are not so large. The average difference in density is less than 0.30, in other words not greater than 1 stop. The difference in density between a blueprint and a modern newspaper can rise up to 0.90, in other words 3 stops. This difference is so large that it can no longer be corrected with lighting. The measurement methods just stated are therefore inadequate for the filming of blueprints and blueprints in combination with printed matter, handwritten material and drawings on a normal and very dark substrate. In order to ensure that blueprints and very dark originals can still be filmed in a responsible manner, the Metamorfoze Office started a study into the compilation of guidelines for this special category of originals in September 2005. These originals often have a large format. This study was therefore extended with a study into the compilation of guidelines for the frame-filling filming of A0 size originals (technical drawings). This study was completed at the start of April 2006 and the guidelines were compiled. At the start of the study a choice was made for a completely new approach to the filming. This new approach assumes a fixed shutter time and a fixed quantity of light with which the entire collection can be filmed. This ideal and fixed shutter time and quantity of light are defined by a fixed density of Patch A on a Kodak Gray Scale. Therefore a Kodak Gray Scale must also be filmed with each exposure. The density of each separate original is then no longer important. However the transfer of information is important. Just as for all Metamorfoze filmings, all of the information that is visible on the original must also be visible in the image on the microfilm. This applies to the first, the second and the third generation. The density of Patch A on the microfilm is of vital importance. This fixed density of Patch A has been developed in cooperation with the microfilm companies Karmac Microfilm Systems, Strata Preservation NV and Microformat Systems BV.

These guidelines cover the following subjects:

- Filming mode
- Density
- Resolution
- Illumination
- Reduction ratio

For other issues regarding the filming of blueprints and technical drawings please refer to the existing *Metamorfoze Preservation Microfilming Guidelines, Version III, February 2006*.

During the study and during the compilation of these guidelines low-contrast filming with an average gamma value of 1.5 was assumed.

If you have any questions or comments about these *Metamorfoze Preservation Microfilming Guidelines, Blueprints and Technical drawings*, please contact Hans van Dormolen, Metamorfoze microfilming quality manager, tel. +31(0)70 3140129, e-mail hans.vandormolen@kb.nl, or Dennis Schouten, Metamorfoze project manager, tel. +31(0)70 3140373, e-mail dennis.schouten@kb.nl.

Technical specifications

Blueprints and technical drawings may only be filmed at low contrast. The gamma value required for low contrast filming is 1–1.8. The density of Patch 19 must always be 0.00 (see *Metamorfoze Preservation Microfilming Guidelines, Version III, February 2006*, Chapters 2.3 and 2.4).

Filming mode

Filming must always be done against a black background. The use of backlighting is not permitted. Backlighting has a contrast-enhancing effect and creates unnecessary loss in the light components, such as pencil lines and grey letters. Moreover stickers and other information on the rear side of the originals shine through. To make transparent originals more legible, a white sheet of paper should be placed under the original before filming. The white sheet of paper should be the same size as the original. A glass plate must be used to minimise the effect of creases and folds. For each exposure the following details should be added on the lower centre part of the image:

- **Kodak Gray Scale** The density of Patch A is important to guarantee the correct average shutter time and quantity of lighting for each exposure. For each exposure the gamma value can also be calculated and the minimum density viewed. This also increases the insight into the stability of the development procedure. The Kodak Gray Scale Q-13 must be used up to a reduction ratio of 21. The Q-14 must be used from reduction ratio 21 to reduction ratio 30. This classification also applies to the Kodak Color Control Patches stated below.
- **Kodak Color Control Patches.** Extra information written in red pen is often added to blueprints. To gain an insight of the theoretically possible loss of this type of information on a black/white microfilm it has been decided to add a colour card to each exposure.
- **Ruler.** With the help of this ruler the original format can be calculated for each exposure.

Density

For the filming of collections of blueprints and for the filming of collections with different types of originals (blueprints, technical drawings, photos, handwritten material, printed matter and very dark originals, etc.) and therefore with considerable differences in density, the density of Patch A on the Kodak Gray Scale is the standard limit. The density of Patch A must lie between 1.33 and

1.38. Filming must therefore be done with a fixed shutter time and fixed quantity of light, irrespective of the density of the original.

The normal methods for reflected light and/or density measurement apply for the filming of collections without blueprints and only small differences in density compared to white paper. White paper has a density of 0.00 – 0.05. The density standardisation used for low-contrast filming also applies to this type of filming, namely 1.00 – 1.20 (see *Metamorfoze Preservation Microfilming Guidelines, Version III, February 2006*, Chapter 2.6).

Resolution

For a reduction ratio of 30 Metamorfoze requires the original negative to have a Quality Index of at least 4.5.

Illumination

For a reduction ratio of 30 Metamorfoze requires that the difference in density between the middle and the corners and between the corners may be no more than 0.10.

Reduction

Originals up to size A0 can be filmed with a reduction ratio of 30 in a single exposure. Originals larger than A0 must be filmed overlapping. For this the length/width ratio of the original is decisive for the choice between filming in cine mode/IA or comic mode/IB. Filming must be as effective (i.e. as logical) as possible. The frame should be filled as much as possible with a minimum of overlapping between the exposures.

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