

Stencil Exposure Test Procedure

VIA **STEP WEDGE TEST**

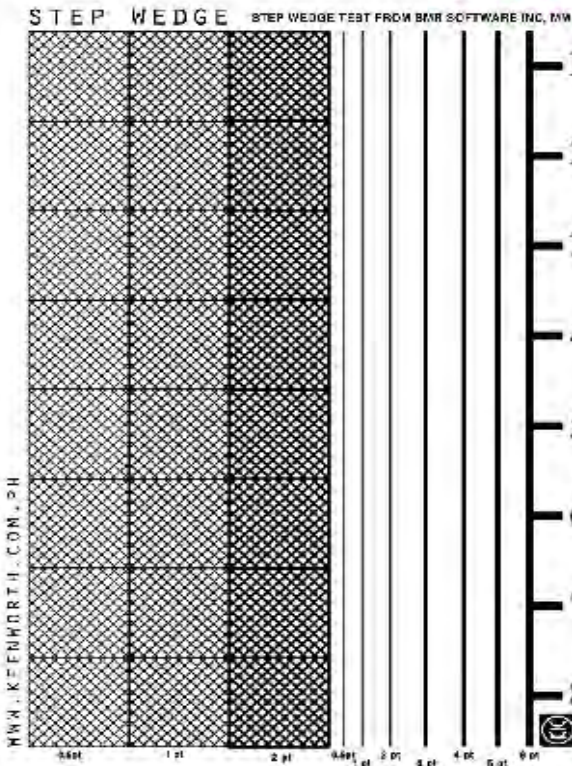


Figure 1: Step Wedge Test, is one of many exposure calculator films that is available in the market.

Step Wedge Exposure calculator is a resolution film of test pattern of diagonal, horizontal and vertical lines of various thickness point. This pattern is repeated up to 8 times so objective observation can be made between the series of exposures, known as an exposure step.

Proper exposure test helps evaluate stencils quality in determining the best balance between stencil hardness (durability) and its copying properties (resolution, mesh bridging and edge definition).



Figure 1: Step Wedge Test: sample copied from SMR Software Inc., MN

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STEP 1 STEP WEDGE EXPOSURE PROCEDURE

TIME:
1ST MINUTE



After the first minute exposure move the card board cover to show the next set.



Move the cardboard cover so that the first line (#8) is showing. Expose the uncovered area for your exposure time setting (i.e. 1minute).

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STEP 2 STEP WEDGE EXPOSURE PROCEDURE

TIME:
2ND MINUTE

CARD BOARD

← ← ← ← SLIDE TO NEXT SET

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Once you are done with your first exposure, Move the cardboard cover to expose the next line. Expose the new uncovered area for the same exposure time (i.e. 1minute), which is both line 8 + line 7.

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STEP 3 STEP WEDGE EXPOSURE PROCEDURE

TIME:
3RD MINUTE

CARD BOARD

← ← ← ← SLIDE TO NEXT SET

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Now you are done with your first and second exposure, Move the cardboard cover to expose the next line. Expose the new uncovered area for the same exposure time (i.e. 1minute), which is line 8 + line 7 + line 6.

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STEP 4 STEP WEDGE EXPOSURE PROCEDURE

TIME:
4TH MINUTE

CARD BOARD

SLIDE TO NEXT SET

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Move the cardboard cover to expose the next line. Expose the new uncovered area for the same exposure time (i.e. 1minute), which is line 8 + line 7 + line 6 + line 5.

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STEP 5 STEP WEDGE EXPOSURE PROCEDURE

TIME:
5TH MINUTE

CARD BOARD

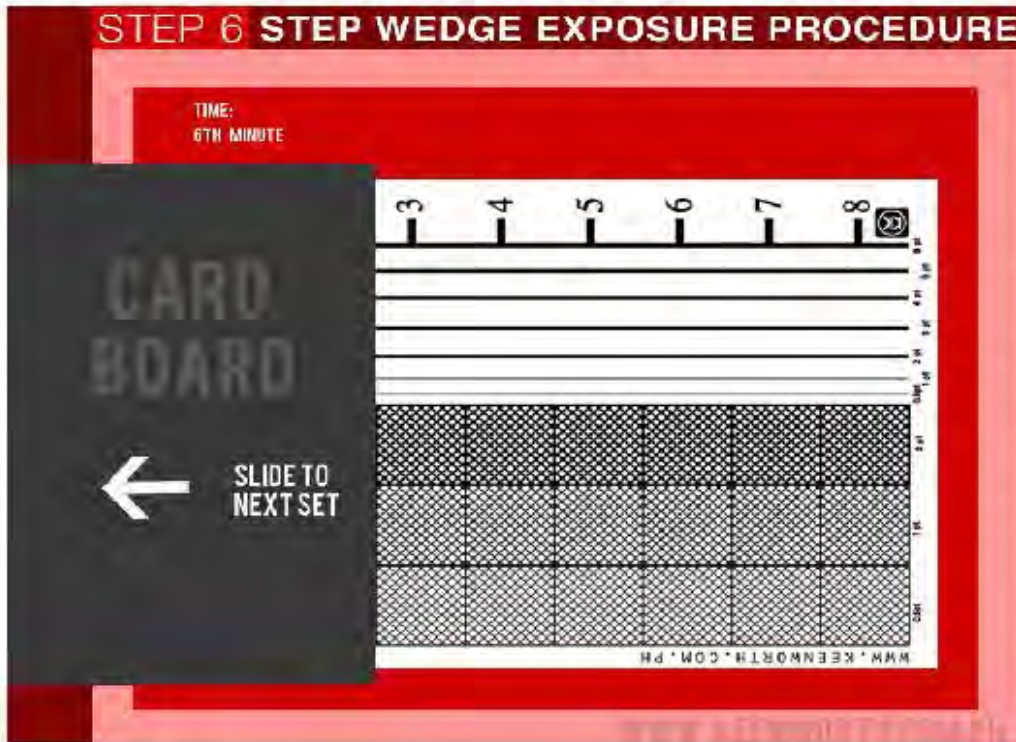
SLIDE TO NEXT SET

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Move the cardboard cover to expose the next line. Expose the new uncovered area for the same exposure time (i.e. 1minute), which is line 8 + line 7 + line 6 + line 5 + line 4.

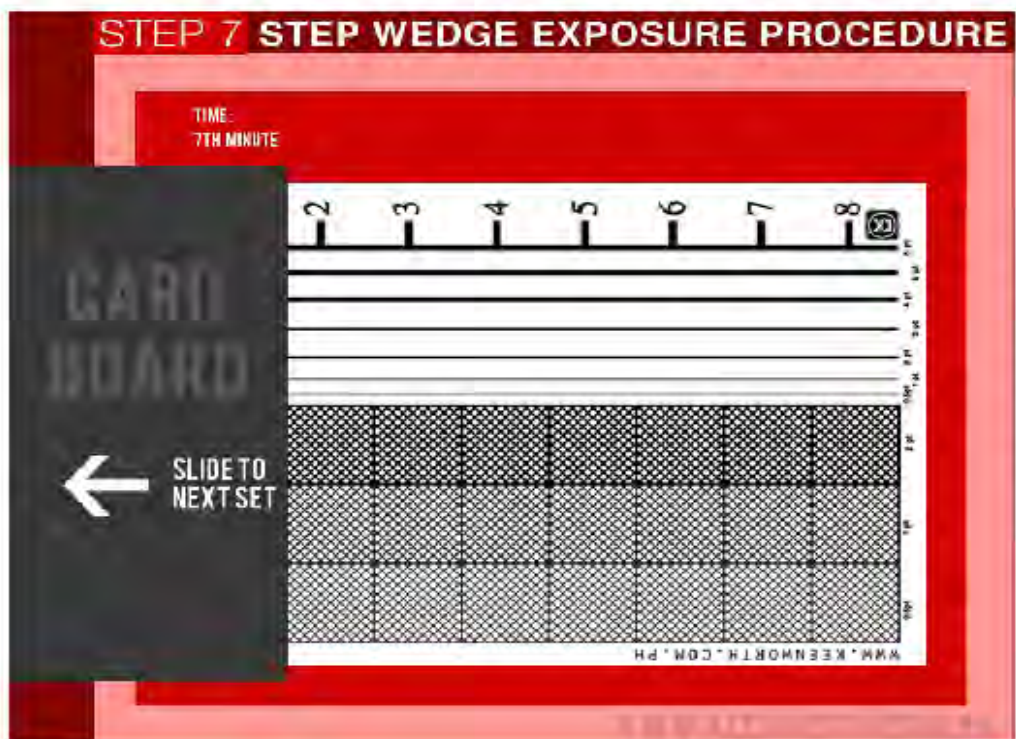
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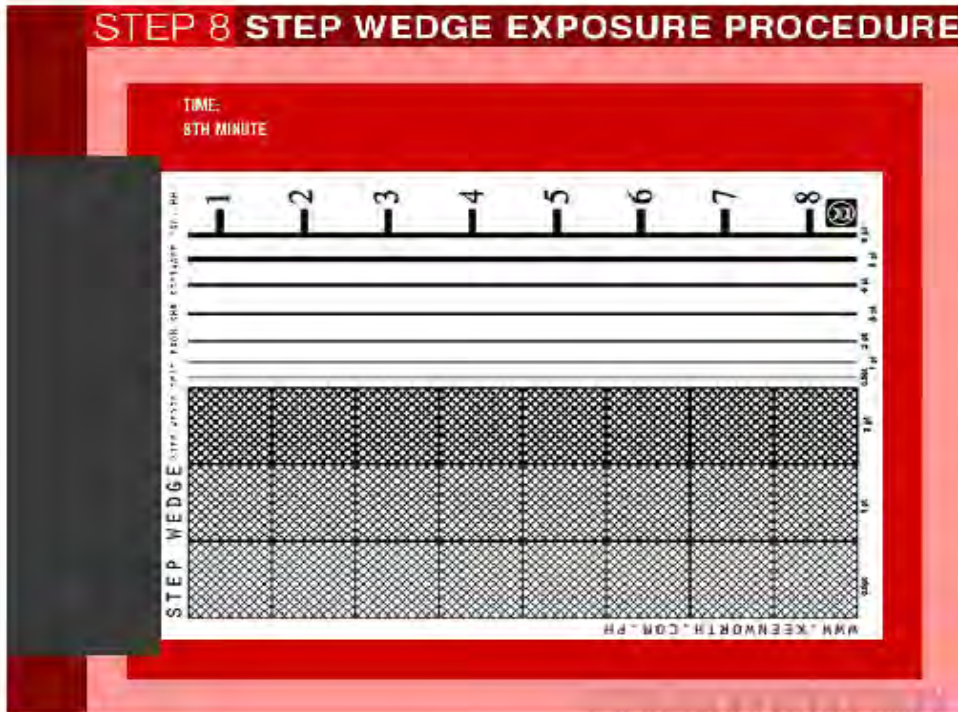
Move the cardboard cover to expose the next line. Expose the new uncovered area for the same exposure time (i.e. 1minute), which is line 8 + line 7 + line 6 + line 5 + line 4 + line 3.

Stencil Exposure Test Procedure
 VIA STEP WEDGE TEST



Move the cardboard cover to expose the next line. Expose the new uncovered area for the same exposure time (i.e. 1minute), which is line 8 + line 7 + line 6 + line 5 + line 4 + line 3 + line 2.

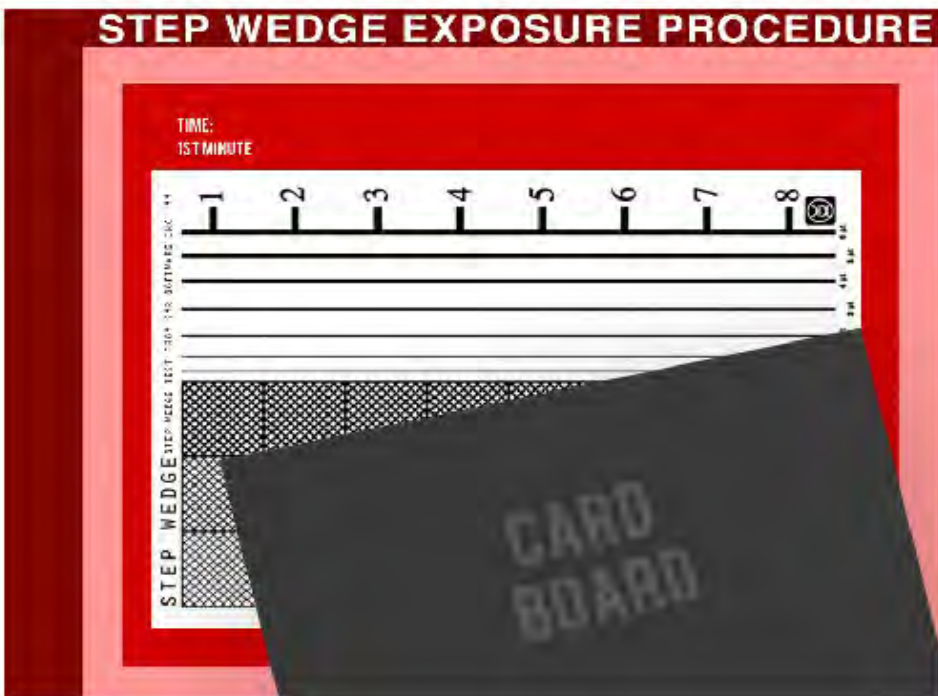
Stencil Exposure Test Procedure
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Once you are done with all your exposure, remove the cardboard cover to expose the last line. Expose the last area for the same exposure time (i.e. 1minute), which is line 8 + line 7 + line 6 + line 5 + line 4 + line 3 + line 2 + line 1.

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Here you will have a screen with 8 different exposure areas on it.

i.e.: If you used 1 minute for each of these exposures, then the screen would have a 1 minute (for line 1), 2 minutes (for line 2), up until 8 minutes (for line 8).

i.e.: if you used 30 seconds for each of these exposures, then the screen would have a 30 seconds (for line 1), a 60 seconds (for line 2), and up to 240 seconds (for line 8 / 30 secs x 8).

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A REMINDER

1. Proper exposure is affected by dynamic variables, hence frequent exposure calibrations are required to maintain exposure control and to assure quality control.
2. Exposure test should be done for each mesh count and whenever changing mesh, emulsion, coating technique, exposure lamps and distance.
3. Challenging media, such as aggressive printable adhesives and solvent-based inks, abrasive ceramic and glass frit inks, as well as water-based and discharge inks could affect exposure process.

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