

# SAATI 21 Step Guide

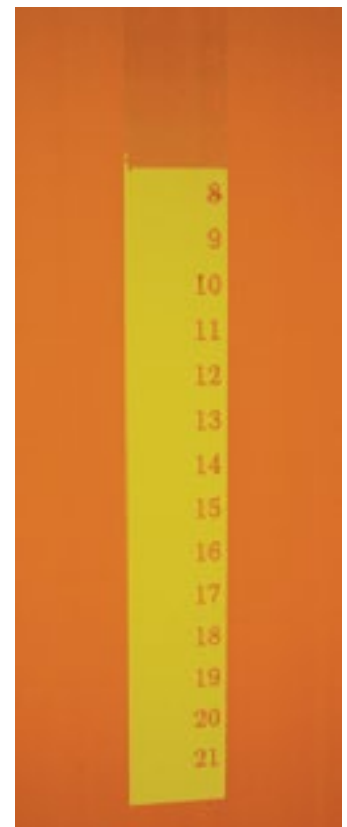
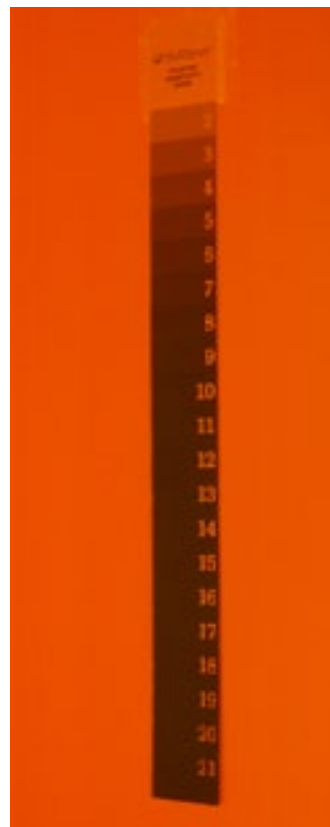
The All-Purpose Tool to Dial in Perfect Exposure for Repeatable High Quality, Durable Stencils



This all-purpose precision exposure guide can be applied to all stencil types before imaging and/or exposure to estimate and standardize the necessary stencil curing time accurately and quickly.

The exposure guide is made of twenty-one increasingly dark swatches of continuous tone, filtering the quantity of light that penetrates it.

Light passes through the guide and begins to expose the emulsion underneath. If enough light hits the guide, the emulsion under the darker swatches begins to cure enough that they will adhere at washout.



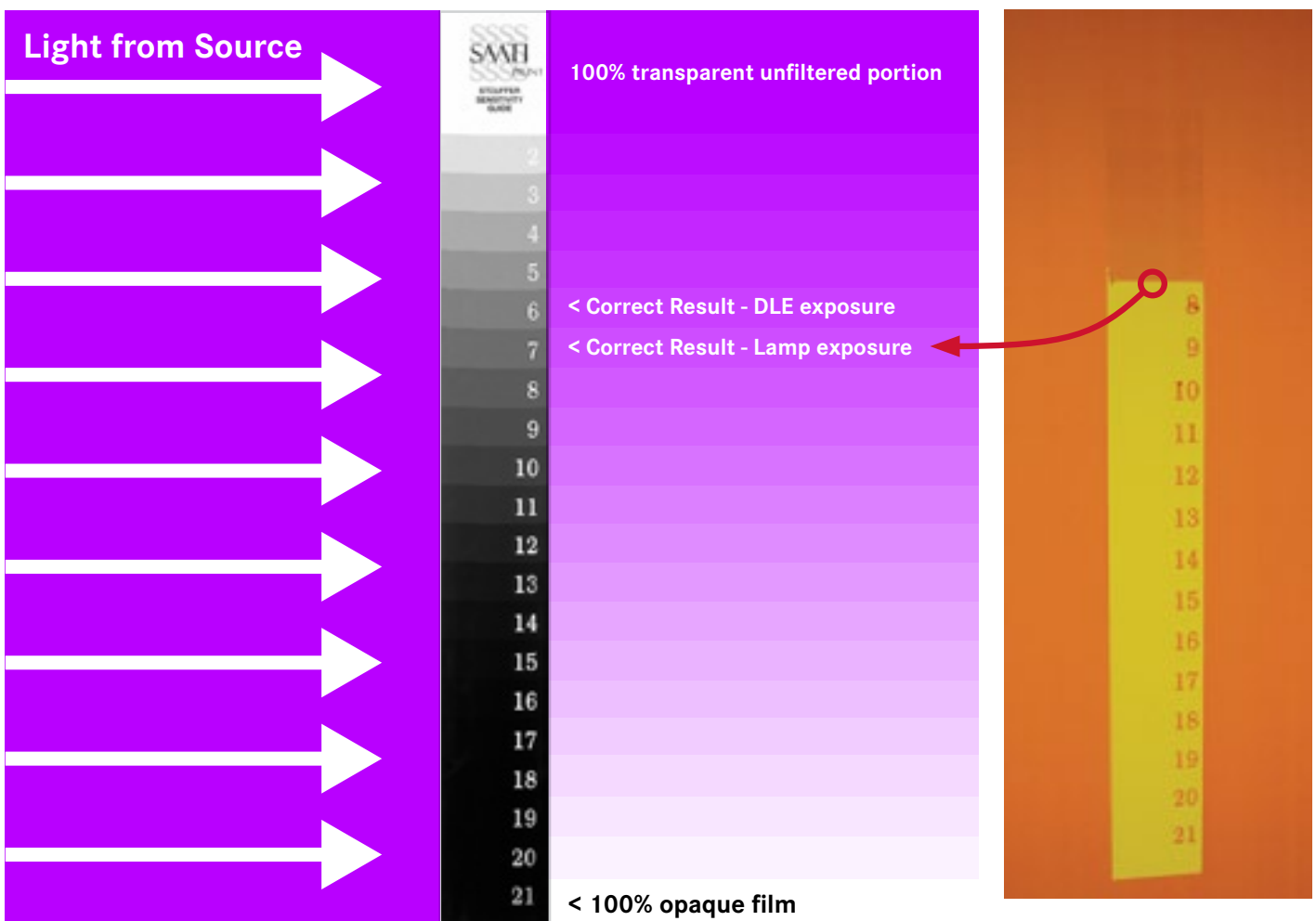
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If **seven steps** of emulsion adhere during development, this means that the unfiltered portion of the emulsion at the top of the guide (which represents the unblocked image area) has received 8.5 times more light than the step seven filtered portion.

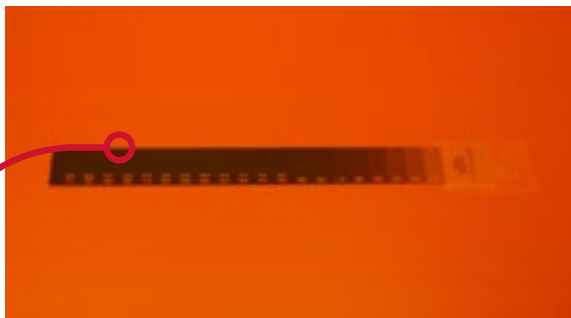
For many emulsion products shot with an external lamp with film or an ink/waxjet, this level of curing is sufficient to reduce the occurrence of pinholes and also will not cause loss of detail due to overexposure.

The same can be said for a result of **six steps** when using **direct light exposure** like the SAATI LTS or CST equipment.

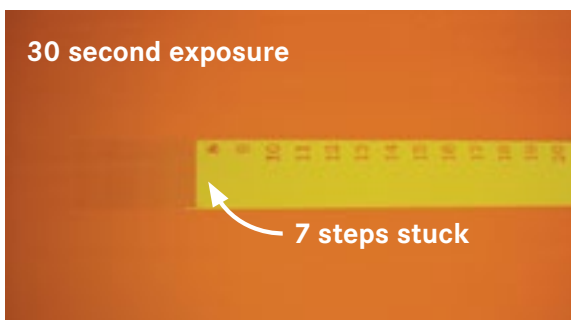


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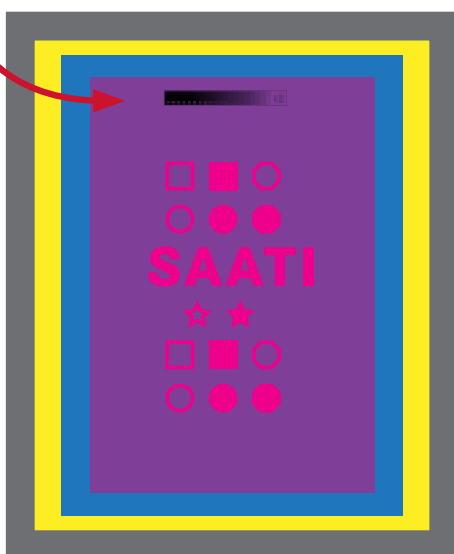
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1. **Tape** 21-step pattern to the unexposed emulsion, **inside** the exposure area but **outside** the image area and place in vacuum frame or self-contained exposure unit



2. **Expose As Usual**
3. Develop screen evenly, applying equal water spray to the image and the test strip. If correctly exposed, 7 steps stick and **the rest falls off**  
More steps = overexposure  
Fewer steps = underexposure



**inside** the exposure area



**outside** the image area

If you expose and develop but do not achieve the correct number steps, there is a simple chart that you can follow to get the correct result, without even performing a second test.

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## Corrections

To increase exposure by	Multiply exposure by
1 step	1.4x
2 steps	2.0x
3 steps	2.8x
4 steps	4.0x

To decrease exposure by	Multiply exposure by
1 step	0.70x
2 steps	0.50x
3 steps	0.33x
4 steps	0.25x

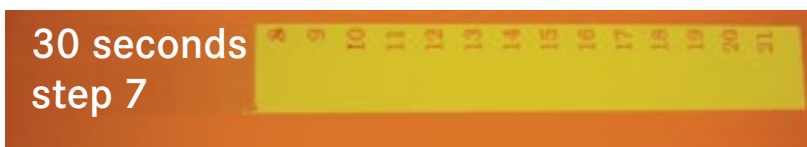
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## Over Exposure Example



**Step 9** - 60 seconds  
Over-exposed.  
multiply exposure time by .5  
 $60 \times 0.5 = 30$  seconds



**Step 7** - 30 seconds  
Just about correctly exposed.  
This time appears to be in the range to reach step 7.

All results depict SAATI Grafic PS Red exposed with 6kW exposure lamp

Decrease by	Multiply by
1 step	0.70
2 steps	0.50
3 steps	0.33
4 steps	0.25

**Step 9 x 0.50 = Step 7**

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## Under Exposure Example



**Step 4** - 10 seconds  
Slightly under exposed.  
multiply exposure time by 2.8  
 $10 \times 2.8 = 28$  seconds



**Step 7** - 30 seconds  
Just about correctly exposed.  
This time appears to be in  
the range to reach step 7.

All results depict SAATI Grafic PS Red exposed with 6kW exposure lamp

Increase by	Multiply by
1 step	1.4x
2 steps	2.0x
3 steps	2.8x
4 steps	4.0x

**Step 4 x 2.8 = Step 7**

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## Advanced Uses

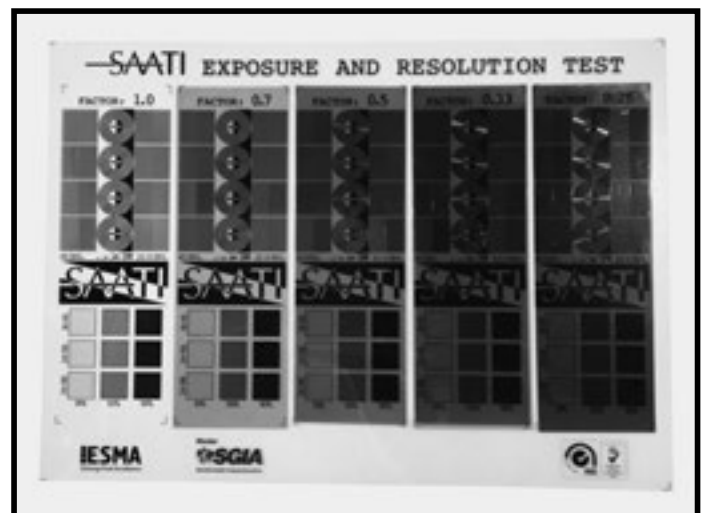
When you record the correct exposure times for each of your products at different coating thicknesses, you will have a valuable tool that will save your time, product and money.

If you expose several stencils for the same amount of time but find some overexposed or details falling out, this can suggest an inconsistencies with your coating thicknesses.

You may find that a different step result produces better prints for a particular product you are using.

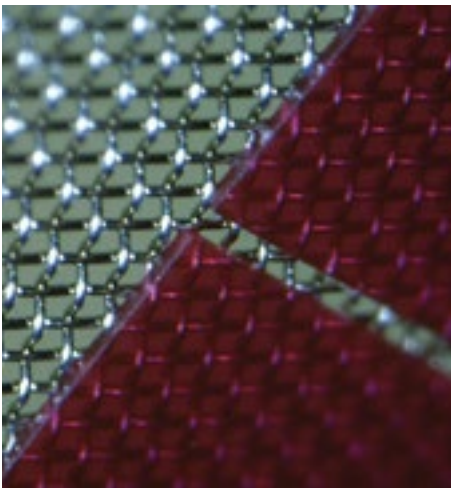
The 21 step guide is useful in that you can determine the optimum result taking into account different cure levels, when used with the **SAATI Exposure Calculator**.

You can pick any value on the step guide, but for most products, 7 steps (6 with DLE) is the preferred cure level.

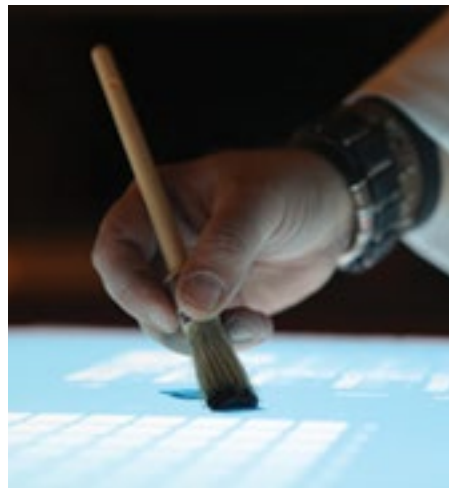


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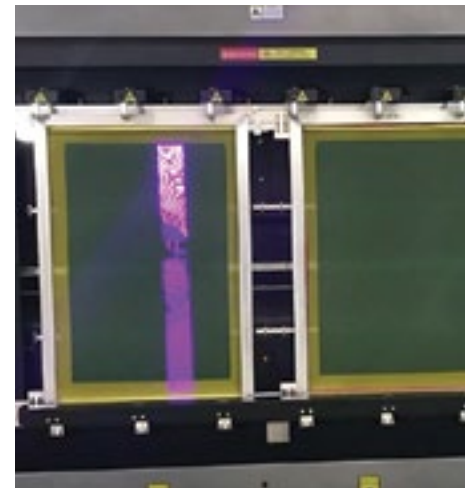
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**Correct Exposure maximizes image quality and stencil durability**



**Correct Exposure minimizes the presence of pinholes that add to set up time**



**Create an archive of instructions for every emulsion & thickness combo - infinitely repeatable high quality results**