

# Printing Epson Printer Profiling Test Charts in Mac OS 10.6.x

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## **Introduction:**

The last stable Macintosh/Adobe/Epson printing path was Mac OS 10.4.11 and Photoshop CS3. Since that time multiple upgrades to the Mac OS and Photoshop have significantly compromised our ability to custom profile Epson printers through the Epson printer driver. While Photoshop CS4 and CS5 can still accurately print with ICC printer profiles, it has become difficult to correctly render profiling test charts. That is, to send test charts through the print path without any colour management (transformation) being applied to the file. The growing permutations of Mac OS, Photoshop version, and Epson driver version renders it no longer possible to stipulate a single correct workflow for printing custom printer profiling test charts from Photoshop on a Macintosh computer.

## **There are five possible solutions:**

1. Purchase and print from a RIP such as MegaRIP (<http://www.serendipity.com.au>) and therefore bypass the Mac OS (ColorSync), Photoshop and Epson printer drivers that are causing the problem.
2. Print from Photoshop CS3 and Mac OS 10.4.11 or 10.5.8,
3. Print from Photoshop CS3 or CS4 on a Windows computer running XP or Windows 7.
4. Print through Adobe's Colour Printer Utility ([http://kb2.adobe.com/cps/834/cpsid\\_83497.html](http://kb2.adobe.com/cps/834/cpsid_83497.html)). Version 1.0 of this wonderful utility unfortunately lacks page layout options, rendering it less useful with test charts that require accurate placement and/or without cropping.
5. Apply a Null Transformation to the Test Chart in the absence of a No Colour Management setting in Photoshop CS5's print dialogue. Note that a scaling bug in Apple's Preview application in 10.6.4 renders its Null transformation of test charts inaccurate and should be avoided.

## **Accurate Null Transformations through Photoshop CS5's print dialogue are possible when three conditions are met:**

1. The correct Epson printer driver is installed and updated for Snow Leopard 10.6.x
2. The ColorSync Utility default printer profile is set to 'a known profile' (e.g. sRGB).
3. The 'known profile' (e.g. sRGB) is assigned to the test chart.

**These notes will help you to verify that the correct Epson printer driver and driver version for your printer is installed for Mac Snow Leopard (OS 10.6.x) and that the Mac OS ColorSync Utility is correctly configured. There is also an explanation of how to accurately print an ICC printer profiling test chart from Photoshop CS5, and a visual method for identifying correctly printed test charts.**

## Installing and Updating the Leopard Driver:

When printing from Snow Leopard (10.6.x) you must first verify that the correct Leopard (10.5) compatible Epson driver is installed. Then you must download and install Epson's 'Common Updater ver 7.00' from [www.epson.com.au](http://www.epson.com.au) 'support and drivers' page under the listings for your printer. This is only necessary when working with Snow Leopard 10.6.x

Epson's 'Common Updater ver 7.00' enables the Leopard driver to function correctly under Snow Leopard 10.6.x.

The following procedure ensures the correct printer driver is installed under 10.6.x

### Uninstall Older Drivers:

Before installing a new driver, always Uninstall any older drivers. The best way to do this is to start to reinstall your existing driver but instead select Uninstall from the installer's drop down menu (whose default setting is Easy Install).

**If an Uninstall option isn't available, you will need to go into your 'Mac HD/Library/Printers' folder and delete the Epson folder. Also delete the Epson printer from your User/Library/Printers' folder.**

### Download and Install Leopard Driver:

Download your Epson printer driver for LEOPARD (10.5.8) from Epson's Support and Download page at <http://www.epson.com.au> Note you have to stipulate Mac OS 10.5 when asked prior to downloading this driver from the Epson site.

### Download and Install Snow Leopard Common Updater:

Once the driver is installed download and install the Common Updater Ver. 7.00 which is now available on the same 10.5.8 page above. Or you can obtain the Common Updater from the above Epson support page when you select your printer and specify Mac OS 10.6.

### Check you have Correctly Installed a genuine Epson Printer Driver:

Reconnect your printer and turn it on. Then go to your 'System Preferences/Print and Fax' pane and if it has not already self installed, click the '+ button' to identify the Epson printer and install it by choosing the Epson software from the 'Print Using:' selection in the 'Add Printer' dialogue box. If all has worked as it should, the icon for your printer in the Print & Fax preference pane should look like this when the correct Epson driver is installed.



**Correct**

Note, if by mistake you have installed a GutenPrint driver rather than a genuine Epson driver, the icon will look like this, it

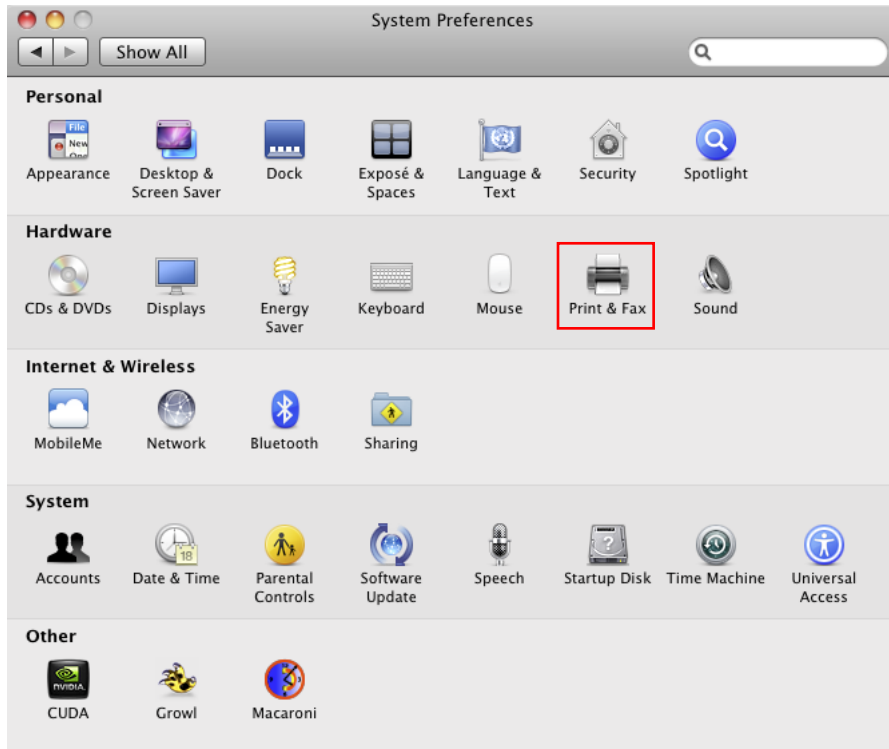


**Incorrect**

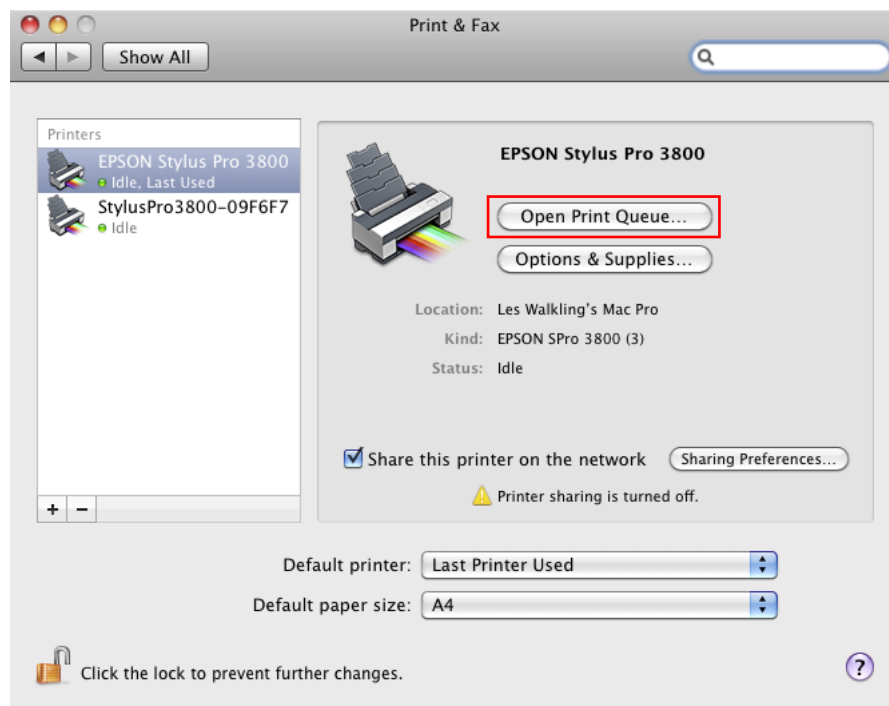
## Verifying your Epson Printer Driver is the Correct Version:

You also need to verify that you have installed the correct version of the Epson driver:

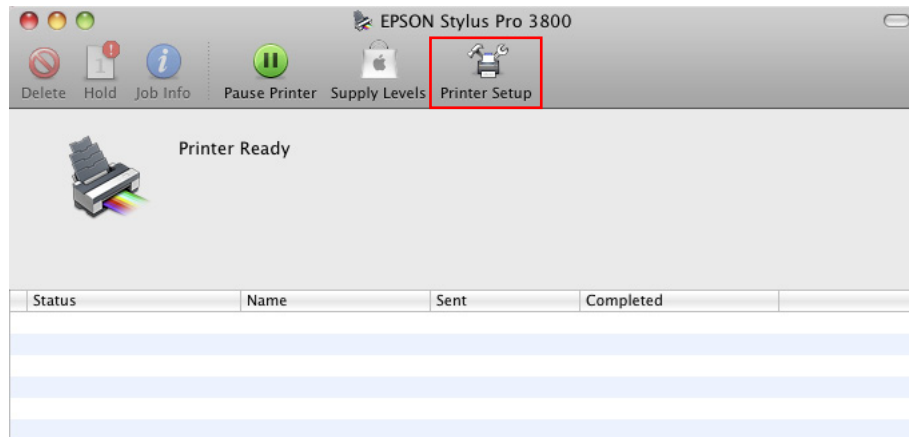
**A.** Open System Preferences/Print & Fax preference pane:



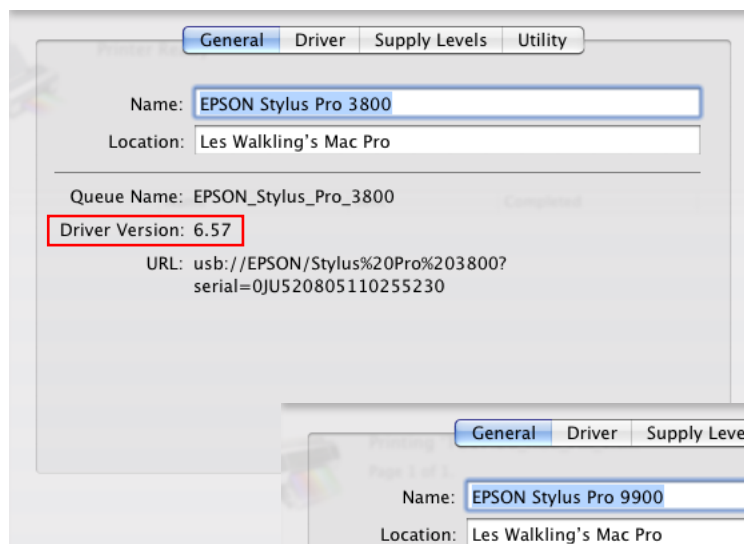
**B.** Select the printer and open the Epson Print Queue:



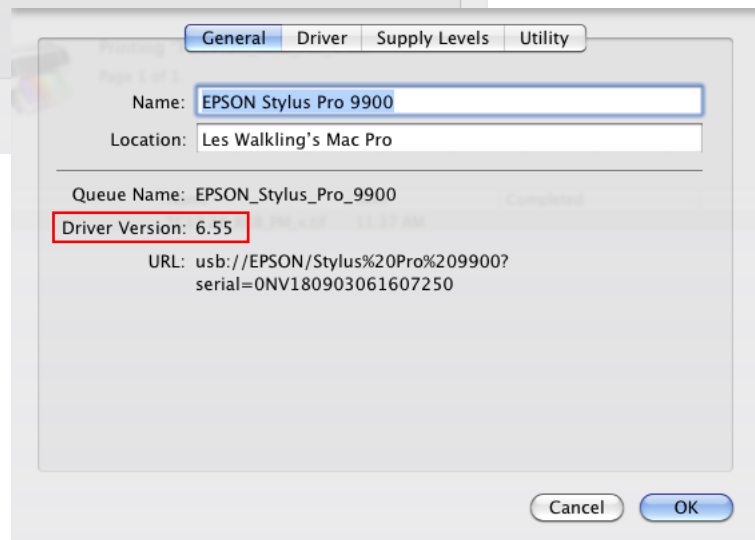
C. Select the Printer Setup icon from the menu bar:



D. Verify that the correct Driver Version is installed as follows:



x800 series printer



x900 series printer

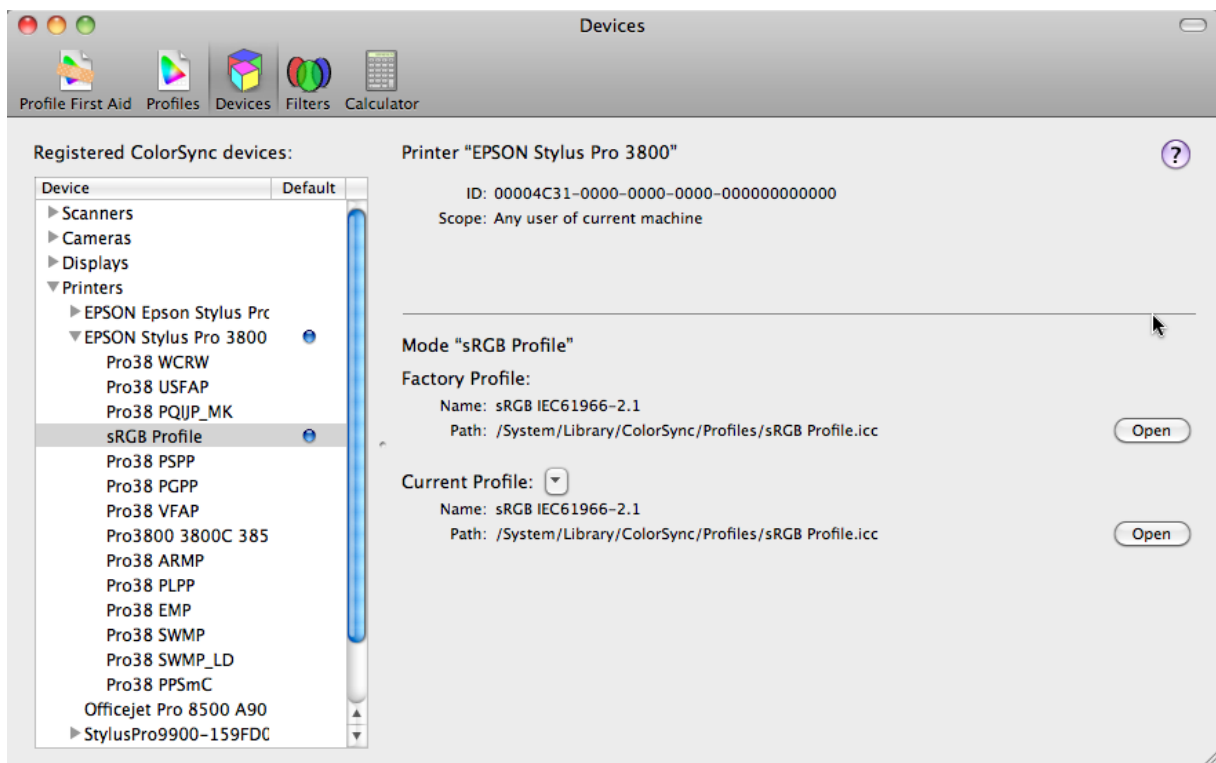
**Note: An x880 series printer requires Driver Version 6.60 to be installed.**

Remember to always uninstall older drivers using the Uninstall command in the driver installation options, before downloading and installing the correct driver version from the 'Support & Downloads' section of [www.epson.com.au](http://www.epson.com.au).

## Verifying the ColorSync Utility is correctly configured in 10.6.x:

Open the 'Applications/Utilities/ColorSync Utility' and select the 'Devices' tab to display all registered devices. A device is registered when it is first connected to the computer.

Select 'Printers' from the list of available devices, and then select your printer. For example the following dialogue shows an Epson 3800 printer is selected. The blue dots indicate the default profile for the selected printer. In 10.6 this is sRGB for the Australian driver.



## How the Snow Leopard/Photoshop/Epson print path was broken:

In earlier Mac OS, the ColorSync Utility selected one of Epson's default printer profiles, and the Epson printer driver loaded the same default profile in the Advanced Driver options. Selecting 'No Color Adjustment' in the driver's Color Control settings guaranteed a null transformation of the test chart data through the Epson driver. In other words, the numbers in the test chart file were faithfully passed to the printer without any alteration, which is a fundamental condition for accurate printer profiling.

In 10.6 this accord was broken. Photoshop CS4 was released before this change to the Mac OS print path was in place. When selecting 'No Color Management' in Photoshop CS4's print dialogue now meant that instead of a null transformation through the Epson printer driver, a 'forced' sRGB transformation took place. The test chart data was now assumed to be sRGB data and the Epson driver transformed it to the driver's default printer profile for the selected Media Type. At least that explains the observed and measured results. The transformed numbers in the test chart file unfortunately resulted in printer profiles with significant gamut distortion, reduced gamut volume and a non-colour managed workflow.

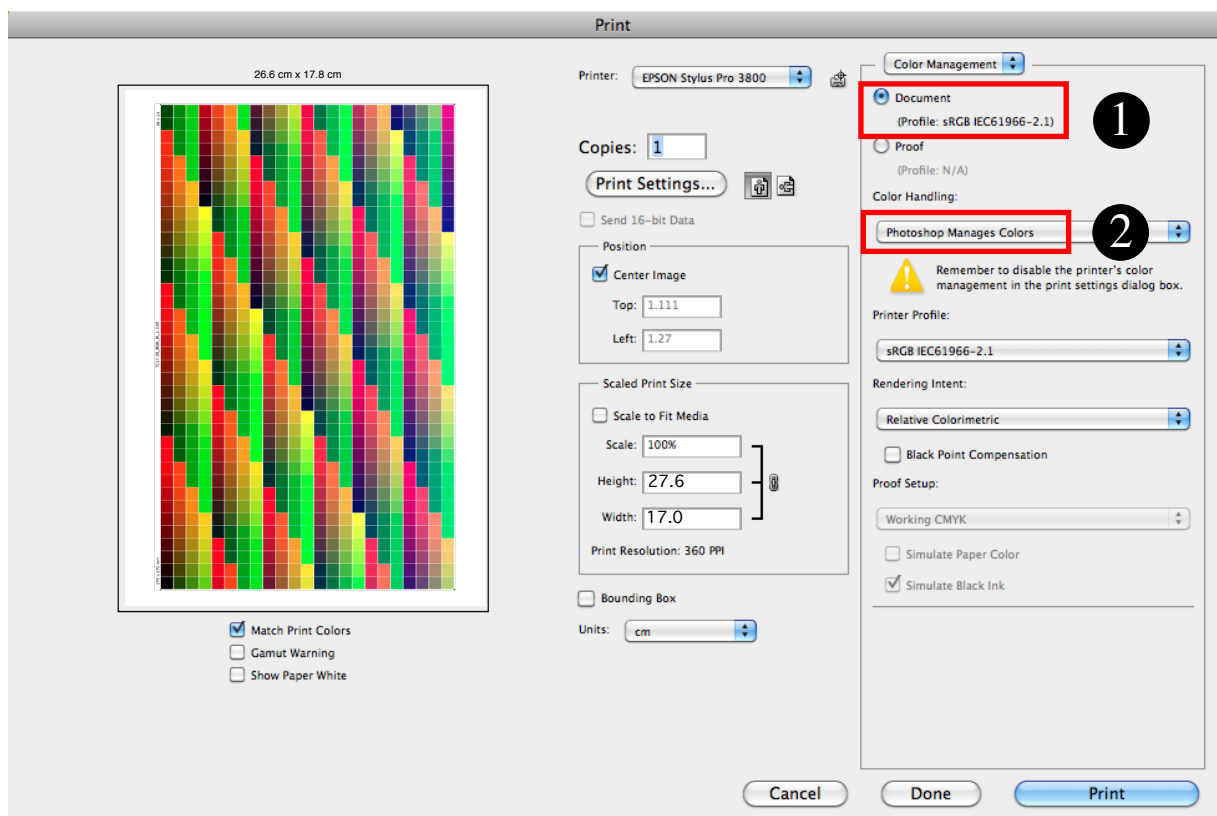
## Printing Test Charts from Photoshop CS5 in Mac OS 10.6.4 >:

1. Photoshop Edit/Assign Profile sRGB to the test chart.

2. Open the test chart in Photoshop CS5:

- Do not change the test chart's physical size or pixel resolution.
- Verify that the test chart's embedded profile (sRGB) has been preserved. **1**
- Perform a **Nozzle Check** to ensure there are no blocked ink jet nozzles.
- Print the test charts through the Photoshop Print dialogue box with

**Color Handling = Photoshop Manages Colors **2****

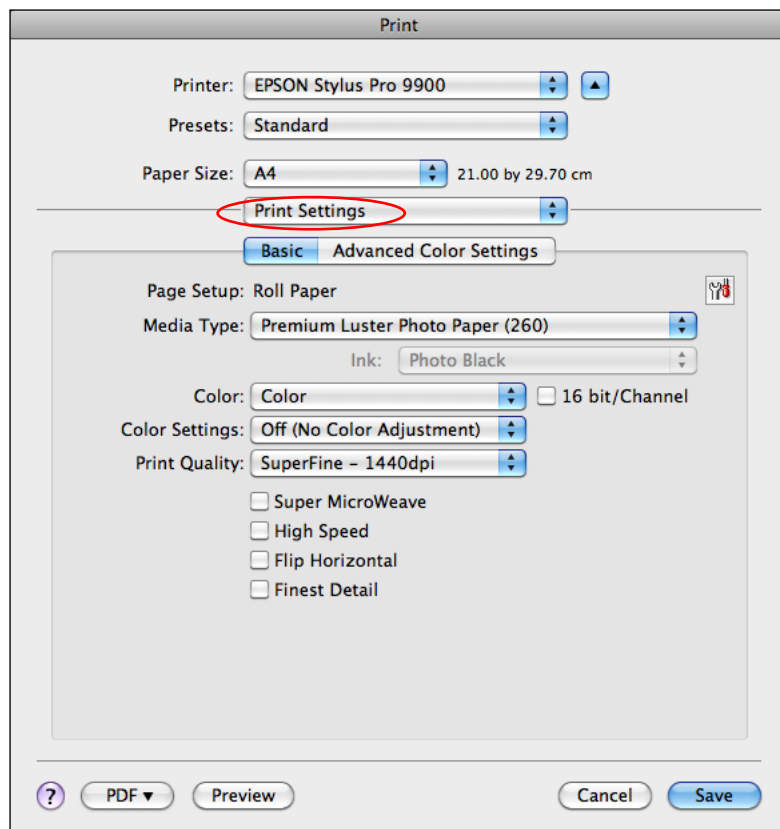
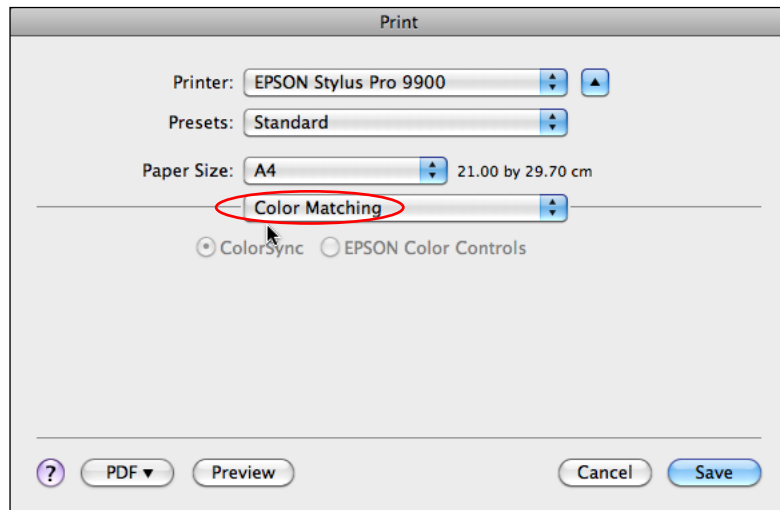


3. Verify your settings are as illustrated above before printing the test chart. That is:

- Document Profile = sRGB
- Color Handling = Photoshop Manages Colors
- Printer Profile = sRGB
- Rendering Intent = Relative Colorimetric
- Black Point Compensation = OFF

4. Click the 'Print Settings' button in Photoshop's Print Dialogue to access the Epson printer driver settings.

Verify that the Color Matching and Print Settings are setup correctly as follows:



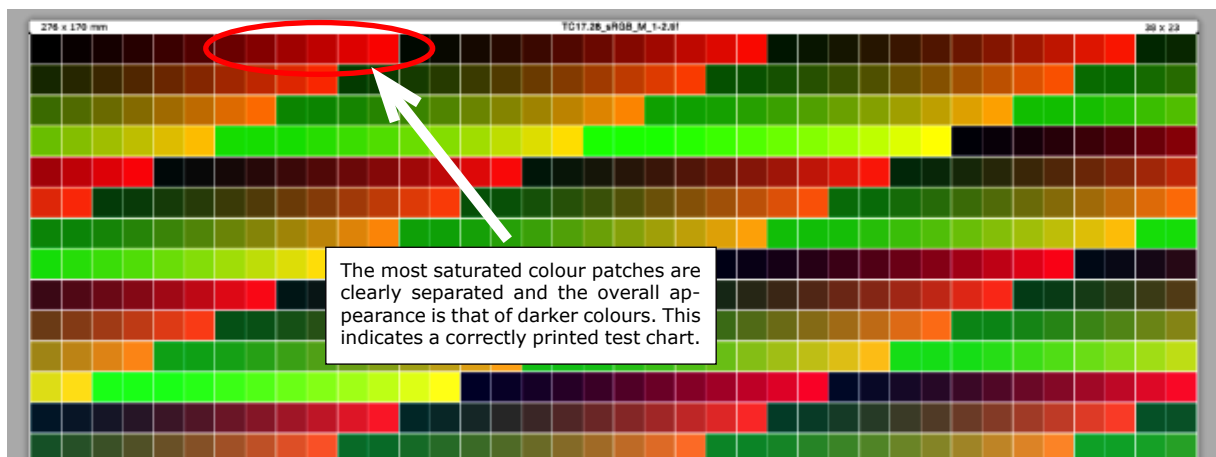
5. Click SAVE to exit and return to the Photoshop Print dialogue.

6. Click PRINT to print the test chart.

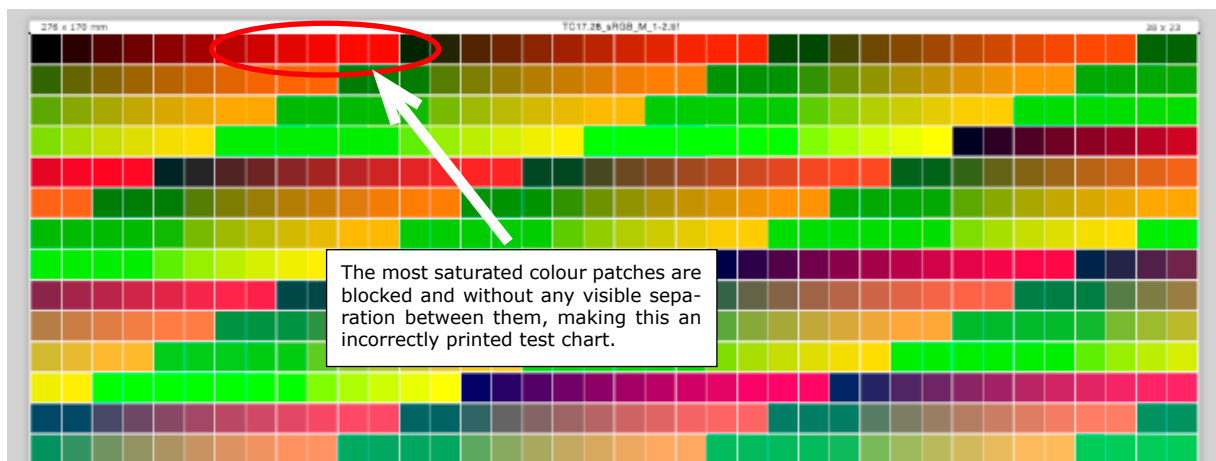
## Verifying Correct Test Chart Printing:

### How to verify that you have correctly printed the test chart:

The following printed test charts indicate how to distinguish between a correct and incorrectly printed test chart. Note that there is an obvious difference between each colour patch in the correctly printed test chart, but in the **incorrectly** printed test chart there is a lack of any differentiation between successive saturated colour patches. In particular examine the sequence of increasingly saturated red patches in the top left hand corner of test chart as circled in red in the following illustrations:



Correctly printed test chart.



Incorrectly printed test chart.

The overall appearance of a correctly printed test chart via an Epson printer driver is a darker and richer print, where as an incorrectly printed test chart will often appear quite colourful and vibrant, but on closer inspection the out-of-gamut colours (such as the lack of separation in the most saturated reds) will become apparent. This is an example of double profiling through the driver and Mac OS (ColorSync) combination and will result in incorrectly printed test charts, and subsequent inaccurate printer profiles.

Les Walking