

# HOW TO SELECT FILES FOR HP INDIGO EPM

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Enhanced Productivity Mode (EPM) is an HP Indigo technology that converts CMYK color to CMY. The operation takes place in the HP DFE RIP using proprietary color management. Basically, the black channel is simulated using the cyan, magenta and yellow channels. This amounts to a 33% gain in productivity on press. Deciding which print jobs are good candidates for EPM can amount to a lot of trial and error or outright guessing.

There are some rules of thumb to follow as well as some print and measure processes. The decision isn't as simple as comparing deltaE from CMYK to EPM. There is also a component of aesthetic value. Printers can be perceiving reproduced color differently from their customers. Yet another factor is the frequency in which mechanical consumables are replaced.

Assuming consistent reproduction and ignoring mechanical variations, here are some examples of good and bad candidates for EPM.

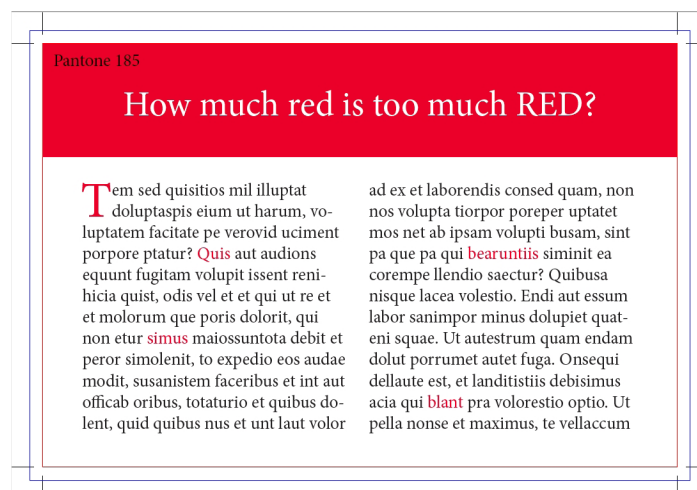


## EPM DOS

These files passed EPM evaluation.  
CMYK without heavy black values



Pantones with no black ingredient



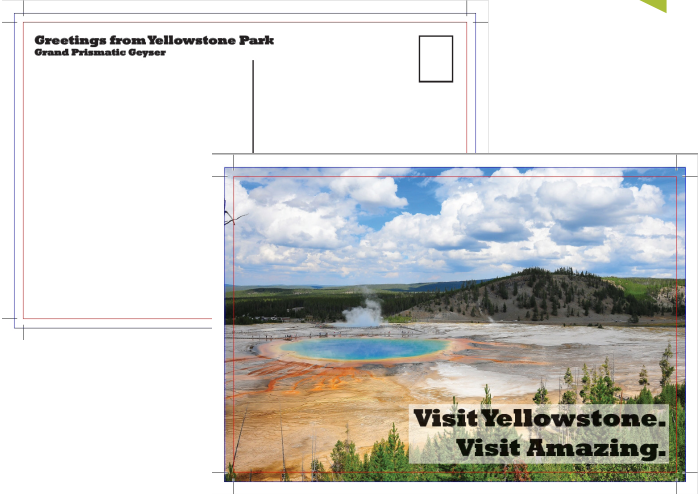
### EPM DON'TS

These files failed the EPM evaluation.  
Heavy shadows in the artwork

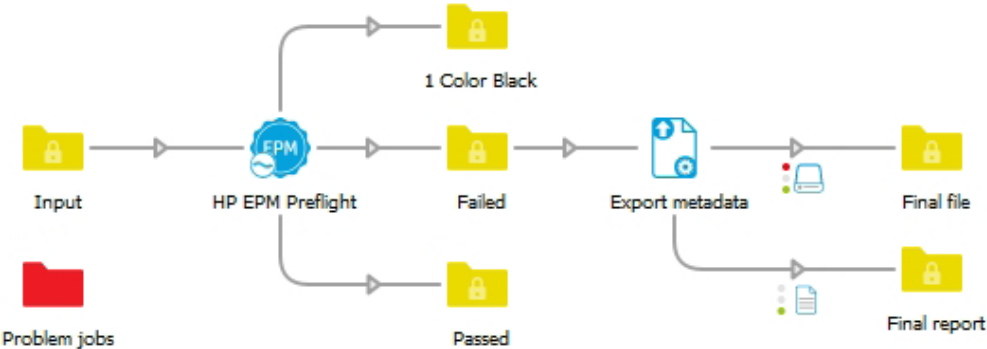


### EPM+

4/1 postcard or sell sheet



### WHAT DOES THE HP EPM PREFLIGHT MODULE DO?



The HP EPM Preflight Module leverages Enfocus Switch and PitStop Server technologies to sort files which are best suited for running as an EPM job. The configurator accepts PDF files only and performs a series of checks, which are customizable to the user.

### THE FILTERING OF THE FILES IS BASED ON EIGHT CHECKS THAT ARE PERFORMED IN THIS ORDER:

1. A check if the job has any color pages.  
If a job is using only black, it is not economical to run EPM as one click would become three.  
For jobs with higher page counts, a provision is made to check a sample of pages. This sample is defined by the user according to page range, percentage of pages or random pages.



2. A check for the presence of acceptable or unacceptable spot colors.  
Black list is the named spot colors that should not print EPM and fail the check. All other spot colors will pass.  
White list is the named spot colors that are allowed to print EPM and pass the check. All other spot colors will fail.  
White list plus safe colors is used to allow any spot color whose breakdown contains CMY and no K in addition to the spot colors that are listed.

Perform spot color check	Yes
Spot color check mode	White list plus safe colors
List of spot colors	EPMSpot
List of technical spot colors to be ignored	cut crease CutContour

3. A check for small black items that may be difficult to print in EPM (small black text and thin black lines).

This check basically looks for items which may be a registration challenge due to their size. The settings are adjusted to rule out what could be trim and fold lines within the PDF trim box. Also, the size of text which is acceptable can be adjusted to the mechanical limitations of the press. For instance, 6 pt black text may run acceptably on one device, where 8 pt text is appropriate for another.

<b>Perform small black objects check</b>	Yes
<i>Smallest black line thickness (default mm)</i>	0.2mm
<i>Smallest black text (pt)</i>	6

4. A check for a high amount of black content pages. Generally speaking, if a job has a certain amount of one-color black pages, it would no longer be efficient to run the job as EPM. The settings in this section allow users to fine tune which jobs to fail the check. When the intent is to run the job EPM+, the “Convert black pages to DeviceGray” setting should be set to Yes.

<b>Perform black pages check</b>	Yes
<i>Fail EPM if</i>	the percentage of black pages is above the fail value
<i>Fail value</i>	33
<i>Ignore small color areas</i>	Yes
<i>Percentage of the page area</i>	5
<i>Convert black pages to DeviceGray</i>	No

5. A check for the use of rich black.

These settings allow the user to customize each of the C, M and Y values for Rich Black that should be acceptable to convert to CMY and run as an EPM job. There is also a setting to fail the page if a certain percentage of the coverage is Rich Black.

<b>Perform rich black check</b>	Yes
<i>Minimum cyan value</i>	30
<i>Maximum cyan value</i>	60
<i>Minimum magenta value</i>	0
<i>Maximum magenta value</i>	0
<i>Minimum yellow value</i>	0
<i>Maximum yellow value</i>	0
<i>Fail EPM if the rich black coverage is above (%)</i>	10

6. A check for a high ink coverage.

This checks for a maximum ink coverage value to determine pass or fail. This section also has a setting for ignoring small areas. For example, if an area of only 20 square millimeters is above the maximum ink value of 320%, the job will pass this check.

<b>Perform ink coverage check</b>	Yes
<i>Maximum ink coverage (%)</i>	320
<i>Ignore areas smaller than (default mm)</i>	20mm

7. A check of the deltaE against the EPM color space. With this setting, the maximum deltaE is set. A device link must be created using the HP Device Link Creator, then selected for use in this check. A setting to ignore small areas can be specified.

8. A check of the deltaC against the EPM color space.

With this setting, the maximum deltaC is set. A device link must be created using the HP Device Link Creator, then selected for use in this check. A setting to ignore small areas can be specified.

<b>Perform deltaE check</b>	Yes
<i>DeltaE CMYK device link</i>	
<i>DeltaE RGB device link</i>	
<i>Maximum deltaE deviation</i>	6
<i>Ignore areas smaller than (default mm)</i>	20mm
<b>Perform deltaC check</b>	Yes
<i>DeltaC CMYK device link</i>	
<i>DeltaC RGB device link</i>	
<i>Ignore black text</i>	Yes
<i>DeltaC value</i>	6
<i>Ignore areas smaller than (default mm)</i>	20mm

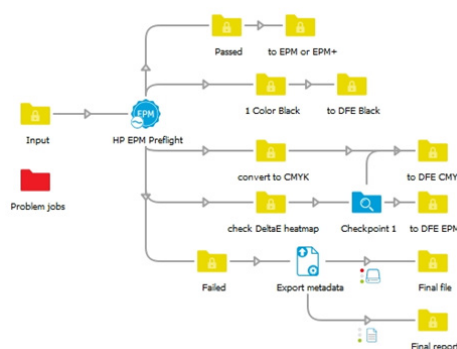
When the file fails a test, it is immediately rejected for EPM. It is only accepted when it has passed all tests.

## OUTGOING CONNECTIONS

Properties	
Property	Value
Name	
Description	
Corner angle	0
Color	Gray
Hold jobs	No
Report dataset name	HP EPM Report
Preflight result type	Failed one of the EPM checks
<i>Failed spot color check</i>	Yes
<i>Failed small objects check</i>	Yes
<i>Failed black pages check</i>	Yes
<i>Failed rich black check</i>	Yes
<i>Failed ink coverage check</i>	Yes
<i>Failed deltaE check</i>	Yes
<i>Failed deltaC check</i>	Yes
Private data key	EPM

Report and log data are captured and can be used downstream of the EPM Module app as text file or PDF. The preflight results have three possible outcomes. Ideally, there should be a outgoing connection to carry files of each result.

- Job contains only black – no other checks are performed
- Job passed all checks – this job is suitable for EPM or EPM+ and can be submitted to the DFE
- Job failed one of the checks – it's possible to send jobs to varied outgoing connections based on which test was failed.



## OTHER CONSIDERATIONS

### DEVICE LINK CREATOR

The HP Device Link Creator needs to be installed separately from Switch, PitStop Server and EPM Module. There are four default device links provided with the HP Indigo EPM Kit. The device link creator is used to create a profile based on the settings in a specific existing DFE. Follow the instructions in the user guide for the HP Indigo EPM Preflight Solution v2. There, details can be found on using this application to create device links. This is an important step in being able to accurately assess files for the deltaE and deltaC checks.

### ABOUT COLOR SHIFT

There is a slight reduction in color gamut and Pantone color representation can be affected depending on the amount of black used in a typical CMYK conversion. This concern is reduced by using accurate, current profiles in the deltaE and deltaC settings. It is also alleviated by trial and error in keeping an effective black list or white list. Refer to the user guide, section 7.1, for specifics of defining deltaE and deltaC values.

### MULTIPLE INSTANCES OF THE APP

It is possible to use multiple instances of the app in one flow. This could be due to the need for varying settings based on the type of print job that is being checked. For performance considerations, performing the ink coverage and deltaE/deltaC checks in separate instances of the app helps to alleviate the chance of large jobs exceeding the time-out setting. Another reason to divide certain checks into different sections of a flow is in the case of wanting some checks done before imposition and others afterwards.

## CONTACT US

### FOR A DEMONSTRATION OF THE HP INDIGO EPM PREFLIGHT SOLUTION OR TO CONTACT A RESELLER



<https://www.enfocus.com/en/a/get-a-demo-of-the-hp-indigo-epm-preflight-solution>

### WEBSITE

[www.enfocus.com](http://www.enfocus.com)