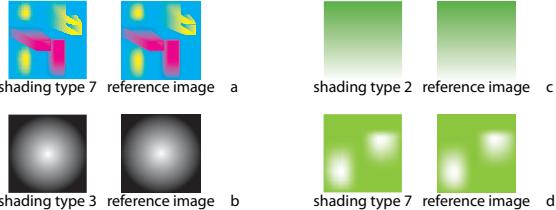


The pages contain test patches with essential features of PDF/X-4 (ISO 15930-7).

Errors are identified either with a cross or by a deviation from the integrated reference images.

Personalized test pages are required for Ghent PDF Output Suite 5.0 Conformance Certification!!!

GWG 6.0 - Use of shadings

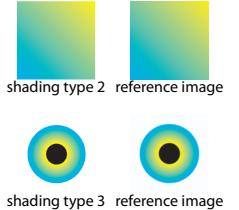


shading type 7 reference image a shading type 2 reference image c
shading type 3 reference image b shading type 7 reference image d

The shadings should look like the reference image

03 Nov 2005 Ghent PDF Workgroup © www.gwg.org 6.0

GWG 6.1 - Use of shadings



shading type 3 reference image a shading type 2 reference image c
shading type 2 reference image b shading type 3 reference image d

The shadings should look like the reference image

03 Nov 2005 Ghent PDF Workgroup © www.gwg.org 6.1

GWG 1.1 - CMYK Overprint Mode



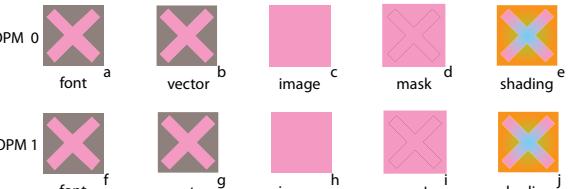
OPM 0
Rect (overpr) 0 / 0 / 10 / 50
Cross 90 / 10 / 90 / 0

OPM 1
Cross (overpr) 90 / 10 / 90 / 0
Cross 0 / 0 / 10 / 50
Rect 90 / 10 / 10 / 50

If an X appears the Overprint Mode (OPM) is not respected.

27 Dec 2006 Ghent PDF Workgroup © www.gwg.org 1.1

GWG 1.0 - CMYK Overprint Test



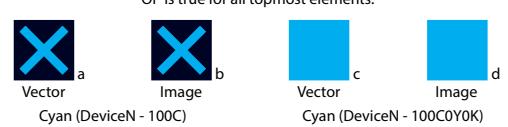
OPM 0
font a vector b image c mask d shading e

OPM 1
font f vector g image h mask i shading j

08 Dec 2005 Ghent PDF Workgroup © www.gwg.org 1.0

GWG 19.0 – DeviceN Overprint (Black)

OP is true for all topmost elements.



a: Vector Cyan (DeviceN - 100C)
b: Image CMYK Black
c: Vector Cyan (DeviceN - 100C0Y0K)
d: Image CMYK Black

a + b: must be rendered to solid Black (100C100K) rectangles
A faint X means, that OP is not honored (or image was converted to DeviceCMYK for b)

c + d: must be rendered to solid Cyan rectangles
c: X means, that color space might have been converted to DeviceCMYK upfront (OPM 1)
d: X means, that 0% Channels might have been ignored or color was converted

12 Dec 2012 © Ghent Workgroup, www.gwg.org 19.0

GWG 19.1 – DeviceN Overprint (Yellow)



a: Vector Cross: Cyan (DeviceN - 100C)
b: Image Overprinting: 0C0M100Y0K
Reference: 100C0M100Y0K (Green)

c: Vector Cross: Cyan (DeviceN - 100C0Y0K)
d: Image Overprinting: 0C0M0Y0K
Reference: 100C0M0Y0K

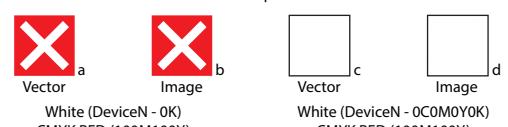
a + b: must be rendered to solid Green rectangles
Cyan X means, that OP is not honored (or image was converted to DeviceCMYK for b)

c + d: must be rendered to solid Cyan rectangles
c: X means, that color space might have been converted to DeviceCMYK upfront (OPM 1)
d: colored X means, that 0% Channels might have been ignored or color was converted

12 Dec 2012 © Ghent Workgroup, www.gwg.org 19.1

GWG 19.2 – DeviceN Overprint (White)

OP is true for all topmost elements.



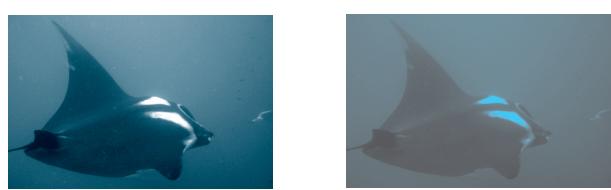
a: Vector White (DeviceN - 0K)
b: Image CMYK RED (100M100Y)
c: Vector White (DeviceN - 0C0M0Y0K)
d: Image CMYK RED (100M100Y)

a + b: must be rendered to solid Red rectangles
White X means, that OP is not honored (or image was converted to DeviceCMYK for b)

c + d: must be rendered to solid White rectangles
c: X means, that color space might have been converted to DeviceCMYK upfront (OPM 1)
d: colored X means, that 0% Channels might have been ignored or color was converted

12 Dec 2012 © Ghent Workgroup, www.gwg.org 19.2

GWG 8.2 - DeviceN Support (4 colors)



Duotone (Black and Cyan)
Grayscale TIFF with Cyan background

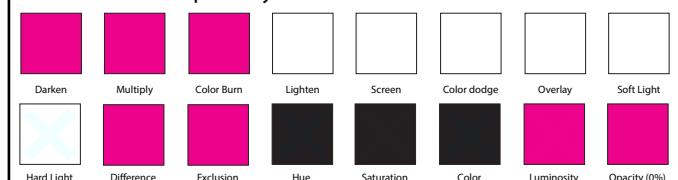
If a check mark ✓ is visible in the upper right corner then DeviceN is respected (= GOOD).
If no check mark appears then DeviceN color was transformed to CMYK (= ERROR).
If the images are missing completely then DeviceN is not supported at all (= ERROR).

27 Dec 2006 Ghent PDF Workgroup © www.gwg.org 8.2

Die Seiten enthalten Testpatches mit wesentlichen Merkmalen von PDF/X-4 (ISO 15930-7).
Fehler sind mit einem Kreuz oder durch eine Abweichung vom integrierten Referenzbilder zu erkennen.

Personalisierte Testseiten sind für die Gent PDF Output Suite 5.0 Conformance Certification erforderlich!!!

GWG 16.0 - Transparency Basic Blend Modes (DeviceCMYK, Non-Knockout)



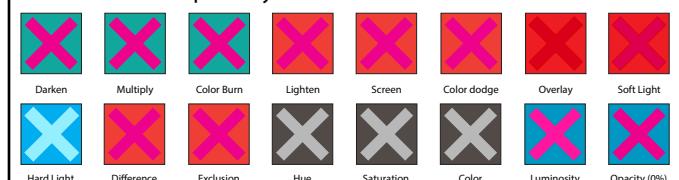
If an 'X' appears, rendering of Non-knockout Transparency Groups (a transparency effect) is not performed correctly.

PDF/X Output Intent	ISO Coated v2 300% (ECI)
Transparency Group	Non Knockout (Blend Mode Normal), TBCS*: DeviceCMYK
Source object	DeviceCMYK, using defined Blend Mode
Backdrop	DeviceCMYK

*TBCS = Transparency Blending Color Space

05 Nov 2012 **PDF/X-4** © Ghent Workgroup, www.gwg.org 16.0

GWG 16.1 - Transparency Basic Blend Modes (DeviceCMYK, Knockout)



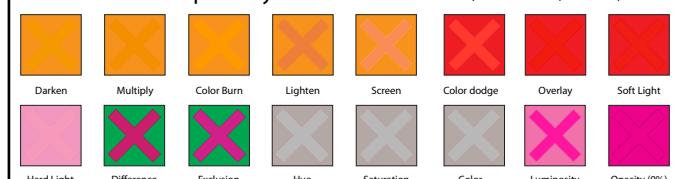
If an 'X' appears, rendering of Knockout Transparency Groups (a transparency effect) is not performed correctly.

PDF/X Output Intent	ISO Coated v2 300% (ECI)
Transparency Group	Knockout (Blend Mode Normal), TBCS*: DeviceCMYK
Source object	DeviceCMYK, using defined Blend Mode
Backdrop	DeviceCMYK

*TBCS = Transparency Blending Color Space

04 Jan 2013 **PDF/X-4** © Ghent Workgroup, www.gwg.org 16.1

GWG 16.2 - Transparency Basic Blend Modes (DeviceCMYK, Isolated)



If an 'X' appears, rendering of Isolated Transparency Groups (a transparency effect) is not performed correctly.

PDF/X Output Intent	ISO Coated v2 300% (ECI)
Transparency Group	Isolated (Blend Mode Normal), TBCS*: DeviceCMYK
Source object	DeviceCMYK, using defined Blend Mode
Backdrop	DeviceCMYK, using defined Blend Mode

*TBCS = Transparency Blending Color Space

05 Nov 2012 **PDF/X-4** © Ghent Workgroup, www.gwg.org 16.2

GWG 16.6 – Image Softmasks (DeviceCMYK)

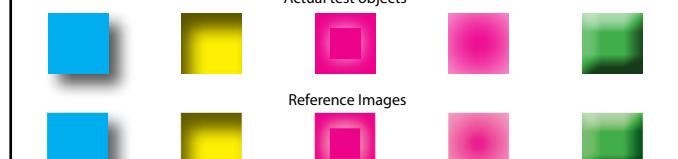
Actual test object 

Reference Image 

If a solid black contour appears at the edges of the left image, the Image Softmask (a transparency effect) is not rendered correctly.

11 Oct 2012 **PDF/X-4** © Ghent Workgroup, www.gwg.org 16.6

GWG 16.8 – Vector Softmasks (part 1)

Actual test objects 

Reference Images 

Drop Shadow Inner Shadow Outer Glow Inner Glow Bevel and Emboss

Each of these transparency effects (vector soft masks) should match the reference images.

11 Oct 2012 **PDF/X-4** © Ghent Workgroup, www.gwg.org 16.8

GWG 16.9 – Vector Softmasks (part 2)

Actual test objects 

Reference Images 

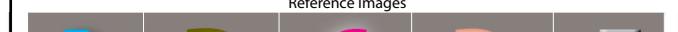
Satin Basic Feather Directional Feather Gradient Feather

Each of these transparency effects (vector soft masks) should match the reference images.

11 Oct 2012 **PDF/X-4** © Ghent Workgroup, www.gwg.org 16.9

GWG 16.10 – Text Softmasks (part 1)

Actual test objects 

Reference Images 

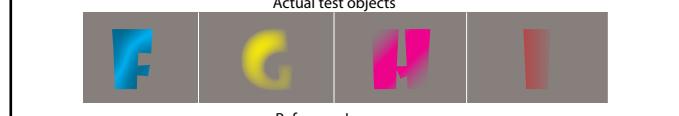
A B C D E

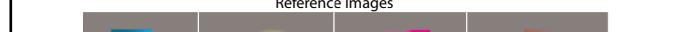
Drop Shadow Inner Shadow Outer Glow Inner Glow Bevel and Emboss

Each of these transparency effects (Text Softmasks) should match the reference images.

11 Oct 2012 **PDF/X-4** © Ghent Workgroup, www.gwg.org 16.10

GWG 16.11 – Text Softmasks (part 2)

Actual test objects 

Reference Images 

F G H I

Satin Basic Feather Directional Feather Gradient Feather

Each of these transparency effects (Text Softmasks) should match the reference images.

11 Oct 2012 **PDF/X-4** © Ghent Workgroup, www.gwg.org 16.11

Les pages contiennent des patches de test comprenant des fonctionnalités essentielles de PDF/X-4 (ISO 15930-7).

Les erreurs sont identifiées soit par une croix, soit selon une déviation par rapport aux images de référence.

Des pages de test personnalisées sont requises pour la certification de conformité de Ghent PDF Output Suite 5.0 !!!

WG 9.1 – OpenType Font Support	
Warnock Pro Semibold – OpenType (Type 1)	
äöüÄÖÜäääfi fl©®@OEÆØæfÿþ‰	äöüÄÖÜäääfi fl©®@OEÆØæfÿþ‰
Arial Unicode MS – OpenType (TrueType)	
äöüÄÖÜäääfi fl©®@OEÆØæfÿþ‰	äöüÄÖÜäääfi fl©®@OEÆØæfÿþ‰

GWG 5.1 - Font subset and substitution			
	Placed EPS-file n°1 (VVLNKK+Myriad-Roman)		Placed EPS-file n°2 (VVLNKK+Myriad-Roman)
subsubsetted font	12345		45678
expected result	12345		45678

- If all characters are correct and appear in the right order, the subset fonts have been processed correctly.
- If some characters do not appear or display in the wrong order, incorrect handling of subset fonts has occurred.

GWG 5.2 - Font subset and substitution			
	Placed EPS-file n°1 (FEPTUI+Myriad-Roman)		Placed EPS-file n°2 (PGNBEO+Myriad-Roman)
subsubseted font	12345		45678
expected result	12345		45678

- If all characters are correct and appear in the right order, the subset fonts have been processed correctly.
- If some characters do not appear or display in the wrong order, incorrect handling of subset fonts has occurred.

GWG 5.0 - Font Substitution

GWG 18.1 - 16Bit Image (DeviceCMYK)



Colorspace: DeviceCMYK
Reference image (cross): 8BIT, ZIP
Test image: 16 Bit, ZIP

© bvdm, www.romant16.com

No X must be visible when rendered correctly.

GWG 17.0 - JPEG2000 compression (DeviceCMYK)

GWG 17.3 - JBIG2 compression

De pagina's bevatten test patches met essentiële PDF/X-4 (ISO 15930-7) features.
Fouten worden aangeduid met ofwel een kruis of door een afwijking met het geïntegreerde referentiebeeld.

Gepersonaliseerde testpagina's zijn vereist voor Ghent PDF Output Suite 5.0 Conformance Certification!!!

GWG 2.0 - Spot to CMYK Overprint

this row: cmyk over spot					
font	a	vector	b	image	c
mask	d	shading	e		
this row: spot over cmyk					
font	f	vector	g	image	h
mask	i	shading	j		

15 Jun 2015 Ghent PDF Workgroup © www.gwg.org 2.0

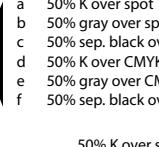
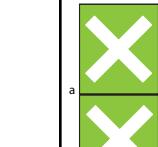
GWG 4.1 - White Overprint Mode

Spot White		
a	Rect	75 / 5 / 100 / 0
	Cross (OP)	0% GWG Green
almost White		
b	Rect	.2 / .2 / .2 / 0
	Cross (OP)	15 / 100 / 100 / 0
	Rect	.2 / .2 / .2 / 10

If a visible X appears, the "Overprinting White" is not handled.

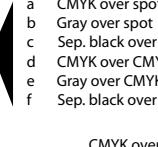
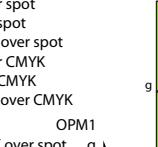
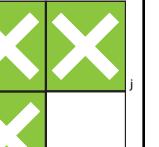
8 Apr 2008 Ghent PDF Workgroup © www.gwg.org 4.1

GWG 3.0 - Gray Overprint Patch

OPM0		
a	d	
b	e	
c	f	
OPM0	a 50% K over spot b 50% gray over spot c 50% sep. black over spot d 50% K over CMYK e 50% gray over CMYK f 50% sep. black over CMYK	
OPM1		
g	j	
h	i	
OPM1	50% K over spot 50% gray over spot 50% sep. black over spot 50% K over CMYK 50% gray over CMYK 50% sep. black over CMYK	

02 Jan 2013 Ghent Workgroup © www.gwg.org 3.0

GWG 4.0.1 - White Overprint Patch

OPM0		
a	d	
b	e	
c	f	
OPM0	a CMYK over spot b Gray over spot c Sep. black over spot d CMYK over CMYK e Gray over CMYK f Sep. black over CMYK	
OPM1		
g	h	
h	i	
OPM1	CMYK over spot Gray over spot Sep. black over spot CMYK over CMYK Gray over CMYK sep. black over CMYK	

10 Nov 2006 Ghent PDF Workgroup © www.gwg.org 4.0.1

GWG 3.1 - Gray Image Overprint (CMYK over Spot)

During flattening (in InDesign or Acrobat) of drop shadows over spot colors overprinting grayscale images with a white background are created.

Reference		
Correct		
Wrong		

Overprinting must be honored for the output.

21 Jan 2013 Ghent Workgroup © www.gwg.org 3.1

GWG 12.0 - White Overprint/Knockout

Overprint			
CMYK			
Spot			
Vector			
Text big			
Text 6pt			

If filled X appear the Overprint settings were not respected.

29 Aug 2013 Ghent Workgroup © www.gwg.org 12.0

GWG 8.1 - DeviceN Support (5 colors)

	
Duotone (should appear only in Black and GWG Green separations)	Colorized TIFF (should appear only in GWG Green separation)
Spot color gradient (should appear only in GWG Green and Cyan separations)	

If a X appears instead of the green checkmarks ✓ then DeviceN is not supported!

20 Jan 2013 Ghent PDF Workgroup © www.gwg.org 8.1

GWG 8.01 - DeviceN Support (6 colors)

	
Duotone (should appear only in Black and Pantone 265C separations)	Colorized TIFF (should appear only in Pantone 265C separation)
Spot color gradient (should appear only in Pantone 265C and GWG Green separations)	

If a X appears instead of the green checkmarks ✓ then DeviceN is not supported!

11 Jan 2007 Ghent PDF Workgroup © www.gwg.org 8.01

Las páginas contienen parches de prueba con características esenciales de PDF/X-4 (ISO 15930-7).
Los errores se identifican con una cruz o con una desviación de las imágenes de referencia integradas.

Las páginas de prueba personalizadas son necesarias para la certificación de conformidad de Ghent PDF Output Suite 5.0!!!

GWG 23.0 - 4 different Grays

DeviceGray	DeviceCMYK	Separation	DeviceN
25%	0/0/0/75	75	75
a	b	c	d

Rendering Intent: Relative Colorimetric with Black Point Compensation
Output Intent: ISO Coated v2 300% (ECI)

If an X (or half of an X) appears, the defined color space is treated differently than DeviceCMYK

12 Apr 2016 © Ghent PDF Workgroup © www.gwg.org 23.0

GWG 13.0 - ICC Source Profile

RGB Vector	RGB Image	CMYK Vector	CMYK Image
a	b	c	d

Rendering Intent: Perceptual
Output Intent: ISO Coated v2 300% (ECI)

If a red X appears, then the Source ICC Profile is not respected.
In case a faint green X is shown, the rendering intent is not respected.

03 Mai 2016 © Ghent PDF Workgroup © www.gwg.org **PDF/X-4-ICC** 13.0

GWG 13.2 - ICC based CMYK Overprint

ICCbasedCMYK white	ICCbasedCMYK green

ICCbasedCMYK objects must never overprint other CMYK objects, despite Overprint is enabled

In case of an X, the CMYK color was converted while preserving the Overprint Mode

02 Mai 2016 © Ghent PDF Workgroup © www.gwg.org **PDF/X-4-ICC** 13.2

GWG 13.3 - ICC based RGB Overprint

ICCbasedRGB white	ICCbasedRGB green

ICCbasedRGB objects must never overprint other CMYK objects, despite Overprint is enabled and Overprint Mode is 1

In case of an X, the RGB color was converted to CMYK while preserving the Overprint Mode

27 Apr 2016 © Ghent PDF Workgroup © www.gwg.org **PDF/X-4-ICC** 13.3

GWG 16.1 - Transparency Basic Blend Modes (ICCbasedRGB)

Darken	Multiply	Color Burn	Lighten	Screen	Color Dodge	Overlay	Soft Light
Hard Light	Difference	Exclusion	Hue	Saturation	Color	Luminosity	Opacity (0%)

A faint X is due to differences in the CMYK and does not indicate a failure.

PDF/X output intent	ISO coated v2 300% (ECI)
Page group blending color space	DeviceCMYK
Upper object	ICCbasedRGB (sRGB)
Lower object	ICCbasedRGB (sRGB)
Rendering intent	Saturation
All group color spaces	DeviceCMYK
All groups	Non isolated, non knockout

EXAMPLE

If an X appears, rendering of Non-knockout Transparency Groups (a transparency effect) is not performed correctly.

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GWG 16.4 - Transparency Basic Blend Modes (ICCBasedCMYK)

Darken	Multiply	Color Burn	Lighten	Screen	Color dodge	Overlay	Soft Light
Hard Light	Difference	Exclusion	Hue	Saturation	Color	Luminosity	Opacity (0%)

If an X appears, rendering of Non-knockout Transparency Groups (a transparency effect) is not performed correctly.

PDF/X Output Intent	ISO Coated v2 300% (ECI)
Page Level TBCS*	Non Knockout (Blend Mode Normal), TBCS*: DeviceCMYK
Upper (object):Type, TBCS*	ICCBased CMYK (FDGRA39), using defined Blend Mode
Lower (object):Type, TBCS*	DeviceCMYK

* TBCS = Transparency Blending Color Space

15 Oct 2015 © Ghent Workgroup, www.gwg.org **PDF/X-4-ICC** 16.4

GWG 16.7 – Image Softmasks (ICCBasedRGB)

Actual test object	Reference Image

If a solid black contour appears at the edges of the left image, the Image Softmask (a transparency effect) is not rendered correctly.

19 Mar 2012 © Ghent Workgroup, www.gwg.org **PDF/X-4-ICC** 16.7

GWG 17.2 - JPEG2000 compression (ICCBasedRGB)

Actual test object

No "X" must be visible when rendered correctly.

11 Nov 2015 © Ghent Workgroup, www.gwg.org **PDF/X-4-ICC** 17.2

Le pagine contengono patch di prova con caratteristiche essenziali di PDF/X-4 (ISO 15930-7).
Gli errori sono identificati da una croce o da una deviazione dalle immagini di riferimento integrate.

Le pagine di prova personalizzate sono necessarie per la certificazione di conformità di Ghent PDF Output Suite 5.0!!!

GWG 18.3 - 16Bit Image (DeviceGray)



Colorspace: DeviceGray
Reference image (cross): 8Bit, ZIP
Test image: 16 Bit, ZIP

© bvdm, www.roman16.com

No X must be visible when rendered correctly.

12 Nov 2015

PDF/X-4

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18.3

GWG 18.2 - 16Bit Image (ICCbasedGray)



Profile: Schwarze Druckfarbe - ISO Coated v2 (ECI)
Reference image (cross): 8Bit, ZIP
Test image: 16 Bit, ZIP

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No X must be visible when rendered correctly.

8 Feb 2016

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PDF/X-4-ICC

18.2

GWG 18.4 - 16Bit Image (ICCbasedCMYK)



Profile: ISO Coated V2 (ECI)
Reference image (cross): 8Bit, ZIP
Test image: 16 Bit, ZIP

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No X must be visible when rendered correctly.

12 Nov 2015

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PDF/X-4-ICC

18.4

GWG 18.0 - 16Bit Image (ICCbasedRGB)



Profile: eciRGB v2
Reference image (cross): 8Bit, ZIP
Test image: 16 Bit, ZIP

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No X must be visible when rendered correctly.

12 Nov 2015

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PDF/X-4-ICC

18.0

GWG 20.5 – CMYK Image with ICC V4 profile

CMYK image with ICC V4 profile
Output intent has an ICC V2 profile



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If a red cross appears instead of the image or the image turns negative
the ICC V4 profile is not supported by this viewer/output workflow.

There might be other effects if the ICC V4 profile is not supported properly.

27 November 2015

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PDF/X-4-ICC

20.5

GWG 20.6 – RGB Image with ICC V4 profile

RGB image with ICC V4 profile
Output intent has an ICC V2 profile



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If a red cross appears instead of the image or the image turns negative
the ICC V4 profile is not supported by this viewer/output workflow.

There might be other effects if the ICC V4 profile is not supported properly.

27 November 2015

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PDF/X-4-ICC

20.6

GWG 22.0 – Color Conversion Indicator



If an X is visible a color conversion or an ink saving operation have been applied to the PDF.
Certain transparency blend modes (e.g. Hard Light) can deliver
a completely different result after a color conversion.

14 Oct 2015

PDF/X-4

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22.0

GWG 22.1 – OutPutIntent Change Indicator



If an X is visible the Output Intent of the PDF (ISO Coated v2 300% (ECI)) has been changed.

23 Dec 2016

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PDF/X-4-ICC

22.1