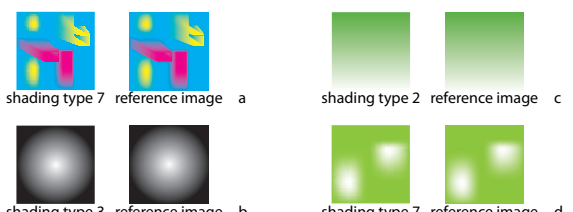


The pages contain test patches with essential features of PDF/X-4 (ISO 15930-7).
Errors are identified either with a cross or by a deviation from the integrated reference images.

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

GWG 6.0 - Use of shadings

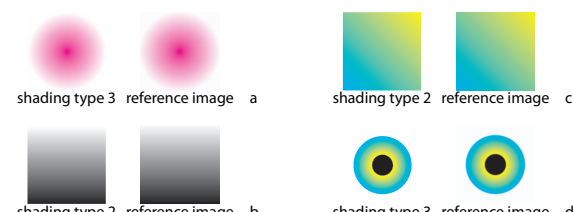


shading type 7 reference image a shading type 2 reference image c
shading type 3 reference image b shading type 7 reference image d

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 OPM 1

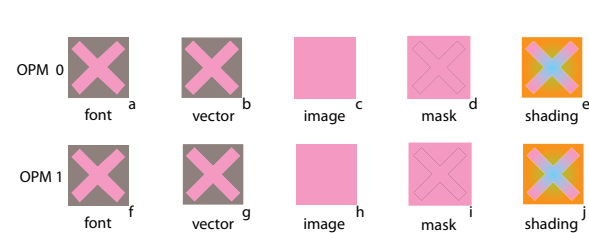
Rect (overpr) 0 / 0 / 10 / 50
Cross 90 / 10 / 90 / 0

Rect (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

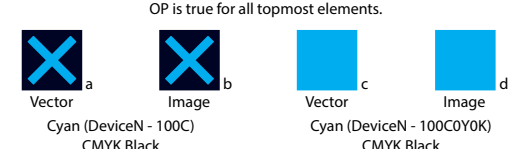
GWG 1.0 - CMYK Overprint Test



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.

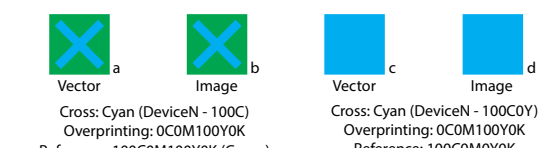
Vector a Image b Vector c Image d
Cyan (DeviceN - 100C) CMYK Black Cyan (DeviceN - 100C0Y0K) CMYK Black

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)



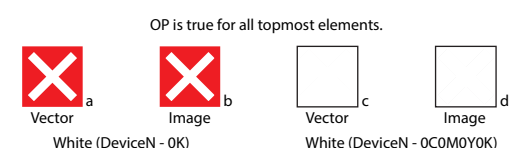
Vector a Image b Vector c Image d
Cross: Cyan (DeviceN - 100C) Cross: Cyan (DeviceN - 100C0Y)
Overprinting: 0C0M100Y0K Overprinting: 0C0M100Y0K
Reference: 100C0M100Y0K (Green) Reference: 100C0M0Y0K

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.

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

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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 Referenzbild 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

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

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

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

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 !!!

GWG 9.0 - Font Support

Type1 PostScript:	äöüÄÖÜäääfi fl©®@DEÆØæfÿþ% (NewCenturySchlbk Italic)
Expected result:	äöüÄÖÜäääfi fl©®@DEÆØæfÿþ% (NewCenturySchlbk Italic)
TrueType:	äöüÄÖÜäääfi fl©®@DEÆØæfÿþ% (BookAntiqua-BoldItalic)
Expected result:	äöüÄÖÜäääfi fl©®@DEÆØæfÿþ% (BookAntiqua-BoldItalic)
CID (Type1):	äöüÄÖÜäääfi fl©®@DEÆØæfÿþ% (WarnockPro-BoldIt)
Expected result:	äöüÄÖÜäääfi fl©®@DEÆØæfÿþ% (WarnockPro-BoldIt)
CID (TrueType):	äöüÄÖÜäääfi fl©®@DEÆØæfÿþ% (PalatinoLinotype BoldItalic)
Expected result:	äöüÄÖÜäääfi fl©®@DEÆØæfÿþ% (PalatinoLinotype BoldItalic)
Multiple Master:	dit is een multiple master ex ponto num dit is een multiple master ex ponto num (ExPontoMM)
Expected result:	dit is een multiple master ex ponto num dit is een multiple master ex ponto num (ExPontoMM)
Type 3 Vector:	äöüÄÖÜäääfi fl©®@DEÆØæfÿþ% \$ËABCD...XYZ (T1 / Garamond Bold)
Expected result:	äöüÄÖÜäääfi fl©®@DEÆØæfÿþ% \$ËABCD...XYZ (T1 / Garamond Bold)
Type 3 Bitmap:	null fällt ein negativer Zahlungsstrom an. In den Jahren eins bis fünf (T10)
Expected result:	null fällt ein negativer Zahlungsstrom an. In den Jahren eins bis fünf (T10)

03 Nov 2005 Ghent PDF Workgroup © www.gwg.org 9.0

GWG 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%

If the text in the line above does not look like the image in the line below
an error in the rendering of the font occurred.

14 jan 2012 PDF/X-4 © Ghent Workgroup, www.gwg.org 9.1

GWG 5.1 - Font subset and substitution

	Placed EPS-file n°1 (VVLNKK+Myriad-Roman)	Placed EPS-file n°2 (VVLNKK+Myriad-Roman)
subsetted 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.

11 Nov 2012 Ghent PDF Workgroup © www.gwg.org 5.1

GWG 5.2 - Font subset and substitution

	Placed EPS-file n°1 (FEPTUI+Myriad-Roman)	Placed EPS-file n°2 (PGNBEO+Myriad-Roman)
subsetted 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.

11 Nov 2012 Ghent PDF Workgroup © www.gwg.org 5.2

GWG 5.0 - Font Substitution



If a check mark ✓ appears above, then the embedded font is used (correct behavior).
If an other character appears, the embedded font was substituted
with a Symbol font installed in the system (host or RIP).

16 Nov 2005 Ghent PDF Workgroup © www.gwg.org 5.0

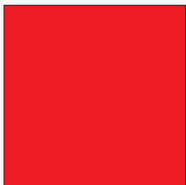
GWG 18.1 - 16Bit Image (DeviceCMYK)



No X must be visible when rendered correctly.

12 Nov 2015 PDF/X-4 © Ghent Workgroup, www.gwg.org 18.1

GWG 17.0 - JPEG2000 compression (DeviceCMYK)



No "X" must be visible when rendered correctly.

19 Mar 2012 PDF/X-4 © Ghent Workgroup, www.gwg.org 17.0

GWG 17.3 - JBIG2 compression



Black White

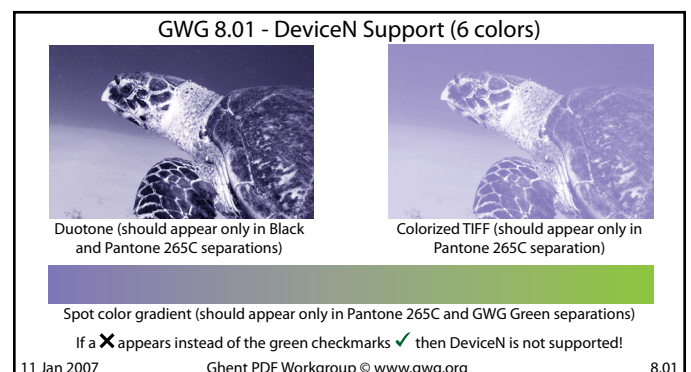
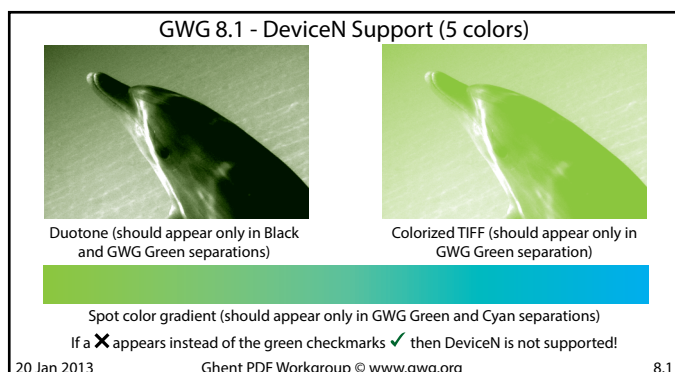
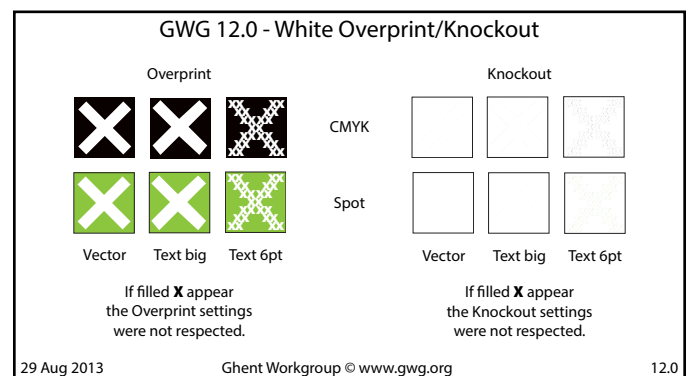
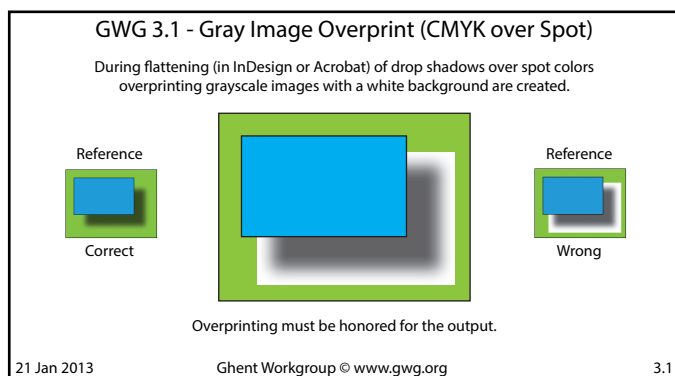
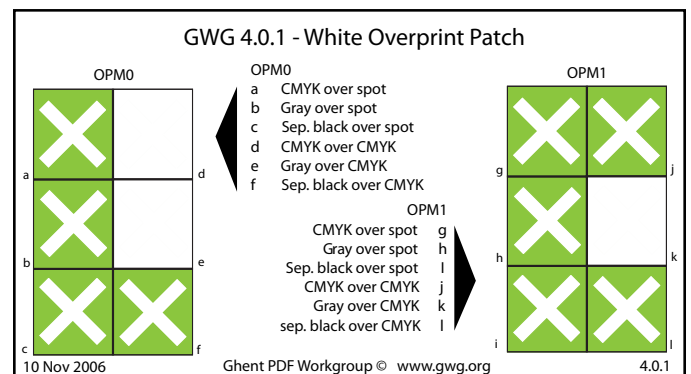
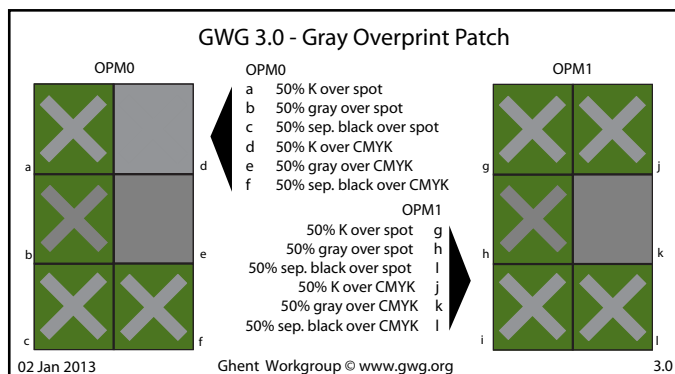
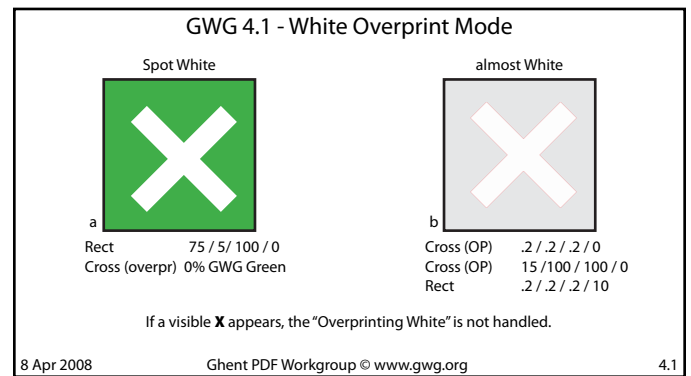
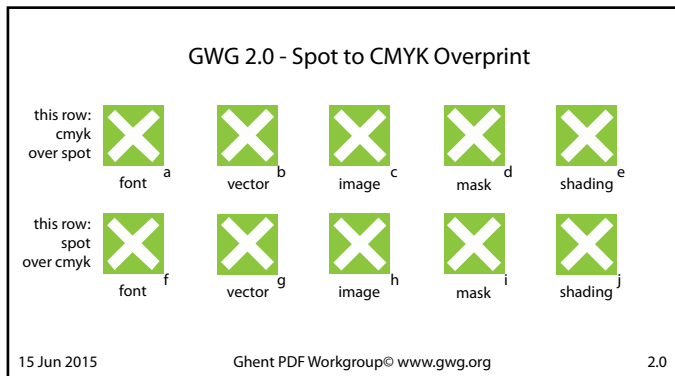
No "X" must be visible when rendered correctly.

03 July 2012 PDF/X-4 © Ghent Workgroup, www.gwg.org 17.3

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!!!





*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% 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 as 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%)

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

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

A clearly visible **X** indicates that this blend mode is not supported properly which is a failure.

14 July 2016 © Ghent Workgroup, www.gwg.org **PDF/X-4-ICC** 16.1

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 (FOGRA39), 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)

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

No **X** must be visible when rendered correctly.

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

No **X** must be visible when rendered correctly.

8 Feb 2016 © Ghent Workgroup, www.gwg.org **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

No **X** must be visible when rendered correctly.

12 Nov 2015 © Ghent Workgroup, www.gwg.org **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

No **X** must be visible when rendered correctly.

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GWG 20.5 – CMYK Image with ICC V4 profile

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

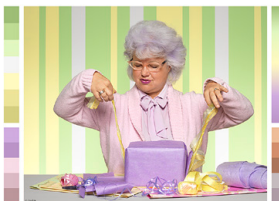


If a red cross appears instead of the image or the image turns negative the ICC V4 profile is not supported by this viewer/output workflow.
There might be other effects if the ICC V4 profile is not supported properly.

27 November 2015 © Ghent Workgroup, www.gwg.org **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



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 © Ghent Workgroup, www.gwg.org **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** © Ghent Workgroup, www.gwg.org 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 © Ghent Workgroup, www.gwg.org **PDF/X-4-ICC** 22.1