



FAQ for graphics (formats and files)

1. *Why do we recommend certain graphics formats?*

Technical considerations: the exchange of graphics files is a tricky business, much more difficult than that of text. The conversion of graphics can be a nightmare, and the result far from satisfactory. The Information Technology Strategies Implementation Group (ITSIG) was asked to look into the technical problems related to graphics exchange and reuse, and to provide recommendations for technical solutions. Their recommendations are found in the [Guide for the use of IT in the development and delivery of standards](http://www.iso.org/itsig-guide) (<http://www.iso.org/itsig-guide>). The ISO/CS requirements concerning graphics formats [ISO Central Secretariat requirements for provision of text and graphics in electronic form](#) was drafted on the basis of the ITSIG recommendations with respect to the work that we need to carry out. From a practical perspective its really not a question of us equipping ourselves with every graphics software on the market since there would be implications in terms of staffing, equipment, etc. and we have to approach this problem as any other commercial company would.

Procedural considerations: see item 11.

2. *What does the ISO/CS do if it cannot obtain usable graphics files?*

We either redraw the figures in our CAD system or scan them. The disadvantage in scanning the figures is that it is somewhat time consuming and not the best solution since if the figure needs subsequently to be altered (e.g. technical or editorial modification) the original has to be corrected and then the figure rescanned.

3. *What are native files and why does the ISO/CS sometimes ask for them?*

Native files are files in the internal format of the application program that created them (the internal format is represented by an extension which is usually proposed by the application program itself, e.g. .cdr for CorelDraw, .psp for PaintShopPro, .bmp for Paint, .dwg for AutoCad).

Our drawing office asks for native files when they discover that the files that have been received are not usable for some reason or another.

Given that it is not possible to foresee when such a solution may be valid, we do not ask for native files in the first instance. It is of course an option that we systematically ask people to send us both our preferred format AND the native files (and we could alter our procedures accordingly) but it would be difficult to justify asking people to send us duplicate files when we don't know whether we need them. Therefore the option "ask when we know its necessary" has been selected at present.

To date this system seems to work. If anyone has information that indicates otherwise, please let us know so that we can adjust our procedures accordingly.

4. *Can ISO/CS use TIFF files?*

Most of the time, yes. We can open the files in PhotoShop and perform minor editorial modifications if necessary. But TIFF files are our 3rd choice (see [ISO Central Secretariat requirements for provision of text and graphics in electronic form](#) and item 5).

5. *Why are scanned (TIFF) files sometimes refused?*

Scanned (TIFF) files may be refused either because we cannot open them or because the files are of insufficient quality. The quality rejection criteria include the following.

- a) The drawing is not compliant with the ISO/TC 10, ISO/TC 213 and other applicable draughting rules — we cannot correct TIFF files to the degree necessary to rectify such non-conformities and so our only choice is to reject the file.
- b) The image is skewed — the original was not straight when scanned.
- c) The lines in the image are stepped — the original was probably moved when being scanned.
- d) The image is fuzzy — the resolution is probably insufficient (use 300 dpi minimum) or maybe there are problems in the setup parameters.

6. *Why does the ISO/CS always ask for DXF?*

We always ask for DXF since this (in addition to DWG, the native format of AutoCad) is our preferred format for two basic reasons:

- it is a revisable format, allowing us to alter the figures as necessary in our CAD system AutoCad 2000i;
- it is recommended by the Information Technology Strategies Implementation Group (ITSIG) as being the most widely used/acceptable of the revisable graphics formats.

7. *What happens if the ISO/CS cannot obtain files in one of its preferred formats?*

When we cannot obtain files in one of our preferred formats we then see how else we can advance in the most efficient manner.

8. *How would we like to receive graphics files?*

By preference, please supply the graphics files as separate files since this avoids us having to separate the graphics files from the text files. If you do link the graphics files to the word processor file, preferably do not save (embed) a copy of the file in the word processor file: see item 22 for information regarding linking using Microsoft Word.

[Note that to create a complete PDF file containing all graphics (figures and formulae), copies of the graphics files need to be linked to (preferably) or saved in (also acceptable but beware of effect on file size) the document being converted.]

9. *Why do we not want JPEG format and what would we prefer instead?*

We do not want to receive files in "JPEG format" since such files are not revisable. We would prefer either one of our recommended formats or good quality originals of the drawings concerned and we will scan them ourselves.

10. *Can we use CDR (CorelDraw) files?*

Yes. We can open CorelDraw files in Adobe Illustrator.

If you use CorelDraw note that in our experience it is not recommended to import directly .cdr files into Word. Instead, we recommend that before importation the files are converted to EPS or TIFF. However, do not submit the EPS or TIFF file to the ISO/CS; submit the .cdr file.

We have noted the following in conversion from DWG to CDR to EPS: loss in print quality (black becomes grey); change in size at each conversion.

11. *What criteria do we apply when evaluating the acceptability of files for drafts and final drafts?*

When we prepare the drafts and final drafts of standards, we have different criteria that are applied.

At the DIS stage, it is important for us to circulate the document as quickly as possible. The acceptance criteria are based on legibility, completeness, editorial acceptability (at this stage complete compliance with the ISO/IEC Directives, Part 2, is not required) and comprehensibility — i.e. the document should be fit to be voted on at enquiry stage.

At the FDIS stage, it is important for us to prepare the document in such a way that it is suitable for publication, since in the majority of cases it will be approved and will proceed with no changes, or only minor changes, to publication. It is at this stage therefore that the bulk of our input is carried out. The text and drawings are fully edited, and the document prepared for publication, and therefore it is essential that we have both text and drawings in revisable format to allow us to carry out our work. The document is created in the electronic formats corresponding to the needs of the member bodies for adoption etc. At present, the member bodies ask that we supply documents in two basic formats: non-revisable formats (character-based PDF for the text and EPS or TIFF for the drawings) and revisable formats (Word for the text and DXF for the drawings).

12. What does the ISO/CS use for the production of graphics?

For the production of graphics we use AutoCad 2000i, a computer-aided design product available from AutoDesk Inc, the internal format of which is DWG.

(History — may be useful if you are requesting graphics files: ISO/CS introduced its first graphics software "PC-Draft" in 1991; AutoCad14 was introduced at the end of 1998, together with a conversion tool from PC-Draft to AutoCad14; AutoCad 2000i was introduced in May 2001.)

In terms of formats, we thus prefer to receive DWG (the native format of AutoCAD) or DXF (Data Exchange Format), both of which are fully revisable and which we can import into our system easily. For more information please see the [Guide for the use of IT in the development and delivery of standards](http://www.iso.org/itsig-guide) (<http://www.iso.org/itsig-guide>).

We treat the majority of graphics files in our AutoCAD system which has been set up to produce drawings compliant with the draughting rules of ISO/TC 10 and of ITSIG. (ISO/CS, DIN and AFNOR use the same CAD system.) The rules followed by our drawing office are provided in the document [DRG working instructions and directives](#).

Our drawing office thus works with drawings in DWG format and converts them into EPS format (which is easily made to be non-revisable) for embedding into Word and FrameMaker+SGML documents. In other words, EPS format is the interface between the drawing office and the production chain. The advantage of such an approach is that the drawings cannot be changed during the subsequent processing of the document. Of course, we have to use PostScript printers. A current disadvantage, is that EPS files can't be displayed in the current versions of Word without special, so-called, TIFF preview being added to the EPS files.

13. Why do we not like graphics prepared as WMF files?

In general we do not like graphics prepared as WMF files because the Microsoft drawing tools do not produce graphics compliant with the draughting rules and so the resultant drawing is not acceptable.

14. What is BMP?

BMP is the bit-mapped file format used by Microsoft Windows but other softwares also produce a "bit-mapped file format" — see the following URL where this is discussed: http://webopedia.internet.com/TERM/b/bit_map.html

15. Are BMP files acceptable?

No.

16. Why do we ask you to complete the [Dispatch of electronic files](#) form?

The form is intended to ensure that file originators provide us with all technical details concerning the files irrespective of whether these files are in conformity with our requirements. For example, although we cannot process BMP files we can process TIFF files, both of which are "bit-mapped" or "raster" files.

17. What can you do if you can't send us our preferred formats and you're not sure whether we can use what you have available?

Send our drawing office test files in the formats that you can provide to enable them to check. At the same time provide details of the document(s) in question. You may e-mail directly the manager of the drawing office Mr Maugain: maugain@iso.org.

18. Can we open PSP (PaintShopPro) files?

No. We have no application to open PSP files.

19. What formats are suitable for flowcharts?

In the past, we have been able to reuse flowcharts prepared using a CASE tool, and we are happy to test any file in a native (proprietary) format to see whether we can reuse it; otherwise, we will have to redraw the chart entirely.

20. Why do we prefer to receive revisable formats at FDIS stage?

See item 11.

21. Does Word have a DXF filter?

The DXF filter is not installed automatically with the default Word setup. To install during setup select the "complete" installation option. Alternatively, you may install it separately from the installation program: details are provided below. However, in our experience EPS and TIFF are the best graphics formats for importation into Word documents: see item 22.

The converter for Word 6 is available at the following URL: <ftp://ftp.microsoft.com/softlib/mslfiles/DXF.EXE>.

For Office for Windows 95, Office 97 and Microsoft Office 2000, a DXF image filter (32-bit) is available to install from the Microsoft Office Converter Pack. For further information see the following article on the Microsoft web site: <http://support.microsoft.com/support/kb/articles/Q158/0/09.asp?LN=EN-US&SD=gn&FR=0>

22. Which graphics formats are best for importation into Word documents and how should this be done?

In our experience, EPS and TIFF are the best graphics formats for importation into Word documents. Most CAD systems can save files in one or both of these formats.

Microsoft Word creates relative links when the Word file and the EPS or TIFF files are in the same directory at the moment when the links are created. If the Word and graphics files are in two different directories, Word creates absolute links.

We recommend that you create relative links for documents that are likely to be transmitted to other people since you can simply transmit the directory containing both the text file and the graphics files and the links will remain intact for both the sender and the receiver. Instructions are provided in the template reference manual.

23. Which graphics formats are best for exchange of vectorized graphics files?

DXF is currently the most widely used/acceptable exchange format for vectorized graphics files. See also item 6.

24. Can EPS be converted to DXF?

Most EPS files are intended for visual presentation (e.g. an arc may be approximated by a sequence of small lines) whereas DXF files are intended for exchange of revisable and structured presentation.

Only EPS files produced using certain software (e.g. Adobe Illustrator) can be converted to a vectorized format. In most cases, this conversion is not possible.

25. In what format would we like to receive chromatograms?

We should like to receive chromatograms in either DWG, DXF or TIFF format. If this is not possible, please provide high quality originals, i.e. of sufficient quality that they can be scanned and remain legible.

26. What are the requirements for photographs?

We need to receive either original photographs (which we will return to you after publication if you request this) or TIFF files of an appropriate quality (for guidance see the [Guide for the use of IT in the development and delivery of standards](http://www.iso.org/itsig-guide) <http://www.iso.org/itsig-guide>). We also need to know whether the reproduction required is colour or black-and-white. Colour reproduction should be avoided unless necessary owing to the related cost.

27. Shading and colours

Shading and colours shall be avoided unless it is considered necessary to clarify the intended meaning. Further information is provided in the document [Use of shading in International Standards](#).

28. First- and third-angle representations

Projections shall be in the first-angle representation. Projections in the third-angle representation may be used only if the content cannot be represented in the first-angle representation [see the [Guide for the use of IT in the development and delivery of standards](http://www.iso.org/itsig-guide) (<http://www.iso.org/itsig-guide>), third edition, E.1, fourth paragraph from the end of the clause]. Submitted drawings not compliant with these rules will be redrawn.

29. Is it possible to obtain copies of the graphics present in published ISO standards?

Files of the graphics present in published ISO standards are available in EPS and TIFF formats from the ISOSTD server. The graphics are split into chunked and compressed (.zip) files, and are stored together with the text files of the corresponding ISO standards.

30. Further information?

If you require any further information, we have various information documents concerning preferred formats, as well as the ITSIG Guide, at the following URL: <http://www.iso.org/sdis>