A font whose glyphs are drawn

The three marks in the list below are not letters of any face. They are a Type 3 font: each glyph is a little content stream in this file, drawn with the same calls that draw the page. They set as text, measure as text and extract as text.

Every word on this page is set in an EMBEDDED face, DejaVu Sans, and the marks come from the drawn one. That is the ordinary way a Type 3 font is used - it exists for what the real face has not got - so the two kinds share one document, one font list and one write.

- ☑ Kern: pages, streams, graphics primitives, the standard faces
- ☑ TrueType: subsetting, Identity-H, ToUnicode
- ☑ Type 1 and OpenType, embedded whole
- ☑ Type 3: this page
- ☐ SVG fonts - there is no such thing in PDF
- ☒ A font editor, to get any of this

The same three glyphs at four sizes - a font, not a drawing, so the size is the font size and nothing is scaled by hand:

The colour of the empty box follows the text, because that glyph is written with the d1 operator: it describes shape only, and the reader paints it in whatever colour the text has. The two coloured ones use d0 and bring their own.

What follows the text is what the glyph FILLS. Setting the text colour sets the fill colour and nothing else, so a d1 glyph drawn with a stroke comes out in the stroke colour - black, whatever the text was set to. The empty box above is therefore a filled ring: an outer rectangle and an inner one, painted with the even-odd rule so the middle stays open.

blue, orange - then the same two colours asked of a d0 glyph, which ignores them

Signed off ☑ on the day, still open ☐ on the next.

one line, two fonts, two kinds of font - and one write that has to tell them apart

Check it yourself

The first command shows the font dictionary: no font file anywhere, a /CharProcs entry per glyph, and a /Widths array in glyph units rather than in thousandths of the em. The second prints one of those glyph streams - the d0 or d1 line first, then ordinary drawing operators. The third is the one that matters for a reader: the marks come back out as the characters they stand for, which is what /ToUnicode is written for. The last one is the point of this page as a test: two fonts, of two kinds, in one file - a Type 3 without a font program and a subset of DejaVu Sans with one.

```
qpdf --qdf --object-streams=disable 02.11-type3.pdf - | grep -A12 Type3
qpdf --qdf --object-streams=disable 02.11-type3.pdf - | grep -B2 -A8 ' d0'
pdftotext 02.11-type3.pdf - | head -12
pdffonts 02.11-type3.pdf
```