SPRINGFIELD SOLUTIONS BARCODE GUIDELINES

The development of any artwork intended to include a barcode should always take into account the guidelines set down in the GS1 UK document entitled "Bar Coding – getting it right Recommendations for best practice."

We cannot insist a Customer follows these guidelines but we can and should draw their attention to potential problems. If the Customer still insists we print the code as is then we should seek written confirmation of this instruction.

The following are the main issues related to bar codes and achieving good scan results: -

a)   Bar Code Structure – the basic 13 digit code comprises four parts:
- The first two digits are the country of origin.
- The next four digits is the manufacturer code.
- The next five is the product identifier.
- The last number is the check digit.

The check digit is generated by the code creation software and is used by the scanning software as a self check to ensure the code scans correctly. If approved artwork is received with a generated code in the file then we will know the code is a correct number as it is impossible to create a barcode number with the wrong check digit. If, however, the file arrives without a code in it and the numbers are supplied separately then it would be prudent to generate a code through our software to ensure the numbers supplied will work. If in doing so a check digit error warning comes up do not assume to correct the check digit as prompted by the

error message. Check back with the Customer as the fault may rest elsewhere.

b)   Bar Code size – ideally this should be 100% but subject to the technical limitations of the print process 80% magnification factors can be used. Bear in mind the smaller the code the smaller is the margin for error when the code is scanned.

c)   Bar code colours – always use dark colours such as black, blue, dark green etc for the bars. Remember barcode scanners use a red laser light so colours with a high proportion of red, yellow, orange etc will appear as white under a red light and not give sufficient contrast to achieve a scan.

d)   Background colours – the background ideally should be white but red, orange and yellow cam also be used. A useful quick guide is to view the proof of the artwork with a piece of clear red plastic film. If the bars are not clearly visible then you potentially have a problem with the choice of colours.
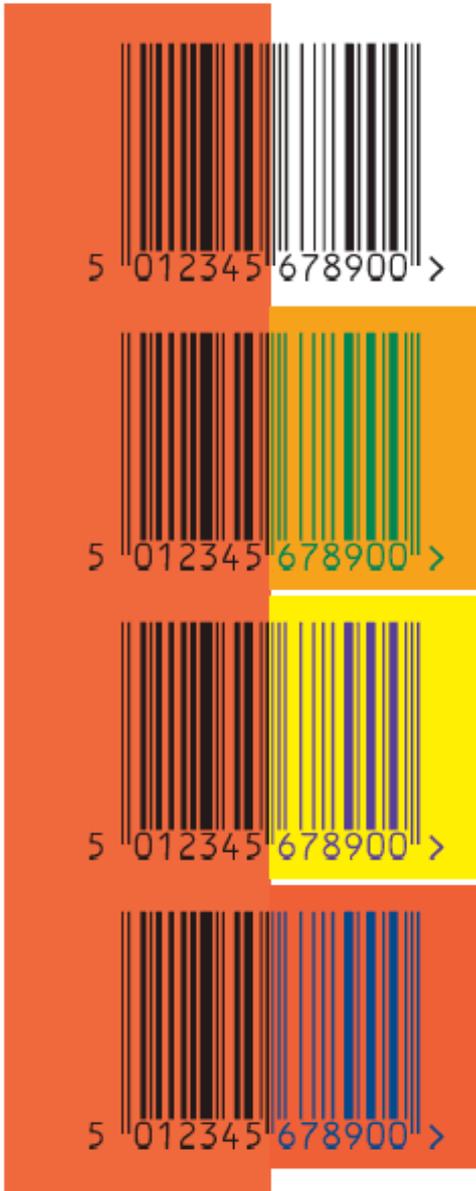
Scannable ✓   Non-scannable ✗
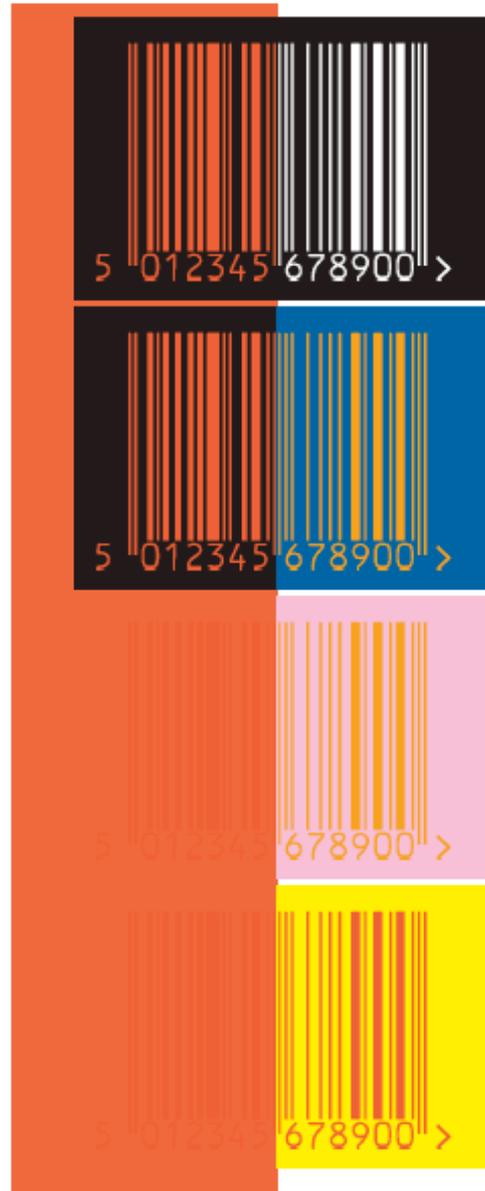
e)   Bar width reduction (BWR) – this is compensation built into the file to counter the spread of the bars during the printing process. The compensation brings the bars back to their optimum width. Failure to employ BWR can lead to scan failures. This is one of the main reasons why we should reserve the right to generate our own barcodes and place them in the file.

f) Truncation – reducing the height of the bars will not affect the ability of the code to be scanned, it will, however, mean greater care must be taken at the till to line up the code with scanner to achieve a good scan.


Truncated   Nominal Height
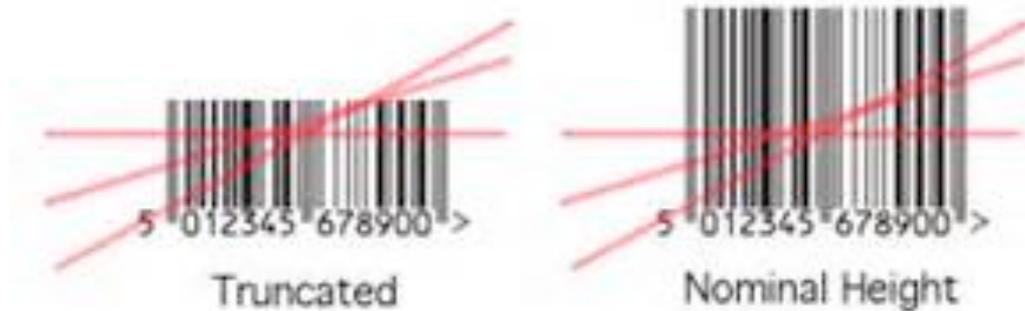
To read a code the scan beam must travel the whole length of the code. Reducing the height makes the width of the path smaller and increases the chance for the scanner to miss some of the bars.

g) Light Margins – there are two of these at the start and end of the code. They are probably one of the most important aspects of the barcode structure. No print or non-scannable background colour should encroach within these margins. The accepted practice has been to employ light margin indicators to give a guide as to the area to be left free of text or colour.

The first number of the code in this case, the 5 and the arrowhead, have traditionally been used to serve as indicators.
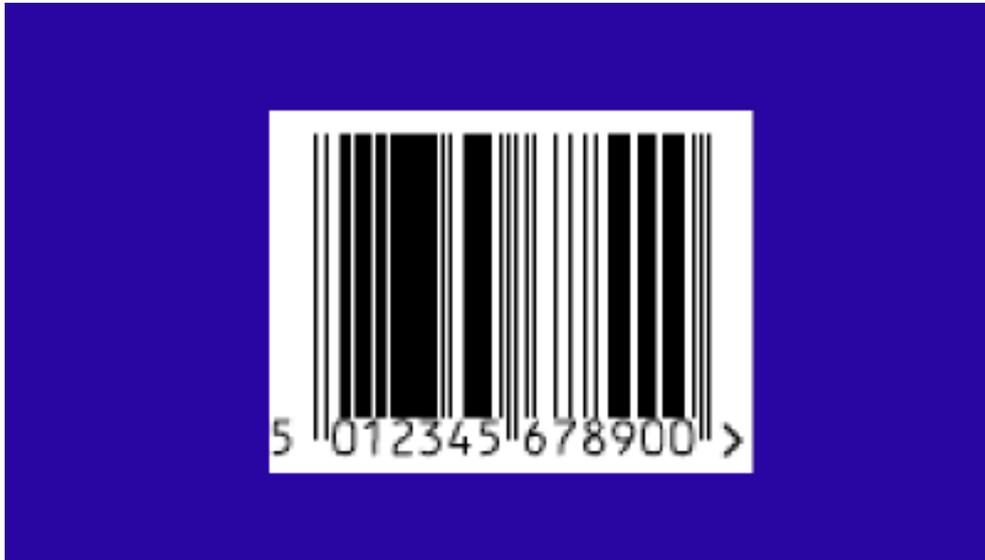
However, experience as shown that the space indicated by these is not big enough to achieve the best scanning (first layout)

The GS1 UK Guideline recommends text free areas of 6mm to the left of the code and 4.5mm at the right of the code (second layout).

We have demonstrated this with practical tests by scanning the type of code shown in the first layout and getting a fail reading. The light margins are then made bigger by masking out the background with white paper and rescanning. The F-FAIL reading then goes to A-PASS on the same code.

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