

Design Instructions

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Chapter 1. About Graphic Concrete

What is graphic concrete?

Graphic concrete is a patented technology that enables beautiful patterned concrete surfaces to be produced simply and cost efficiently. The technique uses a special membrane in the prefabrication process of concrete. The desired image is printed on the membrane using a surface retarder, and concrete is then cast on top of the membrane. When the retarder is washed away, the image is revealed. The image results from the contrast between the fair-face and the exposed aggregate surface.

You can select from our collection of ready-made patterns or design your own pattern. You can also choose between a smooth, velvety or exposed aggregate surface. Changing the aggregate and/or cement colour offers a vast amount of variation in the overall effect.

Graphic concrete opens up enormous opportunities for builders, architects, designers and the concrete industry as a whole. The technique is simple and cost effective, and the end result is a beautiful and durable concrete surface.



exposed aggregate

fair-face surface

graphic concrete

Where can graphic concrete be used?

Graphic concrete is suitable for prefabricated concrete products that are cast horizontally. The technology cannot be used for casting-in-place. Typical applications include façades, partition walls,

supporting walls, noise walls and concrete slabs. Graphic concrete is suitable for different sizes of concrete elements and slabs.



Ground slabs



Wall elements

What does graphic concrete cost?

The graphic concrete membrane is sold directly to the prefabrication factory, which then sets the prices for the finished concrete elements. The total price per square metre depends on the amount of membrane used, which varies according to the dimensions of the concrete elements. Send us the specifications for your project and we will estimate the cost of the membrane and help you find the optimal solution.

Graphic concrete is a cost-efficient alternative, as the

concrete surface is ready for use and does not require any additional surface treatment or coating. This minimises construction time at the beginning of the project, while the maintenance-free surface keeps costs down over the entire lifespan. The most cost-effective solution is to use a repeating pattern in large volumes.

We offer consultation services to all participants in the construction project for the duration of the project. We also offer graphic design services.

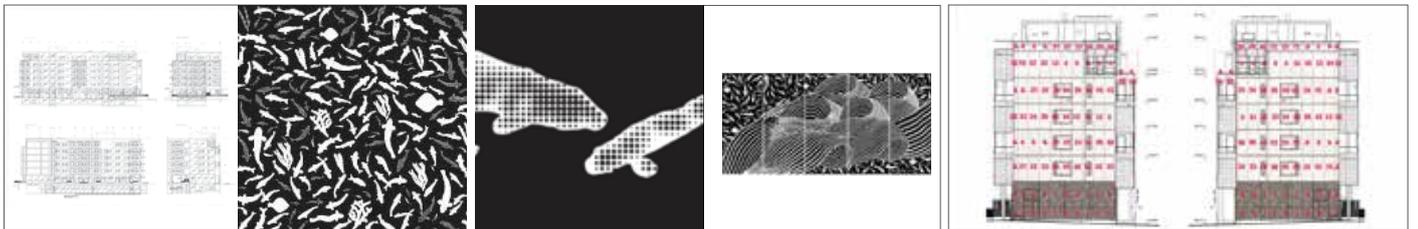
Chapter 2. Production Process

General production process

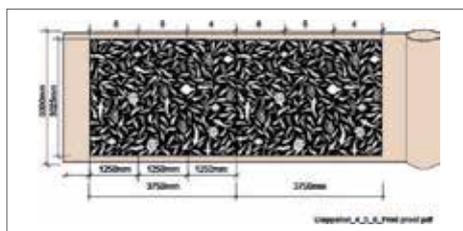


- 1 Design your own pattern and send it to us, or select a ready-made pattern from the GCCollection™.
- 2 The pattern is then printed onto the membrane, which is then sent to the prefabrication factory.
- 3 Concrete is poured into a mould on top of the membrane.
- 4 The following day the membrane is removed from the surface of the element.
- 5 The surface cement that has not set is washed with a high-pressure cleaner, revealing the pattern.
- 6 The end product is a patterned concrete element that can be delivered ready for use to the construction site.

GC service & process



- 1-1 GC receives project inquiries and relevant information: project name, location, schedule, drawings, panel sizes and original pattern from the customer.
- 1-2 GC checks the quality of the original pattern file (Black: exposed aggregate & White: fair-face surface), gives a first cost estimate and provides consultation on how to find the best alternative.
- 1-3 A architect makes a drawing to confirm the placement of pattern on the façade.



- 1-4 GC provides the printing instructions and order confirmation, and then the customer approves them.
- 1-5 The order will be sent to production. The pattern will be printed on the membrane and sent to the fabrication factory.

A close-up photograph of a perforated metal mesh. The holes are irregular in shape, ranging from roughly circular to elongated and somewhat triangular. The metal has a light, metallic sheen. The background is a soft, out-of-focus light gray.

Chapter 3. GC Product & Design

Getting started

Graphic concrete is suitable for prefabricated concrete products that are cast horizontally. The technology cannot be used for casting-in-place.

We offer four options for using graphic concrete: **GCCollection™** includes around a hundred ready-made repeating patterns that can be customised and scaled as you like, in order to create a unique look; **GCBasic™** lets you create your own repeating pattern with the dimensions 3200x3200mm; **GCPlus™** enables the use of

photographs, artwork and other large non-repeating patterns; and **GCSmooth™** uses a blank membrane to create a beautiful velvety smooth and even concrete surface without any pattern.

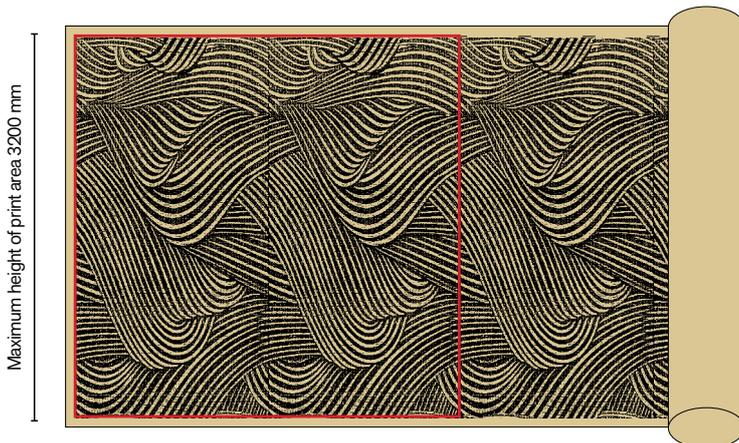
Whether you select one of our ready-made repeating patterns or decide to create your own design, we recommend contacting us at the very start of the design process so that we can help you find the optimal solution.

GCBasic™

GCBasic & GCPlus™ represent unique patterns designed by architects and designers for specific projects. All GCPlus™ patterns are repeating and continuous.

We are ready to help in the design process in order to achieve the optimal solution for your own pattern as cost effectively as possible.

Example 1:



The most cost-effective solution is to print the pattern in continuous 3200 mm sections.

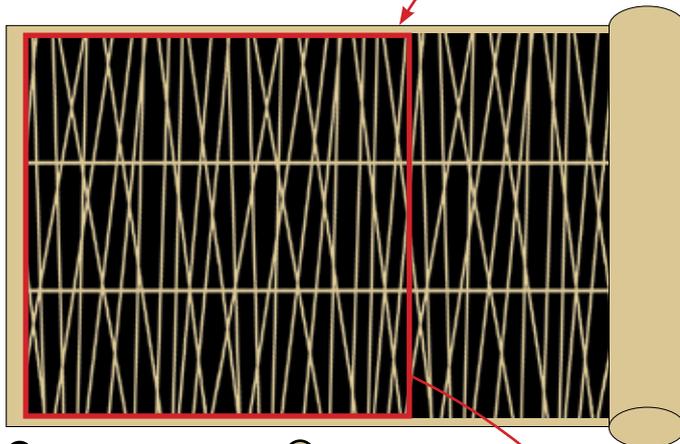


A custom GCBasic™ pattern on the façade of a building

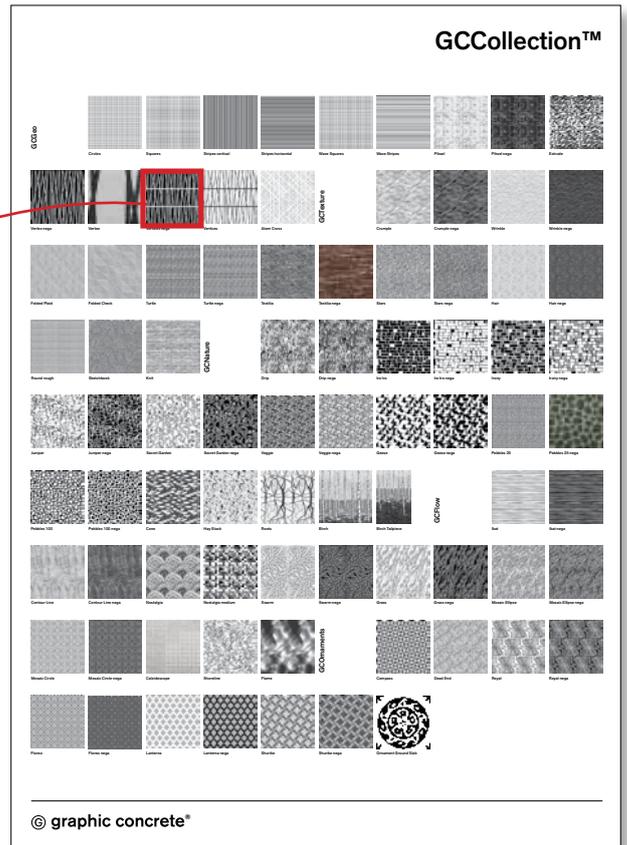
GCCollection™

You can download our **GCCollection™** patterns in .jpg format from our website: www.graphicconcrete.com/en/products/gc-collection/. The patterns are available in scale 1:10 as high-resolution images with the dimensions 3200x3200 mm, and they can be used as such in your designs.

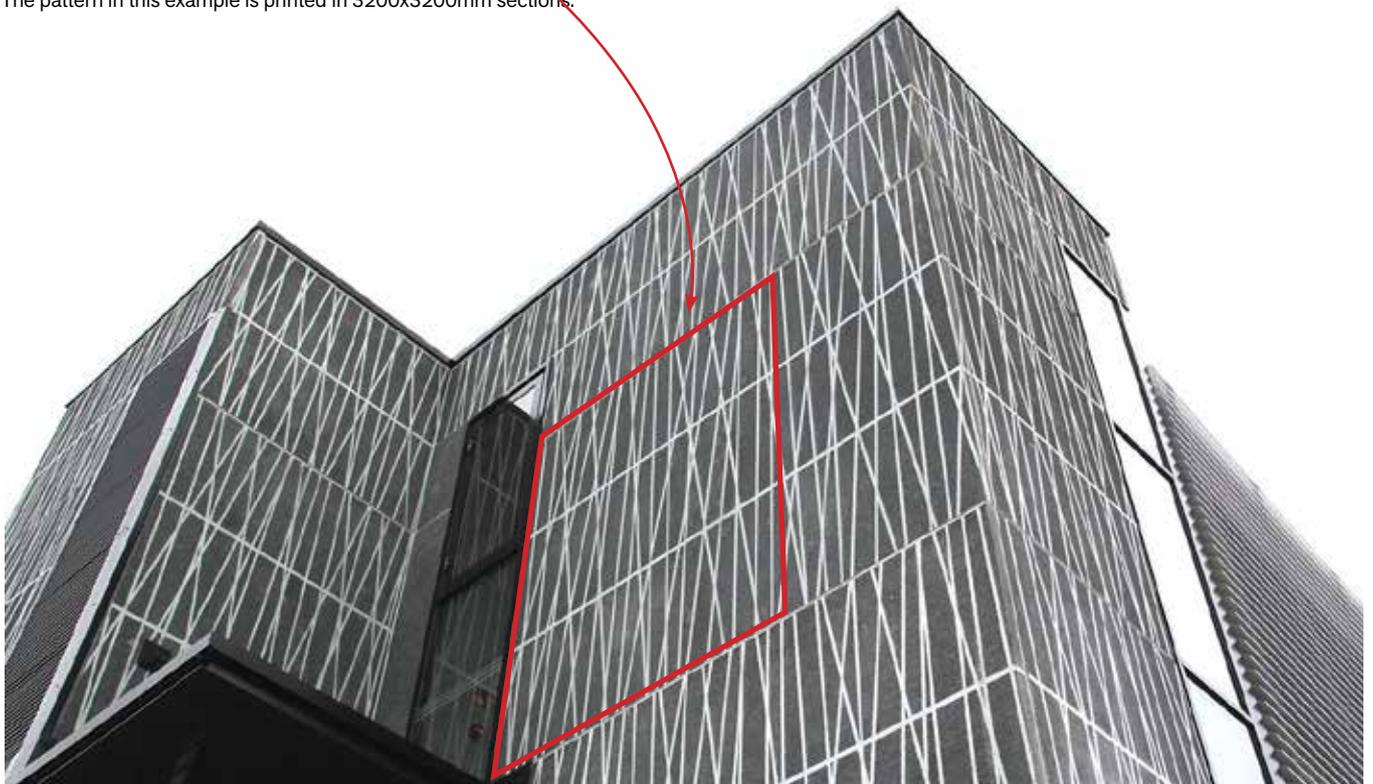
The patterns can also be customised and scaled as you like. Most of the patterns have been designed to be continuous in all directions; for example, even if the patterns are rotated 90 degrees, they are still continuous both vertically and horizontally.



● RETARDER (BLACK) ● FAIR-FACE SURFACE (WHITE)
 The pattern in this example is printed in 3200x3200mm sections.



GC-Collection™ patterns

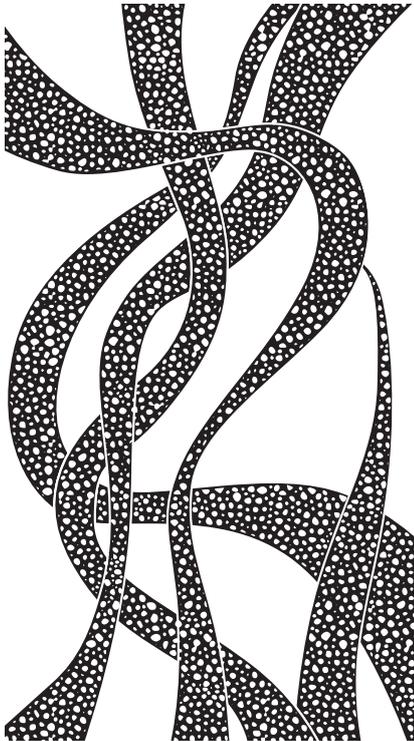


The pattern as it appears on the façade of a building

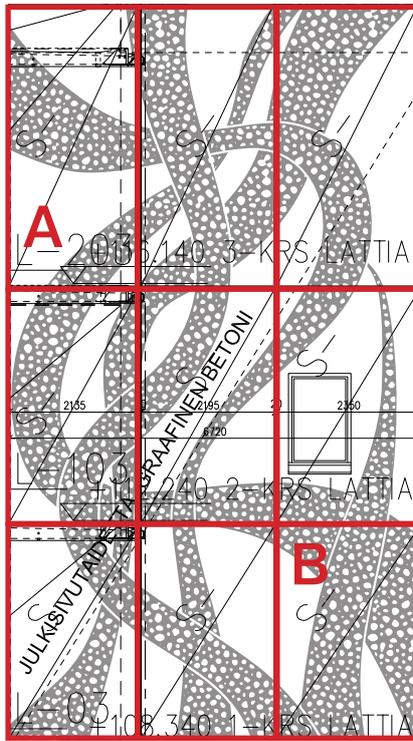
GCPlus™

GCPlus™ images are printed as unique, non-repeating patterns. There are no size limitations as the image can continue from one element to the next. We are ready to help in the design process in order to achieve the optimal solution for your GCPlus™ image.

When you send us your image, we can help process the image and divide it into suitable dimensions for the elements. In this way the prefabrication factory is provided with ready membranes for each individual concrete element.



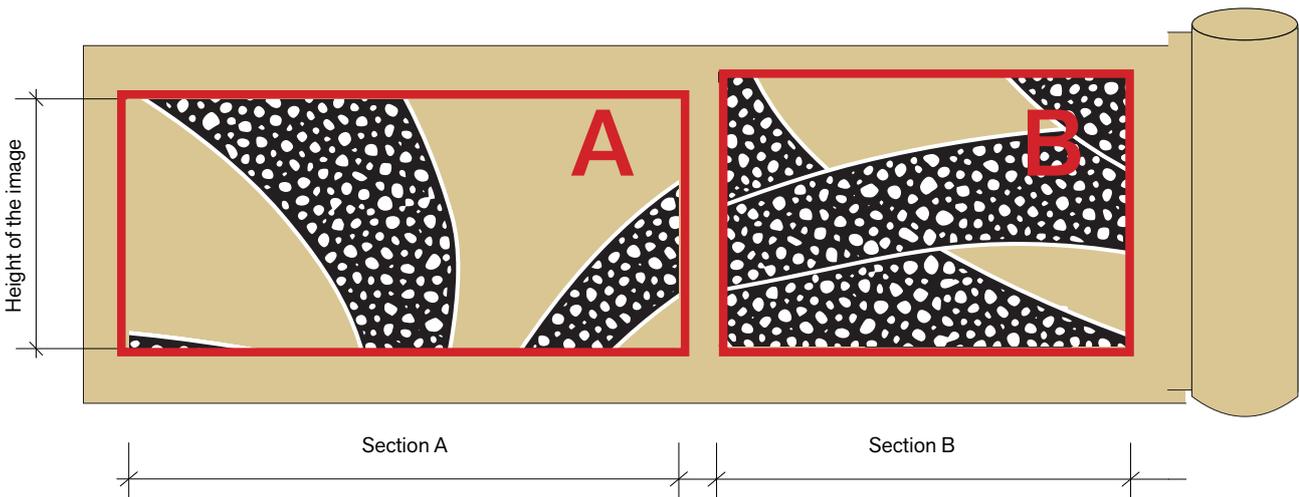
A custom GCPlus™ image



The same image divided into sections according to the number and placement of elements



Section B of the image as it appears on the façade element

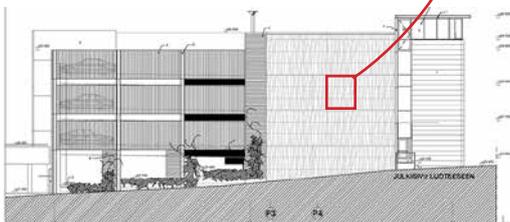
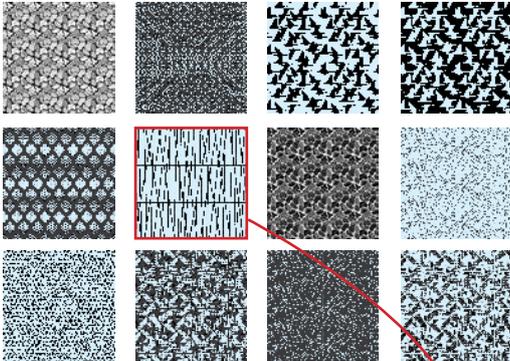


We can divide your image into sections to cover multiple elements. When printed on the membrane, the image appears in reverse.

Graphic concrete design process

Option 1:

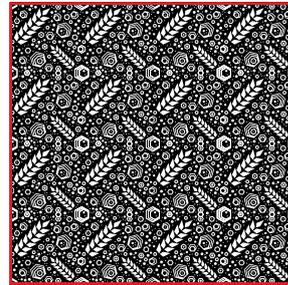
Select a pattern from our GCCollection™.



Our GCCollection™ features repeating patterns with the dimensions 3200x3200 mm. You can choose the layout and how you want the patterns to repeat in your own project.

Option 2:

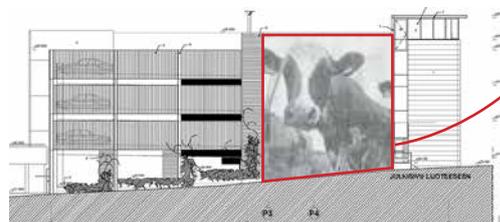
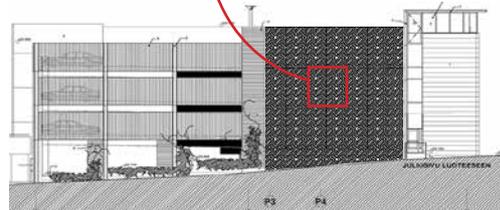
Create your own pattern, GCBasic™ or GCPlus™.



GCBasic



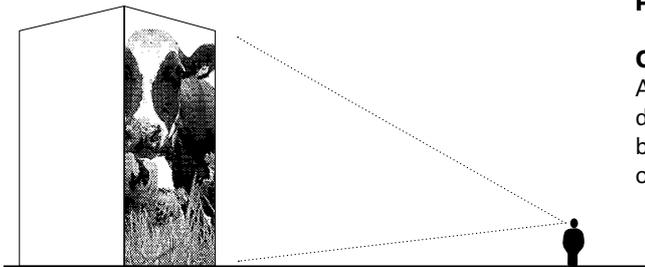
GCPlus



There are no size limitations when using GCBasic™ repeating patterns with the dimensions 3200x3200 mm images or a unique GCPlus™ image.

Tips when designing your own pattern

Design your pattern or image in scale 1:10 or 1:1. Name the file accordingly: (project name)_(image name)_(width x height in millimetres).(file format). Example: project_image1_7000x3010mm.pdf



Pay special attention to viewing distances, colours and contrasts.

Consider how you want the image to appear.

A good design is one that can be viewed from afar while revealing more details the closer you get. Colours and contrasts play an important role in bringing out the details: changing the aggregate and/or cement colour offers a vast amount of variation in the overall effect.

Use rasters for photographic images.

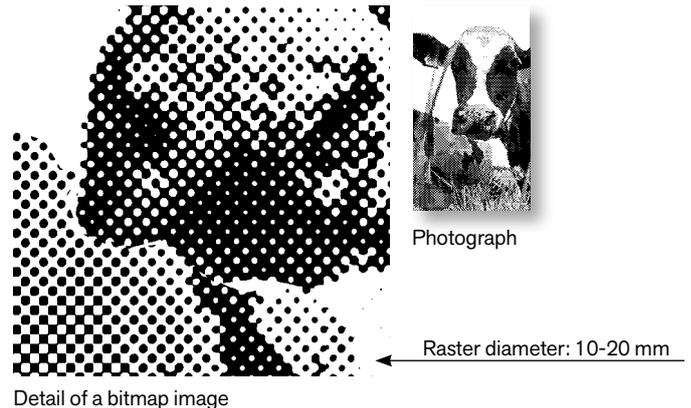
Open the image in Adobe Photoshop, for example.

1. **Image > Mode > Greyscale**
2. **Image > Image Size > Convert image into 1:10 scale of the wanted size. Resolution approx. 300 dpi.**
3. **Image > Mode > Bitmap > Output min. 300 dpi**
 - Method: Halftone Screen
 - **Halftone Screen > choose accordingly to your design: Frequency, Angle, Shape**

When rasterising an image, use large raster pixels and lines.

Recommended sizes:

- Average 10-20 mm in scale 1:1
- Avoid rasters smaller than 5 mm



Use vectors for patterns.

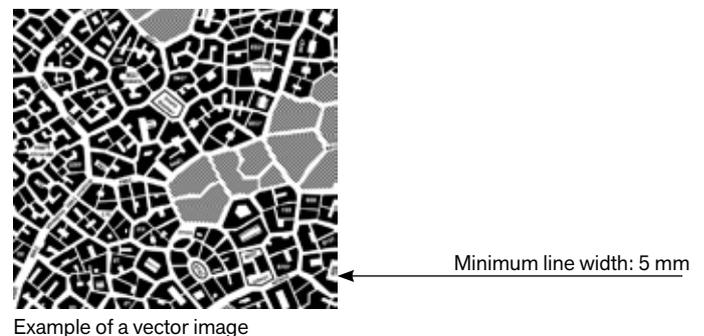
Design the image or pattern in Adobe Illustrator, for example.

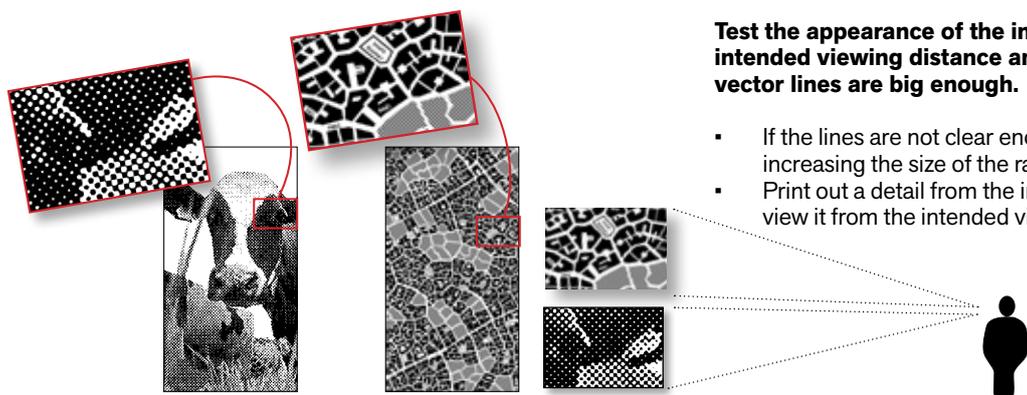
Make sure to use only 100% black; do not include any other colours in the document:

- Double click the fill colour
- C: 0, M: 0, Y: 0, K: 100

Use thick lines when creating a vector image.

The minimum width should be 5 mm in scale 1:1.





Test the appearance of the image or pattern from the intended viewing distance and make sure the raster or vector lines are big enough.

- If the lines are not clear enough or the image appears blurry, increasing the size of the raster or vector lines usually helps.
- Print out a detail from the image or pattern in scale 1:1 and view it from the intended viewing distance.