

Title: Choosing the Best Halftone

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Summary: Choosing the best halftone for your GERBER EDGE jobs

Spot the Best Dot

The GerberTone family of dots, and Classical dots are probably the most frequently used halftones for GERBER EDGE jobs. Here is a brief overview of the dots, where to use them, and some tips and tricks for usage.

Basics and Terminology

- The higher the LPI, the smaller the dot.
- The "Halftone Coverage" listed below is the size of the Classical dot you would have to use to get the same grey levels from a GerberTone dot.
- The GerberTone Simulated LPI is the approximate dot size as it appears on the vinyl. Because it is a simulated dot size, it may not exactly match a Classical halftone of the same LPI.
- Because it uses multiple layers of color, process color jobs tend to hide banding and other "dot anomalies" better than spot color.
- Sometimes with GerberTone, you may notice some patterning. This is not banding in the traditional sense, but a result of the creation of the simulated smaller dot. This patterning occurs mostly at the extremities of a fade. This patterning usually cannot be seen at most true viewing distances, but may be noticeable up close.

GerberTone for Vectors			
	Simulated LPI	Halftone Coverage	When to use
GerberTone	42.4 LPI	21.2 LPI	Good all around spot and process color dot. Jobs can be scaled from very small up to 10 feet long without any visible banding.
Gerbertone Fine	63.6 LPI	21.2 LPI	Especially good for small process color jobs for close viewing distances. For spot color fades, set fades between 20% and 80% to avoid some of the "patterning" mentioned above.
GerberTone Long	32 LPI	16 LPI	Especially good for fades more than 10 feet long.

GerberTone for Bitmaps (Images)			
	Simulated LPI	Halftone Coverage	When to use
GerberTone Photo	81.9 LPI	27.3	Good all around spot and process color dot. Jobs can be scaled from very small up to virtually any practical image size without visible banding or contouring in highlight areas. May produce noticeable "patterning" in monochrome or spot color images. Consider using a classical dot for spot color images that do not require frequent scaling.
Gerbertone Artwork	70.7 LPI	70.7 LPI	Especially good for small process color jobs and non-photographic images. Good for process color reproductions of scanned logos, watercolor paintings, non-continuous tone images. Will not produce GerberTone Patterning, but does not tolerate scaling nearly as well as GerberTone Photo. May produce banding or contouring on larger photographic or continuous tone images.
FYI:	GerberTone Photo automatically changes to GerberTone Artwork for bitmaps or images whose smallest dimension is less than 3.5 inches.		

While GerberTone simplifies the use of halftones, there are some cases where you might wish to use a classical dot.

Classical Dots		
Classical LPI	Object Description	Why?
53, 70.7 or 106.1 LPI Small dots	Vector/Shapes without linear or radial fades. Good for small, medium or large areas.	While these dots at these LPI will probably produce banding with larger linear or radial fills, they can be used for percentage tints with no fades. High LPI classical halftones produce a small dot and a nice, even pattern which may be desirable for some closer viewing conditions.
53, 70.7 or 106.1 LPI Small dots	Small (less than 1 inch) Vector/Shapes with linear or radial fades.	Small objects mean closer viewing distances, and a desire for a smaller dot. Small objects also mean fewer colors are required. Therefore, a higher LPI can be used to get the small dot without banding.
70.7 or 106.1 LPI	Non-photographic, non continuous tone	These types of jobs must pass two crucial tests: If the job does <i>NOT</i> look real, and if you

Small dots	Images/Bitmaps such as solid color logos, watercolor paintings, cartoons.	<i>CAN</i> count the number of colors, you can use the LPI mentioned. In some cases these LPI will create the EDGE output to be brighter, or more contrast-y, prompting people to mention that "the EDGE output looks better than the original!" These LPI will cause "contouring" in continuous tone or photographic images.
Low LPI (less than 20 LPI) Big Dots	Bitmaps or Vectors with longer viewing distances.	The lower the LPI, the more greyscale steps and colors you get from an image, and less the chance for banding or contouring. If the viewing distance is more than 20 feet, the human eye assimilates these large halftone dots into a whole image, and you have no worries about banding or contouring.
35.4, 42.4, 53 LPI	Spot color or monochrome bitmaps/images.	With only one layer of color, spot color bitmaps sometimes look better with a classical dot than with GerberTone Photo. These images will not tolerate substantial scaling before banding or contouring.

Other Fills		
Halftone Type	Object Description	Why?
Stochastic Fills	Bitmaps only (spot or process)	The stochastic fill for the GERBER EDGE provides a softer-looking image that also lends itself to certain special effects.
Spiral Dot	Bitmaps or Vectors	Similar to a classical dot, but each halftone cell builds differently. May offer greater contrast in photos than classical dots.
Think in Reverse	Use dots that are inappropriate!	A drawback in one case can be an asset in another! "Improper" halftone usage can also create some dynamic special effects! Try some huge dots in small objects. Jack up the LPI to get some dramatic contrast or heavy banding.