

Good Halftones for Good Blasting

The term halftone refers to a black and white image that uses defining dot formations to create an illusion of a continuous tone, all tones between black and white (grayscale). This is used to reproduce artwork such as a photograph. The smaller dots approach an appearance of a solid blast coverage and larger dots produce shading. Customers wishing to sandblast photographs onto an object use halftone techniques. Consequently, halftone etching on granite is frequently used in the monument and memorial industries.

The proper artwork and photo positive (or negative) is the most crucial step in creating a successful halftone photo resist. Film created from an inkjet printer, process camera or image setter is required. Vellum paper or drafting paper positives do not provide the resolution or 3.0 density (absolute blackness) required for halftone imaging. Remember, with photoresist processing, the black areas of your artwork relate to the areas that are sandblasted, which will turn frosted or white. So, when blasting halftones onto glass, use a negative image. This will make the shadows or grays of your image white in appearance.

An accurate exposure time and precise development are also required in producing a halftone photo resist. When fine detail artwork and photo resist are over exposed to ultra violet light, undercutting can occur. Not only does this cause image distortion or loss, but it will also cause the photo resist to crosslink (become water resistant) in areas to be washed out. It is highly recommended to washout halftones with a pressure washer. High pressure and low water volume work effectively in pushing the water soluble emulsion out of the sandblast areas. Over washing will lead to a loss of dots (again distorting the image to be sandblasted).

Adhesive is then required to bond the photo resist mask to your object. When sandblasting halftones, dilute seven parts adhesive with three parts isopropyl alcohol (rubbing alcohol). Diluting the adhesive ensures a very thin adhesive coat, thus, avoiding an added resist barrier. Always apply your adhesive to your surface using a foam brush and coat in long, even brush strokes.

And finally, when sandblasting your halftones, we suggest 20-25 psi using a pressure pot system and 60-80 psi using a siphon system. With either system, hold your nozzle six to eight inches from the surface at a 90° angle. Keeping your nozzle perpendicular to the surface avoids cutting under the mask or dots which could lift from the sandblast surface.