

DECAL AND NAMEPLATE DESIGN GUIDE



A Guide for Designing and Specifying Decals, Labels and Nameplates

The purpose of this guide is to describe, in brief detail, an overview of the considerations involved in the creation, production, and delivery of decals and nameplates, and other graphic applications used for product identification.

Production of decals and nameplates is a complex segment of the graphics arts industry and as such there is significant requirement for excellent communications between the customer and U.S. Nameplate Company. In order to deliver a high quality, durable product, it is vital that U.S. Nameplate Company has either explicit knowledge of the use of the product or a detailed specification from the customer. One of the prime objectives of the guide is to improve the flow of communications between the customer and U.S. Nameplate Company which will generate a customer product of the highest quality, produced on schedule, at the lowest possible price.

U.S. Nameplate Company has been in business continuously since 1946 and in that period of time has produced and delivered more than 450,000 orders to approximately 5,000 customers worldwide. The company has a strong technical staff most capable and willing to assist you in the design, specification, and ordering of your identification products. We hope this design guide is useful and when you have a product identification requirement you will allow us to provide a quotation. Our phone number is 800-553-8871.

SECTION I: THE DESIGN PHASE

A. Where will the product be used?

Is the part going to be used indoors or out-of-doors (What is the environment?). What are the general atmospheric conditions, humidity, and temperature ranges for product exposure? Are there any corrosive elements to be considered or will the part come in contact with any chemicals or petroleum products? Are there any approval requirements such as UL, CSA, or AGA?

B. How long will it—or do you want it--last?

How long do you envision the identification to remain on your product before replacement? What do you think is the useful life for the identification product?

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C. What materials are best for my use?

Is the application surface flat, contoured or are there obstructions such as rivets or screw heads? What is the texture of the surface? Does the part fit in a recess and if so what dimensional tolerances will you require?

D. How will the decal/label/nameplate be attached?

If you don't know the material and process required for your part, U.S. Nameplate Co. engineers can recommend the proper materials and production process based on the previous answers in A, B, and C. Section II lists some of the various materials, processes, and adhesives available.

E. Colors

U.S. Nameplate can match your color requirements if a PMS type or other standard color is not available. Costs increase as the number of colors increases.

F. Artwork

You can furnish camera-ready art or have our art department design it for you. The preferred files are vector (line drawn) artwork. If all you have is a rough sketch; we can also work with you to create it in-house. We print proofs for your approval before any production job is started. When the art is approved we make films for plates and screens in a minimum amount of time, and therefore at a minimum cost. We can receive your file/s via FAX or email. Call to discuss any artwork possibilities you may have in mind.

G. Size and Shape

If your identification product requires a special shape, you will more than likely require a die for this purpose. We have hundreds of hard dies that we own, in a variety of sizes and shapes. Metal parts requiring "hard tooling" may cost anywhere from a few hundred dollars to thousands of dollars. If any of our dies that we own fit your size or shape we will use our tooling at no charge to you. Shapes that are square or rectangular are the most cost effective to produce because in most cases they don't require any special tooling. U.S. Nameplate is equipped to produce parts to with 0.002" in tolerance and for non-die-cut parts, plus or minus 0.005" is a reasonable tolerance to work to. Giving us as much tolerance as possible minimizes a great deal of time setting up each phase of production, thereby reducing your costs.

H. Delivery

Give us as much lead time as you possibly can. We strive to turn around jobs in 7 days from the acceptance of the proof. If you need your parts sooner, a special premium charge can be applied to rush your job through within 48 hours of acceptance of proof.

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I. Inspection and Shipping

If your part is a highly decorative piece and integral to the cosmetic perfection of your product, we will produce to that standard, 100% inspect each part and ship for ZERO reject potential. If your part is not of such exacting standards, we still produce to the finest industry standards, however, the inspection level is less. We typically ship within a 10% over/under quantity standard. If you have unusual or very specific packing, handling or shipping instruction, be sure to let us know prior to production.

J. Release Program

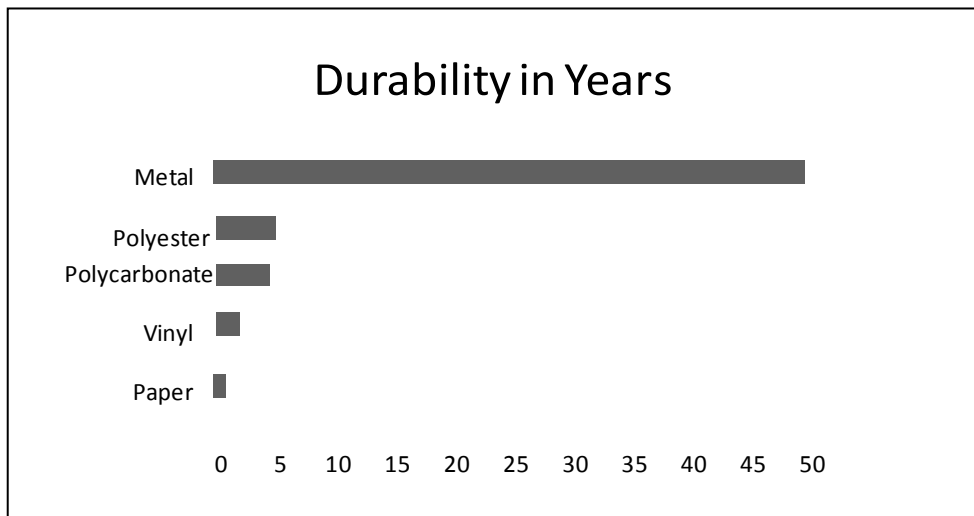
U.S. Nameplate understands and works comfortably with the “Just-In-Time” concept of planning and inventory control. We would be pleased to discuss with you your requirements and our ability to interface with your system.

SECTION II

When it is time to Order

A. Cost Guidelines

Typically, 4/5 of the cost of a decal or nameplate is labor, and 1/5 is the cost of material. As you can see, it is only a slight increase in the overall price to specify highly durable films or even metal. The following figures chart the relative differences in durability from one substrate to another.



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Description of Substrate	Expected Durability (yrs)
Premium Cast Vinyl Films – High Performance	
2mil permanent acrylic adhesive	5-7
4 mil permanent acrylic adhesive	5
Calendared Vinyl Films-Less Durable-Economy Grade	
3 mil soft gloss white – permanent adhesive	3
3 mil ultra clear – permanent adhesive	2
4 mil matte – permanent adhesive	2
4 mil hard, matte – permanent adhesive	2
4 mil hard, matte – removable adhesive	½-1
Polycarbonate	
Standard	3
Coated	5-7
Polyester Films(including Mylar)	
1 mil clear – acrylic permanent adhesive	2
2 mil clear – acrylic permanent adhesive	2
1 mil metallic chrome – acrylic permanent adhesive	2
2 mil metallic chrome – acrylic permanent adhesive	2
1 mil metallic gold – acrylic permanent adhesive	2
2 mil metallic gold – acrylic permanent adhesive	2
Other Films	
4 mil acrylic film, metallic chrome, embossable	5
4 mil acrylic film, brushed chrome, embossable	5
Metals	
Aluminum, stainless steel – screen printed, digital printed	20
Aluminum – etched, screen filled	25
Metalphoto® – Metalphoto®	30+
<p>Length of durability varies greatly by exposure to the extremes: humidity, temperature, and ultraviolet radiation (sunlight), for example. Lengths of durability listed are generally suggested under “normal” conditions and are not guaranteed. Consult U.S. Nameplate for specific durabilities.</p>	

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B. Materials to Use

Paper – Usually for temporary signage or for applications like promotional bumper stickers.

Vinyl – Durable plastic PVC film that is flexible, conformable, abrasion resistant, and water and weather-proof. Often used to hug curved surfaces as well as forming over minor surface irregularities.

Polycarbonate – Strong, rigid plastic film with high impact strength and good electrical and optical qualities. Polycarbonates may be heated to conform to surface irregularities. They offer excellent chemical and abrasion resistance. Lexan is a trade name for polycarbonate.

Polyester Film – Very strong plastic film, which does not form as well as vinyl, but offers little or no shrinkage. Polyesters are available in bright metallic finishes as well as transparent and can be printed in any color. Mylar is a trade name for polyester.

Reflective Film – Plastic film coated with tiny glass beads that reflect light like a cat's eye. For decorative effects, transparent colors are applied so that the light is reflected in color. These films conform to curved surfaces fairly well and offer relatively long life in outdoor applications.

Other Considerations for Decal Products

Shelf Life – Store decals at around 70°F (20°C) with the humidity level less than 50%. Under these conditions, the decal is useable for at least 2 years.

Clear Backing – If you want to view your image against the background material consider printing your decal on transparent material. This is less expensive than cutting out the outline of your decal.

Borders – Try to avoid a printed outline or border around your decal. This requires a close registration and additional cost to produce.

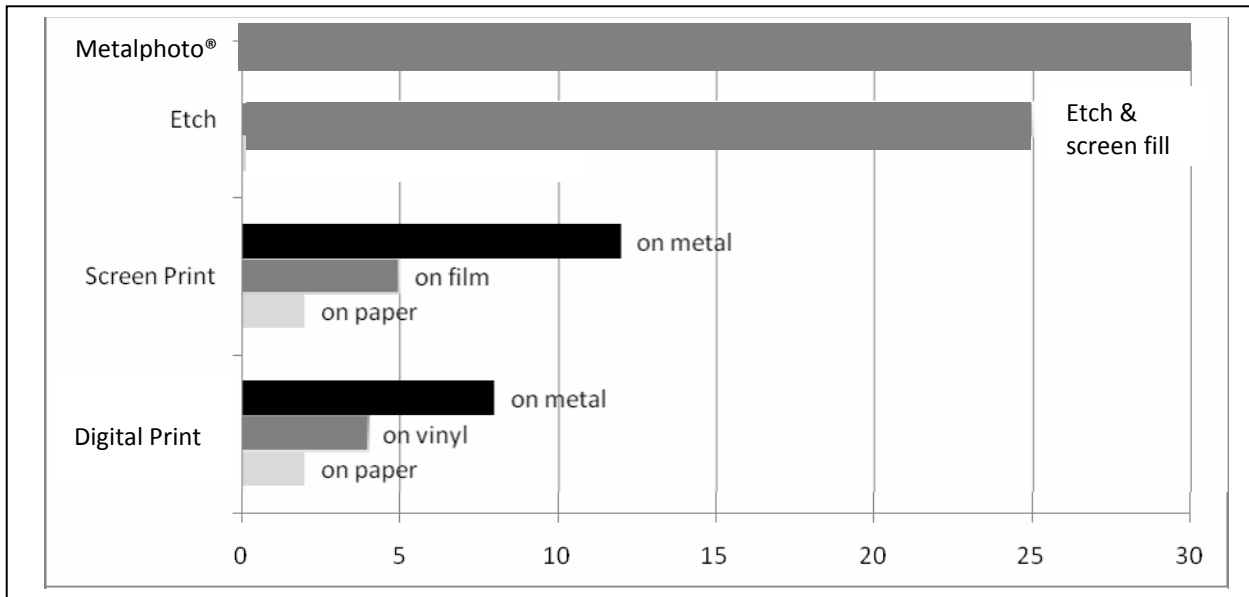
Sizes – Decals are produced from film stock procured in standard widths and sizes. Finished decals are increments of these standard sizes with minor loss for trim. To minimize cost and material waste, specify decals in standard sizes – ask your printer for recommendations. Small decals (under 2") should be die cut.


C. Processes


Another major factor concerning the cost differential from one decal or nameplate to another has to do with the process selected. The more durable the product, the greater the cost.


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Durability of Printing Process in Years




 **Digital Printing-** Digital printing refers to methods of printing in which a digital-based image is applied directly to a variety of media. It usually refers to professional printing where small-run jobs from desktop publishing software and other digital sources are printed using toner-based laser or inkjet printers. Digital printing allows for on-demand printing, short turnaround time, and even variable data, when a different image is for each impression.

 **Screen Printing -** This process forces screen “paint” or ink through the tiny mesh of a screen that has been photographically imaged. Selected holes are blocked, allowing ink to flow through open holes. The result is accurate imaging on the substrate with a dense, thick layer of “paint” that will in and of itself be very durable. Additional protection of the graphic can be achieved by over laminating a film to the cured substrate. This process works very well with vinyls, polyesters, polycarbonates, or any of the “plastic type” substrates, as well as metal.

 **Metal Etching –** This process results in the desired image etched into the metal by a process of first lithographic printing a photographic negative on a sheet of metal, dusting the still wet ink with a special etching powder (creating what is called a “resist”), then immersing the sheet in acid or caustic solution. The resist protects the metal from etching, while the exposed areas of the sheet are allowed to be etched. When the resist is stripped away, what is left is the desired image etched into the sheet. This etched surface can then be further decorated with inks or paints to give more color and definition to the etched graphics. Because of the considerable number of processing steps necessary to produce this kind of part, it is the most expensive, yet most durable. This method is recommended for the toughest and harshest environments, as well as military specs.

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 Metalphoto®- This process utilizes the porous nature of unsealed anodized aluminum to create a sub-surface image, through exposure and development of an anodic layer impregnated with silver compounds much like traditional black & white photography. Metalphoto® plates are commonly used in military, aircraft, marine, heavy construction, and industrial applications. Metalphoto® products meet military specifications.

Other Considerations – It is sometimes desirable to “reverse print” (print on the backside) of a transparent substrate so the graphics are protected by the thickness of the substrate material. There are interesting variations of this technique, one of which is called “dead front” printing. Using the “dead front” technique, the user is unaware of the graphics until a light source from the backside illuminates the graphics. Typical of this application would be instrument and/or control panels. U.S. Nameplate has considerable experience in these forms of screen printing.

D. Adhesives

Selection of the proper adhesive (if any) depends upon a number of factors:

- What is the product to which the nameplate or decal will be attached? Metal, glass, plastic, composites, fibers?
- What is the texture of the surface to which the nameplate will be attached?
- Is the product intended for indoor or outdoor use?
- What temperature range will your product live in?
- Has the surface been treated in any way or are there other materials between the nameplate and the actual surface of the product?
- Have silicon or other mold releasing compounds been used on or around your product? Have these materials been thoroughly cleaned from the product or are they still present?

When these questions have been answered, a selection can be made regarding the proper adhesive to meet your requirements. Adhesives come in a variety of thicknesses from 1.5mils to 4 mils unsupported, or up to 1/8” or more for foams having special applications. Adhesives are typically acrylic in nature for permanent adhesion, or rubber based for temporary adhesion. Adhesive films can be colored when desirable for certain applications. U.S. Nameplate Company does not manufacture the adhesive. We work closely with adhesive manufacturers to meet your requirements should we not stock the appropriate adhesive.

We hope this design guide will prove useful to you.

When you have a requirement for nameplates, labels, decals or any other product identification, please call U.S. Nameplate Company: 1-800-553-8871

www.usnameplate.com



Provided by U.S. Nameplate Company
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