

DuraTech Design Checklist

To better engineer the cost of and produce a part, DuraTech should have specific information from our customers up-front. This design checklist can shorten lead times, reduce costs, and ensure that quality is designed into the part. It will allow our staff to verify, or suggest, materials and adhesives that are best suited for each individual application.

The checklist is designed to work in tandem with a blueprint or sketch indicating size and colors.

PART NUMBER (Include any and all P/N's covered by this checklist.): _____

If more than one, would you like the parts to be quoted as a set? Y N (Oftentimes, parts that are used on the same piece of equipment can be the same material and therefore can be ran together as a set. Please call for more information on sets.)

QUANTITY (Please be as specific as possible. Major factor in unit price and tooling costs.)

Estimated Annual Usage? _____ Project life? _____
Prototype Q? _____ Use production tooling for prototypes? Y N
Pre-production Q? _____ Projected Order Quantity? _____

Would you like us to produce a pre-determined blanket amount, hold product, and ship on demand? Y N

If yes, identify blanket time frame: six months one year other _____; and number of releases: _____
(Blanket orders are a great way to save money and inventory costs. Get the economies created by a larger order quantity, product shipped on a Just-In-Time schedule, and billing only as each release is shipped.)

ENVIRONMENT (Please be as specific as possible.)

Please explain the end use _____

Is the part to be used outdoors? Y N If yes, please explain the exposure (vertical, horizontal, enclosed, etc.): _____

Is the part exposed to any chemicals? Y N If yes, please list any specific chemicals: _____

Maximum temperature? _____ Minimum temperature? _____ Application temperature? _____

Surface applied to? _____ Textured? Y N Curved? Y N If yes, radius? _____

(Indicate the specific surface, including the color. Different adhesives work better on different surfaces. For example, a powder coat paint surface may require a different adhesive than one painted with enamel. An ABS plastic may require a different adhesive than a polyethylene plastic. Also, dark surfaces may require special color matching considerations. Please send us the surface whenever possible.)

CONSTRUCTION (Based on the information given above, DT may recommend an alternate construction. However, the information you provide below will give us valuable insight to the requirements of the project. If this information is included on your blueprint or sketch the following section may be omitted.)

Material preference: _____ Thickness: _____

Adhesive: Y N If yes, please specify any preferred type: _____ Thickness: _____

Selective (No adhesive in certain areas, e.g. windows, keypads. DT standard procedure is to keep .060" adhesive free on all sides of a window/keypad. Our standard tolerance on the placement is $\pm .020$ ". Please note deviations to these practices on your blueprint.)

GRAPHICS (Any artwork supplied should be computer generated. Can be e-mailed to artwork@duratech.com.)

Computer art information: None E-Mail _____ Other _____

GRAPHICS (cont.)

____ Number of custom colors (Please include PMS #'s or, better yet, include samples or chips to match.)

____ Number of standard colors (Standard colors can save costs. Standard color chips are available upon request.)

____ Texture or antiglare finish (Please include sample or indicate gloss level.): _____

____ Selective (No texture in certain areas, e.g. LED windows, display windows, etc. DT standard procedure is to bleed the texture into the windows by .010". Please note deviations to this practice on your blueprint.)

TOLERANCES (Generally, the tighter the tolerance, the higher the initial tooling costs, and larger fallout percentages. Care should be taken to avoid over spec'ing your part. Thicker materials may require larger (laser) diecutting tolerances, or the use of a hard tool.)

Diecutting: ____ +/- .010" I-Cut, generally used on short runs

____ +/- .005" Hard tool, generally used for extremely tight tolerance or long running projects.

____ +/- .010" Laser burned steel rule die, generally used for parts that fit a recessed area.

____ +/- .015" Jig cut steel rule die, generally used for less critical applications.

Graphics to diecutting: ____ +/- .015" Industry standard

Printed graphic tolerances (as stated): +/- .010" - Printed graphics to graphics created by one color

+/- .020" - Printed graphics to graphics created by more than one color

AGENCY REGULATIONS/REQUIRED APPROVALS: __UL __CSA __Other _____

FEATURES

____ Tamper Evident (Leaves "void" message if removed.)

____ Destructible (Designed to fracture easily to prevent one piece removal.)

____ Computer imprintable/ink receptive

____ Removable Adhesive

____ Repositionable Adhesive

____ Serializing (1/16", 1/8" or 1/4" high - please indicate size and color.): _____

____ Embossing - Number of expected actuations: _____ Height (Recommended 1 1/2 times material thickness for polycarbonate, 1 time for polyester): _____

OTHER INFORMATION (Parts will be shrink wrapped in packages of 100 - 200 unless otherwise specified.)

Special packaging requirements? _____

Is the part backlit? __Y __N If yes, please describe: __LCD __LED __Other _____

Is the part applied to a subpanel? __Y __N Dura-Tech supplied? __Y __N (Include drawing.)

Applied to a membrane switch? __Y __N DT supplied? __Y __N (Include drawing/complete checklist below.)

(Please submit housings - including working display units and lighting sources - as early in the design stage as possible.)

MEMBRANE SWITCH INFORMATION

ELECTRICAL

Number of switches: _____ Operating Voltage: _____ Operating Current: _____

Maximum contact resistance: _____ Minimum open circuit resistance: _____

Switch circuitry: __XY matrix __One side common __Other (Please describe.) _____

ESD shielding required? __Yes __No Immunity requirement in volts: _____

RFI/EMI shielding required? __Yes __No

Number of LED's? _____ Type? _____

Type of LCD display: _____ Customer supplied? __Yes __No

Type of connector: _____ Customer supplied? __Yes __No

Other discrete components: _____

MECHANICAL

Total thickness with overlay: _____ Tail length and location: _____

Special operating force requirements: _____ oz.

Tactile feedback required? __Yes __No If yes: __Stainless steel __Polyester

Number of expected actuations: _____

Mounting method: __Adhesive (Please complete "Surface applied to?" section on overlay Design Checklist.)

__Studs __Holes __Other (Please describe.) _____

ENVIRONMENTAL

Operating voltage: _____ maximum _____ minimum

Storage temperature: _____ maximum _____ minimum

Maximum humidity conditions: _____

Special altitude requirements: _____

Other: _____