MSA Policy for Frozen Design

Introduction:

Lately, there has been a great deal of discussion concerning "Frozen Design" and "Frozen Process" requirements. The trouble is, these two terms can mean different things to different people, which can create a gap in understanding and may set the stage for disagreement.

There is a cost-to-benefit ratio related to defining and achieving the degree of "Frozen" that is desired. The following policies explain the extremes of the "Frozen" spectrum. As such, they establish MSA's typical product offering, as well as what MSA is capable of providing if the customer desires a greater degree of control to be exercised.

Frozen Design (FD)

MSA provides three distinct categories of products:

1. Reference Designs (Standard Products)
2. Customized Reference Designs (CRD)
3. Totally Custom Products

The following is MSA's definition of Frozen Design for each of these product categories:

1. Reference Designs (Standard Products):

Reference designs are **not frozen**.
A special set fi part numbers are assigned to Reference Design products.
Although these designs do not often require change, when it becomes necessary to do so, changes will be made to these part numbers, without formal notification to customers.

2. Customized Reference Designs (CRD):

Customized Reference Designs are based on, therefore include, common components from the Reference Design on which they are based. In order to precisely meet more specialized needs of customer applications, the final CRD product also incorporates customized and/or fully custom components.

Once a CRD sample has been approved by a customer, MSA assigns a unique part number to the complete product, and special part numbers to each customized/custom component. Such part numbers signal the necessity for special consideration when either common or custom component design changes must be made:

MSA Guidelines for Frozen Design related to Customized Reference Designs:

a. Common Component Changes, which **do not** affect Form, Fit or Function:
When changes to *Common* components do not affect the form, fit or function of the CRD end product, the CRD design **is not frozen**. Such changes may be made without formal customer notification.

b. Changes which **do** affect Form, Fit or Function:
If there is any chance that either fit or performance could be impacted by updates made to *Common* components, and whenever changes are required for any *Customized or Totally Custom* components, the design **is frozen**.

Before changing anything, MSA will notify the customer, discuss the genesis of the change, and determine the best course of action to ensure fulfillment of the customer's requirements.

3. Totally Custom Products:
Once samples of totally custom products have been provided to and approved by the Customer, MSA will assign a special part number to each component, and a special part number for the final assembly.

All such designs (component level and final assembly) are **frozen**.
This means; dimensions, tolerances, features, and specifications will not be changed without first notifying the customer, discussing the need for change, providing design alternatives, and gaining customer approval to proceed.

Useful Reasons to Consider Changing Frozen Designs:

Circumstances beyond anyone's control, including both planned improvements and unplanned/unavoidable occurrences, can encourage a change to be made to Frozen Designs.

A. Obsolescence and Government Mandates:

Changes to Frozen Designs can be driven by:
the obsolescence of raw materials and purchased components,
the loss of a supplier for a particular component, material or outside process,
changes in governmental mandates related to allowable materials (i.e. RoHS and REACH), and
geopolitical restrictions on sources of materials (i.e. Conflict Minerals)

Whenever such issues arise, MSA will immediately notify the customer, discuss options, and select the path that best suits the customer's needs.

B. Unexpected Cost Increases:

World commodity markets can suddenly and unexpectedly increase the cost of raw materials (i.e. copper, and rare-earth permanent magnets), which may negatively impact the cost of purchased components and outside processes. Such changes have a commensurate impact on the selling price of end products. Whenever this occurs, MSA will notify the customer so that, together, they can explore the various options that will continue to meet the customer's technical and commercial needs.

C. Beneficial Design Changes:

Planned change can often provide a beneficial, valid reason to thaw a Frozen Design. Continuous Improvements related to quality, performance, opportunities for cost reductions, or any combination of these are all positive reasons to explore making a design change.

Whenever such opportunities are presented, the customer makes the final decision whether, or not, to take advantage of the improvements.

The Best Path to achieve the desired Frozen Design Realization

Very early in the design phase of every project, defining the appropriate level of Frozen Design must be a collaborative effort between the customer and MSA.

Only when design guidelines and goals are clearly established can the correct design characteristics and relevant manufacturing processes be selected, thereby achieving the desired technical and commercial results.