

## Research & Experimentation Tax Credits for the Plastics & Rubber Manufacturing Industries

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The Research & Experimentation (R&E) tax credit, also known as the Research & Development (R&D) tax credit, is a tax incentive that may be available to plastics or rubber processors (“Processors”) to reduce their federal and state income tax liabilities. Processors who are developing new part or mold designs; experimenting with different resins or materials; automating manufacturing processes; or evaluating and testing processing variables may be engaging in qualified research.

### About the R&E Tax Credit

Historically, the R&E tax credit has been claimed by biotechnology companies, pharmaceutical companies, and large manufacturing companies with proprietary technology and research facilities. However, changes to governing regulations have allowed additional industries, such as custom manufacturers, to utilize this federal tax incentive.

The R&E tax credit is calculated by comparing the current year’s research expenditures to a base amount, with 20% of the increase in expenditures captured as the tax credit. The base amount may be calculated numerous different ways and is specific to each taxpayer.

Eligible expenditures include wages for the performance, support, or supervision of qualified research activities; supplies used in the conduct of research; and payments made to 3<sup>rd</sup> parties to perform qualified research on the taxpayer’s behalf.

Companies can benefit by both deducting the research expenditures and claiming the credit. While the research expenditures are a reduction of taxable income as a business deduction, the R&E tax credit is a dollar-for-dollar reduction of tax. Further, approximately 30 states have similar tax incentives for qualified research activities. Many times, the state-level benefit may be greater than the Federal benefit, with credit amounts ranging from 1% to 40% of research expenditures in excess of the base amount.

### The Requirements and Applicability to Plastics & Rubber Processors

There are four basic requirements for an activity to qualify for the research tax credit. The following overview discusses the requirements and how these activities apply to processors.

#### 1. Development or Improvement to a Business Component

In order for an activity to qualify, processors must be developing a new business component or improving an existing business component that is held for sale, lease, or license, or used by the taxpayer in its trade or business. Business components are defined as products, processes, techniques, formulas, inventions, or software applications.

Generally, custom processors are in the trade or business of manufacturing parts to meet their customers’ specifications. In order to do so, they may assist their customers develop alternative part designs to evaluate or improve manufacturability; develop and test new mold designs; experiment with different materials of construction; or invest in automation technology to improve cycle time. Many times, these products or processes qualify as business components and the development and testing of these business components may qualify as a research activity.

## 2. Eliminating Uncertainty which is Technological in Nature

In order for an activity to qualify, the research must be undertaken for the purpose of eliminating uncertainty concerning the development or improvement of a business component which is technological in nature.

Uncertainty exists if the information available to the taxpayer does not establish the capability of developing or improving the business component, the methodology of developing or improving the business component, or the appropriate design of the business component.

Also, taxpayers are not required to be seeking information that exceeds, expands, or refines the common knowledge of skilled professionals in the particular field of science or engineering in which the taxpayer is performing the research. Thus, multiple design alternatives may establish the uncertainty required.

Plastics and rubber processors are rarely provided with the information necessary to produce a part to specifications. They are provided with a part design, and it's the processor's responsibility to develop a manufacturing process that will produce a part that meets the customers' specifications. The development and testing of this process is regularly the focus of many processors' research activities.

Further, the information sought must be technological in nature. That is, the process of experimentation to eliminate the technological uncertainty must fundamentally rely upon the principles of physical, biological, engineering, or computer science. Additionally, a taxpayer may employ existing technologies and may rely on existing principles of the applicable science to satisfy this requirement.

Clearly, the process of experimentation employed by processors relies upon the engineering and chemical sciences. Thus, the development of the new designs or improvements to existing designs is technological in nature.

## 3. Qualified Purpose of Research

In order for a research activity to qualify, the research must relate to new or improved functionality, performance, reliability, or quality. A processor's research efforts often relate to improved functionality, performance, reliability, or quality.

For example, during the development process, the processor may develop numerous hypotheses relating to, but not limited to, the following activities:

- Development of alternative part designs to improve manufacturability
- Development of new mold designs with an emphasis on the following:
  - Number of cavities
  - Length or width of runner
  - Gating issues
  - Flashing issues
  - Tolerance considerations
- Development of process control improvements through in-mold sensors
- Development of prototypes or models (including computer-generated models)
- Performance of mold-flow analysis
- Consideration of various ejection alternatives
- Development of processing alternatives with an emphasis on the following:
  - Plastic temperature
  - Flow rates
  - Pressure

- Cooling rate/time
- Test new resins
- Automation of manufacturing processes
- Development or testing of new concepts or technology
- Implementation of robotics or production control software
- Streamline or improve production or manufacturing processes to achieve higher standards in quality and productivity
- Performance of certification testing

#### **4. Process of Experimentation**

In order for an activity to qualify, a taxpayer must eliminate technological uncertainty by engaging in a process of experimentation. A process of experimentation is an evaluative process and should be capable of evaluating more than one alternative. Treasury regulations define a process of experimentation as modeling, simulation, or systematic trial and error.

After hypothesizing one or more of the above developments or improvements, a process of experimentation would commence to determine whether the hypotheses could be proven and integrated into the design. Frequently, this experimentation is not limited to the research of just one of the above alternatives, but extended to several alternatives as decisions related to one development or improvement often lead to a design conflict with another development or improvement.

Frequently, processors rely upon CAD modeling; mold flow simulations; and systematic trial and error, often in the form of prototype (PPAP or First Article) construction and testing. These activities regularly qualify for the R&E tax credit.

#### **A Note on Record-Keeping**

Taxpayers who are creating documentation procedures must capture the information necessary to prove that qualified research is taking place, while connecting the employees performing the qualified research to the activities themselves.

Business documents that many taxpayers already prepare as part of their engineering or reporting systems are the best place to begin. Many times, these documents including, but not limited to, drawings, designs, pictures, notes, emails, and meeting minutes create nexus to the employees performing the qualified research.

The ideal documentation for plastics processors to maintain includes, but is not limited to, the following:

- The details of the process of experimentation. The IRS often will request the step-by-step process that a taxpayer undertakes during its research. A highly detailed and documented process is best.
- The alternatives that were considered. These alternatives may relate to the capability or methodology of developing the product or process or could consist of design alternatives that were discarded in determining the best option. Taxpayers are encouraged to record both successful and unsuccessful alternatives. For purposes of the R&E credit tracking, unsuccessful alternatives are as significant as the successful alternatives (if not more significant since design uncertainty is evident).
- The results of experimentation. Any reports, notes, or testing results help corroborate the research activities.
- Documents listing employees involved in the research efforts. Documents listing employees that are performing or supervising the research provide excellent nexus to the research activities that are performed.
- The amount of time spent on each research project by person. Calendars, time logs, or time cards provide excellent sources of the employees' qualifying and non-qualifying activities.

By developing documentation procedures to amalgamate with existing engineering documentation, R&E tax credit documentation may be introduced to an organization with little interruption to existing practices.

## Conclusion

Processors may qualify for the R&E tax credit for the development or improvement of its products (typically new parts or molds) and/or manufacturing processes. While the Federal and State tax savings may be a significant incentive, Taxpayers should ensure they are properly documenting its R&E tax credits to withstand scrutiny by the IRS or state taxing authority.

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It is important to note that Mueller Prost will work with your CPA to properly document the R&E tax credit. These services are meant to augment, not replace, your current CPA's services.

## Contact Us Today

To schedule a no-obligation consultation, contact **Michael J. Devereux II** at 314.862.2070 or [mdevereux@muellerprost.com](mailto:mdevereux@muellerprost.com).