

STEEL FOUNDERS' SOCIETY OF AMERICA

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Purchasing Steel Castings – Source Selection

Steel castings offer unique opportunities for performance. The ability to select the widest range of steel materials from high strength to wear resistant to heat resistant to corrosion resistant to alloys compatible with other steel components is available as a steel casting material. Steel castings can provide the most complex internal passages and flexible geometries to optimize performance and light weight. Steel castings can be made in small lot sizes. They can be as small as required or as large as needed. Steel casting design is limited only by the imagination and requirements of the user.

While steel castings offer otherwise unobtainable advantages, purchasing steel castings can be difficult. A purchaser must provide a part design which may or may not be suitable for casting, select a material or alloy from a list of casting alloys, specify inspections and acceptance criteria for casting quality, and choose a casting supplier. Much of the purchasing of steel castings is done as purchasing commodities using the same process as buying ordinary standard parts like bolts and steel plates. Purchasing companies often locate steel casting purchasing as a commodity activity when it is rarely a commodity purchase. Most steel castings are proprietary designs developed by the purchasing company. This is the antithesis of a commodity and is by definition a proprietary and custom purchase.

So, what are the best steps to successfully purchase a casting that provides the best product at the best value? Since the use of steel castings is diverse, the requirements and qualified suppliers are different in different market spaces. The purchaser needs access to the steel casting expertise specific to their market. This may be, but often is not, available internally to the purchaser's organization. Studies by purchasing organizations show a disparity where purchasers rate the expertise higher than the foundries that supply their needs. The suppliers report poor communications and inadequate support from purchasers of steel castings. One approach is to retain a consulting expert on steel castings in the market of interest.

A more common approach is to collaborate with a qualified casting supplier in the design and specification of the casting required. Selecting a qualified supplier is the critical step in success of this approach. While any supplier interested may be able to become qualified, suppliers who are currently qualified can be identified for collaboration.

Many companies do an assessment of suppliers but these often review factors less relevant to the supplier's ability. While ascertaining the financial stability and production equipment capability of a potential supplier is necessary, it is insufficient.

Qualified suppliers are current suppliers of similar products in the market space of interest. They can be identified by their current market activity. It is helpful to see what level of current and recent business is in the markets of interest. Which customers are already being supplied by the casting producer? Does the foundry have qualified supplier status with industry leaders in the market space?

Other specific questions can identify supplier qualification. Does the supplier have the non-destructive testing available commonly needed in this market space? Are they producing similar parts? Do they produce the alloys of interest? Do they have documented melt and heat treatment procedures? Do they have a qualified weld procedure for the alloys and welders qualified to the procedure? Is the staff qualified with the skills and experience in this market space?

Supplier qualification may be the most important part of success in steel casting purchasing. Traditionally, purchaser's primary responsibility was to find qualified and responsive suppliers. More recently, purchasers assumed that any supplier willing to contractually meet the purchase requirement was qualified. This included other unqualified global suppliers. Unfortunately, much of the problems in using steel castings comes from naïve purchasers selecting low cost unqualified suppliers for poorly design castings. This leads to missed schedules, poor and unacceptable quality and inadequate cost expectations.

Steel castings offer market advantages in performance, cost and beauty to purchasers. Gaining these advantages requires developing manufacturable designs and qualified supplier selection. SFSA maintains a website with [steel casting design](#) information and a [directory of member steel foundries](#) to assist companies in design and supplier selection. SFSA also is happy to provide advice and direction to interested companies to make their efforts in steel casting acquisition successful.



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