



## **DIVISION OF PURCHASING**

# **GUIDELINES FOR WRITING EFFECTIVE SPECIFICATIONS**

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# Guidelines for Writing Effective Specifications

## 1. Introduction

Specifications are one of the most important elements of the purchasing process. The preparation of good specifications is probably the most difficult function in the process. Inadequate or poorly written specifications are the cause of many bidder challenges and can considerably delay the purchasing process. This information is designed to define specifications and assist agencies by providing guidelines to good specification writing.

The Division of Purchasing has final responsibility for specifications issued as part of formal Invitation to Bids or Request for Proposals. The specification may originate with an agency, an outside consultant, another governmental entity, or a professional society or association, however, the Division of Purchasing will review the specifications for suitability and competitiveness. Some agencies have the view that they are authorized to spend to the limits of their budgets and should be able to buy whatever product or service they prefer. However, the Division of Purchasing view is to conserve public funds and to refrain from buying a more costly product or service or larger quantity than is actually needed. The Division of Purchasing is obligated to try to obtain both product and price competition.

## 2. Definition of Specification

The term "specification" refers to a description of the characteristics of a commodity or service required or desired. Specifically, it is defined as the explicit requirements furnished with a solicitation upon which a purchase order or contract is to be based.

Specifications set forth the characteristics of the property and services to be purchased so as to enable the vendor to determine and understand that which is to be supplied. This information may be in the form of a description of the physical, functional, or performance characteristics, a reference brand name or both. It may include a description of any requirement for inspecting, testing, or preparing a material, equipment, supplies, or service for delivery. Specifications may be incorporated by reference and/or through attachment to the solicitation.

## 3. Why Use Specifications

Specifications are written so as to not restrict bidding but to encourage open competition. The goal is to invite maximum reasonable competition. The degree to which specifications are open and unrestrictive directly affects the type and extent of the competition desired.

Specifications provide for quality control, that is, they assure that the quality of an item is suited to its intended use and eliminates unnecessary features or frills.

Specifications are public records; they serve to keep the purchasing open by allowing the public to see exactly what is being purchased. Specifications are used during the evaluation of bids to determine whether or not bids are responsive.

Some of the difficulty in preparing specifications stems from the fact that the State can seldom dictate the *exact* characteristics of the products it wants. The requirements of an agency are usually not sufficient to justify a special or name brand product. Consequently, specifications are developed around a manufacturer's product specifications. If the specification did not have to satisfy state statutes requiring competitive bidding, the task would be much easier. The immense

variety of items purchased by the State further complicates specification writing. Products are improved, new products are introduced, and the needs of the public change. Consequently, the function of preparing and updating specifications must be an ongoing one.

## **4. Specification Sources**

There are many available sources that can be of assistance to you when you are developing your specifications. Here are suggestions for gathering specification information:

- Collect as much information as possible from the end user as to the function and performance of the requested product. Use their expertise and knowledge.
- Collect product information from the industry (brochures, catalogs, specs, etc.). Many manufacturers list their catalogs and product specifications on the internet.
- Look for standards and test information from professional societies where available.
- Look for specification information from other government entities. Check to see if standard specifications already exist. Use the internet and e-mail for research. Many states have standard specifications listed on the internet.
- Call on other “experts” in the purchasing community for help.
- NIGP: The National Institute of Governmental Purchasing maintains a library of over 10,000 specifications developed by federal, state, and local government purchasing entities in the U.S., and Federal, Provincial, and local entities in Canada.

## **5. Types of Specifications**

There are several different types of specifications to address the thing being purchased in a number of ways. The great variety of goods and services bought by the State necessitates the use of all of the following types of specifications:

### **5.1 Standard**

Where items that have similar usage are needed frequently or repetitively, standard specifications are developed. This establishes performance and quality levels, reduces the variety of things bought, simplifies inventories, allows for large volume contracts to be developed, and eliminates duplicative specification writing. Most statewide contracts use standard specifications to describe products required.

The standard specification details the characteristics that the item must possess without naming a brand or model.

### **5.2 Non-Standard**

Most purchases use non-standard or have no standard specifications developed for the item or service required and are used on a one time basis. A non-standard specification can be anything from a simple brand-name-or-equal description to a statement of work for professional services. Preparing them constitutes a large portion of purchasing

daily work.

### **5.3 Brand Name**

Brand name specifications cite a brand name, model number, or some other designation that identifies a specific product of a manufacturer. Brand name specifications are not considered good specifications, but they do have a legitimate use in public purchasing. An example might be when a particular brand name item must be purchased in order to be compatible with existing equipment.

The most restrictive type of specification, they have the effect of limiting bidding to a single product and are only used when only one product will meet an intended need.

### **5.4 Brand Name “or Equal”**

In the absence of standard specifications, the State often uses manufacturers' brand or model designations as a standard. Brand names are used to indicate general performance and quality levels. Unless otherwise noted, it is understood that other brands or models will be accepted on an "or equal" basis.

To aid in communicating the desired quality level to bidders, an effort should be made to use brand name designations that are known throughout the industry or have specifications that are readily available. If a bidder does not know which of his products is comparable to the designated brand names, he cannot bid intelligently and may not bid at all. Bidders customarily know their competition and can usually tell without too much difficulty which of their brands or models will be considered equal. Still, the bidder cannot be sure which features of the item will be considered crucial in making the award. In addition to the brand name, the specifications should name the minimum salient characteristics to be used in comparing brands and making the award.

Vendors who represent other brands or models as "or equal" which clearly do not meet this standard of quality or use, may be dropped from the bid list. It is the responsibility of the bidder to furnish with the original bid or proposal submission sufficient data for the State to determine if the goods or services offered conform to the bid specifications. The purchaser reserves the right to determine equivalency.

### **5.5 Detailed Design-type or Custom-made**

Design specifications set the requirements for the item to be purchased by detailing the characteristics that the item must possess. These specifications are used to determine how a product is to be fabricated or constructed and is primarily used where a structure or product has to be specially made to meet a unique requirement. Design specifications have precise characteristics that can limit competition and generally do not accommodate rapidly changing technology. Their use is limited.

### **5.6 Functional or Performance-type**

The use of performance type specifications has steadily increased. This type of specification states the function that a user wishes to achieve and can contain both elements of design and performance. The emphasis is on what the product does, how well it performs, and at what cost for its intended use. This encourages ingenuity, innovation, and cost reduction.

Writing performance specifications and evaluating bids requires a different approach and point of view than the more traditional one. Instead of establishing common denominators by looking for equivalencies, one must look for differences that provide equal or better performance and lower costs.

## 5.7 Qualified Product List or Approved Brands

ac A QPL specification is one based on certain tests or other criteria for comparing or examining and approving products before seeking competitive bids. It specifies acceptable products by brand name, model number, or whatever designation is necessary to precisely identify a certain product. Continued documentation of acceptable products is necessary as products tend to change or be modified and may or may not continue to be acceptable.

The purpose of this type of specification is to determine, in advance, those products which are acceptable. The evaluation of these bids is greatly simplified, the price becomes the main factor for award. One of the main reasons for using a QPL is to avoid the problems that occur where a low bidder offers a product, and the products conformance to specifications is unknown and difficult to ascertain. One disadvantage of QPLs is that they can limit competition, and over time, the list can become outdated as the quality of products improve or new, better products are developed.

Producing a qualified product list involves developing original specifications and field-testing similar products for acceptability and can take a considerable amount of time and expertise. But, in the long run, it can reduce the amount of time testing products because several products can be tested simultaneously. Once a product is accepted for the list, it does require further testing unless specifications change. Manufacturers must agree to inform purchasing of any significant changes to their product for reevaluation and continued acceptance on the qualified product list.

## 5.8 Samples and Technical Data

This type of specification requires that bidders offer their price and a sample of their product and technical data meeting general descriptions. In some instances, the comparison and testing of samples can effectively substitute for a detailed specification.

Samples are tested and evaluated on a price/performance, cost-effective basis. Examples of products for which this approach is useful are floor waxes, paints, disinfectants, cleaning agents, and art materials.

All samples and test results should be retained for delivery compliance of products ordered.

## 5.9 Alternatives and Optional Items

Alternate specifications are sometimes needed in the public interest to consider comparisons of costs or to keep awards within the funds available. They can be used to obtain wider competition and other advantages.

c Optional items are features that may be adapted to a piece of basic equipment and may enhance performance, may be needed under certain circumstances, or may be luxury items. Careful consideration should be given as to whether optional items will be purchased or not and if the cost of such optional items should be included in the award consideration.

## 6. How to Develop Specifications

Consideration should be given to suitability and to overall cost effectiveness in addition to acceptability and initial price. Specifications by their nature, set limits and thereby eliminate or

restrict items that are outside the boundaries drawn. Specifications should be written to encourage, not discourage, competition consistent with seeking overall economy for the purpose intended.

The function of specifications is to provide a basis for obtaining a commodity or service that will satisfy a particular need at an economical cost. A good specification should do these things:

- Identify minimum requirements.
- Allow for a competitive bid.
- List reproducible test methods to be used in testing for compliance with specifications.
- Provide for an equitable award at the lowest possible cost.

To provide a common basis for bidding, specifications should set out the essential characteristics of the item being purchased, so that all bidders know exactly what is wanted. If an essential requirement is left out of the specification, an award may be made for a product that does not meet the needs of the purchaser. The suitability of the product may not become apparent until much later. Situations such as these are seldom resolved to anyone's satisfaction and can be a waste of taxpayers money. If such an omission is discovered in time, the bid should be canceled, specifications corrected, and new bids solicited.

Avoid overspecifying or underspecifying. Items should be able to perform as necessary without unessential frills. Requiring unnecessary features can result in specifications so restrictive that they can defeat competition and increase the cost of the item. Remember that all purchasing activities are subject to public and vendor scrutiny.

If a specification allows both an equal opportunity to bid and objectivity of selection by the bidder, then the specification is serving its intent. A straightforward and fair evaluation based on good specifications will persuade vendors to bid.

## **7. Suggested Boilerplate**

The following information is presented as a basic outline for specifications. Sections may be added or deleted as required by the product specification being developed.

### **7.1 Scope, Classification, or Description**

The first words or lines of a specification should be a general description, classification, or scope of the product desired and the intended or desired use of the item.

### **7.2 List of Requirements**

These requirements should identify measurable physical, functional, and quality characteristics that meet the requirements. This may include a detailed list of characteristics, such as: sizes, physical dimensions, weights, percent and type of ingredients, types and grades of materials, standard of workmanship, or basic design.

The text should be clear, simple language, free of vague terms or those subject to variation in interpretation. The use of abbreviations should be restricted to those in common usage and not subject to possible misunderstanding

### **7.2.1 Measurements**

All terms relating to measurements (gauge, capacity, volume, etc.) should be used in accordance with established precedent and trade practice. Review the document and make every effort to replace words with numbers or use words and numbers in combination (one (1) two (2) ). Whenever you use numbers instead of words, communication is truly enhanced. All measuring and testing equipment is designed to provide specific numerical answers.

### **7.2.2 Figures and Tables**

Figures, illustrations, graphs, etc. can often describe the item more clearly and accurately than text. They should be used as much as possible.

### **7.2.3 Group Terms**

Group terms are designations with established precedent and trade practice, such as: type, grade, class, and composition. These terms are defined as follows:

- Type: Implies design, model, shape, etc. of commodities.
- Grade: Implies quality of a commodity.
- Class: Implies mechanical or other characteristics that are not in quality of grade.
- Composition: Implies chemical differences in commodities.
- Other: Other terms such as: style, color, form, weight, size, etc., are also used as group terms.

### **7.2.4 Shall, May, Should, or Will?**

Use “shall” to express a requirement binding on the contractor or the purchaser.  
Use “may” or “should” to express nonmandatory provisions.  
Use “will” to express future requirements or when certain conditions are met.

## **7.3 Definition of Terms**

The necessity for definition of terms can usually be avoided with good specifications. However, in those cases where proper interpretation is necessary or agreement as to definition of terms is a key part of the specifications, such definitions should be included.

## **7.4 References to other Specifications or Publications**

References to other specifications or publications should be limited to the federal government, commercial organizations, technical societies, etc., which are widely recognized and accepted by industry. Examples of recognized organizations are the American Society for Testing and Materials (ASTM) Standards and the American Society of Mechanical Engineers (ASME).



## 7.5 Sampling, Inspection, and Test Procedures

When samples are required, it should be clearly identified as a requirement in the specifications. All samples and test results should be retained for delivery compliance of products ordered.

When possible, a test inspection plan should be developed and included in the specification.

## 7.6 Packaging and Delivery Information

Where specifications differ from standard commercial-sized packages, this should be clearly defined. Custom packaging may increase the cost of the product.

Special or unusual delivery dates or delivery points should be listed. Many times, items need to be shipped to a variety of locations within the State. A complete list of delivery addresses should be included in the specifications so that a bidder may take into account delivery costs and submit an accurate bid.

## 8. Checking Your Specifications

To assure that your specifications meet the above criteria, use the following checklist:

- Specifications should be clear and accurate, yet simple. They should NOT be so specific that a loophole eliminates competition and allows a bidder to take advantage of the purchaser.
- Specifications should be understandable to both the bidder and the purchaser.
- Specifications should be as flexible as possible. Inflexible specifications defeat the competitive bid process.
- Specifications should be legible and concise.
- Specifications should be capable of being checked. Specifications that are written in such a way that a product or service offered cannot be checked as meeting specifications is of little value and results in confusion.
- The specification should be reasonable in its tolerances. Unnecessary precision is expensive.
- The specification should be as fair to the bidder as possible and allow for competitive bidding by several bidders.

## 8. Division of Purchasing Rules Regarding Specifications

IDAPA 38.05.01

### 111. SPECIFICATIONS -- POLICIES AND DEVELOPMENT.

**01. Purpose.** Unless exempted by these rules or by the administrator, all solicitations and requests for quotations require specifications. Specifications set forth the characteristics of the property to be acquired. Specifications serve as the basis for obtaining property adequate and suitable for the using agency's needs in a cost effective manner, taking into account the costs of ownership and operation as well as initial acquisition costs. Specifications shall be drafted clearly

to describe the agency's needs and to enable the vendors to determine and understand the agency's requirements. Specifications shall, as much as practical, be nonrestrictive to provide an equal basis for participation by an optimum number of vendors and to encourage competition. This information may be in the form of a description of the physical, functional or performance characteristics, a reference brand name or both. It may include a description of any required inspection, testing or preparation or delivery. Specifications may be incorporated by reference or contained in an attachment.

**02. Use Of Functional Or Performance Descriptions.** Specifications shall, to the extent practicable, emphasize functional or performance criteria while limiting design or other detailed physical descriptions to those necessary to meet the needs of the agency. To facilitate the use of such criteria, using agencies shall endeavor to include as a part of purchase requisitions their principal functional or performance needs.

**03. Preference For Commercially Available Products.** Requirements shall be satisfied by standard commercial products whenever practicable.

**04. Brand Name Or Equal Specification.**

a. A brand name or equal specifications may be used when the buyer determines that such a specification is in the agency's best interest.

b. A brand name or equal specification shall seek to designate as many different brands as are practicable as "or equal" and shall state that products substantially equivalent to those designated will be considered for award.

c. Unless the buyer authorized to finally approve specifications determines that the essential characteristics of the brand names included in the specifications are commonly known in the industry or trade, brand name or equal specifications shall include a description of the particular design and functional or performance characteristics required.

d. Where a brand name or equal specification is used, the document shall contain explanatory language that the use of a brand name is for the purpose of designating the standard of quality, performance, and characteristics desired and is not intended to restrict competition.

**05. Brand Name Specification.**

a. Since use of a brand name specification is restrictive, such a specification may only be used when the administrator or designee makes a written determination. Such determination may be in any form, such as a purchase evaluation or a statement of single manufacturer justification. The written statement must state specific reasons for use of the brand name specification.

b. The administrator shall seek to identify sources from which the designated brand name item or items can be obtained and shall solicit such sources to achieve whatever degree of competition is practicable. If only one (1) source can supply the requirement, the acquisition shall be made under Section 67-5720 of the Idaho Code.

**06. Specification Of Alternates May Be Included.** A specification may provide alternate descriptions of property where two (2) or more design, functional or performance criteria will satisfactorily meet the agency's requirements.