

# Bid Specifications

Presented by the  
Department of General Services  
Bureau of Procurement

Rev. March 2010



# Course Objectives

When you have completed this course, you should be able to:

- ▶ Understand the Commonwealth's policies on bid specifications.
- ▶ Understand the basics of writing a bid specification.
- ▶ Understand what players should be involved in writing the bid specifications.
- ▶ Understand the types of bid specifications and what should be included in each.
- ▶ Understand the necessity of proper grammar when writing bid specification.



# Course Topics

- ▶ Procurement Handbook
  - Part 1 Chapter 13 – Specification/Statement of Work
- ▶ Specification Basics
- ▶ Writing Specifications
  - Design Specifications
  - Performance Specifications
  - Item Specifications
  - Freight and Delivery Specifications
  - Installation Requirements
  - Warranties
  - Extended Warranties
  - The need for clarity
  - Sentence Structure
  - How grammatical errors in specifications are handled
  - Types of ambiguities



# Procurement Handbook

## Part 1, Chapter 13 Specifications/Statements of Work



# Part 1 Chapter 13

## Specification/Statement of Work

- ▶ **Common Standard.** Central to all competitive procurements is the common standard. Bidders must submit bids on an equal basis. In competitive sealed bidding, the term “lowest bidder” implies a common standard under which bids must be received. The common standard implies a specification and terms and conditions that are freely accessible to all competitors. The bids must be based upon the specification and the terms and conditions.
- ▶ **Purpose of Common Standard.** A common standard is necessary to ensure fair and just competition, thus eliminating as much as possible, any question of favoritism. The purpose of competitive procurement is frustrated where there is no common standard. The common standard provides a level playing field for those who want to compete for Commonwealth contracts.



# Part 1 Chapter 13

## Specification/Statement of Work

- ▶ **Ambiguous Specification.** If bidders are misled by specifications or statement of work requirements, the bidding was not on a common basis, and the lowest figures submitted would not, in law, be the lowest bid since it lacked fair competition.
- ▶ **Modifications Prohibited.** In the competitive bidding method of procurement, discussions between the Commonwealth and a bidder resulting in modification of the specification is not in keeping with the purpose of competitive bidding. When an Agency deviates from the requirements of competitive bidding by changing the terms of its Invitation for Bid (IFB), the proper procedure is to set aside all of the bids, readvertise, and secure new bids so that all of the bidders would be on an equal footing.



# Part 1 Chapter 13

## Specification/Statement of Work

- ▶ **Conformance with Specification.** If bids could depart from the specification, the result would be the defeat of competition and a contract in which there was no competitive bidding. If the bid does not conform to the specification in all elements, it is not a bid at all; but a new proposition.
- ▶ **Proprietary Specification.** Since the purposes for competitive bidding require that all responsible bidders shall have the opportunity to compete, a specification that has the effect of putting unnecessary obstacles in the way of potential bidders is faulty and illegal. A proprietary specification has the effect of severely restricting competition. The fact that only one bidder may be able to meet the requirements of the specification does not, in and of itself, make the specification invalid.



# Part 1 Chapter 13

## Specification/Statement of Work

- **Legitimate Needs vs. Mere Preferences.** The Commonwealth should seek to meet legitimate and valid needs. The specifications should represent a bonafide attempt to satisfy those needs. “Real needs” refer to an item which will fully satisfy the Agency’s requirements and not effect mere preferences. Anything desired which would exceed minimum needs is subject to question. If there is a legitimate and valid need, the specification is not faulty even if only one manufacturer makes the item which meets the specification.
- **Discretion in Preparation of Specifications.** The Commonwealth has some latitude of discretion in preparing the specification. Unless the specification is prepared in a hasty or capricious manner, or is not founded upon the exercise of a reasoned judgment, and absent fraud or collusion, courts will not disturb an award.



# Part 1 Chapter 13

## Specification/Statement of Work

- ▶ **“Or Equal” Specification.** The words “or equal” in a specification mean that the bidder is given the opportunity to substitute an item in place of the specified manufacturer’s product named in the IFB. Thus, when the words “or equal” are used, the specifications do not strictly limit competitive bidding to suppliers of the designated manufacturer’s type. Any substituted item must, however, in the opinion of the purchasing agency, be equal to the referenced item in terms of character, quality, and performance.
  - **Minimum Standard.** The reference to the specified manufacturer’s product provides a minimum standard of character, quality, and performance.



# Part 1 Chapter 13

## Specification/Statement of Work

- **Missing “Or Equal” Words.** If the words “or equal” or “or approved equal” are not inserted after the manufacturer trade name and number, they shall be implied. Therefore, bidders can offer substitutes.
- **Identification and Descriptive Literature.** A bidder quoting a material other than the referenced make and model should:
  - Furnish complete identification in the bid of the product it is offering by the trade name, brand, and/or model number.
  - Furnish descriptive literature and data with respect to the substitute material.
  - Indicate any known specification deviations from the referenced material.



# Part 1 Chapter 13

## Specification/Statement of Work

- **Purchasing Agency Responsibility.** It is incumbent upon the purchasing agency to evaluate the information on the substitute material to determine if it is equal in character, quality, and performance.
- ▶ **No Substitute Specification.** When a “no substitute” is requested, the purchasing agency will consider bids for the reference material only. When a “no substitute” is specified, the purchasing agency must have justification to show that only the referenced material will fully satisfy the Agency’s needs.
- ▶ **Alternatives.** An alternate is a product that deviates from the requirements of the written specification in its composition, qualities, performance, size, dimensions, etc. Since an alternate does not meet the requirements of the specification, a bid offering an alternate must be rejected.



# Part 1 Chapter 13

## Specification/Statement of Work

### ► Specification Preparation Guidelines.

- Unless there is satisfactory justification for a superior product, an industry standard specification should generally be used.
- Specifications that merely reference a manufacturer's product should be used sparingly and only when necessary.
- A specification should generally be performance and/or quality driven to describe the performance and/or quality parameters that are required to meet the Agency's legitimate needs.
- Satisfactory justification for "no substitute" specification is required.
- Adequate time must be allowed for bidders to prepare and submit bids. If sufficient time is not given, the bidder may not have adequate time to fully read and comprehend the bid requirements.



# Specification Basics



# Specification Basics

Writing specifications may be the most challenging and important step in the procurement process. Consider that a specification is a “city map” for procurement. Without an accurate map the procurement efforts to obtain equipment, materials and services may fail.

There are two ideals to remember when developing specifications:

- The bidders cannot read your mind.
- The bidders are not going to provide any more than is asked for in the written Invitation for Bid (IFB) specification.



# Specification Basics

A specification is a concise statement of a set of requirements to be satisfied by a material or service. There are several types of specifications. Specifications may take many forms, each having a specific respective benefit. Listed below are several types that can be used.

1. Design Specifications
  - Details the characteristics that an item **must** possess to meet your specific requirements.
2. Performance Specifications
  - Tells what the product must do or what end result will be produced
3. Item Specifications
  - Description stating specific information that clearly identifies the level of quality and performance.



# Specification Basics

Regardless of the type of specification, you should remember these guiding principles:

- ▶ Identify minimum requirements
- ▶ Allow for a competitive bid
- ▶ Allow for the lowest possible cost or best value

A specification should:

- ▶ Be simple but exact
- ▶ Reference terms common to the marketplace
- ▶ Have reasonable tolerances and not be restrictive
- ▶ Be competitive
- ▶ Be clear and understandable



# Specification Basics

What should you include in your bid specification?

- ▶ Consider adding the following to your specification if it applies to the product or service you plan to procure.
  - The intended use of the product, or the intended need for the service provided.
  - Detailed product requirements (materials used, color, horsepower, minimum and maximum parameters)
  - Detailed service requirements (what must be provided, what service performed)
  - Performance requirements (what must it do, how is the work performed)
  - Product certifications, professional licenses or required training



# Specification Basics

## What should you include in your bid specification? (con't)

- “build inspection” at manufacturer’s facility during production ( A build inspection is a physical review of a product to ensure that each major component meets requirements. Inspections can be done during or at the end of the manufacturing process.)
- Any space or weight restrictions
- Who handles the installation
- What utilities are available
- Warranty (time period, parts and labor, onsite service and repair, extended warranty)
- Training requirements, instructional and maintenance materials such as manuals or DVD’s
- Delivery instruction
- Quantity needed
- When and where is it needed
- Responsibilities (who hooks up the utilities, removes debris, disposes of the old equipment)



# Writing Specifications



# Writing Specifications

It is wise to build a team of resource people to help provide and collect information in the development of specifications. Such a team might consist of:

- ▶ Your internal customers (requesting areas)
- ▶ Manufacturer's representatives
- ▶ Equipment dealers
- ▶ Service agencies
- ▶ DGS Quality Assurance Specialists
- ▶ Other professional colleagues

Developing specifications is a challenge that can be frustrating. It is easy to use a short-cut style or form of specification.



# Writing Specifications

## ▶ Design Specifications

- State what materials or methods must be used, or tell the contractor how to go about doing the work.
- All it takes to turn an otherwise performance-type specification into a design specification is ONE design requirement.
- Some specifications are so detailed that they also may describe how the product is to be manufactured.
- Design specifications are not as applicable for purchasing items designed by a manufacturer.
- The tendency to specify equipment with exact characteristics can be too restrictive and cost prohibitive.



# Writing Specifications

## ▶ Performance Specifications

- Performance specifications describe the performance requirements that a product has to meet.
- Performance specifications encourage innovation and ingenuity.
- Tests or criteria are developed to measure an item's ability to perform as required.
- Performance specifications provide a good approach to writing specifications.
- In such specifications, design measurements and other specific details are not stated nor considered important so long as the performance requirement is met.
- Where an item is purchased by a performance specification, the contractor accepts general responsibility for design, engineering and achievement of the stated performance requirements. The contractor has general discretion and election as to detail but the work is subject to final inspection and approval or rejection.



# Writing Specifications

## ▶ Performance Specifications (con't)

- Performance specifications advise the contractor what the final product must be capable of accomplishing rather than describing how it is to be built or its design characteristics.
- An example of a performance specification could be that in the procurement of an oven for a cafeteria, the oven must bake a certain volume of rolls, evenly brown on all racks, in a specified number of minutes.



# Writing Specifications

## ▶ Item Specifications

- You should be very careful about specifying equipment by make and model number. This practice is not considered proper in public contracts since it is unfair to competing contractors.
- It is essential to include specific information that clearly identifies the level of quality and performance expected.
- It is appropriate to name the salient (important) characteristics to be used in determining bid responsiveness.
- Brand name specifications do not constitute adequate specifications because:
  - Objectivity may be lessened in the process of awarding the bid
  - Equality of opportunity among bidders may be reduced
  - Competition may be eliminated, which could result in a higher cost.



# Writing Specifications

## Freight and delivery specifications

- ▶ It is common practice for a manufacturer to coordinate the shipping arrangements. Be familiar and knowledgeable of the responsibilities of various shipping terms. Commonwealth's preferred method of shipping is:
  - **Freight on Board (FOB) Destination, Freight Prepaid** – The seller pays the freight charges, owns the goods in transit and files any claims for damage or shortage



# Writing Specifications

## Installation Requirements

- ▶ The installation requirements that should be included in the equipment specifications may be different for each piece of equipment in a bid. It is important to make sure the details of this part of the process are included in the bid.
- ▶ Be aware that installation can be a source for disagreement between two parties. To avoid any misunderstanding, delineate the responsibilities for the various aspects of the installation process.
- ▶ No matter who is responsible for installing the equipment, it is a good practice to request installation manual(s) from manufacturers before writing specifications. The detailed information in the manual verifies the requirements, confirms the fit, promotes fair bidding, and enables you to make a preliminary review.



# Writing Specifications

The following list of questions will be a helpful tool in identifying the bidder requirements:

- ▶ Who will install the equipment?
- ▶ Who will pay for the installation? Are charges included in the price or will there be additional charges?
- ▶ Who will receive, uncrate, and set in place?
- ▶ Who will remove crates and other debris?
- ▶ Who will make final utility connections?
- ▶ Who will remove the existing equipment?
- ▶ Who will relocate old equipment to new location
- ▶ Who will disconnect the utilities from the existing equipment (water, electric, gas, steam, drains, and ventilation)? If you specify the utility work to be done by others, the responsibility to coordinate this with the arrival of the new equipment will be left to you or your designee.



# Writing Specifications

The following list of questions will be a helpful tool in identifying the bidder requirements: (con't)

- ▶ Who will apply for permits (if required)?
- ▶ Who will install, replace, or adjust fire protection for the equipment?

**Note:** Specification writing and installation go hand-in-hand when procuring equipment. Verify you have access to the location intended for the new piece of equipment...what about long corridors, a 90° turn, or a narrow doorway? All of this needs to be addressed in the specification.



# Writing Specifications

## Warranties

- ▶ Warranties vary from manufacturer to manufacturer. Therefore, it is beneficial to know what is included and not included in the warranty. Some standard conditions and limitations covered in a warranty are:
  - Period of time new products are warranted from date of original installation or purchase delivery.
  - The liability of the manufacturer.
  - Normal labor charges incurred in repair or replacement within a certain mileage limitation, 50 miles or 100 miles round trip is usual
  - Full parts or limited parts
  - Parts and labor
  - Listing of parts whose warranty period varies from the standard as stated in the original condition.
  - A no-obligation statement to warrant the equipment and the specifics such as, misapplied, mishandled, abused, modified, etc.



# Writing Specifications

## Warranties (con't)

In bid specifications, include warranty requirements. Any modification to the standard original warranty, such as extended warranty coverage, should be stated.

A warranty should be analyzed just like a feature of the piece of equipment. Some manufacturers offer varying conditions that may become a deciding factor in purchasing the equipment.



# Writing Specifications

A check list of some warranty questions to ask in evaluating a warranty are:

- ▶ What is the duration of the warranty?
- ▶ Does the warranty provide service and repair at the installation site?
- ▶ Does the warranty cover labor, travel time, mileage, or zone charges for the life of the warranty?
- ▶ Are the parts warranted for the duration of the original warranty?



# Writing Specifications

## Extended Warranties

- ▶ An extended warranty could be advantageous if the additional price is in line with the price of a potential normal service call.
- ▶ Buying extended warranties is like buying insurance. It may not be worth it, but then again it could save you expensive repairs.
- ▶ Some questions to consider in deciding on the value of an extended warranty are:
  - Is the equipment a high maintenance item?
  - Are the controls and electronics of the equipment sophisticated?
  - Would specially trained technicians be required to service the equipment?
  - What is the price of an authorized service agency call?
  - How many miles is the installation site from the authorized service agency?



# Writing Specifications

## The need for clarity

The most obvious reason for writing clear specifications is to ensure that you will inform the contractors well enough that they can actually produce or provide the product you need. However, there is another reason why the specifications for public contracts must be clear: fairness to all bidders.

If one bidder happens to have better access to inside information about the work to be done than the others, then vaguely written specifications will give the bidder an unfair advantage over competitors who may be perfectly capable of doing the work, but lack knowledge about some of the details. The protest that may result from such a situation will take a great deal more time and effort to resolve than you would have to spend sharpening up a vaguely worded document.



# Writing Specifications

## The need for clarity (con't)

Being fair to all suppliers is important for three reasons:

- ▶ The most obvious when we are writing specifications for a public contract is that everyone has a right to be treated equally by a public agency spending taxpayer money. Requiring one supplier's product to the exclusion of others would serve to deny the others an opportunity to benefit by receiving the order.
- ▶ It's good business to encourage competition; without it we pay higher prices.
- ▶ Having several independent sources for a given product ensures a reliable supply of needed materials, and often permits larger quantities to be obtained on short notice.



# Writing Specifications – Grammar

## Sentence Structure

- ▶ Keep your sentences short and simple. Many times, when sentences are so long and complex, it's because the writer became confused, and ended up saying something different from what was intended, or maybe nothing at all.

## How grammatical errors in specifications are handled

There are three categories of grammatical errors:

- ▶ Those that don't affect the intelligibility of the sentence. An example would be "Joe ate less doughnuts than John." It should read "fewer doughnuts" but no one can argue about what the writer intended.
- ▶ Those that make the sentence totally unintelligible. These don't often get past the review cycle, but when they do, the contractors may legitimately ignore them in providing the bid for equipment. Usually we're lucky and the contractor will tell us about them and we can fix them in the specification.



# Writing Specifications – Grammar

## How grammatical errors in specifications are handled

There are three categories of grammatical errors: (con't)

- ▶ Those that leave the sentence somewhat intelligible, but change the meaning of the sentence to something different from what was intended.



# Writing Specifications – Grammar

## Types of ambiguities

Ambiguous sentences can be interpreted to have more than one meaning. Three types of ambiguities are found in sentences.

These are:

1. Ambiguous words,
2. Syntactic ambiguities, and
3. Contextual ambiguities



# Writing Specification – Grammar

Ambiguous words are words that may have more than one meaning. Most English words have multiple meanings. In normal reading we usually can tell from the context which meaning was intended. We really get in trouble when someone goes looking for ways to misinterpret our words.

An example of an ambiguous word is “run”, which could have any of 67 different meanings. The ambiguous words “any” and “include” are so often misused by people that they deserve special articles of their own.

Adjusting your point of view will help you catch ambiguities.



# Writing Specifications – Grammar

**Contextual ambiguity** – Sometimes we find a sentence that has no ambiguous words and can be reasonably diagrammed in only one way, but still leaves its reader confused about its meaning. Consider the sentence:

*All surfaces...shall be painted white to increase reflectivity.*

Does it mean “paint all surfaces white”? Or does it mean “determine which surfaces have lower reflectivity than white paint, and then paint them white”? We know from other sources that the writer really wanted all surfaces to be painted.

The infinitive phrase, “to increase reflectivity,” was added to explain the specifier’s general intentions. In addition, it gave the reader two ways to interpret the words.



# Writing Specifications – Grammar

Generally speaking, it is unwise to make explanatory statements in specifications. They tend to cause results like the example. The example sentence is taken from a real Federal Government case. The Government won partly because the contractor did not have data to prove that some of the surfaces were already more reflective than white paint. Even though the Government won, the dispute caused time and labor to be wasted.

Another example is: “The chicken is ready to eat.” Does this mean that it’s time to feed the chicken or that dinner is served? What do you think?

The only way you can avoid making errors of this type is by adjusting your point of view and playing “what-ifs” in your head when you read the text. The ability to catch conceptual errors in specifications and foresee their possible effects comes with many years of experience.



# Writing Specifications – Grammar

**Syntactic ambiguities** occur when there are two or more ways to read the structure of a sentence. Take, for example:

*Flying aircraft may be hazardous*

This is an often-used example, and is attributed to a famous linguist named Noam Chomsky. Does it mean the act of flying may be hazardous? Perhaps it means that airplanes, themselves, may be hazardous. Maybe it means they're hazardous only when in flight. Regardless, it cannot be resolved from the content of the sentence. “Flying” may act as a noun, an adjective, or a verb. Things your English professor called “misplaced and dangled modifiers”, also cause syntactic ambiguities. In spoken English, ambiguities are resolved by raising the pitch of a word. The rise in pitch is called intonation. If you need to add intonation to a sentence to make the meaning clear, the sentence most likely has an ambiguity.



# Writing Specifications – Grammar

Other types of syntactic ambiguities happen when pronouns aren't clearly tied to a single noun phrase, in strings of prepositional phrases and in sentences with multiple conjunctions. Sometimes, syntactic ambiguities can be resolved by punctuating the sentence correctly.

## Punctuation to resolve ambiguities

Hyphens tie together chains of words that serve as units, usually adjectival phrases. Most people tend to neglect hyphens when they are needed.



# Writing Specifications – Grammar

Commas sometimes play a syntactic role in grouping clauses to indicate their affectivity. For example:

*The flange shall be fastened by three round-head screws, three flat-head screws, and three fillister-head screws all of grade-eight.”*

Means you’ve specified that three of the screws must be of grade eight.

If you add a comma before “all”, then you’ve specified nine grade-eight screws.

A comma preceding a dependent clause often indicates whether or not the writer intends the clause to be essential to the meaning of the sentence. In such cases, the presence of a comma may change a firm requirement into a mere statement of fact.

**Note well:** commas in specifications demand extreme care.



# Reference Material



# Checklist and Example

- ▶ Select the link below to view the Specification Writing Checklist.
  - <http://www.dgsweb.state.pa.us/comod/Training/SpecificationWritingChecklist.doc>
- ▶ Select the link below to view an example of a well written specification.
  - <http://www.dgsweb.state.pa.us/comod/Training/SampleBidSpecificationGeneralHVAC.doc>



# Knowledge Check

1. Regardless of the type of specification, you should remember these guiding principles: Identify minimum requirements; Allow for competitive bid; Allow for the lowest possible cost or best value.

True

False



# Knowledge Check

2. A specification should be simple but exact; reference terms common to the marketplace; have reasonable tolerances and not be restrictive; be competitive; and be clear and understandable.

True

False



# Knowledge Check

3. It is wise to build a team of resource people to help provide and collect information in the development of specifications.

True

False



# Knowledge Check

4. The most obvious reason for writing clear specifications is to ensure that you will inform the contractors well enough that they can actually produce or provide the product you need.

True

False



# Knowledge Check

5. When writing bid specifications, make sure you keep your sentences long and detailed.

True

False



# Survey

Select the link below to complete an online survey.

<https://www.surveymonkey.com/s/PDFL977>



**You will receive credit for completing this course within 24 hours. Please select the “Log Off” button in the lower right corner to close this course.**

**Thank You!**

