

Why Military Specifications and Standards?

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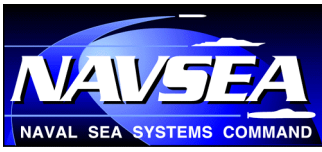
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- Specification
 - A detailed, exact statement of particulars, especially a statement prescribing materials, dimensions, and quality of work for something to be built, installed, or manufactured.
(American Heritage Dictionary)
- Standard
 - An accepted or approved example of something against which others are judged or measured
(Collins English Dictionary)

Specifications and Standards are related, but different



Buying Military Equipment

Procurement Request / RFP / RFQ / etc.

- Statement of Work details ...
 - Work required from industry
- Procurement Specification may invoke ...
 - Specific Requirements
 - Industry Specifications
 - Industry Standards
 - Military Performance Specifications / Military Detail Specifications
 - Military Standards
- Etc.

Part I The Schedule

- A Solicitation/Contract Form
- B Supplies or Services & Prices or Costs
- C Specification/SOW/SOO/ORD
- D Packaging & Marking
- E Inspection & Acceptance
- F Deliveries or Performance
- G Contract Administration Data
- H Special Contract Requirements

Part II Contract Clauses

- I Contract Clauses

Part III List of Documents, Exhibits, & Other Attachments

- J List of Attachments

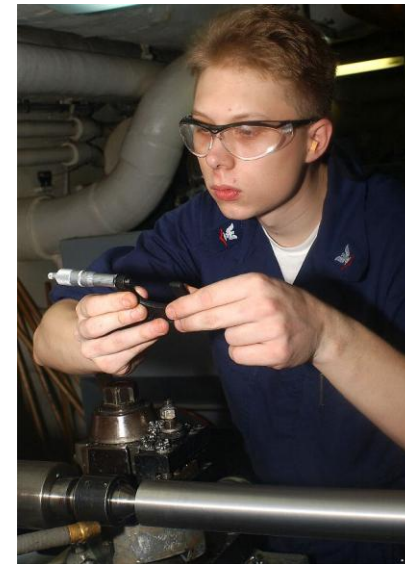
Part IV Representations & Instructions

- K Representations, Certifications, & Other Statements
- L Instructions, Conditions, & Notices to Offerors or Quoters
- M Evaluation Factors for Award

Specifications and Standards are used to buy equipment and services

Types of Specifications

- Detail Specification
 - Detail Design is complete: build to print
 - Customer is responsible for design changes
 - Conformance Testing
 - Design is presumed acceptable
 - If product conforms to the design then the product is presumed validated against the user needs.
 - Industry has limited ability to improve product or processes .
May not be able to use or adapt commercial products.
- Performance Specification
 - Interfaces, environment and product behavior defined;
exact design left to Industry
 - Design can change each time products are ordered
 - Validation Testing
 - Demonstrate both the design and end product meet customer requirements
 - May need to be repeated when the design changes
 - Usually more expensive than conformance testing
 - Industry has considerable ability to improve product and processes as well as adapt an existing commercial product to military needs.



Naval Requirements

- Marine Environment
 - Ship motions
 - Vibration
 - Temperature and humidity
 - Crew proficiency
 - Density has value (for small ships)
- Combat Survivability
 - Shock
 - EMI / EMP
 - Fire
 - Flooding
 - Signature Control
 - Inter-operability
- Logistics
 - Commonality across the fleet
 - Service life
 - Maintenance and Modernization strategies
 - Reliability, Maintainability, and Availability



Many naval products cannot be purchased directly from commercial specifications



Procurement Specification Spectrum for Naval Products

Procurement Unique Specification

- Procurement Specification directly lists the requirements and references to commercial and military standards (and possibly specifications for components and parts)
- **Most appropriate for one-of-a-kind or first-of-a-kind procurements.**
- Often requires considerable effort for Technical Warrant Holder approval – even if a very similar or the same specification was previously used. (need to validate the intended use)
- Industry must react in short time to an RFP because requirements not known earlier.
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Military Specification

- Procurement Specification cites a specific Military Specification (and potentially a Specification Sheet) along with the appropriate additional information identified in section 6.2 of the military specification.
- **Most appropriate for repeated procurements of the “same” item.**
- Requires considerable effort for Technical Warrant Holder approval of the initial Military Specification, but considerably less effort for subsequent procurements.
 - Military Specifications should reference widely used commercial specifications and standards where it makes sense.
- Enables industry to tailor “product lines” to meet future procurements against the military specification.

Commercial Item Descriptions (CID) may be used where all the requirements can be specified in terms of commercial specifications and standards and multiple commercial products meeting the requirements exist.



Military Specifications

MIL-DTL-XXX: Detail Specification
MIL-PRF-XXX: Performance Specification

1 Scope

2 Applicable Documents

3 Requirements

4 Verification

5 Packaging

6 Notes

May invoke commercial and military standards and specifications

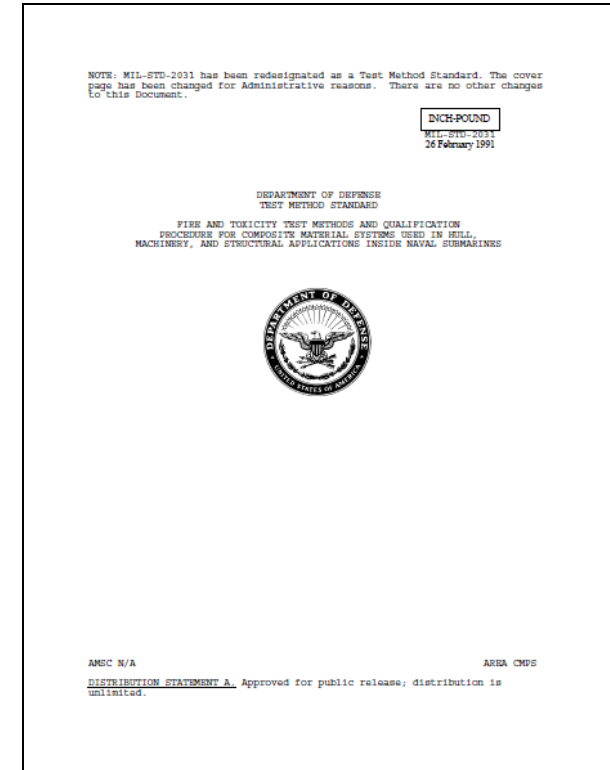
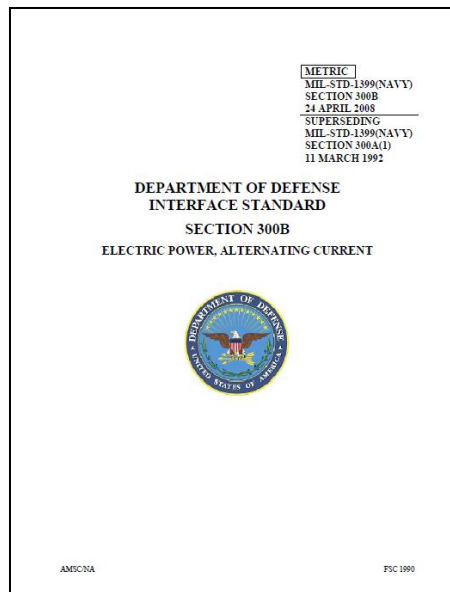
6.1 Intended use

6.2 **Acquisition Requirements – (options)**

etc

Specification Sheets: cover the unique requirements and inspections for a single style, type, class, grade, or model of an item (or series of items which vary only with respect to parameters such as value, size, tolerance, material, finish, failure rate).

- Interface Standards
- Design Criteria Standards
- Test Method Standard
- Standard Practice
- Manufacturing Process Standard



Format defined in
MIL-STD-962



Challenges with Standards and Specifications.

- Keeping standards and specifications up to date.
 - Funding
 - Technical Workforce proficiency
- Understanding when standards and specifications should be replaced instead of updated.
 - Evaluation of adequacy for military applications of commercial specifications and standards.
 - Different is not necessarily better or worse.
 - Determination that the “state of the market” has resulted in one commercial standards / specification superseding another.
- Supporting Legacy Systems – backwards compatibility
 - Replacement solutions for legacy equipment
 - In-active for new design / cancelation of a specification.



Recommendations

- Keep Military Specifications and Standards up to date
 - Adequately fund specification and standards activities.
 - Cancel or in-activate for new design antiquated specifications and standards.
 - Provide backwards compatibility (where it makes sense) with previous revisions.
- Understand Product Requirements
 - Use commercial specifications and standards where they are consistent with the product requirements. Use Commercial Item Descriptions (CID) where all the requirements can be specified in terms of commercial specifications and standards and multiple commercial products meeting the requirements exist.
 - Use military specifications and standards where commonality with other military systems needed and commercial specifications and standards are inadequate.
 - Use product unique requirements sparingly (if possible).
- Create Military Specifications and Standards where commonality makes sense
 - Cite commercial specifications and standards where consistent with the specifications / standard.
 - Enable cost effective procurements of equipment meeting military system needs.