Comparison of Performance and Detail Specification Content

SPECIFICATION REQUIREMENTS	PERFORMANCE SPECIFICATION	DETAIL SPECIFICATION
Section 1 - Scope		
	No difference.	
Section 2 - Applicable Documents		
	As a rule, performance specifications have fewer references. They refer to test method standards, interface drawings, standards, and specifications; and other performance specifications.	Design specifications use materials and part and component specifications; manufacturing process documents; and other detail specifications as references.
Section 3 - Requirements		
	Biggest differences between performance and design are in Section 3.	
General	States what is required, but not how to do it. Should not limit a contractor to specific materials, processes, parts, etc., but can prohibit certain materials, processes, or parts when Government has quality, reliability, or safety concerns.	Includes "how to" and specific design requirements. Should include as many performance requirements as possible, but they must not conflict with detail requirements.
Performance	States what the item or system shall do in terms of capacity or function of operation. Upper and/or lower performance characteristics are stated as requirements, not as goals or best efforts.	States how to achieve the performance.
Design	Does not apply "how to" or specific design requirements.	Includes "how to" and specific design requirements. Often specifies exact parts and components. Routinely states requirements in accordance with specific drawings, showing detail design of a housing, for example.
Physical Characteristics	Gives specifics only to the extent	Details weight, size, dimensions, etc. for

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	necessary for interface, interoperability, environment in which item must operate, or human factors. Includes the following as applicable: overall weight and envelope dimension limits; and physical, federal, or industry design standards that must be applied to the design or production of the item. Such requirements should be unique, absolutely necessary for the proper manufacture of the item, and used sparingly. An example would be the need to meet Federal Aviation Administration design and production requirements for aircraft components.	item and component parts. Design-specific detail often exceeds what is needed for interface, etc.
Interface Requirements	Similar for both design and performance specifications. Form and fit requirements are acceptable to ensure interoperability and interchangeability.	
Materiel	Leaves specifics to contractor, but may require some materiel characteristic; e.g., corrosion resistance. Does not state detail requirements except shall specify any item-unique requirements governing the use of materiel in the design of the item. Such requirements should be unique, critical to the successful use of the item, and kept to a minimum. An example would be the mandated use of an existing military inventory item as a component in this new design.	May require specific materiel, usually in accordance with a specification or standard.

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Processes	Few, if any, requirements.	Often specifies the exact processes and procedures to follow—temperature, time, and other conditions—to achieve a result; for example, tempering, annealing, machining and finishing, welding, and soldering procedures.
Parts	Does not require specific parts.	States which fasteners, electronic piece parts, cables, sheet stock, etc. will be used.
Construction, Fabrication, and Assembly	Very few requirements.	Describes the steps involved or references procedures which must be followed; also describes how individual components are assembled.
Operating Characteristics	Omits, except very general descriptions in some cases.	Specifies in detail how the item shall work.
Workmanship	Very few requirements.	Specifies steps or procedures in some cases.
Reliability	States reliability in quantitative terms. Must also define the conditions under which the requirements must be met. Minimum values should be stated for each requirement, e.g., mean time between failure, mean time between replacement, etc.	Often achieves reliability by requiring a known reliable design.
Maintainability	Specifies quantitative maintainability requirements such as mean and maximum downtime, mean and maximum repair time, mean time between maintenance actions, the ratio of maintenance hours to hours of operation,	Specifies how preventive maintainability requirements shall be met; e.g., specific lubrication procedures to follow in addition to those stated under Performance. Also, often specifies exact designs to accomplish maintenance

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	limits on the number of people and level of skill required for maintenance actions, or maintenance cost per hour of operation. Additionally, existing Government and commercial test equipment used in conjunction with the item must be identified. Compatibility between the item and the test equipment must be specified.	efforts.
Environmental Requirements	Establishes requirements for humidity, temperature, shock, vibration, etc. and requirement to obtain evidence of failure or mechanical damage.	Similar to performance specifications.
Section 4 – Quality Assurance Provisions		
	Must provide both the Government and the contractor (manufacturer) with a means for assuring compliance with the specification requirements	Same as for performance specifications.
General	Very similar for both performance and design. More emphasis on functional. Comparatively more testing for performance in some cases.	Very similar for both performance and design. Additional emphasis on visual inspection for design in some cases.
First Article	Very similar for both performance and detail. However, often greater need for first article inspection because of greater likelihood of “innovative” approaches.	Very similar for both performance and detail. Possibly less need for first article inspection.
Quality Conformance Inspections	No difference.	
Section 5 – Preparations for Delivery		
	No difference.	