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Standard Guide for Fastener Sampling for Specified Mechanical Properties and Performance Inspection¹

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INTRODUCTION

Throughout this guide the terms *detection* and *prevention* apply to quality control systems. A brief description of both is provided to assist the purchaser in the application of this guide.

The *detection system* relies on inspection as the primary means of controlling the quality of furnished material. Methods include in-process and final inspection. In-process inspection is typically performed by the individual performing the process and generally includes a first-piece inspection by someone other than the operator. Quality-control inspection may perform audit inspections on the process output during the course of the production run. In addition, a final inspection is performed by quality control inspectors according to a prescribed sample plan. The other sample plans utilize zero defects as their acceptance criteria.

The *prevention system* uses advanced quality planning in addition to many of the techniques used in the detection system. Quality planning incorporates a systems approach to quality control that focuses on defect prevention and continual improvement. In addition, Statistical Process Control (SPC) is usually applied to control the process, thereby reducing the variability of the output.

The ISO 9000 and/or 9000, QS 9000, and the ANSI/ASQC Q9000 ASQ Q9000, quality system standards, or a combination thereof, are models that may be used in establishing a prevention-based quality systems.

1. Scope

1.1 This guide provides sampling methods for determining how many fasteners to include in a random sample in order to determine the acceptability or disposition of a given lot of fasteners.

1.2 This guide is for mechanical properties, physical properties, coating requirements, and other quality requirements specified in the standards of ASTM Committee F-16. Dimensional and thread criteria sampling plans are the responsibility of ASME Committee B18. Therefore, unless otherwise specified in this guide, dimensional and thread fit sampling shall be in accordance with ANSI/ASME B18.18.3M, B18.

1.3 This guide provides for two sampling plans: one designated the “detection process,” as described in 3.1.3, Terminology F 1789, and one designated the “prevention process,” as described in 3.1.8, Terminology F 1789.

2. Referenced Documents

2.1 *ANSI/ASTM Standards:*

ASME/ANSI B18.18.3M Inspection and Quality Assurance

¹ This guide is under the jurisdiction of ASTM Committee F16 on Fasteners and is the direct responsibility of Subcommittee F16.93 on Quality Assurance Provisions for Fasteners.

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