

Guide to Quality Management Auditing in the Concrete Industry

Reported by ACI Committee 121

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Guide to Quality Management Auditing in the Concrete Industry

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Guide to Quality Management Auditing in the Concrete Industry

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This guide provides the background and methods for conducting an audit of an organization's quality management system. Such an audit can assess the organization's commitment to quality management and conformance to standards, codes, and contract requirements. Audits can also identify portions of the quality management system that need correction or improvement.

Keywords: audit; nonconformance; opportunity for improvement; process audit; quality management system; quality manual.

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Reference to this document shall not be made in contract documents. If items found in this document are desired by the Architect/Engineer to be a part of the contract documents, they shall be restated in mandatory language for incorporation by the Architect/Engineer.

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CHAPTER 1—INTRODUCTION AND SCOPE

1.1—Introduction

An effective means of determining an organization's commitment to quality management is an audit, whether the organization is involved in design, construction, inspection, testing, or other operations. Before procurement, an initial audit can evaluate operations of a supplier or subcontractor. During the course of a project, an audit can verify an organization's quality management, efficiency, and conformance to contract, codes, procedures, and standards. By looking closely into a supplier's operations and asking key questions, a customer can be assured that what is presented in a proposed bid, proposal, promotional literature, or quality plan is consistent with the supplier's capabilities and methods in their normal course of business.

Furthermore, an organization can assess the effectiveness of its own quality management system and, thereby, its internal performance, efficiency, and conformance by conducting an internal audit. The results of such an audit can be the basis for determination of capabilities, self-declaration of conformance to standard, and discovery of opportunities for improvement.

This guide incorporates some of the principles contained in **ISO 9001:2011**, which can be used as reference should the auditor determine that ISO 9001 is applicable.

The level of expectations can vary depending on the needs of the client and what the client determines as adequate. A higher order of performance can be determined by using the criteria established in **ISO 9001:2008**, in which case it is recommended that **ACI 121R** be used as a guide to determine the level of performance as it applies to the concrete industry.

The questions presented herein are intended to cover a broad range of issues, and some organizations may not be able to respond to them affirmatively. That does not necessarily indicate the organization is not a good choice for the task, as the questions themselves are not necessarily the

criteria for acceptance or rejection. In the absence of well-defined criteria, as would be required by contract, code, or self-proclaimed conformance, there is no right or wrong answer, only the facts, which are to be interpreted by the party requesting the audit. The quality management system capabilities encountered can range from the simple and basic to the robust. The level of quality management necessary to perform the task is determined by the party requesting the audit.

1.2—Scope

This guide is intended for use in the concrete construction industry. Recommendations and practices presented are intended to be nonmandatory and only meant as guidance. This document is not intended to offer guidance in initiating a quality management system or to serve as a standard for third-party registration audits.

This guide addresses several disciplines within the concrete construction industry, with questions specific to those disciplines. It begins with the principles and objectives of audits, followed by audit protocol, methods, techniques, and competency of auditors. **Chapter 7** covers common processes of quality management typical to all industries with an emphasis on their application within the concrete construction industry. **Chapters 8** and **9** cover the processes for design and construction. Processes are presented with background information, their impacts on operations, common pitfalls, and sample questions to prompt audit investigations and discussions. For someone not familiar with quality management considerations for a certain discipline within the industry, this guide provides background and a starting point with some of the appropriate questions to ask.

The application of this guide is suited for assembling a list of good practices to use in an audit procedure that is commensurate with the size and complexity of the organization's assigned or proposed task. Its application is also relevant to audits of large organizations with more complex systems and the resources to support them.

CHAPTER 2—DEFINITIONS

ACI provides a comprehensive list of definitions through an online resource, "ACI Concrete Terminology," <https://www.concrete.org/store/productdetail.aspx?ItemID=CT16>.

as-built drawings—generally considered a revised set of drawings provided upon completion of a project, which reflect changes made in the drawings during the construction process; responsibility for providing the drawings, the level of detail required, the liability for the accuracy and completeness of the information provided, and the legal definition differ by the governing bodies of the geographic area and the agreement with the entity purchasing the service. Also known as "record drawings".

audit—systematic, independent, and documented process for obtaining evidence and evaluating it objectively to determine the extent to which criteria are fulfilled.

auditee—organization (or person representing the process) that is being audited.