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| Nota di contenuto | Intro -- Contents -- Preface -- Prologue -- Chapter 1: Introduction to Quality -- 1.1 Design-Bid-Build -- 1.2 Alternate Project Delivery Methods -- 1.2.1 Design-Build -- 1.2.2 Construction Manager/General Contractor -- 1.2.3 Construction Management-At-Risk -- 1.2.4 Alternative Technical Concepts -- 1.2.5 Public-Private Partnership -- 1.2.6 Integrated Project Delivery -- 1.3 Changing Roles -- 1.4 Quality Assurance -- 1.5 Alternative Project Deliveries and Quality Assurance Responsibility -- 1.6 Quality Assurance Organization -- 1.7 Quality Control Plans -- 1.8 Public-Private Partnership -- 1.9 Quality Decisions -- 1.10 Warranties -- 1.11 Challenges -- References -- Chapter 2: Quality Management -- 2.1 Process Management Programs for Quality -- 2.2 Total Quality Management -- 2.2.1 Customer Focus (the Ultimate Judge) -- 2.2.2 Employee Empowerment (Involvement) -- 2.2.3 Process Centered (Input to Output) -- 2.2.4 Integrated System (Horizontal Thought, Elimination of Stovepipes) -- 2.2.5 Strategic and Systematic Approach (Organizational Vision) -- 2.2.6 Fact-Based Decision-Making (Collection and Analyzing of Data) -- 2.2.7 Communications (Organizational) -- 2.2.8 Continuous Improvement (Improvement of Processes) -- 2.3 International Organization for Standardization -- 2.3.1 ISO 9000:2015, Quality Management Systems-Fundamentals and Vocabulary -- 2.3.2 ISO 9001:2015, |

Quality Management Systems-Requirements -- 2.3.3 ISO 9004:2009, Managing for the Sustained Success of an Organization-A Quality Management Approach -- 2.3.4 ISO 9000 Applied to a Construction Organization -- 2.4 Quality Management -- 2.4.1 Convergence of Ideas -- 2.4.2 Customer (TQM 1 and ISO 1) -- 2.4.3 Leadership (ISO 2) -- 2.4.4 Those Who Do the Work (TQM 2 and ISO 3) -- 2.4.5 Teach, Train, and Coach Employees (Graniterock) -- 2.4.6 Process (TQM 3 and ISO 4).
2.4.7 Decision-Making (TQM 6 and ISO 6) -- 2.4.8 Improvement (TQM 8 and ISO 5) -- 2.5 Corporate Quality Management Plans -- 2.5.1 Define Current Corporate Structure and Operations -- 2.5.2 Key Processes, Interfaces, and Outputs -- 2.5.3 Key Performance Indicators -- 2.5.4 Ethical, Social, Environmental, and Safety Policies -- 2.6 Innovation: The Future -- 2.6.1 Need for a Flexible Approach -- References -- Chapter 3: Introduction to Quality Assurance -- 3.1 Introduction -- 3.2 Understanding Quality Assurance -- 3.2.1 Traditional Approach to Quality Assurance -- 3.2.2 Quality Assurance in the Current Industry Environment -- 3.3 Elements Used and Development of a Quality Assurance Program -- 3.4 Role of Quality Assurance in Alternative Delivery (Design-Build) Projects -- 3.5 Testing -- 3.5.1 On-Site Testing -- 3.5.2 Verification for Manufactured Products -- 3.5.3 Certification Acceptance -- 3.6 Forms of Alternative Contracting -- 3.6.1 Warranty -- 3.6.2 Construction Manager-General Contractor, Also Known as Construction Management at Risk -- 3.6.3 Design-Build -- 3.6.4 Design-Build-Operate -- 3.6.5 Public-Private Partnership -- 3.6.6 Design-Sequencing -- 3.6.7 Integrated Project Delivery -- 3.6.8 Multi-Prime -- 3.6.9 Alternative Technical Concepts -- 3.7 Complexities of Quality Assurance for Alternate Delivery Projects -- REFERENCES -- Chapter 4: Prescriptive versus Performance Specifications -- 4.1 Project Specifications -- 4.1.1 Contract Documents -- 4.1.2 Contract Specification Defense -- 4.2 Prescriptive Specifications -- 4.3 Performance Specifications -- 4.3.1 End Result Specifications -- 4.3.2 Quality Assurance Specifications -- 4.3.3 Performance-Related Specifications -- 4.4 Proprietary Specifications -- 4.5 Other Types of Specifications -- 4.5.1 Statistically Based Specifications -- 4.5.2 Warranty Specifications.
4.5.3 Materials and Workmanship Warranties -- 4.5.4 Performance Warranties -- 4.5.5 Composite Specifications -- 4.5.6 Reference Standards -- 4.6 A New Contracting Environment -- 4.6.1 Achieving Quality -- References -- Chapter 5: Quality Assurance in the Design Phase -- 5.1 Overview -- 5.2 Project Planning Relationship to Qualtiy Assurance Considerations -- 5.3 Quality Assurance of Plans and Specifications -- 5.3.1 Design Concepts -- 5.3.2 Quality Assurance of Design Activities -- 5.3.3 Design Quality Checks -- 5.3.4 Outline for a Typical Quality Review Process -- 5.3.5 Specification Development -- 5.4 Relationship between Design and Construction Quality Assurance -- 5.5 Incorporation of Construction Quality Assurance Requirements in Bid Documents -- 5.6 Summary -- References -- Chapter 6: Quality Assurance in the Construction Phase -- 6.1 Overview -- 6.2 Quality Assurance Programs -- 6.2.1 Elements Required in Development -- 6.2.2 Quality Assurance Elements Required on the Project -- 6.2.3 Execution -- 6.2.4 Quality Assurance Review Process -- 6.3 Applying Quality Assurance to Alternative Project Delivery Methods -- 6.3.1 Contractor Shared Risk in Alternate Project Delivery -- 6.3.2 Construction Manager/General Contractor -- 6.3.3 Design-Build and Its Variations -- 6.3.4 Public-Private Partnerships -- 6.3.5 Integrated Project Delivery/Alliancing -- 6.3.6 Design Sequencing -- 6.3.7 Multi-Prime -- 6.3.8 Alternative Technical Concepts -- 6.3.9 Electronic

Documentation System -- 6.4 Application to Specific Construction Elements -- 6.4.1 Quality Assurance for Sitework and Soils -- 6.4.2 Quality Assurance for Aggregates -- 6.4.3 Quality Assurance for Asphaltic Cement Concrete -- 6.4.4 Quality Assurance for Portland Cement Concrete -- 6.4.5 Quality Assurance for Structures: Steel, Aluminum, Timber, and Other Building Envelope Components. 6.5 Building Construction Quality Assurance Processes -- 6.5.1 Introduction to Building Code Requirements -- 6.5.2 Building Construction Disciplines -- 6.5.3 Building Inspections -- 6.5.4 Inspector Requirements -- 6.5.5 Quality Assurance/Quality Control Inspections for Building Construction -- 6.5.6 Tools for Conducting Quality Assurance -- 6.5.7 Quality Assurance for Masonry Construction -- 6.5.8 Timber/Wood Products -- References -- Chapter 7: Introduction to Quality Control -- 7.1 What is Quality Control? -- 7.2 How Does Quality Control Fit into an Overall Quality Management Plan? -- 7.3 Quality Control for Site Work -- 7.3.1 Manufactured Products -- 7.3.2 Examples of Manufactured Product Quality Control -- 7.3.3 Methods for Supplied Products Incorporated into the Work: Materials under Certification Acceptance -- 7.4 How is Quality Control Established and Maintained? -- 7.4.1 Conformance -- 7.4.2 Nonconformance -- 7.4.3 Lines of Responsibility -- 7.5 Role of Quality Control in Alternative Project Deliveries -- 7.6 Quality Control Testing -- 7.7 Looking Forward at Asphalt Mixture Designs -- 7.8 Looking Forward at Concrete Mixture Designs -- References -- Chapter 8: Variation and Sampling -- 8.1 Variation -- 8.2 Types of Variation -- 8.3 True Variation -- 8.4 Reported Variation -- 8.5 Causes of Variation -- 8.6 Variation in Construction -- 8.7 Sampling and Acceptance Plans -- 8.8 Guidance for Developing Sampling and Acceptance Plans -- 8.9 Case Study: Probability Sampling Method -- References -- Chapter 9: Tools for Construction Quality Improvement -- 9.1 Introduction -- 9.2 Data Collection -- 9.3 Data Acquisition and Management in the Digital Age -- 9.4 Quality Imrprovement Tools -- 9.4.1 Checksheets and Datasheets -- 9.4.2 Materials Tickets -- 9.4.3 Tally Sheets -- 9.4.4 Stem-and-Leaf Plots -- 9.4.5 Location Plots -- 9.4.6 Matrix Methods. 9.4.7 Project Planning Tools -- 9.4.8 Flowcharts -- 9.4.9 Affinity and Interrelationship Diagrams -- 9.4.10 Ishikawa Diagrams -- 9.4.11 Pareto Analysis -- 9.4.12 Histograms and Cumulative Frequency Plots -- 9.4.13 Scatterplots -- References -- Chapter 10: Run Charts, Control Charts, Statistical Sampling, and Percent within Limits -- 10.1 Introduction -- 10.2 Statistical Sampling -- 10.3 Run Charts and Control Charts -- 10.4 Percent within Limits -- 10.4.1 Selection of Quality Characteristics for APD Projects -- 10.4.2 Development of Appropriate Specifications -- 10.4.3 Selection of Test Methods for Monitoring Quality Characteristics -- 10.4.4 Process for Certifying Personnel for Sampling and Testing Procedures -- 10.4.5 Statistically Based Procedures Evaluating Quality Characteristics -- 10.5 Example PWL Process Calculations -- 10.5.1 Evaluation of the F-Test Statistic -- 10.5.2 Evaluation of the t-Test Statistic -- 10.5.3 Project-Specific PWL -- 10.5.4 Benefits of PWL -- 10.5.5 Application to APDs -- References -- Chapter 11: Special Inspection -- 11.1 Introduction -- 11.2 Historical Development of Code Provisions -- 11.3 Current IBC Special Inspection Requirements -- 11.4 Jurisdictional Inspections, Structural Observations, and Special Inspections -- 11.5 Roles and Responsibilities -- 11.5.1 Building Official -- 11.5.2 Project Owner -- 11.5.3 RDP in Responsible Charge -- 11.5.4 Architect of Record -- 11.5.5 Structural Engineer of Record -- 11.5.6 Mechanical/Electrical/Plumbing Engineer of Record -- 11.5.7 Special Inspection Coordinator -- 11.5.8 Third-Party Agencies -- 11.5.9

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| | Approved Agency for Special Inspections -- 11.5.10 Special Inspector -- 11.5.11 Contractor -- 11.5.12 Commissioning Agent -- 11.6 Conducting the Special Inspections and Testing Program -- 11.7 Periodic versus Continuous Inspections -- 11.8 Reporting. 11.9 Structural Special Inspection. |
| Sommario/riassunto | Authors Cavalline, Morian, and Schexnayder provide detailed guidance on all aspects of construction quality in the heavy / highway, building, and industrial fields. |