



Designation: D7186 – 05

Standard Practice for Quality Assurance Observation of Roof Construction and Repair¹

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1. Scope

1.1 This practice covers procedures for performing visual monitoring of roofing construction to:

1.1.1 Establish guidelines for quality assurance observation practices; and

1.1.2 Define the role and responsibilities of the quality assurance observer.

1.2 This practice pertains to daily, full-time, quality assurance observation of roofing projects. This practice is applicable to new construction or reroofing projects involving the installation of a new roof system, the removal of existing roofing and installation of a new roof system, or recovering an existing roof. It is also applicable to roofing projects involving repairs or scheduled maintenance to an existing roof.

1.3 This practice contains the following information:

1.3.1 The objectives of the quality assurance process;

1.3.2 The responsibilities and qualifications of the individual(s) involved in the observations of the roof construction or repair;

1.3.3 Identification and use of the basic tools or equipment required for the visual roof observation process; and

1.3.4 Monitoring, recording, and reporting procedures.

1.4 This practice does not address practices of roof investigation, condition reporting, or analysis of preexisting roofs.

1.5 This practice does not pertain to quality control processes or techniques performed by persons or entities representing or under contract to the roofing contractor. The quality control process is separate and distinct from the quality assurance observation process.

1.6 Assessment of safe work practices or safety monitoring procedures followed by the contractor are outside the scope of this practice.

1.7 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the*

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responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 *ASTM Standards:*²

D1079 Terminology Relating to Roofing and Waterproofing
E631 Terminology of Building Constructions

2.2 *Other Documents:*

The Contract Documents

Specification Literature or Roof System Installation Requirements, supplied by the applicable manufacturer, supplier, or distributor of the roof system material
ARMA/NRCA/SPRI Repair Manual for Low-Slope Membrane Roof Systems^{3,4,5}

ARMA/NRCA Quality Control Guidelines for the Application of Built-Up Roofing^{3,4}

ARMA/NRCA Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing^{3,4}

NRCA/SPRI Quality Control Guidelines for the Application of Thermoset Single-Ply Roof Membranes^{4,5}

NRCA/SPFA Quality Control Guidelines for the Application of Sprayed Polyurethane Foam Roofing^{4,6}

NRCA Roofing & Waterproofing Manual, Current Edition⁴

3. Terminology

3.1 *Definitions*—For definitions of building terms, see Terminology E631. For definitions of roofing and bituminous materials terms, see Terminology D1079.

3.2 *Definitions of Terms Specific to This Standard:*

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from Asphalt Roofing Manufacturer's Association (ARMA), Public Information Department, 1156 15th St., NW, Suite 900, Washington, DC 20005.

⁴ Available from National Roofing Contractor's Association (NRCA), 10255 W. Higgins Rd., Suite 600, Rosemont, IL 60018-5607.

⁵ Available from Single Ply Roofing Institute (SPRI), 77 Rumford Ave., Suite 3B, Waltham, MA 02453.

⁶ Available from Spray Polyurethane Foam Alliance (SPFA), 4400 Fair Lakes Ct., Suite 105, Fairfax, VA 22033.

3.2.1 *competent person, n*—a person knowledgeable in common roofing installation practices, the roof system and materials specified for the project, and the quality assurance observation process.

3.2.2 *contract documents, n*—agreement between owner and contractor, conditions of the contract (general, supplementary, and other conditions), drawings, specifications, addenda, modifications, change order, construction change directives, and written orders for minor changes in the work.

3.2.3 *quality assurance observation, n*— the process of recording and reporting the installation of materials and work procedures of the installer or contractor in a roofing project for the purpose of documenting compliance or non-compliance with the contract documents on a daily basis.

3.2.4 *roof designer, n*—person or entity responsible for the selection of the roof system and materials, and developing the project specifications and construction detail drawings.

4. Significance and Use

4.1 Quality assurance observation of roofing projects is an important process for determining if the removal, installation, repair, or maintenance of roofing materials or systems follows the scope and intent of the contract documents and are installed and executed in accordance with accepted roofing practices and the contract documents.

4.2 This practice is applied to full-time quality assurance observation of roofing projects involving the removal, construction, and repair and maintenance of low and steep-slope roof systems and roofing-related accessories.

4.3 This practice establishes the role and responsibilities of those performing quality assurance observation and includes qualifications of the quality assurance observer, as well as procedures for observation and documentation during the roof construction or repair process.

5. The Role of the Quality Assurance Observer (QAO)

5.1 The presence of, or opinions expressed by, the QAO do not relieve the contractor or the manufacturer or other responsible party of their contractual requirements. The information provided by the QAO is for the benefit of the owner (or other client), and no warranty of roof performance, expressed or implied, is offered, neither should it be inferred based on the quality assurance observations.

5.2 The QAO's function is to provide on-site observation, and reporting of the roof construction process in a clear, accurate, and objective manner, using procedures indicated in this practice.

5.3 The QAO shall observe and record:

5.3.1 The general conditions of the job site, roof areas under construction, and materials used in the construction process and their storage;

5.3.2 Preexisting property damages, or property or material damages that occur during the roof construction process;

5.3.3 The condition of the substrate, and substrate preparation, repair, or replacement procedures;

5.3.4 The installation and attachment of any base sheets, including the type of fastener or adhesive used, the fastening pattern and spacing;

5.3.5 The installation and attachment of any vapor retarders or air barriers, including the type of fastener or adhesive used, the fastening pattern and spacing;

5.3.6 The installation and attachment of the insulation layer(s), recover or coverboard materials, including the type of fastener or adhesive used, the fastening pattern and spacing;

5.3.7 The installation and attachment of the roof covering or repair materials which comprise the finished roof system, including the type of fastener or adhesive used, the fastening pattern and spacing, as well as specific material quantities, temperatures, and measurements appropriate to the type of roof system under construction;

5.3.8 The installation and detailing of the roof system flashings at perimeter and roof penetration locations;

5.3.9 The installation and detailing of the sheet metal roofing accessories such as, but not limited to counterflashings, coping caps, joint covers, and edge and fascia metals;

5.3.10 The installation of roof surfacings or coatings;

5.3.11 The installation of temporary weather seals at the end of the work day or prior to inclement weather;

5.3.12 The installation of any other roof components specified in the project specifications;

5.3.13 The weather conditions that occur during the roof assembly installation;

5.3.14 The crew size and foreman, and type of work being performed on a given day; and

5.3.15 All visitors to the roof and their length of stay.

6. Qualifications of the Quality Assurance Observer

6.1 *Significance of Qualifications :*

6.1.1 It is necessary that the person(s) performing quality observation of the construction process understand the project specifications and the specified roof system. Knowledge of industry-accepted good roofing practices is critical to the success of the quality assurance observation process;

6.1.2 A record of experience and training shall be maintained by the QAO and submitted to the project file. An optional, sample form is located in Attachment A;

6.1.3 A thorough understanding of the contract documents, specifically the project specifications, construction detail drawings, pre-bid and pre-construction conference minutes, and any addenda to the roofing specifications is required; and

6.1.4 A thorough understanding of the type of roof system specified including knowledge of the manufacturer's requirements is required.

6.2 *Technical Qualifications of the QAO* can be achieved by either 6.2.1 or 6.2.2:

6.2.1 Completion of specialized training or certification in Quality Assurance observation. The training or certification program shall be specific to roofing quality assurance observation and shall be administered by an industry recognized organization.

6.2.2 Completion of a roof system application program provided by the roof system manufacturer specified.

6.2.3 In lieu of the requirements in 6.2.1 and 6.2.2 by either: