

## Part 512 – Construction

### Subpart C – Evaluation of Construction Materials

#### 512.20 General

A. Quality requirements for construction materials are contained in Title 450, National Handbook of Conservation Practices (NHCP), and Title 210, National Engineering Handbook (NEH). Many of these specifications and standards refer to standards and specifications used in the industry, such as the following:

- (1) ASTM International
- (2) American Association of State Highways and Transportation Officials (AASHTO)
- (3) American Water Works Association (AWWA)
- (4) USA Standards Institute
- (5) American Concrete Institute (ACI)
- (6) Federal Supply Service (FSS)
- (7) Product standards published by the National Bureau of Standards (NBS)
- (8) Others

B. These referenced standards and specifications set forth requirements for material performance, material testing, quality control, and quality assurance.

C. To ensure that construction materials meet job requirements as defined by the plans and specifications, an evaluation of material quality in relation to applicable industry standards, specifications, or both must be made. The nature, time, and place of this evaluation depend on the type of material, specifications, the kind of construction, and other factors that could affect the public's health and safety.

#### 512.21 Evaluation Procedures

A. Material quality will be evaluated by a procedure specified by the design engineer. Evaluation procedures may include laboratory testing, manufacturer certifications, examination at the job site, or prequalification.

B. Incorporation of used materials in systems for which NRCS provides technical or financial assistance is subject to concurrence by the State conservation engineer (SCE), based on the guidelines below, and any other criteria established by the SCE. The owner must pay special attention to used items during operation and maintenance activities. Used materials are acceptable if they meet all of the following requirements:

- (1) Are suitable for the proposed work
- (2) Meet testing requirements
- (3) Have an expected service life equal to or greater than the projected design service life for the overall structure or system
- (4) Are structurally adequate and environmentally acceptable
- (5) Do not increase operations or maintenance costs over the use of new materials

C. Most Federal contracts contain Federal Acquisition Regulation Clause 52.236-5, "Material and Workmanship," which requires that all materials be new.

D. New products that have not been used previously for conservation practice application must be evaluated and approved for use by the SCE before being specified. Trial use of new products must be

under the approval of the SCE and must be supported by industry or applicable standards, specifications, evaluation data, reports, or some combination of these. Reports on the material placement, properties, and durability may be required.

E. SCEs must designate new or used materials that require certification, testing, or both based on the quantity of the items used, the life of the item in relation to the life of structures in which it is used, the cost of the types of structures in which it is used, the difficulty of replacement, and the consequences of failure of the structures in which it is used. Acceptance of a material on the basis of certification is permissible only if the material meets all of the specification requirements.

### **512.22 Waivers of Material Certifications**

NRCS contracts require certification for all materials incorporated in the works of improvement unless specifically waived. Certification may be waived under certain conditions, as determined by the design or project engineer with the concurrence of the SCE or approving authority.

### **512.23 Prequalification of Materials**

A. Prequalification is the evaluation and determination of materials that may be used without further certifications. Prequalification eliminates the need for requesting and furnishing individual certifications and test results for each project or contract. Acceptable materials to consider for prequalification are those items that are manufactured under close quality control and consistently meet the applicable specifications. For small projects, the use of prequalified materials is a viable alternative to ensure material quality.

B. Prequalified materials may be used in NRCS construction by referring to the certification, test data file, or both. When a prequalified item or product is used, its use must be recorded on the as-built drawings, recorded in the job diary, or documented by other suitable methods as determined by the SCE.

C. States have the authority to prepare and maintain a list of materials approved for prequalification when the quantity of materials being used economically justifies its preparation.

D. Many factors affect the quality and acceptability of manufactured products. Prequalified products, materials, or both may require occasional review to ensure minimum quality requirements are current. The SCE determines the review frequency at the time the material is initially placed on the prequalification list.