

**Forest Service Manual  
National Headquarters - Washington Office  
Washington, DC**

**Forest Service Manual 7100 – Engineering Operations  
Chapter 7170 - Geotechnical and Materials Engineering**

**Amendment:** 7100-2000-1

**Effective date:** September 15, 2000

**Duration:** This amendment is effective until superseded or removed.

**Approved by:** Mike Dombeck, Chief

**Date approved:** September 15, 2000

**Responsible Staff:**

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**Superseded Document(s):** 7100 Contents, Amendment 7100-92-7; 7100 Zero Code Contents, Amendment 7100-96-3; 7100 Zero Code, Amendment 7100-96-4; 7110 Contents, Amendment 7100-94-2; 7110, Amendment 7100-94-3; 7120 Contents, Amendment 7100-92-3; 7120, Amendment 7100-92-4; 7130 Contents, Amendment 7100-93-1; 7130, Amendment 7100-93-2; 7140 Contents, Amendment 7100-97-1; 7140, Amendment 7100-97-2; 7142.31 Exhibit 01, Amendment 7100-97-3; 7150, Amendment 7100-90-1; 7160 Contents, Amendment 7100-96-5; 7160, Amendment 7100-96-6; 7170, Amendment 7100-90-2; 7180, Amendment 7100-90-1

**Posting Instructions:** This is a technical amendment that converts the format and style of this FSM title from Applixware to the current corporate word processing application. Since this amendment replaces all text except Interim Directives (ID's), do not check for the last transmittal received for this title, instead place this transmittal sheet at the front of the title. DO NOT remove ID's when posting this amendment. ID's are not being reformatted at this time.

**Digest:** Following is an explanation of the changes throughout the directive by section.

Please read the new posting instructions carefully. These directions apply to this transmittal only.

**7100:** Entire amendment text is replaced. New text corresponds with text located on the Service-wide Directives Home Page in the Forest Service Web

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(<http://fsweb.wo.fs.fed.us/directives/index.html>) and the World Wide Web  
(<http://www.fs.fed.us/im/directives>).

Although some minor typographical and technical errors were corrected, substantive direction has not been changed.

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## **7170.2 - Objective**

To ensure the structural stability, safety, cost effectiveness and efficiency of engineered facilities by considering geotechnical and materials engineering factors affecting project performance.

## **7170.3 - Policy**

1. Geotechnical and materials engineering services shall be used in planning, designing, constructing, maintaining, and operating engineered facilities commensurate with the opportunities, values, hazards, and risks that are anticipated or associated with the facility.

2. The associated geologic, pedologic, and hydrologic services required for geotechnical and materials engineering work shall comply with FSM 2500 and 2800.

3. Materials sampling and testing shall comply with applicable standards as established by the American Association of State Highway and Transportation Officials (AASHTO), American Society for Testing and Materials (ASTM), or other recognized methods as approved by the Regional Engineer.

## **7170.4 - Responsibility**

[Reserved]

## **7170.5 - Definitions**

### **1. Geotechnical Engineering.**

That branch of civil engineering dealing with the characteristics, analysis, and application of earth and rock materials as well as the application of the laws and principles of mechanics and hydraulics to the use of soil and rock as an engineering material.

### **2. Materials Engineering.**

That branch of civil engineering which applies scientific methods and engineering principles to the use of aggregate, asphalt concrete, bituminous materials, soil stabilizers, and other materials in the construction of engineered facilities.