

## CHAPTER 3

# GENERAL REQUIREMENTS

### SECTION 301 GENERAL

**301.1 General.** Log structures shall comply with the general requirements of this chapter.

### SECTION 302 MATERIALS

**302.1 Materials.** Materials used in the construction of log structures shall conform to the provisions of this Section. Materials used to conform to the applicable provisions of this standard shall be installed in accordance with the installation instructions provided for those materials.

**302.2 Logs.** Log styles shall include, but are not limited to, round, rectangular or other shapes (profiles) that are peeled, notched, coped, hewn, sawn, milled, or otherwise profiled into their final form for installation.

**302.2.1 Stress grading.** All logs shall be stress graded and identified by the grade mark or Certificate of Inspection issued by an accredited log grading agency.

**302.2.1.1 Log grades and design values.** Log grades and design values shall be developed in accordance with one of the following standards:

1. ASTM D 3957
2. ASTM D 3737
3. ASTM D 245

**302.2.1.2 Species.** Logs shall be of species that are listed with clear wood strength values as published in ASTM D 2555.

**302.2.1.3 Grade marks.** Grade marks or Certificates of Inspection shall include the following information:

1. Name or registered trade mark of the accredited grading agency.
2. Name or identification number of the manufacturer.
3. Species of logs.
4. Grade name or designation.
5. Moisture content at time of grading, if moisture content is other than green in conformance with Section 302.2.2.1.

**302.2.1.4 Log profile.** The average log profile shall be drawn and dimensioned.

**302.2.2 Moisture content.** Moisture content ( $MC$ ) shall be evaluated in accordance with the requirements of this section.

**302.2.2.1 Design moisture content.** The design moisture content ( $MC_D$ ) shall be determined in accordance with the requirements of Section 302.2.2.1.1 or 302.2.2.1.2.

**302.2.2.1.1 Prescriptive specification.** Logs shall be evaluated as green and shall have design moisture content ( $MC_D$ ) equal to the average moisture content at fiber saturation ( $MC_{FSP}$ ), in accordance with Table 304.2(1).

**302.2.2.1.2 Certified specification.** The design moisture content shall be equal to the moisture content determined and certified by methods prescribed by an accredited third-party grading agency.

**302.2.2.2 Service moisture content.** The service moisture content ( $MC_S$ ) shall be determined in accordance with the requirements of Section 302.2.2.2.1 or 302.2.2.2.2.

**302.2.2.2.1 Prescriptive specification by climate zone.** Prescribed by geographic climate zone using Figure 304.2.2.3 and Table 304.2(4).

**302.2.2.2.2 Calculation procedure.** Calculated in accordance with ASTM D 4933.

**302.2.3 Design values.** Elements of log structures shall have design values as prescribed in this section.

**302.2.3.1 Sawn lumber and glued laminated timber.** Design values, adjustment factors and section properties for visually-graded and mechanically-graded dimension lumber and glued laminated timber shall be as specified in the AFPA NDS.

**302.2.3.2 Logs.** Design values for softwood and hardwood logs shall be as specified in Tables 302.2(1) through 302.2(5) or as established by an accredited grading agency. Tabulated design values shall be multiplied by all applicable adjustment factors listed in Table 302.2(6) to determine allowable design values.

**302.2.3.3 Specific gravity.** The specific gravity ( $G$ ) for wood species or species groups shall be obtained in accordance with one of the conditions listed in this section.

**302.2.3.3.1 Prescriptive specification for wood in unseasoned condition.** Specific gravity shall be obtained from ASTM D 2555.

**302.2.3.3.2 Prescriptive specification for wood in oven-dry condition.** Specific gravity shall be taken from AF&PA NDS.