
POLICY: REQUIREMENTS FOR FIRE SERVICE FEATURES AND REQUEST FOR ALTERNATE MATERIALS AND METHODS FOR FIRE SERVICE FEATURES

Division of the State Architect (DSA) documents referenced within this publication are available on the [DSA Forms](#) or [DSA Publications](#) webpages.

DISCIPLINE(S)

Fire and Life Safety (FLS)

PURPOSE

This policy establishes the minimum requirements for fire service features, including fire apparatus access roads and fire protection water supplies, on public school (K-12) and community college campuses. Furthermore, this policy specifies the requirements for submitting a request for alternate materials and methods when fire apparatus access roads, fire protection water supplies, and other fire service features do not comply with the minimum requirements of California Code of Regulations (CCR) Title 19, Public Safety, and CCR Title 24, California Building Standards Code, Parts 1 through 12, due to local site conditions and firefighting capabilities of the Local Fire Authority (LFA).

BACKGROUND

The Division of the State Architect (DSA) is the authority having jurisdiction (AHJ) for fire and life safety (FLS) regulations, codes, and standards in providing plan review and construction oversight for public schools (K-12) and community colleges within the State of California. Fire service features, including fire apparatus access roads and fire protection water supplies, are required to comply with the requirements of CCR Title 19 and CCR Title 24, which includes the California Fire Code (CFC), the California Wildland-Urban Interface Code (CWUIC), and other adopted referenced standards. The LFA has a mandated responsibility for providing emergency response services and ongoing annual inspections for public school (K-12) and community college campuses but are not required to provide design approval or construction oversight for construction projects where DSA is the AHJ. The Office of the State Fire Marshal (OSFM), the adopting state agency for fire and life safety regulations in California, does not adopt CFC Section 503, which contains prescriptive requirements for certain fire service features, specifically fire apparatus access roads. In response, DSA has implemented this policy to establish the minimum requirements for fire service features, including fire apparatus access roads and fire protection water supplies.

DSA has established this policy in conjunction with the *DSA 1-AMM-810: Request for Alternate Materials and Methods for Fire Service Features*. Design Professionals (DP) may utilize the DSA 1-AMM-810 to propose alternate materials and methods pursuant to California Administrative Code (CAC) Section 4-404 and CCR Title 19 Section 2.01, specific to local site conditions which vary between public school and community college campuses throughout California, in coordination with the firefighting capabilities of the LFA.

APPLICABILITY

This policy is applicable to the construction and development of new campuses, the construction of new and relocated buildings, additions to existing buildings, and the rehabilitation of nonconforming buildings on public school (K-12) and community college campuses. Alterations and changes of use to existing buildings that require modifications to existing fire service features, and alterations to existing fire apparatus access roads, fire protection water supplies, and other fire service features shall be subject to the provisions of this policy.

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POLICY

1. REQUIREMENTS FOR FIRE APPARATUS ACCESS ROADS, FIRE PROTECTION WATER SUPPLIES, AND OTHER FIRE SERVICE FEATURES

Projects complying with the minimum requirements of CCR Title 19, CCR Title 24, and DSA PL 26-01 Section 1 do not require LFA review or acceptance prior to DSA plan approval. However, DSA strongly advises that design professionals and school districts coordinate all applicable projects submitted to DSA with the LFA to ensure that the LFA can effectively provide emergency response services. A written Site Safety Plan (SSP) in accordance with CBC Chapter 33, CFC Chapter 33, and CEBC Chapter 15 shall be submitted to DSA prior to the start of construction pursuant to form *DSA 102-IC: Construction Start Notice/Inspection Card Request*. A copy of the SSP shall be provided to the LFA, in accordance with their policies and procedures, prior to start of construction.

1.1 Fire Apparatus Access Roads

1.1.1 Fire apparatus access roads shall comply with the requirements of CCR Title 19 Sections 3.05(a) and 3.16, CFC Section 503, and the following:

- a. **Access and loading.** Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus weighing up to 75,000 pounds and shall be surfaced to provide all-weather driving capabilities. The fire apparatus access road design shall be in accordance with a national or state standard, such as AASHTO Guide to Design of Pavement Structures, and consider the weight of the vehicle, traffic index, and soil strength.
- b. **Turning radius.** The minimum inside turning radius for fire apparatus access roads shall be 28 feet pursuant to CFC Section 503.2.4.
- c. **Dead ends and turnarounds.** Dead-end fire apparatus access roads in excess of 150 feet shall be provided with width and turnaround provisions in accordance with CFC Appendix D Table D103.4 and Figure D103.1.
- d. **Grade.** Fire apparatus access roads shall not exceed 10 percent in grade.

Exception: Grades steeper than 10 percent as approved by the LFA based on the fire department's apparatus.

1.2 Fire Protection Water Supplies

1.2.1 Fire protection water supplies shall comply with the requirements of CFC Section 507, Appendix BB, and Appendix CC.

1.3 Other Fire Service Features

1.3.1 All other fire service features shall comply with the requirements of CCR Title 19, CFC, CWUIC, and adopted referenced standards.

1.3.2 Other fire service features may include but are not limited to: fire department connections (FDC), post indicator valves (PIV), isolating and control valves, standpipe and hose systems, water tanks for private fire protection, stationary pumps for fire protection, and private service mains and their appurtenances.

1.4 Wildland-Urban Interface (WUI) Areas

1.4.1 Fire service features for projects located in a WILDLAND-URBAN INTERFACE AREA, as defined in CWUIC Chapter 2, shall comply with the minimum requirements of CWUIC Chapter 4.

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1.5 Nonconforming Fire Service Features and Site Conditions

1.5.1 Where fire apparatus access roads, fire protection water supplies, or other fire service features do not comply with the requirements of Sections 1.1 through 1.4, the DP may propose alternate materials and methods pursuant to Section 3.

2. REQUIRED INFORMATION FOR DSA SUBMITTAL

2.1 Fire Access Site Plan

2.1.1 A fire access site plan with the following information associated with the project's scope of work shall be submitted to DSA for review and approval:

- a. Fire apparatus access roads. Specify type of surface, dimensions, vertical clearances, grades, turning radiuses, dead-ends, turnarounds, and turnouts (CCR Title 19 Section 3.05(a), CFC Section 503.2, CWUIC Section 403, and DSA PL 26-01 Section 1.1.1).
- b. Bridges and elevated surfaces that are part of a fire apparatus access road (CFC Section 503.2.6 and CWUIC Section 403.1.8).
- c. Traffic calming devices along fire apparatus access roads such as speed bumps, speed tables, speed dips, raised crosswalks, etc. (CFC Section 503.4.1).
- d. Fire access and security gates or barricades with approved means of emergency access and operation (CCR Title 19 Section 3.16, CFC Sections 503.5 and 503.6, and CWUIC Section 403.1.10).
- e. Fire apparatus access road marking such as approved signs, red curb markings, roadway striping, etc. (CFC Section 503.3).
- f. Premises identification (CFC Section 505.1, CWUIC Sections 403.2.4 and 403.2.5).
- g. Fire hazard severity zone (FHSZ) for the project. Specify if located in a Moderate, High, or Very-High FHSZ, and if located in a State Responsibility Area (SRA) or a Local Responsibility Area (LRA). Refer to the SFM website FHSZ map viewer for the adopted FHSZ in a SRA or contact the LFA for the adopted FHSZ in a LRA (CWUIC Sections 1.1.2 and 101.3.1).
- h. Fire protection water supply and flow test results (CFC Section 507 and Appendix BB, CWUIC Section 404, and DSA PL 09-01).
- i. Locations of fire hydrants, fire department connections (FDC), post indicator valves (PIV), and other isolating and control valves (CFC Sections 507, 912, and Appendix CC, CWUIC Section 404, and NFPA 24).
- j. Where required, location of fire command center (CFC Section 508).
- k. Where an automatic sprinkler system is required, location of fire riser (NFPA 13).
- l. Where required, standard plan comment for Emergency Responder Communications Enhancement System (ERCES) (CFC Section 510 and CWUIC Section 908).
- m. Where required, water tanks for private fire protection (CFC Section 507, CWUIC Section 404, NFPA 22, and NFPA 1142).
- n. Where required, stationary pumps for fire protection (CFC Section 913, CWUIC Section 404, and NFPA 20).
- o. Where provided, student drop-off areas along fire apparatus access roads (DSA PL 07-03).
- p. Where alternate materials and methods are proposed and accepted by the LFA pursuant to Section 3, pages 1 and 2 of the completed and signed DSA 1-AMM-810 shall be copied on to the project's fire access site plan.

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2.1.2 The DP shall clearly identify all new and existing fire service features, or portions thereof, associated with the project's scope of work, on the fire access site plan. Existing DSA-certified fire service features shall not be required to comply with current code requirements.

3. REQUEST FOR ALTERNATE MATERIALS AND METHODS

3.1 Application for Approval

3.1.1 Where fire service features and site conditions do not comply with the requirements of Section 1, the DP shall complete the DSA 1-AMM-810, identify the nonconforming fire service features, propose alternate materials and methods, and submit to the LFA for review and acceptance prior to DSA submittal. The DP shall coordinate with the LFA regarding the proposal, evaluation, review, and acceptance of alternate materials and methods for fire apparatus access roads, fire protection water supplies, and other fire service features.

3.1.2 Requests for alternate materials and methods shall include sufficient evidence or proof to demonstrate that the proposed alternate materials and methods are at least equivalent to that prescribed in CCR Title 19, the CFC, and the CWUIC in suitability, quality, strength, effectiveness, fire resistance, durability, and safety, pursuant to CAC Section 4-404 and CCR Title 19 Section 2.01.

3.1.3 Supporting Documentation may be provided by the DP or may be required by DSA in addition to the DSA 1-AMM-810 to demonstrate compliance with Section 3.1.2, including but not limited to:

- a. Manufacturer product information, cut sheets, and/or specifications for proposed alternate materials.
- b. Letter or other acceptable correspondence from the LFA supporting acceptance of the proposed alternate materials methods.
- c. Detailed project description or background information justifying proposed alternate materials and methods.

3.1.4 Supporting documentation shall be submitted to the project file or be provided on the project plans and/or in the project specifications.

3.2 Submittal Review

3.2.1 School District

3.2.1.1 Requests for alternate materials and methods shall be acknowledged by an authorized representative of the school district by completing and signing Section 4 of the DSA 1-AMM-810. This Section shall be signed by a school district representative who has administrative authority over construction projects, including but not limited to superintendent, assistant superintendent, director of facilities, project director, and individuals with similar titles and authority.

3.2.2 Local Fire Authority (LFA)

3.2.2.1 Requests for alternate materials and methods shall be submitted to the LFA for review and acceptance prior to submittal to DSA. Upon completion of LFA review and acceptance, the LFA shall complete and sign Section 5 of the DSA 1-AMM-810. This Section shall be signed by a reviewing official who has authority to accept proposed alternate materials and methods for and on behalf of the LFA including but not limited to fire chief, fire marshal, fire plans examiner/reviewer, or other designated fire prevention officer of the LFA.

3.2.2.2 The LFA may decline to review or reject the proposed alternate materials and methods. Where the LFA declines to review or rejects the proposed alternate materials and methods, the DP shall continue to coordinate with the LFA for review and acceptance, or the DP may submit the DSA 1-AMM-810 to DSA for review and approval on a case-by-case basis. DSA reserves the right to support the LFA's conditions for acceptance.

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3.2.3 Division of the State Architect (DSA)

3.2.3.1 As the authority having jurisdiction (AHJ), DSA reserves the right of final acceptance and approval. Pages 1 and 2 of the DSA 1-AMM-810 are required to be completed, signed and copied on to the fire access site plan prior to DSA submittal for review and approval. Any supporting documentation shall be submitted to DSA in accordance with Section 3.1.3 and 3.1.4.

3.3 Inspection

3.3.1 Alternate materials and methods approved on the project plans shall be subject to inspection during construction by a DSA-certified project inspector in accordance with CAC Section 4-333(b).

3.3.2 Use of alternate materials and methods of construction may be subject to special testing and inspection requirements in accordance with CAC Section 4-333(c).

ADDITIONAL RESOURCES

- *DSA BU 24-05: Fire Safety During Construction and Demolition*
- *DSA PL 07-03: Fire Department and Emergency Access Roadways and School Drop-Off Areas*
- *DSA PL 09-01: Fire Flow for Buildings*

REFERENCES:

California Education Code, Sections 17280 through 17317 and 81130 through 81147
California Code of Regulations (CCR), Title 19, Sections 2.01, 3.05(a), and 3.16
California Code of Regulations (CCR), Title 24,
Part 1, California Administrative Code (CAC) Section 4-404
Part 7, California Wildland-Urban Interface Code (CWUIC) Sections 1.1.2, 101.3.1, 402, 403, and 404
Part 9, California Fire Code (CFC) Sections 503, 507, 508, 905, 912, 913, Appendix BB, Appendix CC, and Appendix D
NFPA 13: Standard for the Installation of Sprinkler Systems
NFPA 14: Standard for the Installation of Standpipe and Hose Systems
NFPA 20: Standard for the Installation of Stationary Pumps for Fire Protection
NFPA 22: Standard for Water Tanks for Private Fire Protection
NFPA 24: Standard for the Installation of Private Fire Service Mains and Their Appurtenances
NFPA 1142: Standards on Water Supplies for Suburban and Rural Firefighting
AASHTO Guide to Design of Pavement Structures, 1993 Edition

A DSA Policy is a formally established set of governing statements based on law and code objectives, addressing any aspect of DSA's review and approval of plans and specifications and construction oversight programs that is not clearly addressed by code. A Policy also may specify administrative or technical requirements that are not yet addressed within Title 24, but are deemed important and necessary to fulfill code objectives in advance of adoption into the code.