

## SECTION 21 05 16 {15125}

### EXPANSION FITTINGS AND LOOPS FOR FIRE-SUPPRESSION PIPING

#### {EXPANSION FITTINGS AND LOOPS FOR FIRE-SUPPRESSION PIPING}

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This section includes fittings and practices used to compensate for thermal expansion and other movements in fire suppression piping systems.

Manufacturers listed in this section were identified as representative and not as an endorsement for meeting this specification. For additional product information, visit 4Specs at [www.4specs.com](http://www.4specs.com), ARCAT at [www.arcat.com](http://www.arcat.com), First Source at [www.reedfirstsource.com](http://www.reedfirstsource.com), SpecSource at [www.specsource.com](http://www.specsource.com), and Sweets Network at [products.construction.com](http://products.construction.com).

This section includes performance, proprietary, and descriptive type specifications. Edit to avoid conflicts among requirements.

Contact the CSRF Support Center at [supportcenter@csrf.org](mailto:supportcenter@csrf.org) to submit comments or suggestions for improvements to this specification. Visit the SPECTEXT web site at [www.spectext.com](http://www.spectext.com) for current product announcements.

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## PART 1 GENERAL

### 1.1 SUMMARY

#### A. Section Includes:

1. Flexible pipe connectors.
2. Expansion joints.
3. Expansion compensators.
4. Pipe alignment guides.
5. Swivel joints.
6. Pipe anchors.

#### B. Related Sections:

1. Section 21 05 00 - Common Work Results for Fire Suppression: Product and installation requirements for piping used in fire protection systems.
2. Section 21 05 48 - Vibration and Seismic Controls for Fire-Suppression Piping and Equipment: Product and installation requirements for vibration isolators used in piping systems.

#### C. Related Sections:

1. Section 13910 - Basic Fire Suppression Materials and Methods: Product and installation requirements for piping used in fire protection systems.
2. Section 15070 - Vibration and Seismic Controls for Fire-Suppression Piping and Equipment: Product and installation requirements for vibration isolators used in piping systems.

## 1.2 REFERENCES

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List reference standards included within text of this section. Edit the following for Project conditions.

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- A. American Society of Mechanical Engineers:
  - 1. ASME B31.9 - Building Services Piping.
  - 2. ASME Section IX - Boiler and Pressure Vessel Code - Welding and Brazing Qualifications.
- B. American Welding Society:
  - 1. AWS D1.1 - Structural Welding Code - Steel.

## 1.3 DESIGN REQUIREMENTS

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Use this article carefully; restrict statements to identify system performance requirements or function criteria only.

Indicate methods for controlling expansion in piping systems on Drawings. Include this article when contractor or manufacturer performs calculations, sizes, and selects method for pipe expansion.

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- A. Provide structural work and equipment required for expansion and contraction of piping. Verify anchors, guides, and expansion joints provide and adequately protect system.

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Edit the following for the applicable system type to be included.

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- B. Expansion Compensation Design Criteria:
  - 1. Installation Temperature: [50] [\_\_\_\_\_] degrees F ([10] [\_\_\_\_\_] degrees C).
  - 2. Fire Protection System Temperature: [\_\_\_\_\_] degrees F ([\_\_\_\_\_] degrees C).
  - 3. Safety Factor: [30] [\_\_\_\_\_] percent.

## 1.4 SUBMITTALS

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Only request submittals needed to verify compliance with Project requirements.

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- A. Section 01 33 00 - Submittal Procedures {01330 - Submittal Procedures}: Requirements for submittals.
- B. Shop Drawings: Indicate layout of piping systems, including flexible connectors, expansion joints, expansion compensators, loops, offsets and swing joints. [Submit shop drawings sealed by a registered professional engineer.] [Include shop drawing information for piping expansion compensation in shop drawings for piping system specified in Section [\_\_\_\_\_.].]