



SECTION 1032

PRECAST CONCRETE FLARED END SECTIONS

1032.1 Scope. This specification covers reinforced precast concrete flared end sections for use at inlets and outlets of rigid pipe culverts.

1032.2 Material. All material shall be in accordance with [Sec 1026.3](#), except that marking required by [Sec 1026.3.10](#) will be limited to [Sec 1026.3.10.1](#).

1032.3 Basis of Acceptance.

1032.3.1 Acceptance Criteria. Acceptability of end sections for all diameters will be determined by the results of such material tests as required in [Sec 1026.3](#), by crushing tests on concrete cores or cured concrete cylinders, and by inspection of the finished end sections, including quantity and placement of reinforcement, to determine the conformance with the design and the freedom from defects.

1032.3.2 Certification. When allowed by the engineer, end sections from approved plants will be accepted based on certification, manufacturer quality control documentation and tests on samples as required by the engineer in accordance with [Sec 1026](#).

1032.3.3 Standard Reinforcement. Flared end sections, utilizing rebar or cold drawn steel wire, shall be in accordance with [Sec 1026](#) for Class II pipe or higher classes of pipe.

1032.3.4 Steel Fibers. Steel fibers may be used in lieu of standard reinforcement. Steel fibers shall be in accordance with ASTM A820.

1032.3.4.1 Design. The amount of steel fibers required in the flared end shall be determined through proof of design testing accordance with ASTM C1765, Section 9, for Class III pipe of the same diameter. Proof of design documentation shall be provided to the engineer upon request.

1032.3.4.2 Mix Verification. Proof of design testing shall be performed every three years. Additional proof of design testing shall be performed when the type of steel fiber is changed or when the dosage rate of the steel fibers is changed.

1032.3.4.3 Workmanship. All protruding steel fibers shall be removed from the flared end prior to shipping.