



**ONTARIO
PROVINCIAL
STANDARD
SPECIFICATION**

**OPSS.PROV 1820
APRIL 2025**

(Replaces OPSS.PROV 1820, November 2014, with minor formatting changes only.)

**MATERIAL SPECIFICATION FOR
CIRCULAR AND ELLIPTICAL CONCRETE PIPE**

TABLE OF CONTENTS

1820.01	SCOPE
1820.02	REFERENCES
1820.03	DEFINITIONS - Not Used
1820.04	DESIGN AND SUBMISSION REQUIREMENTS
1820.05	MATERIALS
1820.06	EQUIPMENT - Not Used
1820.07	PRODUCTION
1820.08	QUALITY ASSURANCE - Not Used
1820.09	OWNER PURCHASE OF MATERIAL - Not Used

1820.01 SCOPE

This specification covers the requirements for reinforced and non-reinforced non-pressure circular concrete pipe with rubber gasket joints, and for non-gasketed reinforced elliptical concrete pipe.

1820.02 REFERENCES

This specification refers to the following standards, specifications, or publications:

CSA Standards

A257.1-09	Non-Reinforced Circular Concrete Culvert, Storm Drain, Sewer Pipe, and Fittings [Part of A257 Series-09, Standards for Concrete Pipe and Manhole Sections]
A257.2-09	Reinforced Circular Concrete Culvert, Storm Drain, Sewer Pipe, and Fittings [Part of A257 Series-09, Standards for Concrete Pipe and Manhole Sections]
A257.3-09	Joints for Circular Concrete Sewer and Culvert Pipe, Manhole Sections, and Fittings Using Rubber Gaskets [Part of A257 Series-09, Standards for Concrete Pipe and Manhole Sections]
A3000-08	Cementitious Materials Compendium

ASTM International

C507M-11 Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe (Metric)

Plant Prequalification Program Publication

Prequalification Requirements for Precast Concrete Drainage Products

1820.04 DESIGN AND SUBMISSION REQUIREMENTS

1820.04.01 Design Requirements

1820.04.01.01 Concrete Pipe

Non-reinforced circular concrete pipe shall be according to CAN/CSA A257.1.

Reinforced circular concrete pipe shall be according to CAN/CSA A257.2.

Reinforced elliptical concrete pipe shall be according to ASTM C507M.

1820.04.01.02 Joints and Gaskets

Joints and gaskets for circular concrete pipe shall be according to CAN/CSA A257.3.

Joints for elliptical concrete pipe shall be according to ASTM C507M, and according to the requirements outlined in the publication, Prequalification Requirements for Precast Concrete Drainage Products.

Elliptical concrete pipe produced with non-gasketed joints shall be used for storm pipe sewers only.

1820.04.01.03 Jacking Pipe

Jacking pipe shall be according to CAN/CSA A257.2 with a minimum class of 65-D and a minimum concrete strength of 40MPa.

1820.04.01.04 Elliptical Reinforcing

Elliptical reinforcing for circular concrete pipe is not permitted for pipes up to and including 900 mm nominal internal diameter.

1820.04.01.05 Lift Holes and Anchors

Lift holes are not permitted for pipes. Lift anchors are not permitted for pipes up to and including 900 mm nominal internal diameter.

1820.05 MATERIALS

1820.05.01 Cement

Cement shall be Portland cement or a commercial blend of Portland cement and blast-furnace slag or fly ash, or both. Ground granulated blast-furnace slag or fly ash may also be added separately to Portland cement. Whether added separately or in the form of blended cement, ground granulated blast-furnace slag shall constitute not more than 70% by mass of the total cementing materials and fly ash shall constitute not more

than 40% by mass of the total cementing materials. The total amount of supplementary cementing materials in the cement for concrete pipe shall not exceed 70% by mass of the total cementing materials.

Portland cement, blended cement, ground granulated blast-furnace slag, and fly ash shall be according to CAN/CSA A3000.

1820.07 PRODUCTION

1820.07.01 General

A manufacturer producing circular concrete pipe or elliptical concrete pipe or both shall possess a current Prequalification Certificate, issued under the Plant Prequalification Program as outlined in the publication, Prequalification Requirements for Precast Concrete Drainage Products.

1820.07.02 Markings

Markings for circular concrete pipe shall be according to CAN/CSA A257.2.

Markings for elliptical concrete pipe shall be according to ASTM C507M.

In addition, all pipe shall be marked with the Prequalification Stamp shown in Figure 1 and as outlined in the publication, Prequalification Requirements for Precast Concrete Drainage Products.



**Figure 1
Prequalification Stamp**