

*A231.1-99 (Reaffirmed 2003)*

***Precast Concrete Paving  
Slabs***

# ***General Instruction No. 2 A231.1-99 May 1999***

**Title:** *Precast Concrete Paving Slabs* — originally published January 1999

The following erratum has been formally approved and is marked by the symbol delta (Δ) in the margin on the attached replacement page:

<b>Revised</b>	Clause 2.1
<b>New</b>	None
<b>Deleted</b>	None

CSA Standard A231.1-99 originally consisted of **24 pages** (vii preliminary and 17 text), each dated **January 1999**. It now consists of the following pages:

**iii–vii** and **3–17** dated **January 1999**; and  
**1** and **2** dated **May 1999**.

- Update your copy by inserting these revised pages.
- Keep the pages you remove for reference.

# A231.1-99

## Precast Concrete Paving Slabs

### 1. Scope

#### 1.1

This Standard specifies requirements for concrete paving slabs manufactured from hydraulic cement concrete to be utilized in the construction of pavement and roof coverings. The Standard includes units with architectural finishes or tactile surfaces.

**Note:** Appendix A contains information on efflorescence and recommends methods for its removal. Appendix B provides a bibliography of information on pavement components made with precast concrete paving slabs and provides information on their installation.

### 2. Definitions

#### 2.1

The following definitions apply in this Standard:

Δ

**Architectural finishes** — special finishes on the wearing surface of the paving slab made from aggregates, colour, and cement, or where the appearance is modified by mechanical means such as mechanical blasting, hammering, polishing, tumbling, or by washing to expose the aggregate.

**Lot** — the lesser of 80 000 m<sup>2</sup> or six months' production by the manufacturer.

**Paving slab** — a precast concrete paving unit that has a face area greater than 0.065 m<sup>2</sup> and an aspect ratio (ie, overall length as per Figure 1, divided by its thickness) greater than four. The minimum nominal thickness shall be 30 mm. The maximum overall length or width shall be 1 m.

**Spacer bars (spacer nibs)** — small protrusions on each side of the slab to keep the slabs uniformly spaced so that sand can fill the joints or provide drainage.

**Tactile surface** — a surface capable of being identified by a visually impaired person using a cane.

### 3. Reference Publications

#### 3.1

This Standard refers to the following publications and where such reference is made it shall be to the edition listed below, including all revisions published thereto:

**CSA Standards**

A23.1-94/A23.2-94,

Concrete Materials and Methods of Concrete Construction/Methods of Test for Concrete;

From A3000-98, Cementitious Materials Compendium:

A5-98,

Portland Cement;

May 1999

(Replaces p. 1, January 1999)

A23.5-98,  
*Supplementary Cementing Materials;*

A362-98,  
*Blended Hydraulic Cement.*

**ACI\* Report**

212.3R-91,  
*Chemical Admixtures for Concrete.*

**ASTM† Standards**

C 260-95,  
*Standard Specification for Air-Entraining Admixtures for Concrete;*

C 494-90,  
*Standard Specification for Chemical Admixtures for Concrete;*

C 979-82 (R1993),  
*Standard Specification for Pigments for Integrally Colored Concrete.*

*\*American Concrete Institute.*

*†American Society for Testing and Materials.*

## **4. Materials**

### **4.1 Portland Cement**

Portland cement shall conform to the requirements of CSA Standard A5. Blended cements shall conform to the requirements of CSA Standard A362.

### **4.2 Supplementary Cementing Materials**

Supplementary cementing materials shall conform to the requirements of CSA Standard A23.5.

### **4.3 Aggregates**

Aggregates shall conform to the requirements of CSA Standard A23.1, except for gradation requirements.

### **4.4 Admixtures**

Admixtures shall conform to the requirements of ASTM C 260 or ASTM C 494.

### **4.5 Water**

Water for use in concrete for slabs shall conform to the requirements of CSA Standard A23.1.

### **4.6 Colouring Material (Pigment)**

Pigment used in the manufacture of slabs shall be natural or synthetic mineral oxides. Unless the supplier provides the purchaser with a history of the colour-fastness of pigments in concrete, such materials shall conform to the requirements of ASTM C 979.

**Note:** ACI Report No. 212.3R provides guidance on the use of pigments.

### **4.7 Other Constituents**

Other constituents, not referenced by CSA or ASTM Standards for use in concrete, may be utilized,