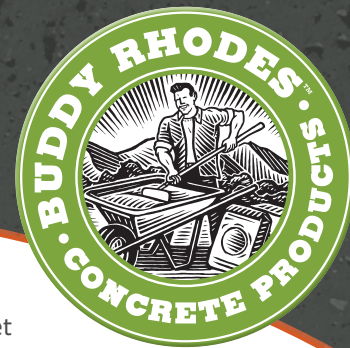


# CSA Cement

## Curing Accelerator for Concrete



### Product Overview

Buzzi Unicem USA CSA Cement is a cementitious powder that increases the strength, shortens the set times, adds durability and decreases the shrinkage of standard concrete mix designs. Buzzi Unicem USA CSA Cement is the perfect addition for mix designs that need to achieve high strengths quickly.

This product is intended to be used when building a mix design from scratch. Typically CSA cement is used as a replacement for a certain percentage of cementitious components in a mix. We recommend a replacement rate of 5-10% by weight of the total cementitious binder (TCB) in a given mix design, with a maximum recommended replacement of 20% by weight. Example: To use at a 10% replacement rate in a mix that contains 100 lb (45.4 kg) of TCB, remove 10 lb (4.54 kg) of TCB and replace with 10 lb (4.54 kg) of CSA cement.

### Benefits / Features

- Achieves high strength quickly
- Decreases shrinkage
- Provides faster setting times in low temperatures

The following table provides useful information regarding the average strength of Buzzi Unicem USA CSA Cement mixes using different percentages with Buzzi GreenCastle Type I cement and citric delay material. Data was obtained using an ASTM C-109 mortar mix with w/c=0.48

**Set Times and Strength Ranges**

% Replacement of TCB	Vicat Set Time	3 hrs (psi)	24 hrs (psi)	7 days (psi)	28 days (psi)
10%	52 minutes	120	410	5,320	8,080
20%	48 minutes	570	1,370	4,570	6,380
30%	41 minutes	1,090	2,470	3,870	6,430
40%	34 minutes	1,440	3,280	3,630	6,220
50%	26 minutes	2,130	4,300	6,100	6,850
60%	21 minutes	3,370	4,970	6,290	8,120
100%	16 minutes	3,630	5,760	8,680	9,640



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