

CSA Cement by Buzzi Unicem USA

What is Buzzi Unicem USA CSA Cement?

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 – as strong as 3,000 PSI in 60 minutes and an initial set time as fast as 20 minutes. Buzzi Unicem USA CSA Cement can be used with retarder additives to provide longer workability, while still achieving high early strengths, making this an ideal product for time-sensitive projects. Buzzi Unicem USA CSA Cement is a made in the USA product.

What is the strength range of standard concrete mix designs enhanced with Buzzi Unicem USA CSA Cement?

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

Buzzi CSA	Vicat Set Time	3 Hrs. (psi)	24 Hrs. (psi)	7 Days (psi)	28 Days (psi)
10%	52 min.	120	410	5320	8080
20%	48 min.	570	1370	4570	6380
30%	41 min.	1090	2470	3870	6430
40%	34 min.	1440	3280	3630	6220
50%	26 min.	2130	4300	6100	6850
60%	21 min.	3370	4970	6290	8120
100%	16 min.	3630	5760	8680	9640

What are the applications for concrete containing Buzzi Unicem USA CSA Cement?

- Concrete repair and maintenance when fast reopening to traffic is needed of roadways, bridges , parking lots, airport runways and aprons, rail crossings or sidewalks.
- Self-leveling mortars with high early strengths.
- Pre-cast production requiring rapid demolding.
- Water pipes, sewers, reservoirs, water tanks requiring high sulfate resistance and extremely low permeability.
- Stucco, Plaster, Guniting and Shotcrete (an accelerant for spray and injection products).
- Fast setting concrete at lower temperatures.

- Tile adhesives and grouts.

What is the curing procedure for concrete mixes using Buzzi Unicem USA CSA cement?

There are no special curing recommendations in normal weather conditions. Standard curing practices need to be used when applicable to adjust for conditions such as heat, cold or wind.

What are the typical compressive strengths of Buzzi Unicem USA CSA Cement tested per ASTM C-1600(*)?

1.5 hours – 3,100-psi avg.

3.0 hours – 3,800-psi avg.

1 day - 5,100-psi avg.

7 day - 7,550-psi avg.

Initial set time – 15 minutes avg. (*)

Blaine - > 6,500 avg.

(*) CSA delay used in mixing procedure

What are the chemical analysis ranges of Buzzi Unicem USA CSA Cement?

SiO₂ 6 – 10 %

Al₂O₃ 20 – 24%

Fe₂O₃ 1 – 4 %

CaO 41 – 45 %

MgO 0.5 – 1.0 %

SO₃ 18 – 25 %

K₂O 0.1 – 0.3 %

Na₂O 0.1 – 0.3 %

Who is Buzzi Unicem USA?

Headquartered in Bethlehem, PA, Buzzi Unicem USA and its affiliates (the “Company”) is one of the leading cement manufacturing companies in the US. The Company’s seven cement plants have a production capacity of approximately 8 million metric tons.

The Company operates 33 cement terminals across the US to distribute cement into 21 states. With over 1,300 valued employees, the Company supplies cement and masonry cement to over 3,800 ready-mix concrete, highway and airport paving firms, concrete block companies and concrete product firms.

The Company’s cement manufacturing locations are in Cape Girardeau and Festus MO; Chattanooga, TN; Greencastle, IN; Maryneal, TX; Pryor, OK and Stockertown, PA.

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