

## FAST SET, RAPID STRENGTH DEVELOPMENT AND DRYING

Major advantage is that concrete or mortar made with CALUMEX CSA cement (used as straight binder, or added to cement) sets quicker, dries faster, and achieves much higher strengths than ordinary Portland cement (OPC).

## LOW CARBON FOOTPRINT

CALUMEX CSA cement can be categorized as "green" cement. Portland cement is calcined at temperatures of  $\approx 1500^{\circ}\text{C}$  ( $2700^{\circ}\text{F}$ ). CALUMEX CSA cement only needs to be fired at temperatures of around  $1250^{\circ}\text{C}$  ( $2250^{\circ}\text{F}$ ). CALUMEX CSA clinker is softer than ordinary cement clinker or calcium aluminate cement resulting in less energy used on grinding.

## LOWER ALKALINITY

CALUMEX CSA cement gives low free lime on hydration. The pH value is only 10.5-11, the pH of ordinary Portland cement (OPC) is  $\approx 13$ . Therefore the risk of alkali aggregate reaction (ASR). It also allows alkali resistant glass fibers to be used (GRC).

## CURING TIME

CALUMEX CSA cement needs wet curing for 3 to 4 hours, compared to ordinary cement needing days or weeks.

## PROPERTIES

CALUMEX CSA cement has low shrinkage, improved freeze resistance, low impermeability, good sulfate and corrosion resistance.

## average analysis

Chemical		Physical		Compressive strength		
	%			hours	psi	Mpa
CaO	44	Blaine	4500 cm <sup>2</sup> /g	6	3000	20
SiO <sub>2</sub>	8,5	Density	2,9 g/cm <sup>3</sup>	day		
SO <sub>3</sub>	16	Setting time	15 min	1	4700	32
Al <sub>2</sub> O <sub>3</sub>	26	Final	35 min	3	6000	41
Fe <sub>2</sub> O <sub>3</sub>	2,5	d50	13 $\mu$	<b>Flexural strength</b>		
MgO	1		1200 mesh	hours	psi	Mpa
TiO <sub>2</sub>	1			6	580	4
alkali	0,36			day		
free lime	0,25			1	725	5,0
				3	800	5,5

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