

Product Data Sheet

CasTech EA-100 / EA-200

Nov-2025, Ver. 01.01



Concrete Expanding Agent for Shrinkage Compensation

DESCRIPTION

CasTech Expanding Agent (EA) is used to prepare expansive concrete, including shrinkage-compensating concrete and self-stressing concrete. In civil engineering it is mainly used for waterproofing and crack resistance, to extend joint spacing, and to prevent temperature-difference cracking of mass and high strength concrete. The range includes two products:

CasTech EA-100 – a high-efficiency, low-alkali calcium sulphoaluminate expansion agent. Its aluminate and sulphoaluminate clinker components are calcined in a rotary kiln with an added dispersing component, giving good adaptability to chemical admixtures.

CasTech EA-200 – a fully compensating expansive agent containing a calcium alunite and CaO double expansion source. Its water-curing requirement is lower than that of pure calcium alunite.

USES

CasTech EA-100 is suitable for crack-resistant, seepage-control, waterproof, antifreeze and water-erosion-resistant concrete, for pumped and cast concrete in construction, traffic, water conservancy, civil defence, hydraulic, power and municipal works, and for large-volume, large-area, long and complex structures cast continuously without joints.

CasTech EA-200 is suitable for mass concrete, high strength concrete, concrete-filled steel tubes and ground concrete works. It can also be used to prepare self-stressing concrete, high-strength non-shrink grouting materials and dry mortar.

ADVANTAGES

CasTech EA-100:

- Alkali content less than 0.5%
- Small loss of concrete slump
- Limited expansion rate of shrinkage-compensated concrete at 7 days is 2.5×10^{-4} ; crack strength increased by 0.4 – 0.7 MPa
- Good adaptability; can be combined with various admixtures
- With Portland cement: hydration heat reduced by 25%, 90-day strength increased by 15%; anti-permeability grade P12; antifreeze grade above D300; increased resistance to sulphate attack

CasTech EA-200:

- Contains calcium alunite and CaO double expansion source
- Residual limited expansion after drying shrinkage is greater than 0 – shrinkage is 100% compensated
- Lower water-curing requirement than pure calcium alunite

DOSAGE

For shrinkage-compensating concrete the recommended dosage of EA is 8%; 10% is used for post-pour strips or expansion strips. The minimum content per cubic metre of concrete is 35 kg and the maximum is 50 kg. EA can be used with fly ash or mineral powder; when calculating dosage, EA and these additions are treated as cementitious materials.

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INSTRUCTIONS FOR USE

- The dosage at the site or batching plant must be determined accurately: too little will not achieve shrinkage compensation, while excessive addition can damage the concrete structure
- Mixing time of concrete with expansive agent should be 30 seconds longer than for ordinary concrete; concrete temperature should be below 30°C; vibrate to a uniform, dense mass
- Finish the surface a second time before final set to prevent surface shrinkage cracks
- Curing is very important: keep exposed surfaces moist at all times for not less than 7 days
- After pouring, backfill basements and apply roof waterproofing and insulation layers as soon as possible

PRECAUTIONS

Health & Safety:

As with all chemical products, caution should always be exercised. Protective clothing, such as gloves and goggles, should be worn. See packaging/MSDS for specific instructions. Treat any splashes to the skin or eyes with fresh water immediately. Should the product be accidentally swallowed, do not induce vomiting, but call for medical assistance immediately.

STORAGE

12 months when stored in factory packed, unopened bags in a cool, dry and elevated place away from direct sunlight.

Fire:

CasTech EA is non-flammable.

PACKAGING

CasTech EA is supplied in 25 kg or 50 kg sealed packaging; other packaging can be agreed.

TECHNICAL SUPPORT

CasTech offers a full technical support package to specifiers, contractors and end users, as well as technical assistance on site and after-sales consultations.

CasTech MIDDLE EAST FZE

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