

PRODUCT NAME

Spray-Con™ DS ST Dry Shotcrete



MANUFACTURER

Gemite® Products Inc.

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FEATURES

- Easy, crack free thick to thin application
- Up to 300 mm (12 in) in a single application
- Long lasting crack resistance
- Low shrinkage
- Excellent freeze/thaw durability
- High bond strength
- Salt resistant
- Waterproof
- Air cured
- Sulphate resistance
- Prevents chloride ion penetration
- Non-toxic, non-flammable
- Superior workability = easy to apply
- Breathable
- Resists most oils, solvents and chemicals
- Labour saving system
- Low rebound
- High early strengths
- Formulated to minimize dust

PRODUCT DESCRIPTION

Basic Use

For vertical and overhead repairs of concrete ceilings, walls, columns and beams in parking garages, water storage tanks, swimming pools, concrete silos, tunnels, bridge piers and other concrete structures. *Spray-Con DS ST* is also used for rock and soil stabilization.

Composition and Materials

Spray-Con DS ST is a Portland cement based, fibre-reinforced, micro-silica modified dry shotcrete (Gunite).

Limitations

Do not apply *Spray-Con DS ST* when the temperature is expected to be below 4°C (40 °F) within 48 hours. Follow Hot Weather concreting procedures when applying *Spray-Con DS ST* at temperatures exceeding 25°C.

Health and Safety

Spray-Con DS ST is non-toxic and non-flammable. Your skin might be sensitive to cement. We recommend use of rubber gloves. Avoid contact with skin. If contact occurs, flush immediately with water. Seek medical advice if irritation occurs. Harmful if digested. Keep product out of reach of children. FOR INDUSTRIAL USE ONLY. Consult MSDS for additional information.

Color

Dark Grey.

Packaging

Spray-Con DS ST Concentrate is supplied in 10.5 kg (23.1 lb) bags (*Single*) bags and 21 kg (46.2 lb) bags (*Double*).

Yield

Spray-Con DS ST Single yields 86 L (3.25 ft³) and covers approximately 3.6 m² @ 24 mm (38.9 ft² @ 1”) thickness per bag. *Spray-Con DS ST Double* yields 172 L (6.5 ft³) and covers approximately 7.17 m² @ 24 mm (77.9 ft² @ 1”) thickness per bag.

Allowance must be made for waste and “cut-off”.

Storage and Transportation

Spray-Con DS ST when stored on pallets in a dry, cool area, has a shelf-life of 12 months. Packaged 60 (*Single*) bags or 40 (*Double*) bags per pallet.

TECHNICAL DATA

Compressive Strength (ASTM C109)	40.5 - 48.8 MPa (5900 - 7100 psi)
Modulus of Rupture (ASTM C348)	7.9 -8.9 MPa (1100 - 1300 psi)
Bond Strength with Concrete	exceeds the tensile strength of concrete substrate

INSTALLATION

Guide Specifications are available from Gemite’s Technical Services on request and must be followed. Gemite’s Technical Service must be consulted before starting a project to ensure that the correct surface preparation and application procedures are followed.

Surface Preparation

Remove all loose, delaminated or grease contaminated concrete. Use sandblasting, scabbling, high pressure waterblast (min. 8-10,000 psi), or other approved methods to remove any laitance, dirt and efflorescence.

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03700 Concrete Restoration
03720 Concrete Resurfacing

Crack Treatment

Mesh all dynamic cracks with galvanized welded wire fabric mechanically fastened over the crack. See Guide Specifications for detailed instructions.

Reinforcing Steel

Remove concrete behind the reinforcing steel to 25 mm (1 in) depth. Remove loose rust from the surface of the reinforcing steel and apply two coats of *Fibre-Prime* rustproofing.

Mix Design	Single	Double
<i>Spray-Con DS ST Concentrate</i>	10.5 kg (23.1 lb)	21 kg (46.2 lb)
Cement	40 kg (94 lb)	80 kg (188 lb)
Sand	140 kg (330 lb)	280 kg (659 lb)

Aggregate Extension:

For some applications, the unit can be further extended with 9 mm (3/8 in) pea gravel. Contact Gemite Technical Service for further information.

Mixing Procedure

Mix *Spray-Con DS ST Concentrate* with the specified amount of sand, cement and water, using a continuous dry shotcrete auger-mixer. Use two hopper arrangement. Preblend the *Spray-Con DS ST Concentrate* and cement uniformly in a mortar mixer and place into one hopper, sand in the other. Blend the contents from both hoppers uniformly in specified proportions in the continuous auger mixer. For preblending smaller quantities of dry shotcrete, use a mortar or concrete mixer. Place the *Spray-con DS ST Concentrate*, cement, sand into the mixer and mix until a uniform blend is achieved.

Application

Spray apply *Spray-Con DS ST* using dry shotcrete equipment in accordance with ACI 506-R85, Guide to Shotcrete. Use pre-dampener to adjust the moisture content to 3-4% to reduce dusting and rebound. During shotcreting, the nozzle distance from the substrate should be 0.6 - 1.2 m (2 - 6 ft) and the nozzle angle to the substrate 90 degrees. The consistency of the *Spray-Con DS ST* should be similar to a firm jelly.

The excess of the material is “cut-off” (sliced) with a sharp trowel. The surface is then finished using a broom, wood float or can be steel trowelled for a smooth finish. Contact Gemite Technical Service for information regarding the use of *Adi-Con* shotcrete accelerators and the selection of dry shotcrete equipment.

Curing

Spray-Con DS ST must be wet cured for 2 days. Protect against fast drying using a surface evaporation retardant, water borne curing compounds or fine water mist. When working under tarps at freezing temperatures, use electrical heaters. Avoid using propane heaters to prevent “carbonation” of the material.

AVAILABILITY AND COST

Spray-Con DS ST is available worldwide. Contact Gemite Products Inc. for the name of the nearest Representative/Distributor and for current pricing information.

MAINTENANCE

None required.

WARRANTY

A limited twelve (12) month Material Replacement Warranty is available. For complete details contact Gemite’s Head Office.

TECHNICAL SERVICE

For advice on suitability of *Spray-Con DS ST* for a specific application, specification assistance and application instructions, contact Technical Service: USA at 888-443-6483 and Canada at 905-672-2020.

Short Specification

The dry shotcrete mix will be *Spray-Con DS ST*, manufactured by Gemite Products Inc., [USA 888-443-6483] [Canada 905-672-2020]. It will meet all the Technical Data specified in the current *Spray-Con DS ST* Product Data Sheet.