

## Substrates & Surface Preparation

- General** For complete application instructions refer to the Southwest Fireproofing Products Field Application Manual. Before application of Type 7GP™, all substrates must be clean and free of loose scale, dirt, oil, grease, condensation, or any other substance that would impair adhesion. Note: For certain designs, mechanical attachment or the application of Type DK may be required prior to the Type 7GP. Consult the relevant UL Design for details or contact Carboline Technical Service for further information. Fireproofing shall be applied to the underside of roof deck assemblies only after all roofing work has been completed, and all roof traffic has ceased. No fireproofing shall be applied prior to completion of concrete work on steel floor decking.
- Primers** Primers are not recommended or required, except as described below. If a primer is required, contact Carboline Technical Service for recommendations. Type DK spatter coat must be used as a primer/bonding agent on cellular decks and roof decks per UL design requirements.
- Painted/Primed Steel Decks** Type 7GP may be applied to painted/primed steel decking only if permitted by the UL design. If the painted/primed deck is not an approved substrate, metal lath must first be secured to the deck surfaces in accordance with the UL requirements.
- Painted/Primed Structural Steel** Painted/primed structural steel is generally not approved by UL as an acceptable substrate for sprayed fire resistive materials unless the paint or primer was included in the fire test and or a UL listed Primer for Structural Steel. UL has established conditions that must be satisfied for application to primed or painted structural steel, including: minimum bond strength criteria; dimensional limitations for the structural members; use of a bonding agent or adhesive; use of metal lath to provide a mechanical bond; or, use of mechanical breaks of metal lath strips or steel pins and disks. Refer to the UL Fire Resistance Directory-Volume 1 for details or contact Carboline Technical Service before applying Type 7GP to any painted / primed steel beams or columns.
- Painted/Primed Steel Joists** Painted steel joists do not require adhesive, lath or fastening devices. It is acceptable to apply 7GP directly to steel joists.

## Application Equipment

The following are general equipment guidelines for the application of this product. Job site conditions may necessitate modifications to these guidelines to achieve desired results.

- Mixer** Use a minimum 12 to 16 ft<sup>3</sup> heavy-duty mortar mixer rotating at 40 rpm. Use rubber tipped blades that wipe the sides.
- Pumps** Type 7GP can be pumped with a wide range of piston, rotor/stator and squeeze pumps designed to pump cement/plaster materials, including:

Mfg.	Model	Type	Size
Essick	FM9/FME51	Rotor / Stator	2L4
Muller	R - Tex	Rotor / Stator	2L6
Goldblatt	Supertex	Rotor / Stator	2L6
Sunspray	220	Rotor / Stator	2L4
PFT	ZP3 (HM2)	Rotor / Stator	-
Mayco	PF30	Piston	-
Sunspray	HP 320E	Piston	-
Putzmeister	Thomson PTV 700	Piston	-
Putzmeister	S6EV	Rotor / Stator	2L6

Note: Marvel kit must be removed from piston pumps.

# Southwest™ Fireproofing Type 7GP™

Compressor	Compressor on pump must be capable of maintaining minimum 30 psi and 9 to 11 cfm at the nozzle.
Air Line	Use 5/8" (15.9 mm) I.D. hose with a minimum bursting pressure of 100 psi (6.9 kPa).
Ball Valves	Ball valves should be located at the manifold and at the end of the surge hose to facilitate cleaning of the pump and/or hoses.
Hoses	Use 15 to 25 feet of 3" I.D. or larger surge hose from the manifold. Follow with a 16" tapered fitting to a 2" I.D. hose to the spray area. Taper to 15 to 20 feet of minimum 1-1/4" or 1" whip hose.
Standpipe	Use 3" I.D. aluminum tubing with quick external disconnections. Elbows should be 3" I.D. with minimum 36".
Nozzle/Gun	Use a minimum 1" I.D. plaster type nozzle with shut off valve, swivel and air shut off valve.
Orifice Tips and Shields	9/16 to 5/8" I.D. "blow-off" tips with "mini shields".

## Mixing

Type 7GP™ fireproofing material shall be mixed in a conventional plaster paddle type or continuous mixer designed specifically for cementitious fireproofing. Rotary mixers are not recommended. The mixer shall be kept clean and free of any previously mixed materials which may cause premature setting of product. Do not mix or contaminate with plaster products. A 3-bag mix is recommended for paddle type mixers. Mix time should be 1-1/2 to 2 minutes at 45 RPM. Do not over mix. If it is necessary to use a mixer smaller than the recommended 12 to 16 ft<sup>3</sup>, material volume should not go over center bar of mixer. Use approximately 10 gallons of water per 50 lb bag of Type 7GP. Add water to the mixer first. With blades stopped, add Type 7GP to the water and then mix.

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## Density

Wet density measurements at the nozzle are critical to obtaining correct density and yield. To check wet density, fill a container of known volume, such as a 5 oz Dixie cup, with sprayed material level with the top rim of the cup. Take care to avoid trapping air bubbles or compaction of the material in the cup. Determine the weight of the material in the cup in g. Multiply the weight (in grams) by a conversion factor based on the size of the container (conversion factor is 2.107 divided by the volume of the container in oz) to yield wet density in lbs/ft<sup>3</sup> (pcf).

Cup Used	Conversion Factor	Cup Used	Conversion Factor
3 oz	.702	8 oz	.263
4 oz	.527	12 oz	.175
5 oz	.421	16 oz	.132
6 oz	.351	33.8 oz (1 liter)	.062

Theoretical gross yield may be calculated as follows:

$$\text{Theoretical gross Yield} = 12 \times (G \times 8.34 + W) / D$$

Where, G = gallons of water per bag, gal

W = weight of material in bag, lb

D = nozzle wet density, pcf

Type 7GP™ Yield Chart\*

Water Used per bag (G)	Nozzle Wet Density (D)			*Estimated Coverage (board ft per bag)	Dry Density, pcf
	g / Liter	Weight in 5 oz cup, g (net)	pcf		
10 gal	830	1237	50.9	31.4	21
	870	129	53.4	30.0	22
	909	134	55.8	28.7	23
	949	140	58.2	27.5	24
	988	146	60.6	26.4	25
10.5 gal	856	8127	52.5	31.4	21
	897	133	55.0	30.0	22
	937	139	57.5	28.7	23
	978	145	60.0	27.5	24
	1019	151	62.5	26.4	25
11 gal	882	130	54.1	31.4	21
	924	137	56.7	30.0	22
	966	143	59.3	28.7	23
	1008	149	61.8	27.5	24
	1050	155	64.4	26.4	25

\* Theoretical Gross. Field results will vary. Material losses during mixing and application will vary and must be taken into consideration when estimating job requirements.

## Application Procedures

For complete application instructions refer to the Southwest Fireproofing Products Field Application Manual.

Thicknesses of 3/4 inch or less can typically be applied in one pass. For thicknesses of greater than 3/4 inch, apply subsequent coats after the prior coat has set. If preceding coat has dried, dampen the surface with water prior to application of additional coats.

Type DK (Spatter Coat) adhesive shall be applied to all cellular floor units, to all roof deck systems and where indicated by the UL design.

Use only potable water (drinking quality).

Apply product to achieve a uniform texture and thickness as required by UL design.

## Application Conditions

Air and substrate temperatures shall be 40°F minimum, and shall be maintained 24 hours before, during and for 24 hours after spraying occurs.

Ventilation in enclosed areas is very important, to assist products to set and dry properly. Total air exchange should be at least 4 times per hour.

## Finishing

Type 7GP is normally left as a sprayed texture finish. Surface may be over sprayed with Type DK or HC to provide a more durable finish.

Note: If surface of Type 7GP has dried, dampen the surface with water prior to application of Type DK or HC.

## Protection of Adjacent Surfaces

Adjacent surfaces shall be protected from damage and overspray. Sprayed fireproofing materials may be difficult to remove from surfaces and may cause damage to architectural finishes.

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## **Curing**

Fresh Type 7GP must be protected from rain and running water for 24 hours.

Air and substrate temperatures must be 40°F minimum, and must be maintained 24 hours before, during and for a minimum of 24 hours after spraying occurs.

## **Field Tests**

The architect may select and the owner pay for independent testing of spray applied fire resistive materials. Testing shall be for thickness and density in accordance with: the applicable building code; AWCI Technical Manual 12-A, Standard Practice for the testing and Inspection of Field Applied Sprayed Fire-Resistive Materials, an Annotated Guide; and, ASTM E605, Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Materials Applied to Structural Members.

## **Cleanup & Safety**

- Cleanup** Pump, mixer and hoses should be cleaned with potable water. Sponges should be run through the hoses to remove any material remaining in the hoses. Wet Type 7GP overspray must be cleaned up with soapy or clean, potable water. Cured overspray material may be difficult to remove and may require chipping or scraping to remove.
- Safety** Read and abide by the MSDS.  
Do not breathe dust. Use OSHA approved dust mask.  
Safety goggles or glasses should be worn. For eye contact, flush with copious amount of water in accordance with OSHA instructions.  
Wash skin with clean water to prevent irritation.  
Follow equipment manufacturers' recommendations regarding safety and maintenance.



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