SOUTHWEST TYPE 5AR™

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	A gypsum based, Spray-applied fire resistive material (SFRM) designed for the fire protection of interior structural steel.
Description	This is an extended set, spray applied fire resistive material that can be left in the equipment and lines for up to 4 days without setting. It was developed to be used as a holding material to leave in the equipment and lines to reduce start up and clean up times when using the Southwest Type 5 materials. This material requires injection with Accelerator A-20 to reach final set. It is intended for use with Southwest Type 5GP and Southwest Type 5MD for application to interior structural columns, beams, joists, decks, walls, roofs, girders, floors and pre-cast concrete units.
Features	• Extended set time - up to 4 days • Labor and material savings • Reduced clean up and start up times • Increased production • Accelerator A-20 injection is required for final set • Styrene free - no toxic decomposition gases • Economical - maintains project on budget • Multiple UL Designs - can be used with all Southwest Type 5GP and Southwest Type 5MD designs
Color	Green
Finish	Textured
Primer	Primers are not required or recommended. If a primer is specified or steel is primed, bond strength must meet minimum UL criteria. A/D Type TC-55 Sealer is used as a primer/bonding agent to meet this requirement where specified. Southwest Type DK3 (spatter coat) must be used as a primer/bonding agent on cellular decks and roof decks per UL design requirements. Contact Carboline Technical Service for further information. Southwest Fireproofing materials neither promote nor prevent corrosion. Fireproofing should not be considered part of the corrosion protection system.
Application Thickness	1/2" - 5/8" (12.7 mm - 15.8 mm) on initial pass
Limitations	Not intended for permanent direct exposure to weather or excessive physical abuse beyond normal construction cycles. Not recommended for use as refractory cement or where operating temperatures exceed 200°F (93°C).
Topcoats	Generally not required. In severely corrosive atmospheres, consult Carboline Technical Service for selection of coating most suitable for the operating environment.

SUBSTRATES & SURFACE PREPARATION

General	Prior to application, all substrates must be clean and free of loose scale, dirt, oil, grease, condensation, or any other substance that would impair adhesion. For certain designs, mechanical attachment or the application of Southwest Type DK3 (spatter coat) may be required. 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. When applying to flexible roof systems it is required that Southwest Type DK3 (spatter coat) is used. Also be sure that all roof work is completed and water tight before commencing installation of fire protection. Roof traffic shall be limited to maintenance after fire protection is applied and cured. No fireproofing shall be applied prior to completion of concrete work on steel floor decking.

SUBSTRATES & SURFACE PREPARATION

Painted/Primed Steel Decks	Apply 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 Steel Joists	Painted steel joists do not require adhesive, lath or fastening devices. It is acceptable to apply directly to steel joists.
Painted/Primed Structural Steel	Painted/primed structural steel is generally not approved by UL as an acceptable substrate for Spray-applied Fire Resistive Materials (SFRMs) unless the paint or primer was included in the fire test and/or UL listed for SFRM applications to 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 to any painted/primed steel beams or columns.

MIXING & THINNING

Mixer	1. Use a minimum 12-16 cubic foot (340-453 liter) heavy-duty mortar mixer capable of rotating at 40 rpm with rubber tipped blades that wipe the sides. 2. Use continuous feed mixer. Contact Carboline technical service for recommendation. Densities may vary when using this type of mixing equipment.
Mixing	Always mix with clean potable water. The mixer shall be kept clean and free of any previously mixed materials which may cause premature setting of product. A 3-bag mix is recommended for paddle type mixers. Mix time should be 2 minutes at 40 rpm. Do not over mix. The material volume should not go over center bar of mixer. Use 11 to 13 gallons (41.6 to 49.2 liters) of water per 50 lb. (22.7 kg) bag. Add water to the mixer first with blades stopped. With mixer turned on, add material to the water and begin mixing. The amount of water necessary will depend on the amount of time the material will be left in the equipment and lines: Overnight: 11 gallons (41.6 L) 2-3 days: 12 gallons (45.4 L) 4 days: 13 gallons (49.2 L) The maximum time the material can be left in the equipment and lines is 4 days.
Density	For information and recommendations to obtain the proper density and yield, contact the local Carboline representative or Carboline Fireproofing Technical Service.

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Pump	This material can be pumped with a wide range of piston, rotor stator and squeeze pumps designed to pump cement & plaster materials including: Essick - model# FM9/FM5E (Rotor Stator/2L4) Putzmeister - model# S5EV (Rotor Stator/2L6) Hy-Flex - model# 321E (Piston) Hy-Flex - model# HZ-30E (Rotor Stator/2L6) Hy-Flex - model# H320E (Piston) Sunspray - model# EZ88 (Rotor Stator/2L6) Strong Mfg. - model# Spraymate 60 (Rotor Stator/2L6) Airtech - model# Swinger (Piston)

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	Mayco - model# PF30 (Dual Piston) Thomsen - model# PTV 700 (Dual Piston) Graco - model# F340e (Piston) Graco - model# F800e (Piston) Marvel kit must be removed from piston pumps.
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.
Material Hose	Use 2" transfer hose for maximum practical length to spray area. Follow with a 16” (406 mm) tapered fitting to a 1-1/2” (38.1 mm) I.D. hose for 50' (15.2 m). Then taper to 1-1/4” (31.8 mm) for 25'. Then taper to a 1” (25 mm) whip hose for 15' to 20' (4.6 m - 6.1 m). All connections should have conical tapered fittings.
Standpipe	Use 2” (50.8 mm) I.D. aluminum tubing with quick external disconnections. Elbows should be 2” (50.8 mm) I.D. with minimum 36” (0.9 m) lengths.
Nozzle/Gun	Use a minimum 1” (25 mm) I.D. plaster type nozzle with shut off valve, swivel and air shut off valve.
Orifice Size and Shields	9/16" to 5/8" (9.5 mm - 15.9 mm) I.D. “blow-off” tips (mini shields optional)
Compressor	Compressor on pump must be capable of maintaining minimum 30 psi (206 kPa) 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 (689 kPa).

APPLICATION PROCEDURES

General	When the material hopper is empty after the last batch of Southwest fireproofing, turn off the Accelerator A-20 injection pump. Turn off the feed valve to the material nozzle. Mix the Southwest Type 5AR material with 11-13 gallons (41.6-49.2 L) of water (depending on the amount of time the material will be left in the equipment). Mix the material for 2 minutes. Fill the hopper with the Southwest Type 5AR slurry. Pump the material until the green color is coming out at the spray nozzle. Continue pumping the material until the hopper is almost empty then cover with plastic to keep the material from drying out. Remove the orifice and place end of spray nozzle in container of water to prevent drying. When spraying commences, mix solution of Accelerator A-20 following the product's mixing procedures. Remove the plastic from the hopper and replace the nozzle orifice. Mix a batch of Southwest Type 5GP or Southwest Type 5MD following the product's mixing procedures. Begin spraying the material with injection of the Accelerator A-20 solution following the Southwest Fireproofing Injection Procedures For High Production (this enables the material to set). The material should be sprayed out in a thin coat of 1/2"-5/8" (13-15.9 mm). A color change back to tan indicates that all of the Southwest Type 5AR has been pumped out. A thin coat of Southwest Type 5GP or Southwest Type 5MD can then be applied over the Southwest Type 5AR for uniform color. For complete application instructions, refer to the Southwest Fireproofing Products Field Application Manual.

APPLICATION PROCEDURES

Finishing — Normally left as a sprayed texture finish. Surface may be over sprayed with Southwest Type 5GP or Southwest Type 5MD once set.

Field Tests — The architect and/or owner may specify 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.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	40°F (4°C)	40°F (4°C)	40°F (4°C)	95%

Air and substrate temperatures shall be maintained 24 hours before, during and 24 hours after application.

CURING SCHEDULE

Surface Temp.	Dry to Recoat
77°F (25°C)	20 Minutes

Recoat time is based on injection with Accelerator A-20. Material must be protected from rain and running water for 24 hours after application.

TESTING / CERTIFICATION / LISTING

Underwriters Laboratories, Inc. — Classified for fire resistance by Underwriter's Laboratoies, Inc. in accordance to ASTM E119 (UL 263, ULC S101). Southwest Type 5AR is co-listed in all UL and ULC designs that list Southwest Type 5GP and Southwest Type 5MD.

City of New York — MEA No. 55-04-M Vol. II (Wall)
MEA No. 56-04-M Vol. II (Beam and Floor/Ceiling)
MEA No. 409-02-M Vol. III (Columns and Roof/Ceiling

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 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 follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Use adequate ventilation. Keep container closed when not in use.

Overspray — 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.

Ventilation — When used in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved respirator.

PACKAGING, HANDLING & STORAGE

Packaging	50 lb. (22.7 kg) bags * Southwest Type 5AR, Type 5GP, Type 5MD and Type DK3 are trademarks of Southwest Fireproofing Products Company.
Shelf Life	12 months Shelf Life: (actual stated shelf life) when stored indoors in a dry place and in original unopened containers.
Storage	Store indoors in a dry environment between 32°F - 125°F (0°C - 52°C) Material must be kept dry or clumping of material may occur.
Shipping Weight (Approximate)	50 lbs. (22.7 kg)

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance, injuries or damages resulting from use. Carbolines sole obligation, if any, is to replace or refund the purchase price of the Carboline product(s) proven to be defective, at Carbolines option. Carboline shall not be liable for any loss or damage. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.