Southwest Fireproofing Type 5AR™

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	A gypsum based, sprayed 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 equipment and lines to reduce start up and clean up times when using 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 applications to interior structural columns, beams, joists, decks, walls, roofs, girders, floors and pre-cast concrete units.
Features	• Extended set time – Up to 4 days. • Labour and material savings. • Reduced start up and clean 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 cUL and UL Designs - Can be used with all Southwest Type 5GP™ and Southwest Type 5MD™ designs.
Color	Green
Finish	Textured
Primers	Primers are not required or recommended. If a primer is specified, or steel is primed, bond strength must meet minimum UL/cUL criteria. Southwest Type DK3™ spatter coat must be used as a primer/bonding agent on cellular decks and roof decks per UL/cUL design requirements. Contact A/D for further information. Southwest Fireproofing materials neither promote nor prevent corrosion. Fireproofing should not be considered part of the corrosion protection system.
Fireproofing Topcoats	Generally not required. In severely corrosive atmospheres, consult A/D Technical Service for selection of coating most suitable for the operating environment.
Application Thickness	12.7mm – 15.8mm (½" - 5/8") Max. recommended thickness per 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 93°C (200°F).

SUBSTRATES & SURFACE PREPARATION

General	Prior to application, all substrates must be clean and free of loose scale substance that would impair, dirt, oil, grease, condensation, or any other adhesion. For certain designs, mechanical attachment or the application of Type DK3 may be required. Contact A/D 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 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.
Painted/Primed Structural Steel	Painted/primed structural steel is generally not approved by UL/ULC as an acceptable substrate for SFRMs unless the paint or primer was included in the fire test and or a UL/ULC listed for SFRM applications to structural steel. UL/ULC have 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 such as A/D Type TC-55 Sealer; 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* or the *ULC Fire Resistance Directory* for details or contact A/D Technical Service before applying to any painted / primed steel beams or columns.

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Painted/Primed Steel Decks	Applied to painted/primed steel decking only if permitted by the UL/cUL 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/cUL requirements
Painted/Primed Steel Joists	Painted steel joists do not require adhesive lath or fastening devices. It is acceptable to apply Type 5GP directly to steel joists.

MIXING

Mixer	1. Use a minimum 340 -453 litre (12 -16 ft3) heavy-duty mortar mixer capable of rotating at 40 rpm with rubber tipped blades that wipe the sides primed steel beams or columns. 2. Use continuous feed mixer. Contact A/D 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 approximately 2 minutes at 40 RPM. Do not over mix. The material volume should not go over center bar of mixer. Use 41.6-49.2L (11-13 gallons) of water per 22.7kg (50 lb.) 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: 41.6L (11 gallons) 2-3 days: 45.4L (12 gallons) 4 days: 49.2L (13 gallons). The maximum time the material can be left in the equipment and lines is 4 days.
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 nom.148mL (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 grams. Multiply the weight (in grams) by a conversation factor based on the size of the container (conversation factor is 2.107 divided by the volume of the container in oz.) to yield wet density in lb/t^3 (pcf).
Conversion Factors	5 oz. (147.9mL) [0.421] 6 oz. (177.4mL) [0.351] 8 oz. (236.6mL) [0.263] 12 oz. (354.8mL) [0.175] 16 oz.(473.2mL) [0.132] 33.8 oz./ (1 litre) [0.062]

APPLICATION EQUIPMENT

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# 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# PF30 (Dual Piston) Thomsen– model# PTV 700 (Dual 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 4.57 to 7.62m of 76mm (15 to 25 feet of 3") I.D. or larger surge hose from the manifold. Follow with a 406.4mm (16") tapered fitting to a 51mm (2") I.D. hose the spray area. Taper to 4.57 to 6.1m (15" to 20') of minimum 31.6mm or 25.4mm (1-1/4" or 1") whip hose.
Standpipe	Use 76mm (3") I.D. aluminum tubing external disconnections. Elbows should be 76mm (3") I.D. with minimum 914.4mm (36").
Nozzle/Gun	Use a minimum 2.4mm (1") I.D. plaster type nozzle with shut off valve, swivel and air shut off valve.
Orifice Sizes and Shields	9.5mm to 15.9mm (3/8" to 5/8") I.D. "blow-off" tips (mini-shields optional).
Compressor	Compressor on pump must be capable of maintaining minimum 206kPa (30 psi) and 9 to 11 cfm at the nozzle.
Air Line	Use 15.9 mm (5/8") I.D. hose with a minimum bursting pressure of 689 kPa (100 psi).

APPLICATION PROCEDURES

General	When the material hopper is empty after the last batch of Type 5GP, turn off the Accelerator A-20 injection pump. Turn off the feed valve to the material nozzle. Mix the Southwest Type 5AR material with 41.6-49.2L (11-13 gallons) 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 Type 5AR slurry. Pump the material until the green colour 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 (12.7mm-15.9mm (1/2" - 5/8")). A colour 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 colour. *For complete application instructions, refer to the Southwest Fireproofing products Feld Application Manual.
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 Spray Fire-Resistive Materials Applied to Structural Members.*
Finishing	Normally left as a sprayed texture finish. Surface may be over sprayed with Southwest Type 5GP or Southwest Type 5MD once set.

APPLICATION CONDITIONS

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

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

CURING SCHEDULE

Surface Temp. & 50% Relative Humidity	Dry to Recoat
25°C (77°F)	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.

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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	Follow all safety precautions on the Safety Data Sheet (SDS). It is recommended that personal protective equipment be worn, including spray suits, gloves, eye protection and respirators.
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	In enclosed areas, ventilation shall not be less than 4 complete air exchanges per hour until the material is dry.

TESTING / CERTIFICATION / LISTING

Underwriters Laboratories, Inc.	Classified for fire resistance by Underwriter's Laboratories, Inc in accordance to ASTM E-119 (UL263, CAN/ULC-S101). Southwest Type 5AR is co-listed in all UL/cUL designs that list Southwest Type 5GP and Southwest Type 5MD.
City of New York	MEA-55-04-M Vol. II (Wall) MEA 56-04-M Vol. II (Beam and Floor / Ceiling) MEA 409-02-M Vol. III (Columns and Roof / Ceiling)

PACKAGING, HANDLING & STORAGE

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

Type 5AR™ is manufactured under license to Southwest Fireproofing™

WARRANTY