

## Selection & Specification Data

**Description** Accelerator A-20 is a powder mixed with water and injected into gypsum based fireproofing materials to reduce the set time and increase production rates. Accelerator A-20 is approved for use with Southwest™ Type 5 materials.

**Features** Underwriters Laboratories (UL) full-scale fire-tested and approved accelerator for all designs; reference UL File Report R8213, rev. 7/11/2005 (Southwest Fireproofing Products Co, USA) – refer to report listing opposite.

- Reduces self-recoat time allowing full same day installation at all FRRs.
- 20 minute set-time to re-coat
- Improves yield by up to 10%
- Improves per coat build – up to ~ 20mm
- No negative effect on fire or other physical properties

**Solids Content** No measurable effect on wet mix Southwest™ Type 5GP

**Theoretical Coverage Rate** Refer to Southwest™ Type 5GP data.

**Mix Ratio** Refer to separate A-20 Injection Procedure information sheet.

## Mixing & Set-Up

### MIXING

**CAUTION:** The Accelerator A-20 solution is acidic and can irritate or injure skin, eyes and lungs. All personnel should wear proper protection when mixing or spraying with Accelerator A-20. Glove, coveralls, respirator and goggles are required to avoid injury. Avoid contact to bare skin. The fumes from the Accelerator A-20 solution are irritating. Review Accelerator A-20 MSDS prior to use.

Mix one 25 kg bag of Accelerator A-20 (aluminium sulphate) with 41.7 litres of clean potable water. Continue mixing until Accelerator A-20 powder is dissolved completely. A longer mix time will be required to dissolve Accelerator A-20 in colder temperatures. After mixing, allow bubbles to come out of the solution.

### SET-UP

Open valve at base of mixing tank to allow solution to flow to the injector pump. Close valve to injection hose. Open bypass valve and turn on injector pump to re-circulate Accelerator A-20 solution back into the mixing tank for 5 minutes. The Accelerator A-20 solution concentration can be checked with a hydrometer or by weight of a known volume. By hydrometer measurement, the target specific gravity is 1.245 with range of 1.235 to 1.255. To check by net weight of a filled container, a full 1 litre container should weigh 1245 grams ± 10 grams.

Next, fill the alum hose with solution. Close the valve on the end of the hose near the injection housing. Close the bypass valve and open the injector pump valve to alum hose. With the end of the alum hose going back into the mixing tank, open the valve to allow solution to flow through the hose. Continue pumping back into the tank until all air bubbles are out of the solution. Using the injector knob, turn the knob out to decrease the solution percentage and turn the knob in to increase the solution percentage to be injected.

## Test & Approval Data

Summary of full scale fire tests / approval reports undertaken at Underwriters Laboratories Inc. using accelerator injection with Type 5GP (conducted for Southwest Fireproofing Products Co, Albuquerque, NM, USA)

Report #	Detail
97NK42617	Seven full scale column tests
99NK6424	Roof assembly – beams & joists
00NK11556	60 minute roof assembly
02NK25202	60 minute roof assembly – reduced DFT
02NK25202 – p2	120 minute roof assembly
03NK26141	Four full scale floor beam tests
04NK08798	Four full scale roof joists – reduced DFT
04NK08798 – p2	Four full scale column – improved pumpability formula (approved for all designs)
05NK21685	Four full scale roof beam tests
06NK25450	Composite floor & beam test
09NK UL Special	Floor beams – tests confirming linearity of Type 5GP test data

## Application Equipment Guidelines

<b>Pump</b>	Use an alum injection pump with a minimum 600 psi pressure capacity. Contact Carboline technical service for more information. Use 200 litre plastic drum(s) with power mixer for each drum.
<b>Valves</b>	A backflow valve must be used at the injection point to prevent the Accelerator A-20 from dripping and setting up the material in the off position. The flow of Accelerator A-20 must be turned off and flushed out of conveyance line before stopping the conveyance pump.
<b>Material Hose</b>	3/8" (9.5 mm) hose set up with the backflow valve and an injection module placed at 25 foot back from the nozzle.
<b>Nozzle / Gun</b>	Use a minimum 1" (25 mm) I.D. plaster type nozzle with shut off valve, swivel and air shut off valve.
<b>Orifice Size &amp; Shields</b>	9/16 to 5/8" (14 to 16 mm) I.D. minimum. Use mini-shields or supershields depending on project conditions.

# Accelerator A-20

## Injection Flow Rates

- To determine the proper Accelerator A-20 flow rate, it is necessary to calculate the Type 5 GP pumping rate in bags per hour.

- Use the following procedure to calculate the Type 5 GP pumping rate:

- Mix 2 bags of Type 5 GP per the data sheet instructions. The target Type 5 GP mixer density is 44-48 pcf (0.705-0.769 kg/lit). Check the wet density using the procedures given in the application instructions for Type 5 GP. A ½ or 1 litre container can be used.

- Spray the material without injecting Accelerator A-20 on the steel. Spray material until the hopper is almost completely empty. Next, mix another 2 bag batch of Type 5 GP. Time the spraying of these two bags until the hopper is almost completely empty again to the same point.

Calculate the Type 5 GP pumping rate with this formula: (2 bags) x 60 = # of bags per hour (time in minutes)

- Once the pumping rate has been calculated, use the charts in "A-20 Injection Procedures" to set the injector pump to the optimum percentage flow rate of Accelerator A-20 to obtain the desired 17 pcf (0.272 kg/lit) or minimum 15 pcf (0.240 kg/lit) dry density of injected Type 5 GP. Ensure that your target density is correct for the design you are using. **Injection flow rate must not exceed the recommended rate. If Type 5 GP is over injected, the dry densities will fall below the minimum required by the UL / BS476 / AS4100 design.**

Note: The Flow rates as described in the "A-20 Injection Procedures" information sheet should be used as starting rates which will require adjustments based on the sprayed density measurements at the nozzle and dry density estimates. The table in "A-20 Injection Procedures" should be used to set Accelerator A-20 flow rate for 17 pcf dry density. Set the alum pump to the flow rate required for the bag application rate. Check the Accelerator A-20 flow rate by the time required to fill a ½ or a 1 litre container. Pump settings for the alum Injector are approximate and can vary with different models or manufacturers. Pump settings can vary with wear on the equipment

## Packaging, Handling & Storage

**Pack Sizes** 25 kg bags

**Flash Point (Setaflash)** N/A

**Storage Temperature & Humidity** Material should be kept dry, covered, and off the ground between -29°C to 66°C (-20°F to 150°F).

**Shelf Life** 24 months minimum; properly stored

**\*Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.**

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