



Bowman
Ex 245

MONOLITHIC CEILINGS FOR MANUFACTURED HOUSING

UNITED STATES GYPSUM COMPANY
BUILDING AMERICA

PLAINTIFF'S EXHIBIT

USG-1566

STRUCTO-TEXTM
Spray-Texture Plaster System

BB015 0124

THE STRUCTO-TEX PLASTER SYSTEM

MATERIALS, APPLICATION AND EQUIPMENT

Introduction

Seven basic products are combined in the STRUCTO-TEX Spray-texture Plaster System to produce a monolithic ceiling assembly for use in manufactured housing production. In addition to standard drywall finishing tools, two other pieces of application equipment are also required in this operation. The first is a plaster mixing and spray pump with a separate catalyst injection system. The second is a high-pressure airless paint spraying unit. The materials and application are described in detail in the following text. The equipment description, specifications and other technical data are based on the latest available information. Consult the equipment manufacturer for his current specifications.

MATERIALS AND APPLICATION

BLENDET[®] **Gypsum** **Base Panels**

Advantages

- ☐ Fire Resistance
- ☐ Dimensional Stability
- ☐ Economy
- ☐ Tough Multi-ply Paper
- ☐ Glass-Fiber Reinforced Core

Application

The baseboard panels are attached to the lower chords of roof trusses spaced 16" o.c. Attachment systems used depend on code and design specifications governing the manufacturer. Some common systems are shown.

Good System – Boards attached using only 1¼" leg staples at joints and in the field. Staples at joints are positioned with crown parallel to joint and spaced approx. 4" o.c.; field staples spaced up to 12" o.c.

Better System – Boards attached using staples with crowns parallel to joints and spaced 4" o.c. at joints and with 1" drywall screws spaced 9" o.c. in the field.

Best System – Direct adhesive attachment (e.g. FOAMSEAL or U.S. Gypsum Back Staple System) to the truss chords or by using 1" drywall screws both at the joints and in the field of the board.

The most critical aspect of attachment is that the base panels be held tightly against the framing truss.

Ceiling Construction

After board is attached certain precautions must be taken before application of the STRUCTO-TEX Plaster system.

Inspect the ceiling to be sure fasteners used are driven flush with the board and joints form a level plane. Cracked or broken boards should be replaced. Begin joint taping with IMPERIAL[®] Type P Tape when the ceiling is acceptable.

IMPERIAL **Type 'P' Tape**

Advantages

- ☐ Pressure-sensitive adhesive for easy application under hand pressure.
- ☐ Thin but strong, the tape lies flat against the board surface for easy coverage.
- ☐ Inert, will not stain through the joint compound into the plaster surface. (Some competitive products do).
- ☐ Special weaving method, by which the fibers are twisted during manufacture, and special coatings applied after weaving allow the tape to resist fraying and edge ravelling.

This product helps assure crack-free joints in the STRUCTO-TEX Plaster System. Its use in this system is not a recommendation for use of glass mesh in standard drywall finishing systems.

Application

Apply IMPERIAL Type 'P' Tape centrally over each board joint and smooth with moderate hand pressure. For maximum bond, which may be needed to hold tape overnight, press tape firmly against the board with a taping knife.

Latex Additive

In the STRUCTO-TEX Spray-texture Plaster System, the DURABOND[®] Joint Compound and the STRUCTO-TEX Plaster are modified during mixing with a specified latex additive. The amount of latex additive used with each material is shown in the mixing directions.

Certain precautions must be taken when handling and transporting latex materials.

- ☐ Store latex materials at temperatures above 40°F. Prevent from freezing. If frozen, the material is ruined and must be discarded.
- ☐ Keep the container closed when not in use to prevent evaporation.
- ☐ Follow manufacturer's cautions found on the container.
- ☐ This material is not a toxicological hazard, however, spills can be slippery when wet and extremely sticky when drying. Clean all spills promptly using dry toweling first to soak up excess liquid and then soap and water to finish.

DURABOND **45 Joint** **Compound**

Advantages

DURABOND Compound provides a smooth, strong joint between base panels and allows easy filling of surface imperfections in the field of the board. The material sets chemically in 30 to 60 minutes with a working time of at least 20 minutes after mixing.

The latex additive provides the initial tack and stiffness required for one-coat application and extra bond of the compound between the board surface, the tape and the finished plaster. A compatible water take up or suction between the board field and the joints exists after modification thus minimizing joint flashing caused by a difference in texture appearance.

MATERIALS AND APPLICATION (continued)

The setting time of the material matches the production cycle time of the industry. Although the joint strength of this system is not as strong in a totally dry state as a system of DURABOND Joint Compound and paper PERF-A-TAPE® Reinforcement Tape, its wet strength at 4 to 6 hours is twice that of a wet, paper reinforcement system.

Mixing

Mixing the joint compound is begun by a crew member as the IMPERIAL Type 'P' Tape is being applied to the ceiling.

The following proportions are used:

1. DURABOND 45 Joint Compound 1 25-lb. bag
2. Water 1½ gal.
3. Latex Additive 1 qt.

The water and latex are combined in a 5-gal. bucket. The DURABOND 45 Compound is then sifted into this mixture. Mixing is accomplished using a ½" electric drill (550 RPM max. no load speed) and a cage-type mixing paddle.

Any higher speed will entrain air in the mixture and reduce strength and lead to shrinkage. The material is mixed for 2½ to 3 minutes but no longer, and is ready for immediate use.

HAZARD CAUTIONS: CONTAINS MICA. Do not take internally. If this happens, CALL PHYSICIAN IMMEDIATELY. When mixing or working in a dusty atmosphere, use respirator approved by NIOSH for removal of mica dust. Do not allow children to use except when under supervision. **KEEP OUT OF THE REACH OF CHILDREN.**

Application

In cold weather during joint finishing, temperature in the application area should be 50° to 70°F. Application of the joint compound to the ceiling is accomplished using a standard 6" taping knife and mud pan. A layer of compound just thick enough to cover the glass-mesh tape and provide a smooth joint between panels is first applied to the board joint. Avoid overfilling or crowning joints. If necessary, joint may be smoothed again with a 10" taping knife.

The field fasteners are spotted while moving toward the next joint.

Coverage will vary with technique and depth of fill required. Twenty-five pounds of dry joint compound will treat joints and field fasteners in approx. 1200 sq. ft. of ceiling area or 260 lin. ft. of board joints.

CAUTION: Once the joint taping has started, the ceiling assembly cannot be moved until the entire system is complete.

As the joint treatment is applied to the last section of ceiling, STRUCTO-TEX Plaster may be sprayed on the first section having the joints finished.

STRUCTO-TEX Spray-texture Plaster and IMPERIAL Catalyst

Advantages

- ☐ Rich monolithic texture unmarred by rosettes, joints or batten strips.
- ☐ Harder and more abrasion resistant than competitive materials.
- ☐ Adjustable setting time for STRUCTO-TEX Plaster to conform to production line speed.
- ☐ Noncombustible surface meets the criteria for a class 1 or class A interior surfacing material.

STRUCTO-TEX Spray-texture Plaster is a mill-mixed, perlite-aggregated gypsum plaster manufactured with a set time of 12 to 14 hours. It requires the addition of water and latex modifier only. The extended set time allows the plaster to be mixed and pumped with no danger of setting in the equipment during a normal production shift.

The set time of the STRUCTO-TEX Plaster must be reduced to approx. 15 to 20 min. as it is sprayed on the ceiling. This set time is achieved with a catalyst injected into the plaster at the nozzle of the pole gun during spraying. Chemically the catalyst is an aqueous solution of hydrous aluminum sulfate.

The catalyst solution is prepared by mixing 3 bags of IMPERIAL Catalyst (9 pounds) into 3¾ gallons of luke warm water. Although as much as 3 lb. of aluminum sulfate can be dissolved in a gallon of water, this practice should be avoided. At this concentration a slight change in temperature or long term storage could cause solid material to precipitate out of solution and clog the metering mechanism of the machine.

CAUTION: Breathing the dust or mist of a solution of IMPERIAL Catalyst may cause lung and nose irritation. A dust mask should be worn while spraying a solution of this material.

KEEP OUT OF THE REACH OF CHILDREN.

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Mixing STRUCTO-TEX Plaster

Equipment

The mixing and application equipment used in the STRUCTO-TEX Spray-texture Plaster System is the Carrousel Double Mixer and Pump, model 12510MK-3-5-CAT manufactured by Quikspray, Inc. 2105 W. Lake Shore Drive, P.O. Box 329, Port Clinton, OH 43452. The equipment consists of two material hoppers for mixing plaster and a spray pump with a separate catalyst injection system. For detailed information on the plaster pump, set up and operation, see section on Plaster Pump Equipment and Operation.

Mixing

Normally, one crew member begins mixing the plaster while the last ceiling joints are being treated. Position the mixer motor over the first material hopper and attach the cage-type paddle mixer. Add the premeasured water from the gauging tank to this material hopper. (Be sure to close the valve on the gauging tank during additions).

Add $\frac{1}{2}$ quart of latex additive to the gauging water in the hopper and disperse with the measuring cup. Switch on the mixer motor and add one bag of STRUCTO-TEX Spray-texture Plaster to the water/latex mixture. Mix for two minutes, scraping dry material into the mix using a polyethylene scraper blade. Stop the mixer and check the batch for lumps using your hand or the lump screen. With all lumps dispersed, check the batch viscosity by the following method:

- a. Place a slightly wetted 2" diameter by 4" high cylinder on a smooth, level, plastic plate.
- b. Holding the cylinder firmly with one hand, fill it with plaster from the hopper, pausing to puddle material with a spatula during the filling operation.
- c. Using the spatula, scrape off excess plaster flush with top of cylinder.
- d. Lift the cylinder directly upward with moderate, steady speed. Do not jerk the cylinder upward or lift too slowly which will impede flow of material.
- e. Measure the diameter of the resulting plaster "patty".

Material mixed at the proper fluidity will produce a slump patty diameter of $5\frac{1}{4}" \pm \frac{1}{4}"$. This is an optimum operating range. Although range of $5\frac{1}{4}"$ to $6\frac{1}{2}"$ may be acceptable, a definite difference in spray pattern and pumping characteristics

will be observed between the high and low ends. Experienced operators use this test effectively to obtain consistently good results.

If this material is too stiff in the tank, adjust the viscosity by adding a small amount of water as required. Avoid overly thin material. Adding dry plaster to the mix will reduce the batch fluidity, but it is not an easy process because lumps may form. In some instances, the mix operator may not have sufficient time to thoroughly disperse the lumps. Avoid mixing for over 5 min.

Repeat the mixing operation in the second material hopper.

Application of STRUCTO-TEX Spray-texture Plaster

As the last ceiling joints are being completed, the spray operator may start the spray application of STRUCTO-TEX Plaster. Spray application begins by opening the valve controlling the catalyst/atomizing air mixture, insuring visual observation of catalyst flow, and then switching on the material pump. The mixer operator is responsible for verifying that both catalyst and material are flowing properly. This is done by periodically checking the decreasing level in the material hopper, observing the flow meter indicator level and monitoring the pump operation.

Start spraying in the area having the earliest completed joints. Best results are achieved when the plaster is applied in two thin coats rather than one heavy coat. This achieves an esthetically pleasing texture finish with the least amount of variance between the joints and the field of the board. The first pass is always made parallel to the board joints, making sure the area directly over the joints is not flooded. Moving the pole gun from a direct to an angular position relative to the ceiling when passing near the joints helps with this effort. As a general rule, after about 200 to 300 sq. ft. of ceiling have been sprayed, the applicator returns to the starting point and applies a second coat perpendicular to the board joints. The time delay between coats allows the first coat to lose a sufficient amount of water to provide a solid base for the texture-finish second coat and eliminate objectionable cratering.

MATERIALS AND APPLICATION (continued)

The size of the initial area covered before respraying depends on various conditions affecting the take-up of water (loss of sheen) in the initial application. In drier weather conditions, a smaller area will be covered before respraying than in damp, cool conditions.

The applicator will become experienced in observing the loss of sheen or take-up in the plaster. The maximum time between coats is not a critical factor provided the delay does not exceed the set of the first coat (approx. 15 to 20 min.).

In each pass, apply even amounts of material so that the finished plaster is $\frac{1}{16}$ " to $\frac{1}{8}$ " thick.

Latex Paint Advantages

The final paint application helps insure color uniformity, increase surface hardness and improve durability.

Apply paint as soon as the plaster ceiling begins to set. Set should start at one end of the ceiling when the plaster spraying is being completed at the other end. Normally, better results are obtained with two light spray applications applied per-

pendicular to each other than with one heavy application. Avoid overpainting or flooding the plaster surface.

With latex base paint, equipment is easily cleaned with soap and water.

The recommended paint for this application is Glidden ULTRA-HIDE Painter Latex Hi-Gel No. 5072 Antique White applied at the rate of 250 sq. ft. per gallon. Also follow manufacturer's cautions found on the container.

Airless paint equipment capable of delivering one gallon of paint per minute and a maximum operating pressure of 2800 psi is recommended.

Equipment manufacturers such as Graco and Binks should be contacted for their equipment specifications and servicing requirements.

PLASTER PUMP EQUIPMENT AND OPERATION

Carrousel Mixer Pump and Catalyst System – Model 12510, MK 3-5-Cat.

1. Initial Connections

- a. Attach the water gauging tank to the back of the pump and connect the water supply line. The tank capacity is 30 to 50+ pounds of water. A float mechanism and automatic shutoff valve in the tank controls the water volume on each fill.
- b. Place the mixer motor on the center support column. Run the motor electrical line down through the support column and connect it to the receptacle below the catalyst tank. Output speed from the mixer motor is 420 RPM. The gearbox is lubricated with SAE 90 wt. gear oil and has a ½-quart capacity.
- c. Connect the control to a 110-volt AC, 20-amp circuit via a 25-ft. heavy-duty extension cord. The control box supplies regulated DC power to the pump drive motor which is protected with a 10-amp fuse.
- d. Connect a regulated source of air to the machine. The supply should provide 50 to 90-psi pressure with a 15-CFM delivery rate. Should only unregulated shop air be available, use an air regulator and filter on the pump supply line.
- e. Connect the low-voltage control line and switch assembly to the front of the machine.
- f. Fill the catalyst tank with catalyst solution of 9 pounds of catalyst per 3¾ gallons of water. Connect the catalyst supply lines to the tank.
- g. Connect the catalyst/atomizing air supply line to the front of the machine. Connect the pole spray gun to this line and charge the system with catalyst solution.
- h. Connect the material hopper suction hoses to the 'T' fitting at the base of the pump.
- i. Connect the 1¼ inch material hose to the pump.

To make spraying easier, tie the material, catalyst/atomizing air and control lines together every 10 ft. with vinyl electrical tape. This prevents hose

tangling and accidental disconnections when the assembly is moved during spraying.

- j. Install the material orifice on the nozzle end of the pole gun. Use a ⅝" diameter material orifice for spraying STRUCTO-TEX Plaster.

2. Start Up Procedure

Priming

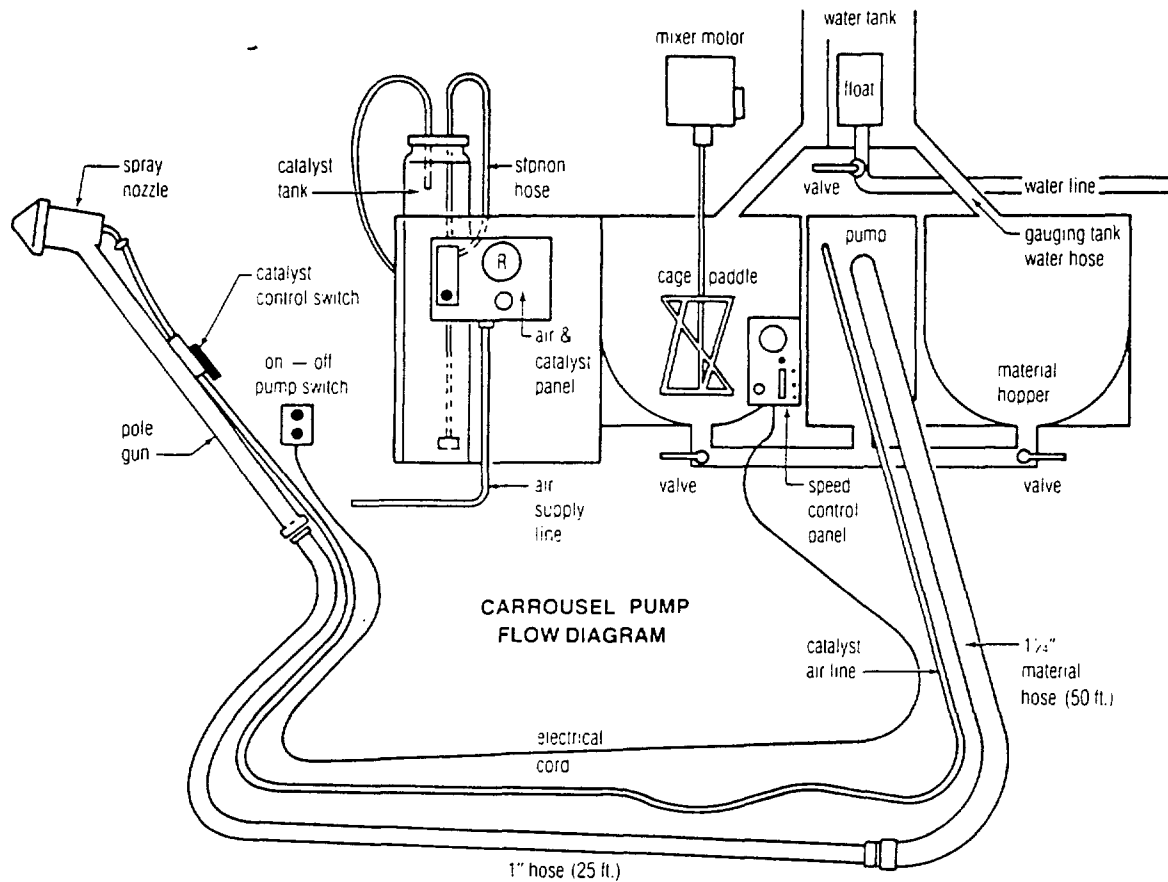
Water must be run through the pump and material hose to keep the first batch of plaster from stiffening in the equipment. Proceed as follows:

- a. Close the valve at the bottom of each material hopper.
- b. Pour two or three gallons of water into each hopper, wetting down the sides of each. Open *one* of the bottom hopper valves, start the Carrousel Pump and pump the water from the hopper. When the hopper is empty, close the valve and stop the pump. *Do not operate the pump with both hopper valves closed.*
- c. Repeat procedure on the other material hopper. Open bottom valve, start the pump, pump the hopper empty. Stop pump and close valve.

Plaster Mixing

- a. Pour the recommended water from the measuring tank into the material hopper. Reset the water tank. (Failure to use all of the recommended water will result in overly stiff material, poor mixing and lumping. The addition of more water may not break up the lumps without excessive mixing and extra time).
- b. Position mixer head over material hopper. Install the cage-type mixer paddle in the coupling at bottom of mixer head. Open plaster bags and prepare them for pouring into the hopper before the mixer is started.
- c. After all the water is poured into the hopper, add ½ qt. of latex, switch on the mixer and add dry plaster. Pour the plaster in a steady and uniform manner. Uniform addition of material eliminates lumping and minimizes splashing. Use the polyethylene scraper blade to scrape dry plaster clinging to the sides of the hopper into

PLASTER PUMP EQUIPMENT AND OPERATION (continued)



the mix. Mix the plaster for two minutes to a uniform, smooth consistency. Avoid mixing more than 5 minutes since this causes aggregate breakdown that stiffens the mix in the hoses and results in texture variation.

- d. While the plaster in the first hopper is mixing, add the water to the second hopper, open the plaster bags and get them ready to pour in the hopper.

Stop mixer and remove mixing blade shaft from the mixer head. Position mixer head over the second hopper. Clean the material from the mixer paddle by rinsing in a separate waste container and replace the mixing paddle on the mixer head. The second material hopper now contains the full

amount of water needed. Add $\frac{1}{2}$ qt. of latex, turn on mixer add plaster and repeat mixing procedure.

Do not add water to hopper containing plaster being pumped, as the additional water will excessively thin the mix causing material separation - separation which can cause plugging at the bottom of the hopper.

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3. Starting to Spray

- a. When the spray operator is ready, open the valve at the bottom of one of the material hoppers. Preset catalyst and air supply at the pump.
- b. Set the air-nozzle plunger on pole gun so the second of the three gauge rings is showing and turn on the air supply. Spray operator starts pump with a remote control switch located at the spray gun. NOTE: The spray gun is connected to the material hose later.
- c. The material is now being pumped into the material hose, pushing the lubricating water in front. Pump from the first hopper for approx. 15 seconds and then switch to the second hopper to eliminate free water in the line. At the point where the mixed material comes in contact with the lubricating water, there could be some material separation. Therefore, it is advisable *not* to connect the spray gun to the material hose until the lubricating water has been pumped out into a waste container and properly mixed material extrudes from the material hose.
- d. The operator stops the pump, doubles the material hose over near the end to stop plaster flow, washes the end of the material line and attaches the spray gun.
- e. Make final adjustments to the atomizing air/catalyst system and plaster supply. Start pump with the remote control system to spray-apply plaster. Move the spray gun in a uniform sweeping manner to achieve a consistent finish plaster thickness (see previous section for detailed plaster application).
- f. To stop spraying, stop the pump with the remote control. Material will continue to spray for approx. 15 seconds as the pressure in the material hose dissipates. Then turn off the atomizing air/catalyst at the pole gun control valve. The slight flow of air to the spray gun will keep material from entering the air jet of the catalyst air line.

4. Speed of Application

The speed of the Carrousel Pump is controlled by a solid state control (rheostat) that permits infinite speed variation from 0 to maximum flow. At maximum flow (a setting of 10), the free flow rate with water is approx. four gal. per min. This achieves an application rate of 6000

to 8000 sq. ft. per hr. with STRUCTO-TEX Spray-texture Plaster at the standard $\frac{1}{16}$ " to $\frac{1}{8}$ " thickness. The pumping speed may be adjusted to give any desirable flow of material up to the maximum.

5. Clean-Up

- a. To clean the Carrousel Pump and Mixer, (required at end of day) alternately wash and flush the inside of the material hoppers while the pump is operating.
- b. When the hoppers are clean, close the bottom valves and fill both hoppers with five to ten gallons of clean water.
- c. Stop the pump and disconnect the material hose at the pump. Insert a wet cellulose sponge into the material hose. Reconnect the material hose and start the pump for a few seconds. Stop the pump and repeat this procedure with a second sponge. Start the pump again to force the sponges through the material hoses to thoroughly clean them.
- d. When cleaning the pump, show extra care in cleaning the suction lines at the bottom of the mixer hoppers, as material tends to settle in these locations. It is advisable to remove the two suction lines. This is an easy procedure, as they are installed with Quik couplings. At the end of each operating day, spray WD-40 lubricating oil onto the bottom valves of each hopper. Work valve to distribute the oil. The Carrousel Pump is now thoroughly cleaned on the inside and ready for future use.
- e. The spray gun and mixing blades should also be washed clean. Take care to prevent any material from entering the air jet in the spray gun. Squirt water through the air valve to flush the air jet clean. The spray gun is easily disassembled after removing the material cap.
- f. To clean the catalyst system, empty the catalyst tank, rinse and refill it with clean water, then flush the system with this water. Remove the water from the tank and dry the system with shop air.
- g. After the clean up procedure, WD-40 lubricant should be sprayed, or wiped over the entire Carrousel Pump and spray gun. A thin film of oil will reduce future cleanup time.

PLASTER PUMP EQUIPMENT AND OPERATION *(continued)*

6. Trouble Shooting and Repair

Mixing

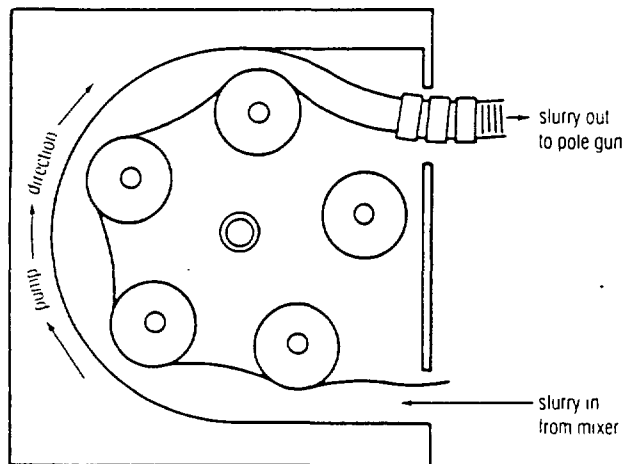
Improper mixing can cause lumps that result in plugs in the bottom of the material hopper. Remove these plugs by momentarily depressing the reverse switch on the control box. Material will now flow backwards through the pump, dislodging the clog. The lumps can be removed by hand or by using the lump screen. Note, however, that the pump can be run in reverse for no more than 15 seconds before the peristaltic pump line is pulled into the machine damaging the hose couples and pumping wheels.

Material lumps in plaster can be caused by exposure to moisture during storage. Overage material will generally contain a lump at the filling spout of the bag. Bags which have been wet or damaged may also contain lumps.

The Carrousel Pump will allow small lumps to pass into the material hoses. Unmixed material or small lumps will cause plugs at the nozzle of the pole gun and possibly at the material hose coupling. Clogging at either of these points requires disassembly and cleaning.

Peristaltic Pumping Line Installation

- a. Install the pumping line of the T-shaped material fitting by attaching the outside U-clamp and strap between the clamp and the T-shaped fitting. (The metal tube should be lubricated with silicone to enable it to slip inside of the pumping line.) The pumping line is now ready to install into the Carrousel Pump.



CARROUSEL
PERISTALTIC PUMP

- b. Start peristaltic pump rotating in the forward direction. Insert raw end of pumping line at the bottom of the Carrousel Pump between the finger bearings and the squeeze wheels and the outer housing. Gently apply pressure and allow the pumping line to be pulled into the Carrousel Pump. Do not exert excessive pressure, as this may cause the pumping line to become twisted or double up inside of the pump, and the finger bearings may damage the pumping line. When the pumping line is properly installed, no damage can result. The pumping line will be pulled in slowly and come out at the top of the pump. When the T-shaped fitting has reached the proper position, stop pump and bolt the fitting in place.
- c. Attach the wire reinforced material suction lines to the bottom of the hopper and to the intake sides of the T-shaped material fittings.
- d. Insert Quik coupling into the raw end of the pumping line that emerged from the top of the pump. (The metal tube should be lubricated with silicone to enable it to slip inside of the pumping line.) The Quik coupling is held in place in the pumping line by installing the outside U-clamp and connection strap. The manufacturer suggests tools shown in the Tools and Supplies list to kept with the equipment for use in repair.

7. Catalyst System

The catalyst system consists of:

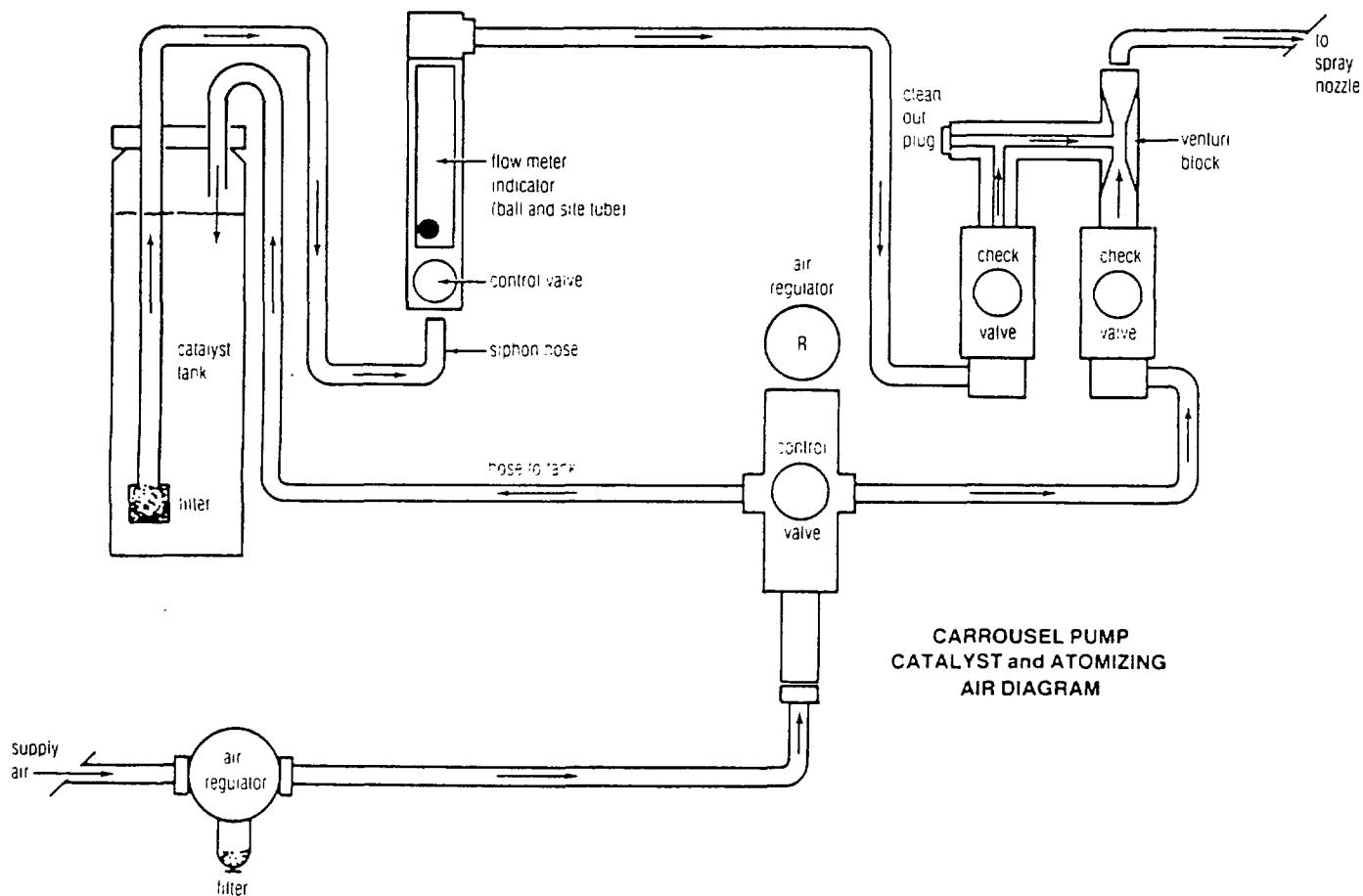
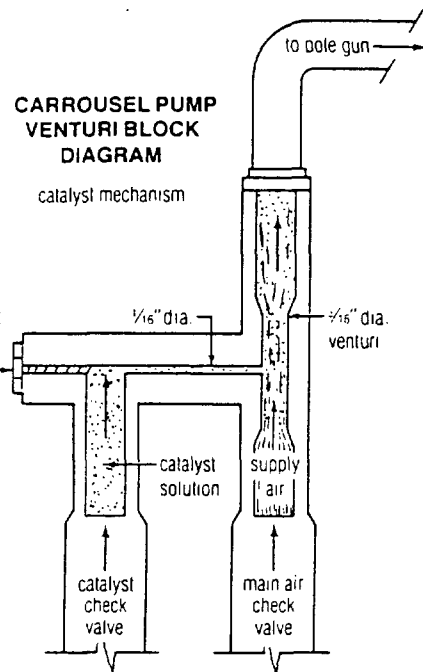
- ☐ catalyst tank, top, siphon line and filter
- ☐ catalyst controls (air regulator, flow meter and venturi block)
- ☐ catalyst/atomizing air delivery lines
- ☐ pole gun with catalyst/atomizing air control valve

Catalyst Tank

- a. 5-gal. capacity glass fiber, rated at 125-psi pressure.
- b. Corrosion resistant PVC top with:
 1. Inlet Quik air coupling for supply air.
 2. Outlet Quik hydraulic stainless steel coupling for catalyst flow to the controls.
- c. A one-way valve and a non-corrosive internal tube with filter extending to the bottom of the pressure tank.

Catalyst Controls

- Regulated supply air inlet (standard Quik coupling) located at the bottom of the catalyst control box.
- Air regulator and 100-psi capacity gauge to regulate atomizing air and catalyst tank pressure.
- Corrosion-resistant flow meter with sight tube and valve to regulate catalyst flow.
- One-way, non-corrosive ball check valve for catalyst from the flow meter to the venturi block.
- One-way, non-corrosive ball check valve for atomizing air from the regulator to the venturi block.
- Venturi block for the introduction of a metered amount of catalyst solution into the atomizing air stream.
- Stainless steel end plug for clean out of the venturi block.
- Female Quik hydraulic coupling.



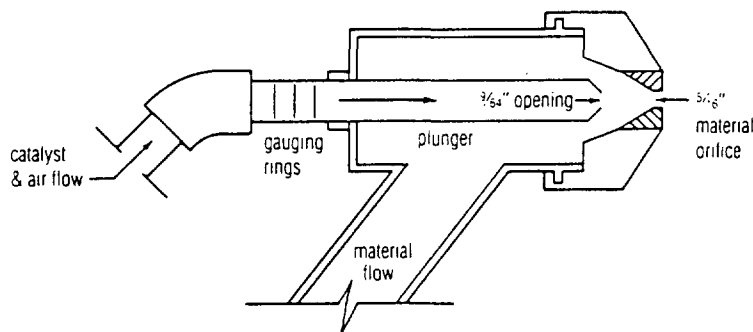
PLASTER PUMP EQUIPMENT AND OPERATION *(continued)*

Catalyst/Atomizing Air Delivery Lines

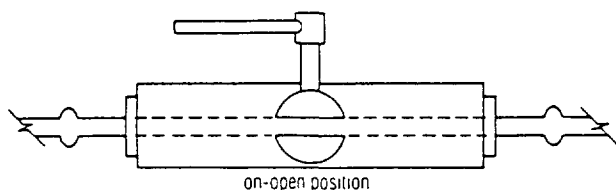
- Male Quik hydraulic coupling
- 75 feet, $\frac{3}{8}$ " I.D. catalyst/atomizing air delivery line
- Female quick-connect coupling

Pole Gun

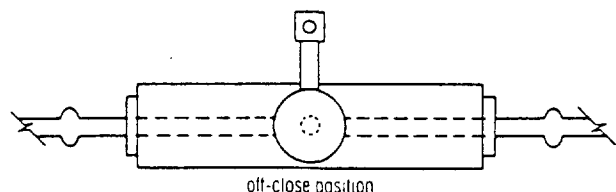
- Non-corrosive quick-connect male coupling
- Catalyst/atomizing air control valve
- Graduated air stem (plunger)
- Air nozzle - $\frac{3}{16}$ " opening diameter.



**CARROUSEL PUMP
SPRAY NOZZLE**



on-open position



off-close position

**CARROUSEL PUMP
CATALYST-ATOMIZING
AIR CONTROL VALVE**

Preventive Maintenance and Trouble Shooting - Catalyst System

The venturi block consists of a venturi tube and two one-way check valves, one for atomizing air, the other for catalyst solution. Catalyst is introduced to the atomizing air stream in the venturi tube and carried from this point to the spray gun to accelerate plaster set time.

The catalyst is an aqueous solution of hydrous aluminum sulfate. Aluminum sulfate crystals will precipitate out of solution if the concentration is too high, or the solution is subjected to temperature changes or allowed to dry out. There are three cleanout ports on the venturi block that permit complete access to the catalyst/atomizing air mixing chamber. The cleanouts are square head stainless steel plugs. The catalyst port is cleaned with a $\frac{3}{32}$ " drill and the air port, with a $\frac{3}{16}$ " drill.

Some basic maintenance and repair operations related to the catalyst system are itemized below:

- ☐ A thin film of petroleum jelly applied to the threads on the catalyst tank top will make removal easier.
- ☐ If damage occurs to a Quik hydraulic coupling, it must be replaced with the identical part.
- ☐ Remove the catalyst tank top and siphon tube assembly carefully to avoid damage.
- ☐ Filter the catalyst solution to remove insoluble impurities before filling the tank.
- ☐ Handle the glass-fiber catalyst tank with care. The tank will break if dropped, especially if it is full.
- ☐ The venturi block is the most likely place for a clog to form.
- ☐ The catalyst flow meter sight tube, made of glass, has a plastic protection shield. Do not operate the machine with this shield removed.
- ☐ If the sight tube must be removed for cleaning or replacement, proceed as follows, exercising great care in each step.
 - Remove the plastic shield.
 - Back off the screw top above the sight tube.
 - Grasp the sight tube with thumb and finger and push up.

- d. With the sight tube clear of the base, swing the bottom end out and remove.
- e. Wash or replace the tube and indicator ball as required.
- f. Installation is the reverse of the above. See that the tube is properly seated on the bottom and top gaskets before tightening the top screw. An improperly installed tube *will* break.

Removal of the tube will never be necessary when the system is properly cleaned.

When cleaning the system it is good practice to:

- a. Empty the catalyst solution from the tank.
- b. Rinse the tank and top with clean water several times.
- c. Fill the tank with clean water and reconnect the system.
- d. Flush the system with this water for 5 minutes. Open the flow meter valve fully during this operation.
- e. Disconnect the tank and empty the water out. Reconnect the tank and run air through the system to dry it.

MATERIAL AND EQUIPMENT REQUIREMENTS

(Minimum requirements for plant start up.)

I. Equipment

1. Carrousel Spray Pump as delivered plus:
 - ☐ air line regulator with water trap
 - ☐ 3/4" air supply line (from regulator to machine)
 - ☐ 12 ga., 3-wire extension cord
 - ☐ garden hose, (from water supply to machine)
 - ☐ spare parts per manufacturer's suggestion
2. Heavy-duty airless paint spray pump plus:
 - ☐ 75' material supply line
 - ☐ pole spray gun with tip (517 to 619)
 - ☐ 12-ga., 3-wire extension cord
 - ☐ spare parts per manufacturer's suggestion
3. Drywall screwgun (two needed)

II. Materials

1. 15,000 sq. ft. BLENDTEX STX Gypsum Base Panels
2. 5,000 SUPERTITE® Drywall Screws, 1" long or 1 1/4" leg staples
3. 100 bags STRUCTO-TEX Spray-texture Plaster
4. 25 bags DURABOND 45 Joint Compound
5. 36 bags IMPERIAL Catalyst (2 cases)
6. 2 cases IMPERIAL Type 'P' Tape (24 rolls)
7. 55 gal. Elvace JCM Latex Additive (Reichhold Chemicals)
8. 100 gal. Glidden 5072 Latex Flat Paint (Antique White)

III. Tools & Supplies

1. 1/2" heavy-duty drill (550 RPM max.) (for mixing joint compound)
2. cage type drywall compound mixer paddle (for mixing joint compound)
3. 2 - 4x12" stainless steel mud pans
4. 2 - 4x6" taping knives (Ames, Hyde or equivalent)
5. 2 - 4x10" taping knives
6. 6 empty 5-gal. pails

7. 2 drywall hammers
8. 2 utility razor knives
9. replacement razor blades
10. 1 box cone-type paint filters (for filtering catalyst)
11. 3 respirators with disposable filters
12. 3 safety or splash goggles
13. 2 - 30-gal. plastic garbage pails
14. 2 boxes heavy-duty liners for above
15. 1 'Y' water hose fitting (siamese connection)
16. garden hose and spray nozzle (from water source to spray area)
17. 2 cans WD-40 spray lubricant (or equivalent)
18. box of wiping rags
19. 1-qt. measure (for latex additive)
20. drum pump (for latex additive)
21. 2" rolls masking tape
22. 2" dia. x 4" high cylinder (plastic or brass)
23. plastic plate (12" x 18" x 1/4")
24. 12" ruler
25. 4 to 8 flood lamps (100-watt)
26. 2 boxes 3 AG 10-amp fuses
27. plastic film (draping for overspray protection)
28. floor protection paper (for spray area)

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STRUCTO-TEX SYSTEM

Notice: We shall not be liable for incidental and consequential damages directly or indirectly sustained nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.



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BUILDING AMERICA

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