

Joint Compounds are affected by aging, therefore, Dealers and Applicators should rotate stocks and store material in dry places. USG Joint Compounds are not affected by freezing temperatures in their powder state, but they will give best results if brought to a temperature of about 60° F. just prior to using by storing in a heated area. Obviously, cold powder when mixed with water will lower water temperature.

In an extreme case, where water temperature may be just above freezing and the powder below freezing, a mixture of the two could result in a frozen bucket of compound impossible to mix or use.

Before, during, and after USG Joint Compound applications, a minimum controlled temperature of 55°—60° F. must be maintained at all times within the working area until material is dry and decorated. Widely fluctuating temperatures (more than 15° F. variation) should be avoided.

Although USG Compounds work very similarly to Compounds, slight modifications in technique may have to be made. Their excellent slickness demands that on heavy fills, the application angle of the tool is raised a little (around 45° is best), this will minimize tendency to cratering and also cut down on "drag."

Craters on fill coats on any type of joint compound can usually be taken care of by applying the final coat very "light," that is, use plenty of tool pressure.

USG Joint Compounds are particularly responsive to tightly applied finish coats and the resulting smoothness achieved by a skilled mechanic can surpass that obtainable with any other type of powder compound.

Sometimes, a coat of joint compound appears to be dry, and often is, on the surface; but underneath it can still be damp. It is essential that previously applied compound is dry throughout its entire thickness before subsequent coats or decorating materials are used over same.

All of the USG Compounds described in this leaflet are compatible with each other, and in addition, is also compatible.

USG Compounds may also be used over hardened

Most casing-based joint compounds including Joint Compounds manufactured by United States Gypsum Company, are not compatible with the USG brand Joint Compounds; and problems may result if any attempt is made to use Compounds with USG Compounds.

If an attempt is made to mix any of the USG brand Joint Compounds and the Joint Compounds together, the final mixture will cause problems.

TEXTURING

Many drywall applicators will use USG Joint Compounds.

for texturing or as a thin coat finish, with very satisfactory results. Light to medium textures are readily obtained, usually without paint additions being necessary. If paint or other similar additions are desired for tinting, etc., consult the appropriate paint manufacturers.

When joint compounds are used for any type of texturing, all surfaces, including treated joints, must be THOROUGHLY dry and not glossy. A good quality oil-based primer-sealer recommended by the appropriate paint manufacturer, should be applied and dry prior to texturing.

Where spray textures are desired with USG Joint Compounds, most spray machine manufacturers can furnish pressure, nozzle settings and other relevant information.

In many areas, entire wall and ceiling surfaces are completely covered with joint compound and brought to a very smooth skim coat finish.

Techniques vary, but one recommended method is to apply the compound over entire surface, render level, allow it to partially dry, then spray on a mist of water, and tool down to a marble smooth glaze.

PAINTING AND DECORATING

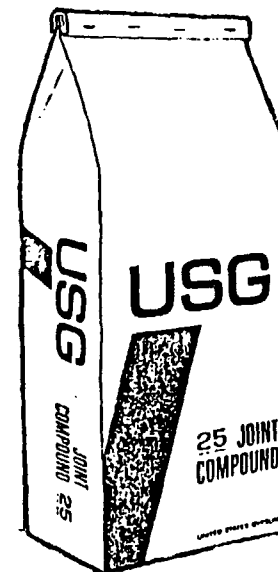
Painting and decorating directions prescribed by appropriate manufacturers should be strictly followed. If decorating problems arise, such manufacturers should be consulted.

COMPLIANCE WITH FEDERAL GOVERNMENT SPECIFICATIONS AND ASTM DESIGNATIONS

USG Joint Compounds will meet ASTM Designation C 475-64, ASA requirement A 97.1-1958 and Federal Specifications SS-J-670A (GSA-FSS).

DISCLAIMER

Since methods and conditions of application and use are beyond the control of the United States Gypsum Company, its warranties of FITNESS and MERCHANTABILITY as well as any other warranties, expressed or implied, made in connection with the sale of this product, SHALL NOT BE EFFECTIVE OR ACTIONABLE UNLESS the product is applied according to United States Gypsum Company's directions and specifications.



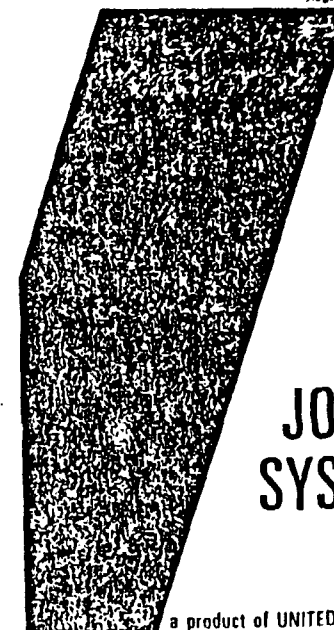
UNITED STATES GYPSUM
THE GREATEST NAME IN BUILDING

J-47 2/67

*Reg. U.S. Pat. Off.

CI004 0205

USG
Reg. U.S. Pat. Off.



**JOINT
SYSTEM**

a product of UNITED STATES GYPSUM

USG-1799

PLAINTIFF'S EXHIBIT

if windows and doors are covered to eliminate drafts, and as mentioned before, the working area shaded whenever possible.

Humidity can be raised to more normal levels by sprinkling sub-floors with water and placing open cans of water about the job.

DO NOT THIN JOINT COMPOUNDS WITH ADDITIONAL WATER. This increases shrinkage and does not appreciably slow down the drying time.

Often, the material on the upper edge of a bucket of mixed compound, or on the edge of a "bread" pan or on tools left in these containers, tends to dry fairly fast, and "crud" flakes or lumps may fall into the mixed material, causing scratch marks and "zippers".

To prevent this, it is essential that the edges of buckets, and other containers are kept wet with a damp brush or conversely, when "crud" starts to form, remove it carefully before it falls into the mixed material, because it will not re-dissolve readily.

When periods of high humidity prevail, it is important that applied compound is thoroughly dry by allowing a much longer drying period before applying subsequent coats, or in decorating final coats. U.S.G. Booklet J-8 "Drying Standards for Drywall Joint Treatment" gives further information on humidity, temperature and applied compound thickness, with tables which accurately show how temperature and humidity changes can affect drying.

RECOMMENDED WATER PROPORTIONS FOR EACH 25-LB. BAG OF POWDER USG JOINT COMPOUND-TAPING

Hand Tool Application.....	Approx. 16	Pints
Mechanical Taping.....	Approx. 19	Pints
Mechanical Fill Coat.....	Approx. 17	Pints

MIXING OF USG JOINT COMPOUNDS

Use a clean mixing container and pour clean drinkable water into it, following water proportions in accordance with bag directions.

Use possible compression lumps and for fast dispersion.

Mix well until powder is uniformly damp, then after a short wait of about 3-5 minutes, remix vigorously until smooth.

DO NOT OVERTHIN COMPOUNDS. Excess water may appear to make initial mixing easier, but it encourages lumping and worse, will cause excessive or delayed shrinkage, and sometimes even loss of bond.

PRE-MIXING

Many compounds particularly caseins, if mixed one day and left overnight must be compensated for viscosity changes by using less water to allow for "watering down" tendency, and this is often difficult to judge.

Since USG Joint Compounds contain no casein, they usually can be mixed and retained at any given viscosity.

On occasions, some slight liquid separation or settlement of compound in the bucket may take place, but a brief remix is all that is necessary to restore the material to its original viscosity.

APPLICATION PROCEDURES

METAL BEAD

USG Joint Compound-Taping, can be expected to give the very best results over metal bead,

The bead must be attached in strict accordance with United States Gypsum's recommendations, and must not be out of alignment or loose. The fasteners must be secure and not protruding. The bead must be free of dust, oil or other contaminants.

Using bead as screed, cover both flanges well with compound, spreading material three to four inches wide from the nose of the bead.

Leave to dry for a minimum of 24 hours (longer if drying conditions are poor), sand lightly if necessary, then apply a coat of

over the first coat, feathering edges two to three inches beyond preceding coat.

Depending on job conditions, quality of work desired, etc., a third or even more coats may be required; these are applied over DRY preceding coats, feathering edges carefully beyond previous ones.

The final coat, when dry, is smoothly sanded ready to receive decoration.

The heavier the consistency of compound used in all coats for spotting nails and screws, then the lower the shrinkage in these critical areas. Consistency and shrinkage are directly proportional.

Check that all nails, screws, and other type fasteners are firmly embedded by drawing a joint finishing knife across their heads. Drive home protruding fasteners.

Apply first coat of compound over all nail or screw heads, immediately prior to embedding tape. Use pressure on knife to smooth compound level with board surface. **DO NOT USE ENOUGH PRESSURE TO SEVERELY BOW KNIFE BLADE, AS THIS TENDS TO SCOOP COMPOUND OUT OF DIMPLED AREA AROUND NAIL OR SCREW HEAD.**

During second coat application of compound on joints, the nails or screws are spotted for the second time. Make sure that first applications are thoroughly dry, and apply just enough pressure on the knife to ensure complete coverage with no scooping. USG Joint Compound-Taping

may be used for second application.

When the joints are receiving their third coat, the thoroughly dry nail or screw spotted areas should be lightly sanded and then given their third coat.

are recommended for third coat applications.

On occasions, depending on job conditions, temperature, humidity, etc., more than three coats may be required. Each previous coat should be dry, and lightly sanded before applying subsequent coats.

Light sanding may be necessary (and is recommended) on the dry final coat before proceeding with decorations.

TAPERED JOINTS

GF004 0206

The tapered edges on Gypsum Wallboard are precision formed—neither too deep nor too shallow—to ensure that the correct amount of Joint Compound is deposited in the channel.

Using a joint finishing knife, butter USG Joint Compound-Taping,

into the channel formed by adjoining tapered edges of Gypsum Wallboard, filling the channel fully and evenly, but avoiding heavy fills.

Immediately center reinforcing tape into the channel, pressing down into the fresh compound with a joint finishing knife, holding the knife at an approximate angle of 45° to the board. Draw knife along joint using sufficient pressure to squeeze some compound from edges of tape, yet leaving enough for sufficient bond. As a guide, there should be 1/4" to 1/2" compound under the tape.

Make certain that the excess compound, squeezed from under the tape, is now spread on the upper

18

GOOD REASONS FOR USING USG[®] READY-MIXED COMPOUND—ALL PURPOSE

READY MIXED—Ready for immediate use. Factory mixed for consistently high quality. Mixing to a smooth, lump free plasticity becomes a U.S.G. plant responsibility, not a job problem.

ALL PURPOSE APPLICATION—Taping and topping compounds are now available in a single package. This simplifies the number of different products required on the job.

LOWER ON-THE-WALL COST—Initial package cost for material may be slightly higher than powder compounds. However, the cost of mixing powders and the additional coverage, usually eliminate this difference. The average time required to job-mix one bag of powder compound on a day-in, day-out basis is at least 15 minutes and often longer. The hidden costs of locating suitable water prior to mixing, the loss of productivity due to mixing time, the possible failure to obtain a smooth, lump free, working compound under some job conditions, all add to the cost of powder compounds. The cost of mixing alone on the average house requiring 8 to 10 bags is 1½ to 2 hours labor.

LOW SHRINKAGE—USG Ready Mixed Joint Compound-All Purpose, should be used for spotting nail heads and for exterior angles on all coats. Its lower shrinkage characteristics not only save money but are very important in obtaining finer finished work, especially on ceilings.

EASY SANDING—Another job economy that makes preparing for decoration easier and faster. The smooth, dry finish often permits using finer grade sand paper, as well as less paper.

EXTRA SMOOTH FINISH—Minimizes the amount of sanding required, especially on

feathered edges. Sanding may be eliminated entirely in the hands of a real craftsman.

BETTER SLIP—Through a machine and under knife or trowel, its buttery working properties produce a perfect joint with outstanding ease and speed.

EXCELLENT BOND—The superior bonding properties of this compound are retained to a considerable degree even under humid job conditions which sometimes adversely affect bonding strength of ordinary powder compounds.

LESS WASTE—Nothing to throw away at the end of the day. When through, simply cover the compound to prevent water loss by evaporation.

LESS DROPPING—The buttery working properties of this compound minimize droppings. Costly job clean-up is virtually eliminated.

LESS TENDENCY TO SURFACE CRUST—Though this compound must be protected from extreme moisture loss after container has been opened, it shows less tendency to skin or crust-over than do dry powder compounds. It can also be retempered with comparative ease.

MINIMUM JOINT RIDGING—Repeated field trials and exhaustive laboratory tests show that this compound reduces frequency and severity of ridging.

RESISTANT TO TAPE EDGE CRACKING—U.S.G. field and laboratory tests have shown this compound to be highly resistant to cracking along tape edges.

FEWER DECORATION PROBLEMS—Smoothness of finished joints, and lack of any chemical reaction with paints or wallpaper simplify decoration.

MORE PLEASANT ODOR—Mechanics will appreciate the relatively mild, pleasant odor of this compound particularly on hot, humid days when working in closets and other confined areas.

LESS STAINING OF FLOORS AND TRIM—While joint finishing is preferably done before wood trim and finish flooring is installed, this is not always possible. The comparative ease of removing USG[®] Ready Mixed Joint Compound-All Purpose, from woodwork lessens risk of stains.

VERSATILITY—Does all three: taping, topping, textures. Handles other chores as well; ready-to-use for repairing cracked plaster walls, small patch work on gypsum wallboard.

PACKAGING—The strong, durable corrugated carton or the metal pail both stack easily and compactly. It is recommended that the cartons and metal pails be piled not more than four high. USG Ready Mixed Joint Compound-All Purpose, in the carton, remains fresh and usable for long periods because it is enclosed in a polyethylene plastic bag. The air tight seal and durable lining of the metal pail packaging assures long shelf life. Because of the specially formulated consistency, USG Ready Mixed Joint Compound-All Purpose, has a package life of about 1 year.

DIRECTIONS AND SPECIAL INSTRUCTIONS

An outstanding characteristic of this compound is compatibility with many powder compounds. This does not mean that dry powder compound can or should be used to mix with or thicken USG Ready Mixed Joint Compound-All Purpose. Rather, it means that Ready Mixed Compound can be used in tools and containers previously holding powder compound without a thorough "clean out." USG Joint Compound-All Purpose can also be used as a topping over powder compound joints which have thoroughly dried, or for taping when powdered PERMA-TAPE[®] Joint Compound-Topping or powdered USG[®] Joint Compound-Topping, is to be used as a finish coat over it.

USG Ready Mixed Joint Compound-All Purpose, should be protected from freezing. If it becomes frozen, allow it to thaw at room temperature. Do not force the thawing process. Retemper and it will again be usable. Avoid repeated freezing and thawing.

Heavy fills and high crowns may produce pits or craters. Disregard these, until the final coat when a "tight crown" or a thin skim coat will fill them. The drag effect of flat trowelling also causes cratering. Minimize this by raising trowel angle to 45°.

We recommend that the applicator first try the compound without thinning. If a thinner material is desired, USG Ready Mixed Joint Compound-All Purpose can be quickly and easily thinned with water using a potato masher type mixing paddle. Add the water gradually to speed the thinning process. Use cool (not hot) water. A drill type mixer with more than 600 R.P.M. is not recommended, as this tends to whip air into the compound.

Shrinkage of nail spots is one of the most critical parts of any drywall job. If thinning of Ready Mixed Compound is necessary for good tool workability, it is urged that nail heads be spotted with compound at package consistency or prior to thinning. This practice will largely minimize nail head compound shrinkage problems. The heavier package consistency should

also be used for all metal work.

When it becomes necessary to hold the wet mix in a metal container for prolonged periods, cover with a damp cloth or add a thin layer of water. Pour off water, retemper when again to be used. If applicator should inadvertently over-thin, simply add additional USG® Ready Mixed Joint Compound to thicken.

TIPS FOR BETTER JOINT TREATMENT

APPLICATION—As a Taping compound for embedding or first coat work, the channel formed by the tapered edges of the gypsum wallboard must be completely filled with compound, level with the plane of the board. When tape is applied and wiped down, be sure that sufficient compound remains beneath the entire tape—approximately $\frac{1}{4}$ " to $\frac{1}{2}$ " under the tape. The recommended procedure is to apply a "skim coat" of compound immediately after embedding tape. This covering coat forms a "sandwich" of compound, and reduces the possibility of edge wrinkling or curling which may lead to a type of edge crack.

AVOID VERY HEAVY FILLS—Extremely heavy fills increase the possibility of excessive shrinkage and check cracking. However, because of its exceptional smoothness, low shrinkage and ease of sanding, USG® Ready Mixed Joint Compound-All Purpose, is the ideal material for taping and all finishing coats as well as all nail spotting. Good workmanship by the mechanic will provide finished jobs that require little or no sanding, which should be the goal of all applicators.

ABNORMAL DRYING CONDITIONS

Slow Drying—Cold, damp weather causes slow drying of all types of joint compounds; and 48 hours is often insufficient between coats. See U.S.G. Pamphlet J-8—Drying Standards for Drywall Joint Treatment.) Finishing over seemingly dry base coats which are actually wet underneath can cause bond failures, delayed shrinkage and paint discoloration. These cold weather difficulties are more prevalent when

improper heat and inadequate ventilation are provided. The minimum heat requirements of 55° F. should be maintained at all times during the erection of the gypsum wallboard as well as through the taping, finishing and decorating phases. The best practice is to use central heating. Temporary heat provided by salamanders, space heaters or unvented gas burners are very often unsatisfactory causing uneven drying, leading to the troubles mentioned above, as well as paint discoloration due to fumes. Particular care should be taken to maintain proper ventilation.

Fast Drying—Applicators will recognize too rapid drying conditions when the compound takes on a shorter working life especially along the feather edges and where one joint joins or crosses another. Rapid drying is usually due to low humidity and warm winds. During these periods every effort should be made to prolong the working and drying time of the compound. Stop drafts by closing doors and windows. Shorten the time required to complete the application by working shorter lengths of joint at one time. Raise the humidity by liberally sprinkling sub-floor with water. Remember, the addition of water to thin compound increases the possibility of excessive shrinkage. Do not try to slow drying by adding water.

ALWAYS CHECK WORKING SURFACES

Gypsum wallboard must be held firmly against and secured tightly to framing members, when nailing. Nails should be applied from the center to the edges of the board, without cutting surface paper or fracturing the core of the board; otherwise nail "pops," ridges and cracking can normally be expected. Make certain each board forms a true, even alignment when a joint is formed. When one board is higher than another, it becomes difficult to leave sufficient compound under the tape covering the high board. Blisters, bond failure and cracks can easily develop in these areas.

Green or wet framing lumber must be avoided at all costs since warping and racking is almost sure to result. Lumber movement, in turn, can cause not only nail "pops," cracks and ridging,

but complete failure of the joint. Boards should be lightly butted—neither forced together resulting in crushed edges, nor spaced widely apart. Open spaces between boards of $\frac{1}{4}$ " or more should be filled with compound at least 24 hours prior to embedding or first coat work. Good planning before hanging board will eliminate many unnecessary joints and will avoid joints formed by more than two boards.

PAINTING AND DECORATING—Painting and decorating directions prescribed by appropriate manufacturers should be strictly followed. If decorating problems arise, such manufacturers should be consulted.

GENERAL PROVISIONS—Dealers and contractors should rotate stocks of joint compound. Storage must be in a protected place because extreme heat and dampness accelerate aging of the product. Aging, of course, can proceed to point of destroying performance characteristics of the material. Check date codes. Rotate stock on first in, first out basis.

As with other crafts, applicators should keep tools clean and in good shape to secure maximum benefits. Dirty buckets, or failure to wipe down bucket as compound is used causes scratches, lumps and shortens the working life. Mechanical taping and finishing equipment must be kept in perfect working order and all parts must be replaced as soon as they show the slightest sign of wear. Mechanical tools can often "read the wall" better than the applicator. Therefore, a competent mechanic with a thorough knowledge of his equipment will constantly adjust his tools to obtain higher or lower crowns required by particular surfaces on every job.

DISCLAIMER

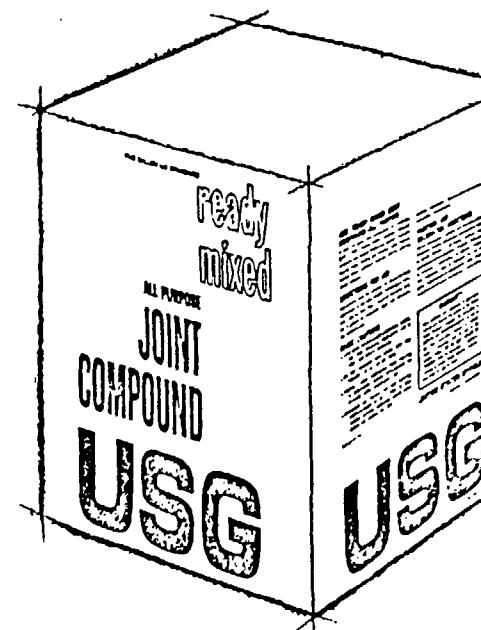
Since methods and conditions of application and use are beyond the control of the United States Gypsum Company, its warranties of FITNESS and MERCHANTABILITY as well as any other warranties, express or implied, made in connection with the sale of this product, SHALL NOT BE EFFECTIVE OR ACTIONABLE UNLESS the product is applied according to United States Gypsum Company's directions and specifications.

UNITED STATES GYPSUM
THE GREATEST NAME IN BUILDING

J.G. USG 7/57

*REG. U.S. PAT. OFF.

CI 000 0222



A ready-to-apply, vinyl-base joint treatment formulation, for taping, topping and texturing.

A product of UNITED STATES GYPSUM