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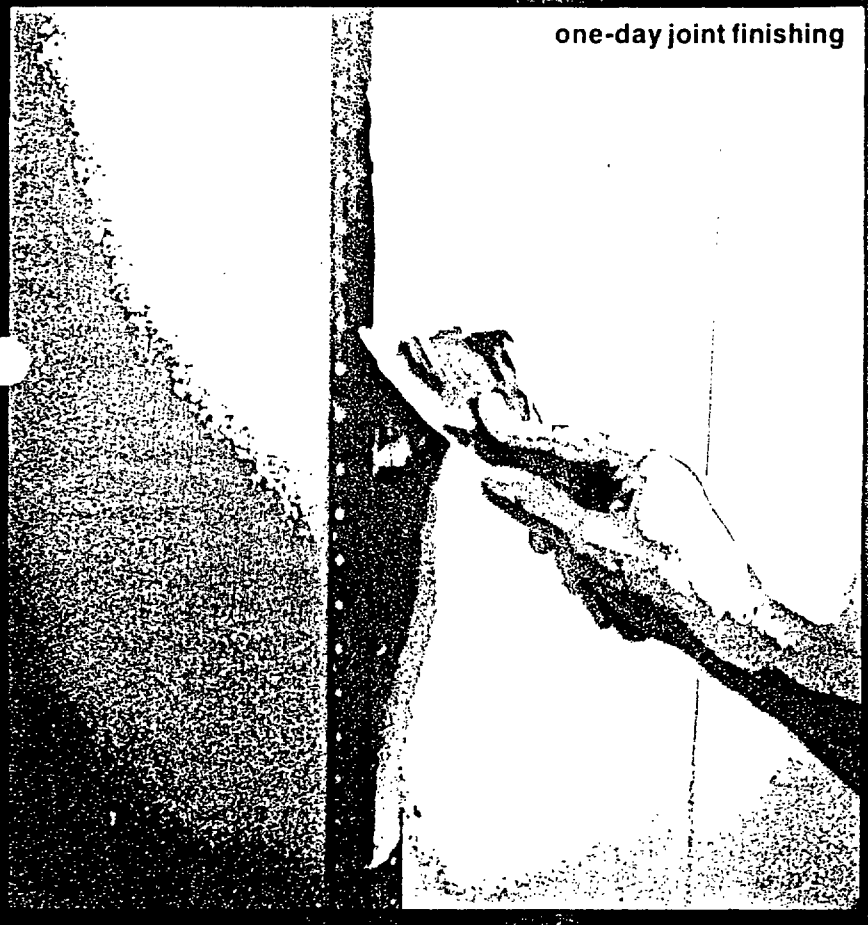
UNITED STATES GYPSUM

PLAINTIFF'S EXHIBIT

USG-1602

DURABOND*
Joint Compounds



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U.S. GYPSUM COMPANY
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Columbus, OH. 43220
614-451-7710

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DURABOND
Taping, 90, and XL Joint Compounds

Three extremely hard, fast-drying powder compounds, unique in bond strength and humidity resistance—specialized for...

pre-filling drywall joints and embedding tape

heavy fills on fasteners, corner beads and control joints

finishing exterior gypsum board ceilings

DURABOND INTERIOR JOINT SYSTEM

DURABOND JOINT COMPOUND-TAPING

A polyindurate material for embedding tape and metal accessories; also ideal for heavy fills since it chemically hardens in 3 to 4 hours. Virtually unaffected by high humidity and changes in humidity. Produces exceptionally strong, low-shrinkage joints with SHEETROCK* Gypsum Panels.

Since DURABOND Joint Compound-Taping and DURABOND 90 are formulated for maximum strength and hardness, they are extremely difficult to sand and are not generally recommended for finish coats. However, exceptionally skilled mechanics using these compounds can produce smooth, acceptable joints without sanding. Mechanics who are accustomed to sanding will achieve better results using USG® Joint Compound-Topping or All Purpose (powder), or USG Ready-Mixed Joint Compound-Topping or All Purpose as a finish coat.

DURABOND 90 JOINT COMPOUND

A polyindurate material having the physical properties of DURABOND Compound-Taping plus the added advantage of fast hardening time—only 1 to 2 hours. DURABOND 90 is the recommended joint pre-fill for rounded-edge SHEETROCK SW Panels—a method that produces the strongest, smoothest drywall joints yet developed. Joint ridging is virtually eliminated.

The fast hardening time of DURABOND 90 makes it an ideal alternate to DURABOND Joint Compound-Taping where quicke finishing and even less shrinkage are desired.

DURABOND EXTERIOR JOINT SYSTEM

DURABOND XL JOINT COMPOUND

A polyindurate joint treatment formulation in powder form for pre-filling, embedding tape and finishing joints of USG® Exterior Gypsum Ceiling Board—also for pre-filling holes in board surfaces, embedding and filling metal accessories and fastener heads. Unlike other DURABOND Compounds, DURABOND XL is formulated for all three joint-

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treatment coats—embedding, filling and finishing. However, each coat must be applied with professional smoothness in order to avoid sanding.

DURABOND XL provides the finest qualities of bonding strength, low shrinkage, and weather resistance currently available. It can be applied and dried at temperatures as low as 45° F.

DURABOND XL Compound and the USG Exterior Gypsum Ceiling Board system can be used for all exterior ceilings not directly exposed to the weather.

WHY DURABOND JOINT COMPOUNDS ARE SUPERIOR

Among the qualities desired in good joint compounds, DURABOND products excel in:

BONDING STRENGTH—DURABOND Joint Compound bond increases as it dries. Once hardened and dry, the bond of DURABOND Compounds far surpasses that of conventional compounds.

MIXING EASE—DURABOND Compounds mix easily—just add to water and stir into solution. Mix can be applied immediately.

SHRINKAGE RESISTANCE—Unlike conventional drying type compounds, delayed shrinkage does not occur with DURABOND. These compounds tolerate moderate amounts of excess water, which would otherwise *cause* shrinkage. *Initial* shrinkage may occur, however, if DURABOND Compounds are allowed to dry before hardening takes place. This condition usually results from exposing unhardened joints to rapidly moving dry air.

HUMIDITY RESISTANCE—DURABOND Joint Compounds feature chemically controlled hardening. Hardening rates are virtually unaffected by changes in humidity, or by high humidity.

EDGE CRACK RESISTANCE—DURABOND Compounds have excellent resistance to edge cracking.

FINISHED SMOOTHNESS—The surfaces of DURABOND finished joints are extremely smooth and tight; skilled applicators can, without sanding, provide acceptable finished joints. For regular daily practice, however, USG Ready-Mixed Compounds are recommended for interior finish coats.

The combined benefits that accrue from use of DURABOND Compounds result in tangible labor and material cost reductions. And, DURABOND one-day finishing assures earlier completion.

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DIRECTIONS FOR APPLICATION

MIXING

Mix DURABOND Compound-Taping or 90 in a clean 5-gal. plastic container. Plastic is preferred for ease of cleaning. Flexing the sides and bottoms of plastic containers quickly loosens hardened compound left from a previous batch. A quick wash removes remaining compound. Metal containers do not clean easily—often require scraping to completely dislodge all hardened compound trapped around the bottom seam.

Sift powered compound into drinkable water while stirring. Mix vigorously with a commercial potato masher for about 3 minutes, or until powder is thoroughly wet. Allow to soak a few minutes, then re-mix to a smooth consistency.

DURABOND Compound-Taping or 90 can be power-mixed. Use a cage-type paddle in a ½" electric drill turning 200 to 400 RPM under load (do not mix at speeds exceeding 600 RPM). Follow same procedures as for hand mixing.

DURABOND XL Compounds *must* be power-mixed. Use same equipment and mix speed as recommended above. Powder and mixing water must be at a temperature of at least 45° F. to attain complete solubility.

Do not mix greater quantities of DURABOND Compounds than can be used before the compounds harden.

Do not allow DURABOND Compounds to be contaminated with other materials—especially other types of joint compounds, or even other previously mixed DURABOND Compounds. Never use dirty mixing water (such as used for cleaning tools).

Do not attempt to hold DURABOND Compounds in wet mix by covering

MIXING & APPLICATION DATA

	Approx. Water (Pints) per 25-Lb. Bag			
	Hand-tool Application	Mechanical Fill Coat	Safe Working Time (Hrs.)	Hardening Time (Hrs.)
DURABOND-Taping	13 to 14	15 to 16	2	3 to 4
DURABOND 90	13 to 14	15 to 16	1	1 to 2
DURABOND XL	13½ to 14	14½ to 15	½	½ to 1

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with water. Compounds harden chemically, even when under water. For the same reason, do not immerse mixing tools in water for later cleaning—*clean tools immediately.*

Do not retemper mix.

Do not mix or apply DURABOND Compounds at temperatures below recommended minimums. For DURABOND-Taping and DURABOND 90, safe minimum temperature is 55°F. Raising the temperature of powders to 70° F. just before mixing, and use of warm water yield best results.

DURABOND XL can be mixed safely at temperatures as low as 45° F.

APPLICATION—DURABOND INTERIOR JOINT SYSTEM

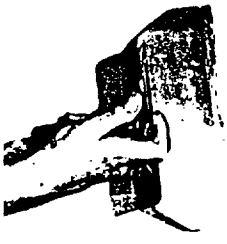
1A. *For SHEETROCK SW Panels*
Pre-fill joint between SHEETROCK SW Panels with DURABOND 90 Joint Compound. Apply compound directly over "V" groove using a flexible 5" or 6" joint finishing knife. Wipe off excess compound applied beyond groove. Allow pre-fill to harden before embedding tape.



Pre-filling wall joint with DURABOND 90

Embed PERF-A-TAPE* Reinforcement with DURABOND Joint Compound-Taping or DURABOND 90; when compound hardens, immediately apply fill coat of either type compound using joint knife or mechanical flat finisher tool.

1B. *For Tapered-Edge SHEETROCK Panels*
Butter joints between SHEETROCK panels with DURABOND Compound-Taping or DURABOND 90, then using a flexible 5" or 6" joint finishing knife, embed tape. When compound hardens, immediately apply a fill coat of either type compound.



Applying second coat

For Either Type of Panels
2. Butter and tape all interior

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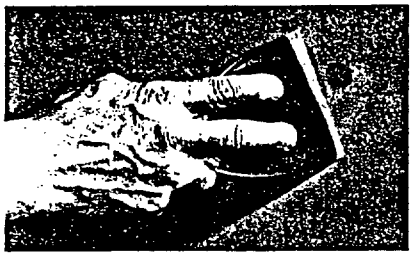
angles; when compound hardens, immediately apply a fill coat of either type compound using joint knife or mechanical corner finishing tool.

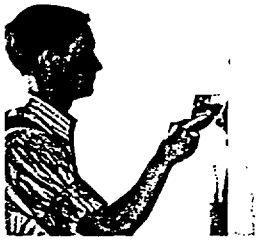
3. Spot all fastener heads with DURABOND Joint Compound.



Spotting fastener heads

4. Apply DURABOND Compound over DUR-A-BEAD* Metal Reinforcement. For minimum shrinkage over reinforcement and nails, use Taping Compound mixed 1½ hours, or DURABOND 90 mixed 45 minutes previously.

5. After fill (second) coat has hardened, apply finishing coat of USG Ready-Mixed Compound-Topping or All Purpose. Completely cover all joints, angles, corner beads and fasteners.



Embedding corner bead

Note: If job is to be completed in one day, all second coat applications should be completed by the noon-hour break. This requires planning and scheduling to match hardening times of DURABOND Compounds used.

APPLICATION – DURABOND EXTERIOR JOINT SYSTEM

1. Pre-fill joints of USG Exterior Gypsum Ceiling Board with DURABOND XL Compound.



Pre-filling joint of exterior soffit

2. After pre-fill has hardened, embed PERF-A-TAPE Reinforcement with DURABOND XL Joint Compound using a flexible

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5" or 6" joint finishing knife. (IMPERIAL* Reinforcing Tape Type P also may be used for hand application.) When compound hardens, immediately apply a fill coat DURABOND XL. Allow fill coat to harden before finishing.

3. Apply DURABOND XL over flanges of USG Control Joints.



Embedding control joint, exterior soffit

4. Wherever plane of ceiling changes to form corners, tape and fill interior angles, and fill metal exterior corner reinforcement with DURABOND XL.

5. Spot all fastener heads with DURABOND XL.

6. After fill coat has hardened, apply finishing coat of DURABOND XL Compound where necessary. Completely cover all joints, angles, corner beads, control joints and fasteners.

7. After DURABOND XL has dried, apply a coat of good quality oil-based primer-sealer followed by a coat of good grade exterior oil or latex paint.

Note: Check weather forecast before beginning work during periods of near-freezing temperatures. Minimum air, water, mix and surface temperatures of 45° F. must be assured until DURABOND XL is completely dry.

HOW TO GET BEST RESULTS FROM DURABOND COMPOUNDS

DO—recognize fast drying conditions (shortened working life and rapid drying of feathered edges) and take appropriate action. During warm weather, stop drafts by closing doors and windows. Raise humidity by liberally sprinkling subfloors with water or by placing open cans of water about the job. During cold weather, position space heaters to direct hot air blasts away from work surface.

DO—provide ventilation during winter conditions.

DO—add powdered compounds to water when mixing—*not* water to powder. And sift compounds while pouring.

DO—apply compounds of heavy consistency over fasteners, metal trim and beads.

DO—keep tools and mixing containers clean at all times. Always use clean water for mixing.

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RESISTANCE—
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cost reductions.
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DO—apply three coats for finest results.

DO—apply relatively thin coats in angles to prevent corner cracking.

DO—exercise special care when using DURABOND Compounds with mechanical equipment. Tool cleanup and careful work scheduling, governed by compound hardening times, are essential.

DON'T—attempt to hand mix DURABOND XL.

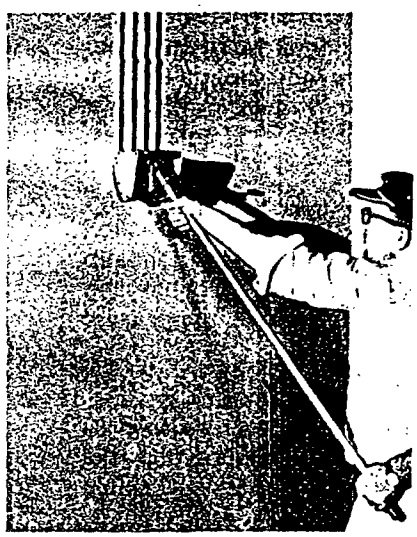
DON'T—use drill-type mixers with speeds higher than 600 RPM. Excessive mixing speed whips air into compounds and accelerates hardening action of DURABOND Compounds.

DO—choose DURABOND 90 and SHEETROCK SW Gypsum Panels for the strongest joints, the smoothest interior walls and ceilings.

DURABOND COMPOUNDS AS A LAMINATING ADHESIVE

Gypsum Panels to Gypsum Panels

For superior bonding, DURABOND Joint Compounds may be used as laminating adhesives. However, because DURABOND hardens by chemical action, application must be completed before hardening begins. (Refer to U.S.G. Drywall Construction Handbook, WB-52, for general laminating directions.)



Double-layer strip lamination

Gypsum Panels to Above-Grade Masonry

DURABOND Joint Compounds are excellent adhesives for laminating gypsum panels to above-grade concrete block or masonry.

Surface Preparation—Concrete surface must be straight and without localized projections that exceed 3/8". Larger projections must be removed. Depressions larger than 4" in diameter and greater than 3/8" in depth must be filled with masonry mortar or DURABOND Compound sanded 1:1, by volume. Surface also must be clean—free of dust, dirt, oil and loose particles.

Gypsum Panel Preparation—Plan panel layout for vertical application. Measure and cut to required length sufficient number of panels to cover entire wall.

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Mixing – Using a clean, smooth-sided container or drum, mix DURABOND Compound with an equal volume of clean sand conforming to ASTM C35. Batch should be large enough to laminate all of the prepared panels, providing batch size does not exceed 25 lbs. of combined DURABOND and sand. Place water, ½ pt. per lb. of DURABOND Compound, into container first. With mixer turning slowly, add DURABOND and sand. Mix 1 to 2 minutes, or until all lumps are dispersed, with a heavy-duty drill and cage-type paddle.

Installation – Spot-apply adhesive over entire panel. Spots should be 2" to 3" across, ½" to ¾" high, and about 12" apart in staggered rows. Spots around perimeter should be kept 1" away from edge of panel.

Place panel vertically against masonry. Press firmly in place to level panel and insure good bond. Shift panel vertically or horizontally to align. When placed, aligned and shimmed at floor line, anchor temporarily with wood cleats at ceiling and floor. Hold abutting panels in alignment at third points (quarter points for ceiling heights over 8') with masonry nails driven through the wallboard, or cleats, and into the masonry. Exercise caution when driving all temporary nails to avoid moving panels, which impairs adhesive bond.

Finishing – Cleats should remain undisturbed overnight. Allow at least 24 hours before attaching trim, control joints, base, etc., or treating joints.

PAINTING AND DECORATING – Follow painting and decorating directions of manufacturers. If decorating problems arise, consult these manufacturers.

GENERAL PROVISIONS

DURABOND, like other powder joint compounds, is affected by aging. Dealers and applicators should rotate stocks of DURABOND-Taping, DURABOND 90 and DURABOND XL Joint Compound, and store them in dry places.

Refer to other folders in this series for additional information on U.S.G.'s complete family of joint treatment products: J-47, USG Joint Compounds (powder); J-60, USG Ready-Mixed Joint Compounds; J-67, PERF-A-TAPE Reinforcing Tape; J-59, COVER COAT* Drywall Compound; J-75, Quality Drywall Finishing.

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