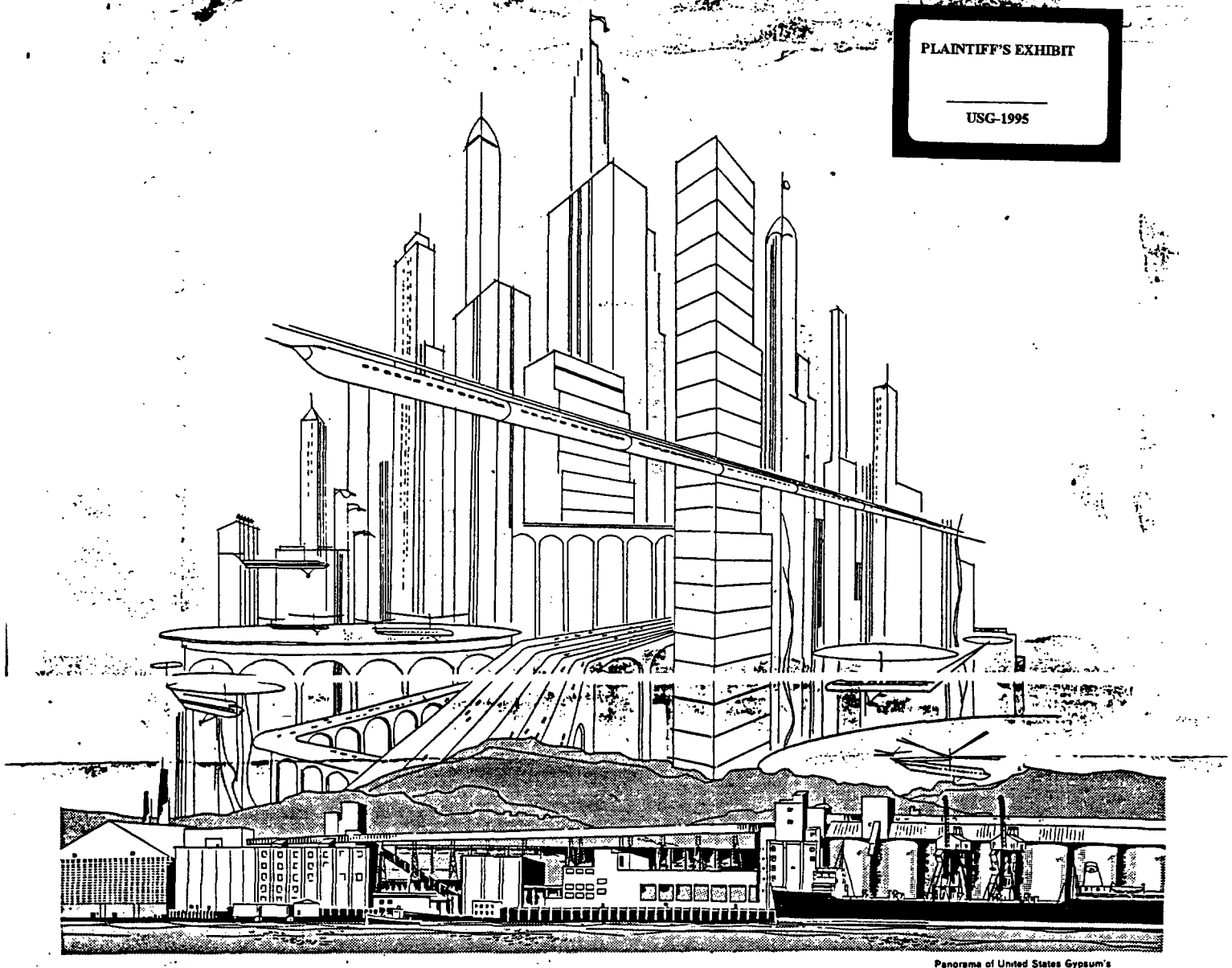
PLAINTIFF'S EXHIBIT

USG-1995



Panorama of United States Gypsum's New Brighton plant on Staten Island.

to build...to grow—this is

the challenge of tomorrow

It took a lot of building to build the world of today. *It will take a lot more to build the better world of tomorrow!*

This is the Challenge of Tomorrow. To join in meeting this challenge—with new and greater volumes of high-performance building materials—is the dedicated purpose of United States Gypsum on Staten Island.

We at the U.S.G. New Brighton plant are proud to be able to serve Staten Island and Greater New York with the materials of growth—SHEETROCK* Gypsum Wallboard, USG* Sheathing, STRUCTO-LITE* Basecoat Plaster, RED TOP* Plaster, ROCKLATH* Plaster Base, PYROBAR* Partition Tile, AUDICOTE* and SABINITE* Acoustical Plasters, and TEXOLITE* Paint Products.

United States Gypsum feels privileged to be a partner in the great Staten Island Community—building, growing, meeting the Challenge of Tomorrow.



Staten Island's gypsum industry began as early as 1834 when Jerome B. King, a pioneer in the field, manufactured gypsum plaster of Paris in a kettle in his back yard and retailed the product in the Staten Island area.

USG "UNITED" STATES GYPSUM

UNITED STATES GYPSUM

the greatest name in building

*T.M. Reg. U.S. Pat. Off.

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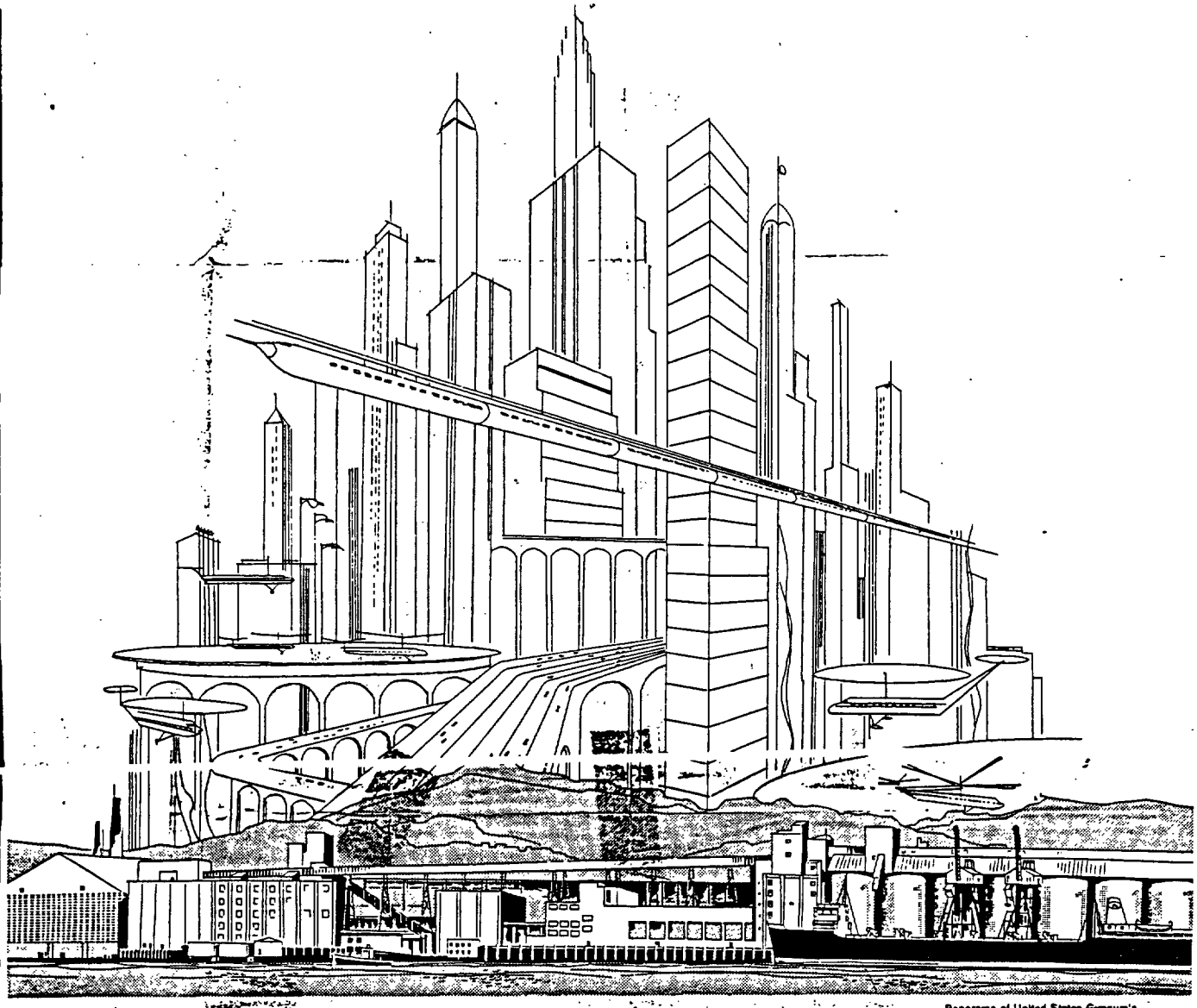

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FOR PROMPT APPROVAL

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ground for plastering. *Alternate.* A milled wood runner may be attached to the rough floor by nailing with cut nails or concrete stub nails in the center groove or through alternate outside edges not over 16 inches o.c.

Application of Ceiling Runner—Attach L-shaped ceiling runner to the construction above as required, locating it by plumbing up from the floor runner. *Alternate.* Where a ceiling runner is not required install furring brackets not over 4 inches from the ends and 36 inches o.c. horizontally approximately 4 inches below top of furred space and attach channel as indicated below.

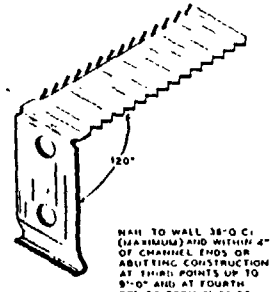
Application of Furring—for furred walls up to 9 feet high, locate furring brackets to the masonry walls not over 4 inches from columns or other abutting construction. Locate brackets at third points vertically and not over 36 inches o.c. horizontally.

For walls from 9 to 12 feet, locate brackets vertically at quarter points. Set brackets in mortar joints or use 2 inch cut nail to attach bracket to mortar joints of brick, clay tile or cement block, or in the field of lightweight aggregate blocks. Use one $\frac{5}{8}$-inch concrete stub nail or one power driven nail per bracket on monolithic concrete. Lay $3\frac{1}{4}$-inch furring channels horizontally on the furring brackets with the legs down, plumbed in line with the base. Wire tie to the bracket with a double strand of 18 gauge tie wire. Bend down excess bracket length.

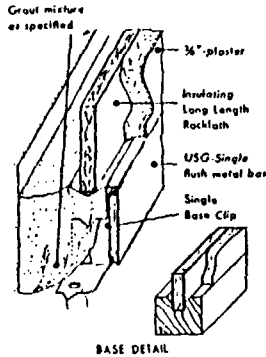
Lathing—Apply gypsum lath with the long length vertical, butted lightly with the foil facing the furred space. Set bottom of lath in the groove of base grout, clipping top of lath to the ceiling runner and wire-tying (over a nail) at the edges to intermediate horizontal channel furring. Cut and fit gypsum lath to allow $\frac{1}{4}$" clearance around window frames. Apply a 3-inch strip of metal lath over each ROCKLATH joint under window.

Plastering—Apply scratch, brown and finish coats to a full $\frac{3}{4}$-inch over face of lath. Cut plaster base coats with the edge of the trowel along margin of metal window frames.

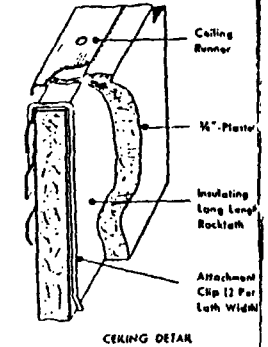
USG-ADJUSTABLE WALL FURRING BRACKET



NAIL TO WALL 36" O.C. (MAXIMUM) AND WITHIN 4" OF CHANNEL ENDS OR ABUTTING CONSTRUCTION AT THIRD POINTS UP TO 9'-0" AND AT FOURTH POINTS FROM 9'-0" TO 12'-0" PLACE ABOVE AND BELOW WINDOWS AS REQUIRED



BASE DETAIL



CEILING DETAIL

BRACE-TITE TRUSSTEEL STUD ROCKLATH

Partition Assembly

DESCRIPTION

A hollow non-load-bearing partition of Trussteel studs ROCKLATH plaster base with BRACE-TITE clip attachment and plaster.

ADVANTAGES

Sound Resistant—has a 46 decibel sound transmission loss rating.

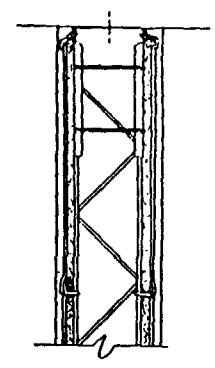
One Hour Fire Rating—with perforated ROCKLATH, gypsum plaster, perlite aggregate proportioned and 100 pounds gypsum plaster to $2\frac{1}{2}$ cubic feet perlite.

Adaptable—may be applied to $2\frac{1}{2}$, $3\frac{1}{4}$, 4 or 6-inch TRUSSTEEL Studs that finish to overall wall thickness of approx. $4\frac{1}{2}$", $5\frac{1}{4}$", 6" and 8".

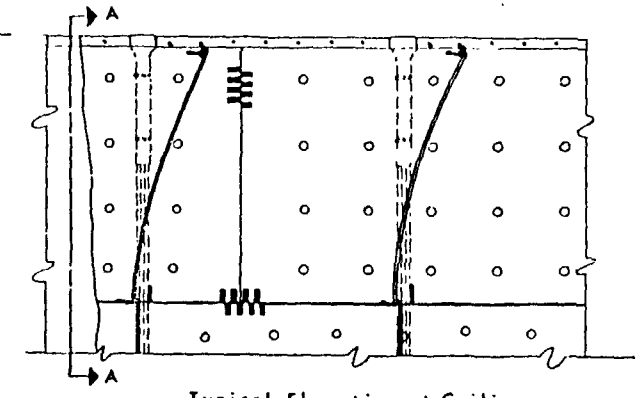
Lightweight—$3\frac{1}{4}$-inch stud partition using sand aggregate weighs 16.1 pounds per square foot, using perlite aggregate, 11.5 pounds.

Strong—comparable in strength to wood or metal stud partition using ROCKLATH plaster base or metal lath and plaster.

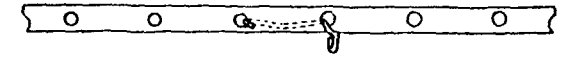
Economical—BRACE-TITE clips make ROCKLATH easy to apply. Plaster is applied to $\frac{1}{2}$-inch thickness in two or three coats.



Section A-A



Typical Elevation at Ceiling



Enlarged View of Starter Clip

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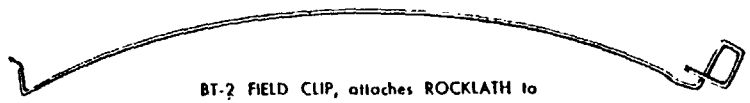


BT-2 FIELD CLIP, attaches ROCKLATH to TRUSSTEEL studs.

BT-2 STARTER CLIP, use at beginning of stud run.





B-1 BRIDJOINT CLIP, use at each ROCKLATH corner.

DIRECTIONS FOR LATHING AND PLASTERING

Lathing—install TRUSSTEEL studs not over 16 inches o.c. (*See page 78* for details.)

Start lath application at the ceiling line with a starter clip (1) attached to the runner track, either to the right or the left of the stud. Work down toward the floor line. Attach each piece of ROCKLATH plaster base with the long dimension at right angles to the stud with a field clip (2) hooked around the stud into the eye of the preceding clip.

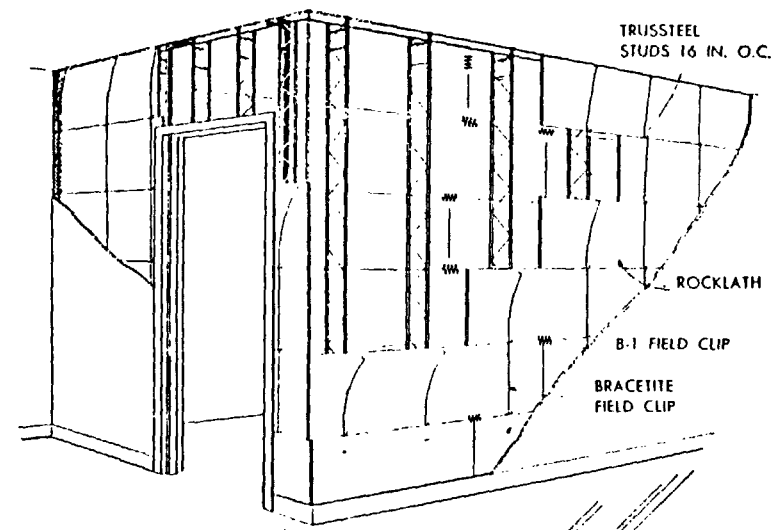
The end joints of ROCKLATH should fall between studs. Stagger the ROCKLATH in alternate courses, and join together at corners with B-1 BRIDJOINT Clips (3). The bottom course of ROCKLATH is cut to width as required; B-1 Clips are placed on the previous course of lath in each stud space, and the bottom course of lath is set in place and wire-tied to the studs.

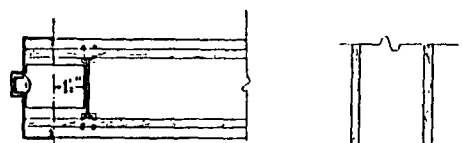
Where ceilings are furred down, starter clip and runner track may be omitted and the top of the field clip may be wired to studs at the ceiling line with double strand of 18 gauge tie wire.

Install cornerite on all internal angles, and corner bead on external corners by stapling to the ROCKLATH. Where rough wood bucks are installed, butt the lath ends against ⅞-inch wood grounds and nail lath to bucks.

Plastering—plaster to ½-inch grounds using gypsum-sand or gypsum-perlite plaster. Plaster may be applied in two or three coats.

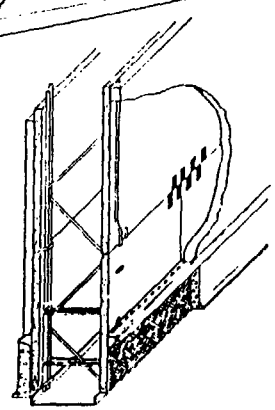
Estimating Quantities—for studs spaced 12 inches o.c.: BT-2 Starter Clips, two for each TRUSSTEEL stud; BT-2 Field Clips, 5½ to 6 per square yard; B-1 BRIDJOINT Field Clips, 4 per square yard. (Each side of the partition.)





Metal Door Buck

Exterior Corner



Terrazzo Base

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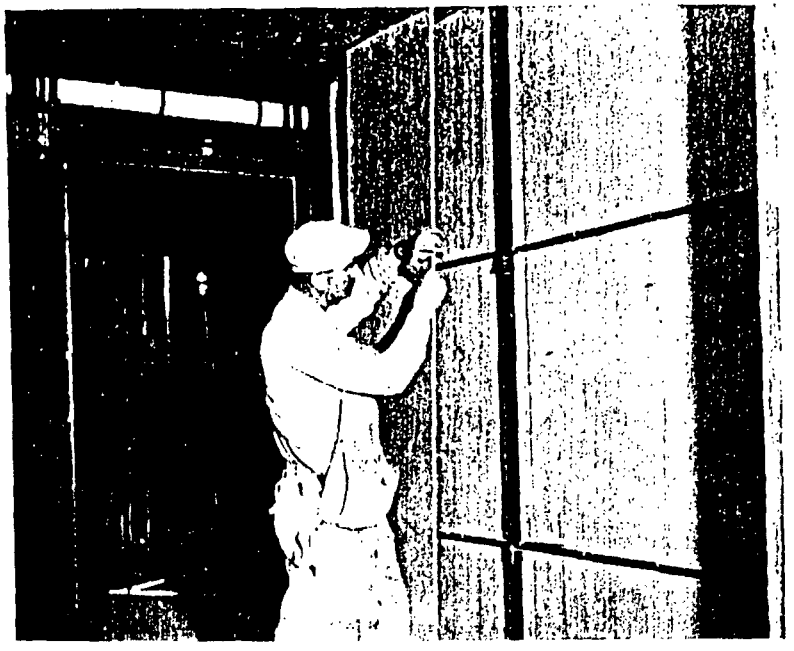


4-IN. HOLLOW LONG LENGTH ROCKLATH

and Plaster Partition

DESCRIPTION

A non-load bearing partition consisting of 1½-inch steel channel framing with ½-inch V-edge long length ROCKLATH plaster base and ¾-inch plaster on each side . . . not over 9 feet high.

ADVANTAGES

Sound Resistant—*sound transmission* rating of 47.4 decibels.

One Hour Fire Rating—when plastered as specified.

Easy to Erect—standard materials.

Lightweight—19 pounds per square foot with sand; with perlite, 12 pounds.

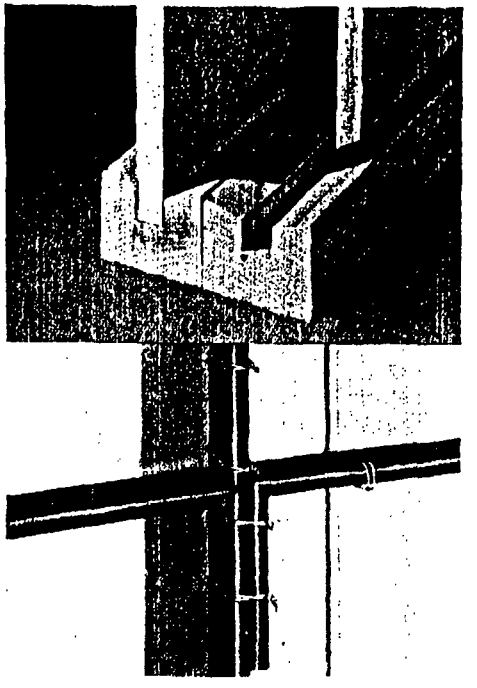
Lathing—attach to the floor two wood runners as specified for USG 2-inch solid ROCKLATH and plaster partitions. Inside edges of runner track grooves, 1½ inch apart. Install a double row of USG L-shaped *ceiling runner* 1½ inches apart. Metal runners may also be suitably employed.

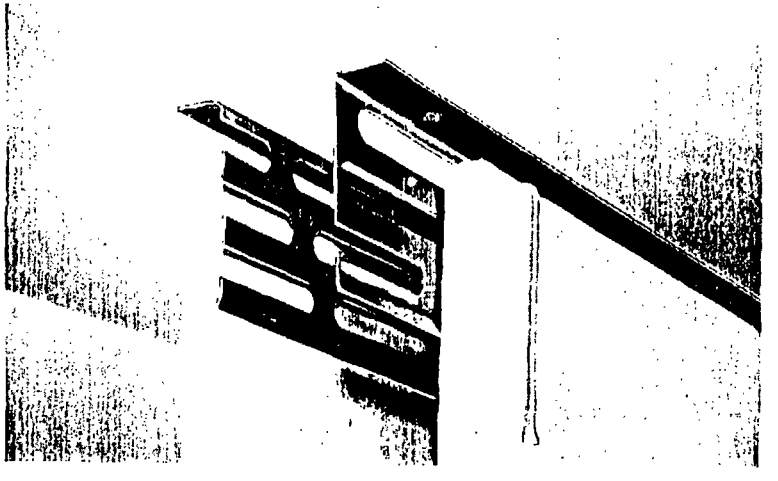
Erect 1½-inch steel channels vertically, not over 4 feet o.c., on top of floor runner. Wire-tie between ceiling runners. Erect 1½-inch channels horizontally at third points by bending channel ends and wire-tying to vertical channels.

Install long length lath by inserting in floor runner, clipping to ceiling runner and wire-tying over a nail at the joints and at partition ends.

Plastering—apply plaster to ¾-inch grounds in three coats using sand or perlite aggregate in following proportions: Scratch coat, one part gypsum plaster or two parts sand; brown coat, one part gypsum plaster to three parts sand . . . Scratch coat, 100 pounds gypsum plaster to two cubic feet perlite; brown coat, 100 pounds gypsum plaster to three cubic feet perlite.

One Hour Fire Rating—scratch coat, one part gypsum plaster to one part sand; brown coat, one part gypsum plaster to two parts sand.





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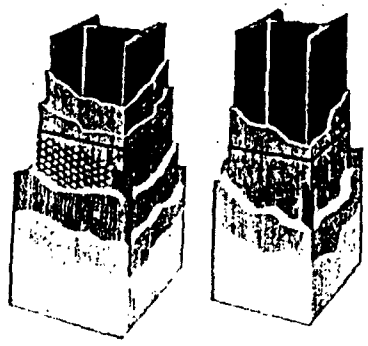
FIREPROOFING STEEL COLUMNS with ROCKLATH and Plaster

1, 1½, 2, 3 AND 4 HOUR FIRE RATINGS



DESCRIPTION

ROCKLATH Plaster Base wired in place against structural steel column, and plastered with gypsum cement plaster and sand or perlite aggregate in proportions and thickness required to give fire rating desired. In certain higher ratings, 20 gauge galvanized 1 inch hexagonal mesh wire fabric is used in addition to the ROCKLATH.

ADVANTAGES

Fireproof - column fire ratings of 1, 1½, 2, 3 or 4 hours are obtained.

Lightweight—6 pounds per square foot of completed surface area for 1 hour protection to 11 pounds for 4 hour protection.

Low Cost—Standard materials used. Easily attached, economy of plastering over gypsum lath.

1-1½ Hour Rating—⅜"—16"x48" Perforated ROCKLATH, cut as required, is applied vertically against the column and fastened with a double strand of 18 gauge tie wire approximately 2" from the ends and 15" o.c. 1-A bead, set at each corner, establishes ½" plaster grounds for 1 hour and ⅝" grounds for 1½ hour ratings. Apply gypsum-sand plaster proportioned 1:2½ and any finish coat.

A 2 Hour Rating is obtained by lathing in the same manner as indicated above except that the 1-A bead must be set to establish 1" plaster grounds over the lath and gypsum-perlite plaster, proportioned 100:2½ must be used.

3 Hour Rating—Lath the same as for 1 hour rating except set 1-A bead to provide 1¾" grounds by snipping expanded flanges 12" o.c., bending back and stapling to ROCKLATH. Apply Gypsum-Perlite plaster proportioned 100 lbs.: 2 cu. ft. for scratch coat and 100 lbs.: 3 cu. ft. for brown coat. Use any standard finish coat.

4 Hour Rating—Apply a double thickness of ½" long length ROCKLATH, cut as required, vertically against the column and fastened with double strand of 18 gauge tie wire about 4" from top and bottom and 24" o.c. Wrap 1" hexagonal 20 gauge galvanized wire fabric over the lath and set 1-A bead to establish 1½" grounds. Apply gypsum-perlite plaster proportioned 100 lbs.: 2 cu. ft. for first ¾" of thickness and 100 lbs.: 3 cu. ft. for second ¾". Use any standard finish coat.

BB006 0811

Specialized Lathing and Plastering Systems

Metal Lathing Systems

	PAGE
Metal Lath Resilient Lathing System	**74**
2-Inch Solid USG Metal Lath Partition	**76**
TRUSSTEEL Stud Metal Lath Partition	**78**
Metal Base	**80**

BB006 0812

METAL LATH RESILIENT Lathing System

DESCRIPTION

A system composed of metal lath, steel furring members and spring clips that provides a floating attachment of plastered surfaces to structural members.

ADVANTAGES

It offers greatly increased protection against plaster cracking due to structural movement, and a considerable reduction in the transmission of sound through walls and ceilings. It is adaptable to wood supports, suspended ceilings, hollow partitions, and masonry or concrete surfaces.

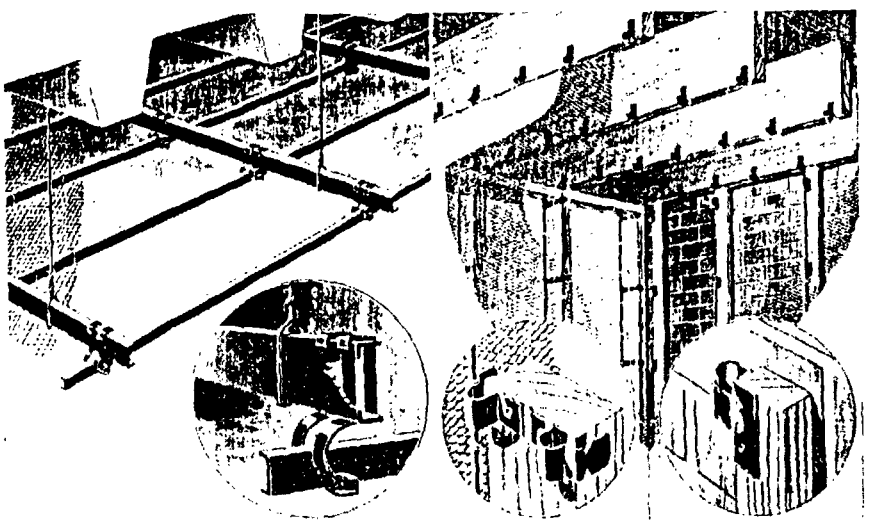
ESTIMATING QUANTITIES

No. 100 Clip, furring channels 12 inches o.c.: use 225 clips per 100 sq. yds.; furring channels 16 inches o.c.: use 169 clips per 100 sq. yds.

No. 200 Clip, walls (clip spacing 16 inches o.c. along studs), 500 clips per 100 sq. yds.; ceilings (clip spacing 12 inches o.c. along joist), 675 clips per 100 sq. yds.

No. 300 Clips, wall (clip spacing 16 inches o.c. along furring strips), 500 clips per 100 sq. yds. Do not use on ceilings.

No. 400 Clips, TRUSSTEEL Stud spacing 12 inches o.c., 675 clips per 100 sq. yds. Spacing 16 inches o.c., 500 clips per 100 sq. yds.



Suspended Ceiling—Showing application of No. 100 Clip for suspended ceiling construction. The clip provides resilient attachment of furring channel to runner channel by replacing use of the tie wire. Easy to erect.

Wood Frame Construction—Showing application of No. 200 Clip on wood studs and joists and No. 300 Clip on wood furring on masonry walls. Clips provide resilient attachment of metal lath and protect plaster finish.

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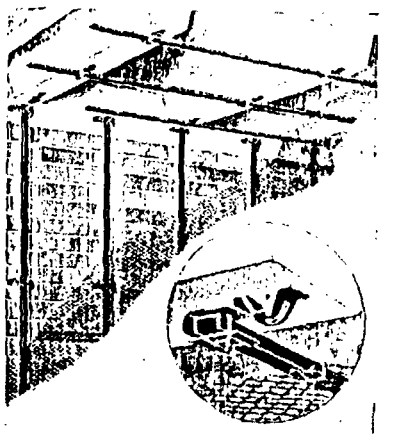
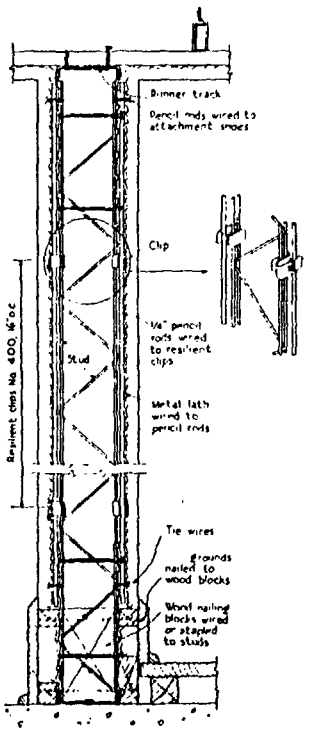


Masonry Surfaces—Showing use of No 500 Clip on ceiling under concrete joist and on masonry walls. Clip is also used on other masonry surfaces. Provides furring and resilient attachment of metal lath.

Trussteel Stud Partition—Showing use of No. 400 Clips spaced 16 inches along studs. A ¼" pencil rod is wired into the notch on outside flange of clip to provide resilient furring member for metal lath.

No. 500 Clip

Spacing of furring Channels, o.c.	Spacing of Clips	Quantity of Clips per 100 sq. yds.
12 inches	24 inches	400
16 inches	18 inches	450
19 inches	15 inches	455
24 inches	12 inches	432



CLIP No 400
TRUSSTEEL STUD PARTITION.

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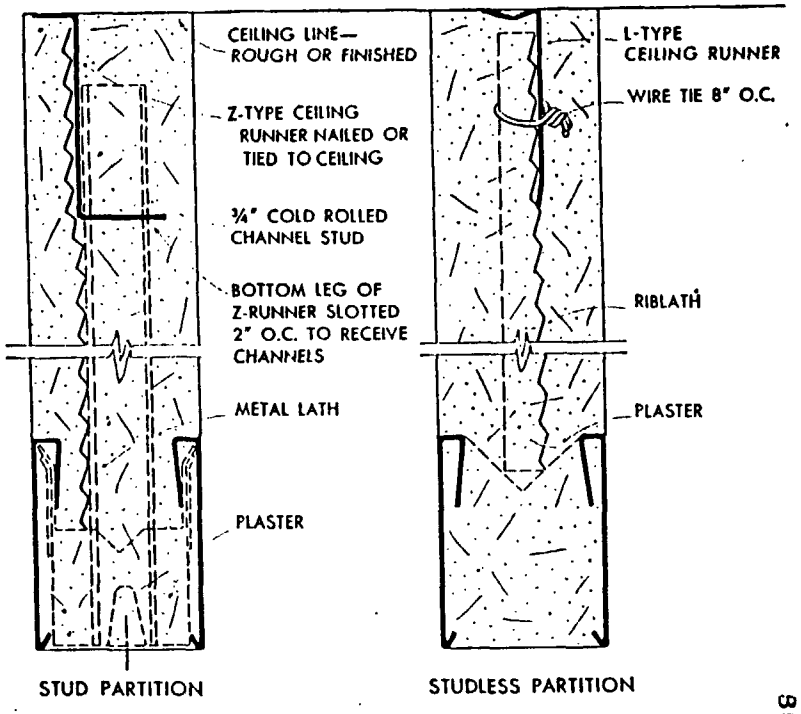


FLOOR & CEILING DETAILS

98006 0815

2-IN. SOLID USG METAL LATH

and Plaster Partition

DESCRIPTION

A non-load bearing partition that finishes to an overall thickness of 2 in. May be erected using ¾ in. channel studs with Diamond Mesh, or with ⅜ in. Riblath, which eliminates the studs.

ADVANTAGES

Saves Space—saves 40% to 60% of the space usually occupied by conventional partition.

One Hour Fire Rating—when plastered according to specifications.

Highly Crack Resistant

Good Sound Transmission Rating—37.6 average decibel transmission loss.

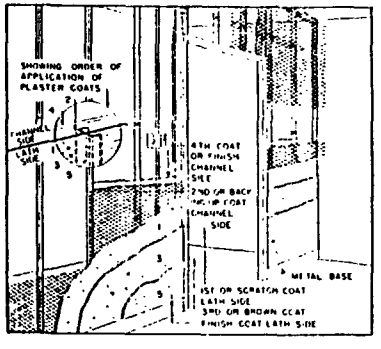
Lightweight—only 18 lbs. per partition square foot with gypsum-sand plaster.

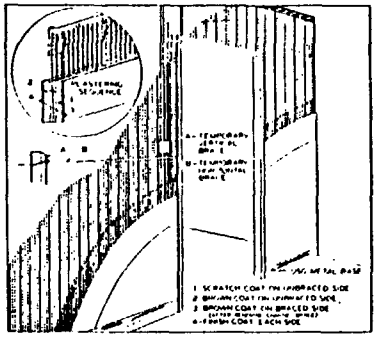
DIRECTIONS FOR ERECTING

Stud Partition—Snap partition lines at floor and ceiling . . . Fasten Z-type ceiling runner to structural ceiling with concrete stub nails, or provide means of attaching channel studs to furred-down ceiling . . . Attach double base clips to structural floor with concrete stub nails 16 in. o.c. (*See page 80*) . . . Drop ¾ in. channels into floor clips and fasten to furred-down ceiling members, or insert into slot of Z-type ceiling runner . . . Wire-tie Diamond Mesh lath in conventional manner to channels . . . Snap on metal base side plates and grout base.

DIRECTIONS FOR ERECTING

Studless Partition—Snap partition lines at floor and ceiling . . . Fasten L-type ceiling runner to structural ceiling or furred-down ceiling . . . Attach double base clips to structural floor with concrete stub nails, snap side plates in place and grout, leaving V-groove to receive ⅜ in. Riblath . . . Erect ceiling length ⅜ in. Riblath vertically by dropping into grouting groove and wire-tying top to L-type ceiling runner not over 8 in. o.c. . . . Where metal door bucks are used, reinforce with inserts and wire-tie the ⅜ in. Riblath to the inserts . . . Where wood bucks are used, wire-tie the lath to USG L-type ceiling runner nailed to the bucks . . . Provide temporary bracing by placing ¾ in. channel horizontally near mid-height of partition, tie to lath 24 in. o.c. Place vertically a 1¾ in. channel or 1½ in. angle brace not over 6 ft. o.c. to hold the lath in position until brown coat on side opposite bracing has set.





DIRECTIONS FOR PLASTERING

2 In. Solid Metal Lath Partitions—Scratch-coat side opposite braces or channels, allow to set and partially dry . . . On studless partition, brown-coat side opposite braces and allow to set before removing braces. Apply brown coat to previously braced side bringing it out to full 2 in. partition thickness. On stud partition, apply back-up coat to channel side to full grounds in not less than two operations . . . brown coat on lath side . . . Apply finish coats on both sides.

98006 0816

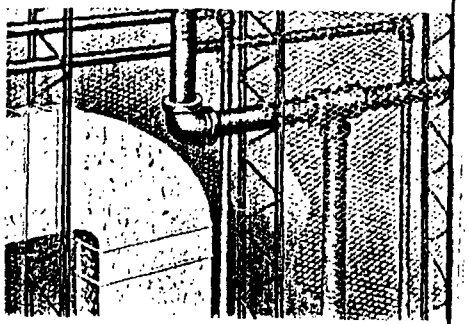
88006 0817

TRUSSTEEL STUD AND HOLLOW METAL LATH

and Plaster Partition

DESCRIPTION

This truss design stud permits the erection of hollow, non-load bearing partitions in which ducts and pipes can be easily fitted and concealed.



ADVANTAGES

Lightweight—Finished partition weighs 13 to 17 lbs. per square foot.

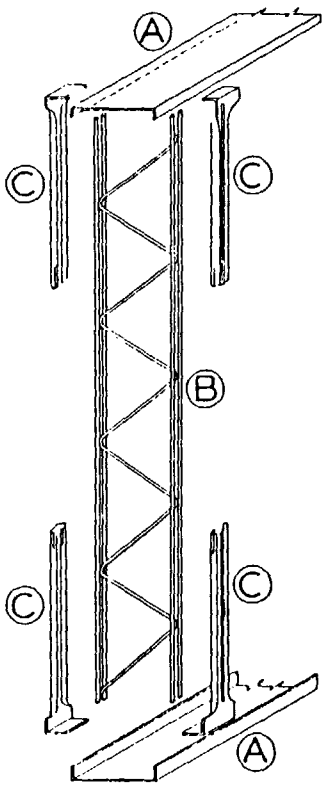
One hour fire rating—when plastered according to specifications.

Strong—Withstands up to 30% greater transverse loads than 1½ in. steel channels.

Adjustable—For varying heights.

Economical—Requires no special tools or structural framing, goes up fast. Can be used with metal lath or ROCKLATH plaster base.

This system is available in the following sizes: Stud lengths, 7 to 20 ft.; stud widths, 2½, 3¼, 4 and 6 in. It contains the following parts as shown in sketch at right: **(A)** 22 gauge top and bottom runner tracks; **(B)** 7 gauge rod studs spot welded at all contact points; **(C)** new snap on type shoes for attaching studs to runners. These shoes allow an adjustment up to 4 in.



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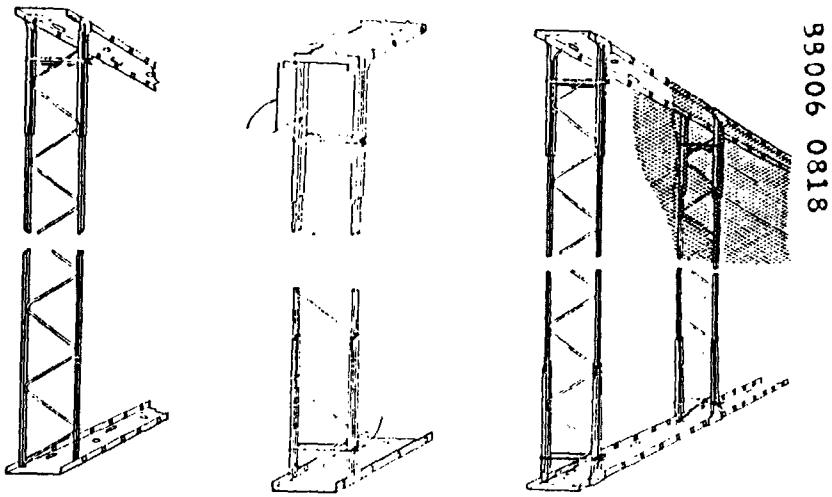

STEP BY STEP ERECTION

Runner track is aligned and attached to concrete floor and ceiling with stub nails at 2 ft. intervals, or wired to suspended ceiling every 16 in.

Studs are secured to runner track by means of two snap-on attachment shoes at top and bottom by inserting flange between runner track and floor or ceiling.

Leg of shoe is then snapped over side of stud and auxiliary wire tie applied 1" from floor or ceiling line.

Metal lath is applied to both sides of studs with 18 gauge galvanized tie wire.

RECOMMENDED STUD SPACING

Type of Lath	TRUSSTEEL Stud Spacing
2.5 lb. Diamond Mesh Lath	12 Inches
3.4 lb. Diamond Mesh Lath	16 Inches
2.75 lb. ⅛" Riblath	16 Inches
3.4 lb. ⅛" Riblath	19 Inches
3.4 lb. ⅜" Riblath	24 Inches
4.0 lb. ⅜" Riblath	24 Inches

FINISHED PARTITION THICKNESS AND LIMITING HEIGHTS

Stud Width	Finished Wall Thickness Metal Lath and Plaster—Normal Grounds	Maximum Partition Height
2½"	4"	14 Ft.
3¼"	4¾"	16 Ft.
4"	5½"	18 Ft.
6"	7½"	20 Ft.

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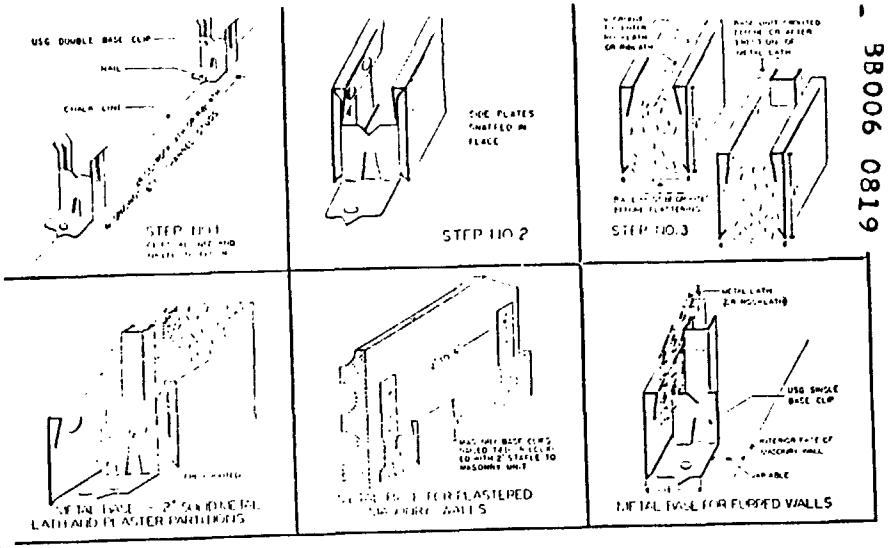


STEP BY STEP ERECTION

USG METAL BASE

DESCRIPTION

A "plastered-in" metal base system for partitions and walls, composed of floor clips or masonry wall clips and steel side plates. May be used with metal lath, ROCKLATH, plaster base or masonry plaster bases. Side plates: 18 gauge steel, 10 feet long by 2½ inches high.

ADVANTAGES

Easy Application—Snap-on attachment feature permits faster installation with automatic and independent adjustment on any rough or finished floor.

Versatile—Internal and external corners can readily be formed on the job for any condition with USG notching tool.

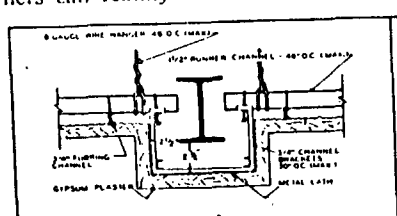
Safety—Adds no combustible materials to the construction and protects base of the partition.

USG METAL LATH

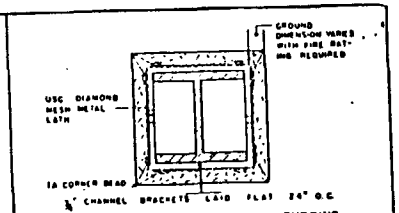
For Column Fireproofing

This time proven system provides a 1, 2, 3, or 4 hour fire rating. It utilizes self-furring Diamond Mesh lath and accessories and typical metal lath construction.

Important: See Architectural Specifications for detailed description of fire ratings, aggregates, and plaster thicknesses.



BEAM & GIRDER FURRING



ALTERNATE METHOD OF COLUMN FURRING

USG READY-FORMED METAL ARCHES

DESCRIPTION

USG Metal Arches are the practical and easy way to form symmetrical arched openings in either new construction or remodeling. Precision-made for doorways, bookcases and recesses. Available in three styles, seven sizes for finished openings 20" to 70½". USG Metal Arches are made of galvanized steel, perforated for proper plaster keying.

ADVANTAGES

Versatile—Choice of size or style. Easy to vary size and shape for any size openings and partitions of any thickness by combining sections in various combinations.

Easy to erect—ready to put in place as they come from the carton. There are no forms to make; no corner bead to bend or shape by hand. No special preparation of the rough opening is necessary.

Economical—Since these arches combine plaster base, corner bead and plaster grounds, there's a saving in time, labor and materials.

DIRECTIONS FOR ERECTING

The arch sections fit perfectly over 2 x 4 studs and any type lath, or over masonry of similar depth. For other partition thicknesses merely split arch soffit, overlapping for thin partitions and filling in gap with striplath for thicker walls. Studs on each side of the arch should be spaced 1½ inches wider than the desired finished opening. Assemble the metal arch units on the floor. Join the units, using connector pins. Strike exact center of the opening on header. Then insert the assembled metal arch in the opening over the lath. Nail in place, temporarily. Then level the arch and nail it securely in place with lath nails through the solid part of the flanges. Vertical corner beads are aligned to the metal arch with connector pins.



TRUE CIRCLE ARCH

No. 11—10" radius
No. 22—15¾" radius



GOTHIC ARCH

No. 33—2' 7½" finished opening
No. 44—4' 1½" finished opening

ELLIPTICAL ARCH

No. 36—3' 1½" finished opening
No. 55—5' 1½" finished opening
No. 66—5' 10½" finished opening



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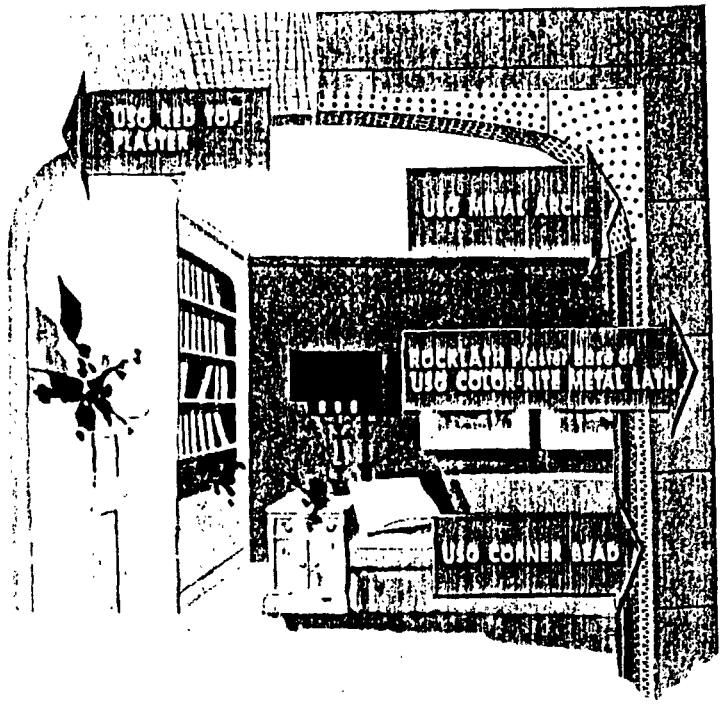


Table of Erection Details

Style of Arch	Width of Finished Opening	Dimension from Arch Base to Header	Spacing between Studs or Bucks (Rough Opening)
No. 11	20"	10"	21½"
No. 22	31½"	15¾"	33"
No. 33	31½"	11⅜"	33"
No. 36	37½"	11"	39"
No. 44	49½"	12½"	51"
No. 55	61½"	13"	62"
No. 66	70½"	13"	72"

B3006 0321

Plaster Problems

Their Causes and Remedies

Basecoat and finish coat plasters are so closely interrelated that the treatment of problems pertaining to their use will be handled simultaneously in the following pages.

All RED TOP basecoat and finish coat plasters are carefully manufactured and thoroughly tested before shipment, and any troubles or problems experienced in their use are normally found to be caused by job conditions.

B3006 0322

INTRODUCTION

As a general rule, most plaster problems result from the following conditions:

1. Atmospheric conditions.
2. Conditions due to set fast or slow.
3. Improper heat and ventilation.
4. Improper application or thickness of basecoat or finish coat.
5. Improper proportioning of aggregate or improper mixing.
6. Improper workmanship.
7. Improper plaster base application.
8. Improper bond.
9. Poor aggregate (improper gradation, impurities, etc.).

Plaster problems are classified under the specific type of condition which exists. These problems are discussed in order under these following types and specialty products:

1. Plaster Cracks.
2. Weak, Soft Walls.
3. Bond Failures.
4. Set and Working Qualities.
5. Color, Surface Stains and Blemishes.
6. Acoustical Plaster Problems.
7. Cover Coat Finish Plaster Problems.

PLASTER CRACKS

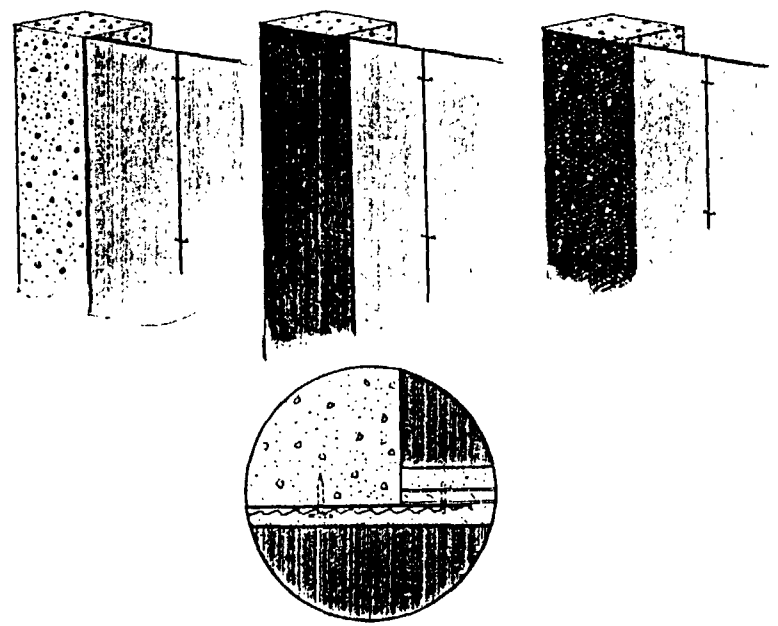
It should be understood in reviewing this broad subject that a plaster slab is *not* a delicate material and will take considerable abuse without cracking. It cracks only when some excessive external force is applied, or when some excessive internal strains are induced within it. The stresses, conducive to cracking, are normally caused by movement in the building frame, or other components of the building over which plaster is applied, or by variations in the atmosphere surrounding the plaster slab. Cracking of plaster occurs more readily where the plaster slab is weaker or thinner than standards permit, and if stresses are encountered before the plaster is dry and has attained full strength.

Proper plaster bases are important to prevent plaster cracking. They also must be sound—this is equally important in the foundations and in the structural framing. Structural weaknesses cannot be corrected in lath and plaster work.

One of the largest single factors causing plaster cracks is the lack of understanding the need for and use of proper heat and ventilation. (*See page 31.*)

Cracking of Partitions installed in line with the face of concrete columns and beams—Reinforced concrete frame buildings and steel frame buildings with columns and beams encased in concrete may induce cracking of plaster in partitions when such partitions are located so that the plaster plane continues from the plaster base over the column and/or beam face, and is bonded to the concrete. This cracking can occur either at the joining of the concrete and the plaster base, or in the field of the partition, whether the plaster base is masonry, metal lath or gypsum lath. The cracking is caused by difference in movement between the concrete and the partition mass—the severity of cracking varying with the age of the concrete and the atmospheric conditions at the time of plastering. The cracking tendency will be reduced if the concrete has aged a year or more, or when building temperatures are moderate and stable for a reasonable time prior to plastering.

In normal construction, where plastering occurs four to eight months after the pouring of concrete, and is frequently done during colder and changeable temperature conditions, cracking may be minimized or eliminated by either, (1) relocating the partition to come several inches back from the column and/or beam face, or (2) if plaster base is installed in line with column and beam by applying heavy paper (No. 30 asphalt felt) over the concrete, lapping onto the plaster base about 1 inch, and then applying diamond mesh metal lath over the paper, scatter-nailing it 12" on center to the concrete, using stub nails, and fastening it to the edge of the plaster base by nailing to masonry, wire-tieing to metal lath, or stapling to gypsum lath. This avoids a bond of the plaster to the concrete, thus reducing stress due to movement of column or beam in relation to the partition mass.



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PLASTER PROBLEMS AND REMEDIES

Because of variations in market practices, aggregates, plaster bases, weather and workmanship, this chart has been prepared to assist in the understanding, diagnosis and treatment of job problems.

CONDITION	MATERIAL	CAUSE	REMEDY OR PREVENTION
1. CRACKS			
1. Connected vertical and horizontal cracks at somewhat regular intervals, often in "stepped" pattern.	Plaster over any sheet lath: fiber, metal, or gypsum.	Plaster too thin, insufficient plaster grounds.	Apply another coat of plaster. Check before plastering to conform to plaster ground requirements.
		Weak plaster.	See "Weak Soft Walls," page 89.
		Lath not properly applied.	Apply Metal Lath and replaster.
2. Cracks around and over openings.	Plaster over brick, clay tile, gypsum tile or cement block.	Lintel construction is poor.	Remedy—patch.
		Improper door buck construction.	Prevention—follow manufacturers' specifications.
	Plaster over gypsum lath and other bases (except rarely metal lath).	Plaster too thin.	Apply another coat of plaster
		Weak Plaster.	See "Weak Soft Walls," page 89.
		Failure to use Striplath.	Cut out and repair.
		Expansion of wood frames.	Sand frames—cut base coat free of grounds.
3. Fine cracks, random pattern usually less than 12" apart. Map cracks Crazing Chip cracks Fine cracks —	Cracks in gauged lime putty over gypsum base coat.	Insufficient gauging plaster.	Strip off finish and replaster with correct mix.
		Base coat too wet or too dry when finished.	Strip off finish and refinish over partially dry base coat.
		Insufficient trowelling.	Water trowel sufficiently.
		Slow set gauging plaster.	Add moulding plaster on accelerator to gauging.
	Cracks in base coat over brick, cloy tile, gypsum tile or cement block.	Shrinkage due to high suction.	Spray water on masonry to reduce suction.
		Undersanding of base coat.	Remove plaster and replaster with correct mix after adjusting suction.
4. Crack at wall or ceiling angles.	Plaster over gypsum lath.	Thin plaster coat, or failure to use cornerite, or poor lumber in framing.	Cut out and patch. Add cornerite if possible.
	Plaster over brick, clay tile or gypsum tile.	Failure to wedge at ceiling, or to interlock or tie walls together.	Prevent by correct construction.
5. Ceiling cracks not due to any of the above causes, or to structural failures.	Plaster on metal lath or gypsum lath.	Metal lath too light, not lapped or not properly tied.	Prevented by following manufacturers' specifications.
		Thermal shock.	Control job temperatures from sudden change.
	Plaster or metal lath or gypsum lath on channel frame.	Improper spacing of channels.	Prevent by proper spacing.
		Thermal shock.	Prevent by job temperature control.
2. COLOR, SURFACE STAINS AND BLEMISHES			
1. Water soluble mildew-like fuzz on surface, generally white but may be colored. Can be brushed off.	Base coat or finish plaster over concrete, brick, or clay tile.	Efflorescence. As masonry units dry out, water-soluble salts from the masonry are being deposited on the surface of the plaster.	Eliminate source of moisture, furr, lath, and replaster.
2. Streaky discolorations.	Lime finishes gauged with gauging plaster or with Keenes Cement.	Lime and gauging not thoroughly mixed.	Prevented by thorough mixing. Remedied by painting with TEXOLITE paint.
		Too much water used in trowelling.	Paint with TEXOLITE Paint.
		Efflorescence from masonry.	See condition 1, above.
		Dirty tools or dirty water.	Wash tools and obtain clean water. Remedied by painting as above.
3. Streaked—joinings show. "Slobbers."	Gypsum trowel finish.	Improper trowelling—too much water on brush. Dirty water.	Paint with TEXOLITE paint.
4. Light and dark spots due to causes other than "dry out."	Float finish.	Improper floating or too much water used in floating.	Point with TEXOLITE paint to get uniform color.
		Variable suction in base coat.	Dampen base coat uniformly.
5. "Pops"—peak-like projections which fall out making little craters or pits; often with fine radial cracks.	Lime base coats and finish.	Unslaked lime in mortar which slakes and swells after it is applied. Contamination by foreign matter.	Remove core of "pops" and patch. Prevented by using double hydrated lime.
6. Same as (5) above except pit is discolored tan or greenish tan.	Gypsum base coats and finishes.	Retarder spots. Lumpy or undissolved retarder added at job. Retarder lumps swell or "pop" when wet.	Cut out spots and patch. Prevented by screening retarder thru 40 mesh screen.

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PLASTER PROBLEMS AND REMEDIES

CONDITION	MATERIAL	CAUSE	REMEDY OR PREVENTION
2. COLOR, SURFACE STAINS AND BLEMISHES			
7. Blisters (do not confuse with [5] above).	Gauged lime putty finishes.	Base too green, insufficient suction or too much water used in troweling.	After finish has "set" trowel with very little water.
		Finish lime too plastic.	Cut putty with small amount fine white sand or increase amount of gauging plaster.
	Gypsum trowel finish	Base coat too wet when finish applied.	After finish begins to "set," trowel with very little water.
8. Uneven color (not due to texture shadows).	Interior colored plaster finishes.	Uneven absorption of base coat, or too much water used in finishing, or dirty box and tools, or variation in water content of successive batches.	Prevented by following specifications. Remedied by painting with TEXOLITE paint.
		Finish not dry.	Ventilate to dry wall properly.
9. Uneven color—light, or "flat" spots in light colors (See 13 below).	Oil paint over gauged lime putty finish.	Painted too soon after plastering (alkali in lime saponifies paint); or, pigment not limeproof.	Repaint with TEXOLITE primer and TEXOLITE paint.
10. Uneven color—dark colors.	Any colored paint over any plaster finish.	Color variation due to non-uniform absorption. Binder strikes in unevenly.	Apply TEXOLITE Sealer and repaint.
11. Yellow surface stains—"yellowing."	Any finish over any plaster base.	Contaminated sand.	Prevent by using clean sand.
		Burning green wood in fireplace.	Improve draft to stop smoke.
		Open gas heaters not vented to outside.	Vent heaters to outside.
		Tarpaper back of plaster base. Creosote treated framing lumber, tar, or tar derivatives used around job.	Use asphalt paper. Avoid source of air contamination. Seal with TEXOLITE Sealer. Redecorate.
3. WEAK, SOFT WALLS			
1. Soft, white, chalky surfaces, occurring during hot, dry weather, usually near opening.	Gypsum base coat over any plaster base.	Dry-out. Too much ventilation has removed water before plaster could set.	Remedy—Persistent spraying will set-up the dry-out areas. Prevention—Screen openings in hot, dry weather and spray during setting period if necessary.
2. Soft, dark, damp surfaces occuring during damp weather.	Gypsum base coat over plaster base.	Sweat-out. Too little ventilation has allowed water to remain in wall after plaster set. Some of plaster has re-dissolved.	Remedy—Dry the walls with heat and ventilation. Prevention—Heat and ventilate as soon as plaster has set. If condition exists for too long a period there is no remedy in restoring original strength. Remove and replaster.
3. Soft (exactly as 2 above), but occurring in freezing weather.	Gypsum base coat over any plaster base.	Frozen plaster.	Close building, supply heat. When plaster has set, continue heat and ventilate.
		Use of too fine or poor grade of aggregate.	No remedy. Prevent by use of aggregate that meets ASTM Specs for gradation and proportioning.
4. Soft, weak wall. Condition general—not spotty nor due to slow set.	Gypsum base coat over any plaster base.	Use of too much aggregate.	No remedy. Prevent by use of proper amount of aggregate.
5. Soft, weak wall.	Gypsum trowel finish over any base coat.	Dry-out or retempered finish.	If dry-out treat as condition (1) above. Trowel well when set. If retempered, no remedy except tear off and refinish.
6. Soft, weak wall.	Gauged lime putty finish over any base.	Insufficient gauging plaster, retempered material, or insufficient trowelling.	No remedy except to remove finish and replaster.
4. BOND FAILU			
1. Separating from plaster base.	Gypsum plaster over gypsum lath or fiber insulating lath.	Too much aggregate, freezing, or addition of lime or Portland cement.	No remedy except to replaster.
2. Separating from plaster base.	Gypsum plaster over metal lath.	Too much aggregate.	Replaster with correct mix.
		Freezing.	Thaw and allow to set and dry, or replaster.
		Lack of fiber.	Replaster with more fiber added, or use extra fibered plaster.

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PLASTER PROBLEMS AND REMEDIES

CONDITION	MATERIAL	CAUSE	REMEDY OR PREVENTION
4. BOND FAILURE			
3. Separating from plaster base.	Gypsum plaster over masonry.	Excessive suction.	Dampen masonry surfaces.
		Masonry non-absorbent has glazed surface.	No remedy. Prevent by hacking masonry surface.
		Efflorescence.	Eliminate source of moisture. Furr, lath and replaster.
4. Separating from plaster base.	Gypsum plaster over concrete.	Use of ordinary gypsum plaster.	Remove and replaster with BONDCRETE.
	Gypsum bond plaster over concrete.	Surface oily, too smooth, dirty or efflorescing.	Remove plaster. Clean and roughen surface. Replaste
		Application of too thick a coat of BONDCRETE.	Do not exceed ¼" thickness on ceilings and ⅜" on side walls.
5. Brown coat separating from scratch coat.	Gypsum basecoat plasters.	Weak basecoat.	Prevent by proper amount of aggregate.
		Failure to provide mechanical key in scratch coat.	Roughen scratch coat and replaster.
6. Finish separating from brown coat.	Gauged lime putty finish over gypsum brown coat.	Brown coat too smooth, too dry, too wet or too weak, finish improperly applied; incomplete hydration of finish lime.	Where brown coat is cause, strip off finish, correct condition of brown coat and replaster. Where finish is cause, refinish properly using Ivory double hydrated lime.
7. Finish separating from brown coat.	Gypsum float and trowel finish over gypsum brown coat.	Brown coat too smooth.	Roughen brown coat.
		Brown coat too dry.	Dampen brown coat until half green.
		brown coat too weak.	Strip down to lath and replaster.
		Finish improperly applied.	Apply as directed.
8. Finish separating from brown coat.	Colored interior finishes over brown coat.	Brown coat not broomed.	Roughen brown coat and refinish.
		Thin finish not ground in.	Finish following application directions.
		Brown coat too weak.	Correct condition of base coat and re-finish. (See 7 above
5. "SET" AND WORKING QUALITIES			
1. Soft walls for over 6 hours after application.	Gypsum base coat over any plaster base.	Dry-out, sweat-out, frozen plaster, over-sanding, sand too fine, or dirty sand.	See "Weak, Soft Walls" page 89.
		Slow set due to error in manufacture.	Send samples to manufacturers' representative.
		Slow set due to poor sand or poor water.	Obtain good sand and water or accelerate plaster.
2. Sets in box or sets on wall before it can be darbied or straightened.	Gypsum base coat over any base.	Quick set due to dirty water, tools and mixing equipment.	Use clean water, tools, equipment.
		Mixing too long.	Reduce mixing time.
		Quick set due to poor sand.	Use good washed sand or add retarder.
		Quick set due to error in manufacture.	Add retarder. Send samples to manufacturers' representative.
		Quick set due to machine mixing.	Add retarder.
3. Works hard or "short." Will not spread. Does not carry proper amount of sand.	Gypsum base coat over any plaster base.	Aged or badly stored plaster.	Get fresh plaster, use equal parts fresh and aged plaster, or use less sand.
4. Works hard or "short." Will not spread.	Gypsum base coat over any plaster base.	Over-sanding.	Correct conditions using proper proportion.
5. Tough and short working, rubbery or lumpy lime putty.	Gauged lime putty over gypsum base coat.	Old material partially carbonated; warehoused too long.	No remedy. Can be used for masons lime.
		Improper soaking, aging or slaking.	No remedy. Prevented by proper preparation.
		Low temperatures.	Do not soak at temperatures below 40° F.
6. Lack of uniformity in set.	Gauged lime putty over gypsum base coat.	Unusual temperatures.	Properly heat the building in cold weather. min. 55°F. Use slow set gauging in hot weather.
		Improper gauging.	Use proper type and amount of gauging plaster.
7. Finish works hard.	Gypsum finishes over base coat.	Mixed too stiff.	Use more water.
		Base too dry.	Apply to half green base. Spray dry base lightly and uniformly before finishing.

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6. ACOUSTICAL PLASTER PROBLEMS

Discussion: Acoustical plasters (RED TOP Acoustical Plaster and SABINITE) are special finish coat plasters that require additional job precautions due to the special function which they perform—that of absorbing sound. By properly following manufacturer's mixing and application directions, an excellent attractive and efficient acoustical ceiling will result. However, job abuses in mixing and application can destroy the acoustical efficiency as well as the appearance of the job.

Indicated below are problems arising from improper use of acoustical plasters, their causes, remedies and preventive measures.

CONDITION	MATERIAL	CAUSE	REMEDY OR PREVENTION
Dropouts and Lack of Bond	RED TOP Acoustical SABINITE	1. Improper basecoat condition.	1. Basecoat not properly cross-raked. Lack of suction— Basecoat too green. Basecoat totally dry—Excessive suction— *Spray lightly.*
		2. Overmixing.	2. No remedy—Dump material and mix new batch.
		3. Undermixing.	3. Mix to proper mortar weight.
		4. *Too thick application.*	4. *Follow application directions.*
Short Working	RED TOP Acoustical SABINITE	1. Undermixed.	1. Mix to proper mortar weight.
		2. Old material.	2. Prevent by proper warehouse and job storage.
Blisters	RED TOP Acoustical SABINITE	1. Too green a basecoat.	1. Provide proper heat and ventilation prior to and during plastering.
		2. Overmixing.	2. No remedy—Dump material and mix new batch.
		3. Improper basecoat preparation.	3. Basecoat not thoroughly cross-raked.
Joinings	RED TOP Acoustical SABINITE	1. Improper job planning and plastering to a partially set edge.	Provide sufficient scaffolding and men. Remedy—Cover with thin skim coat mortar weight of 15# net per 12 qt. pail.
Trowel Marks	SABINITE	1. Final troweling in one direction. 2. Poor lighting conditions.	1. Final trowel in all directions. 2. Supply same lighting effect as finished job.
Slick spots in finish surface	SABINITE	Final troweling too soon.	Remedy—Cover with thin skim coat—mortar weight of 15# net per 12 qt. pail. Prevention—Trowel after water sheen has left surface.
Too fine a texture in float finish.	SABINITE	Surface of float too smooth.	Refloat immediately with coarser float.
Loss of sound absorption.	SABINITE	1. Over-troweling.	1. No remedy—*trowel lightly* on final troweling.
		2. Final troweling too soon.	2. Remedy—Cover with thin skim coat—mortar weight of 15# net per 12 qt. pail.
	RED TOP Acoustical SABINITE	3. Too thin application.	3. Apply full ½" of acoustical plaster over gypsum basecoat.
		4. Improper application of paint in re-decorating.	4. No remedy—follow manufacturer's painting directions.
	RED TOP Acoustical SABINITE	5. Stipple texture too light.	5. Surface allowed to take up too much before stippling. Stipple as specified.
Weak, soft ceilings	RED TOP Acoustical SABINITE SABINITE	1. Overmixing.	1. No remedy—scrape down to basecoat and re-apply.
		2. Troweling thru set.	2. No remedy—scrape down to basecoat and re-apply.

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7. RED TOP COVER COAT Finish Plaster Problems—over Concrete

Discussion: RED TOP COVER COAT is a special finish coat plaster designed for application only over smooth, clean, unpainted concrete surfaces. It affords an ideal surface to receive decoration. To assure a strong bond between the concrete and COVER COAT, the manufacturer's directions for surface preparation must be adhered to and COVER COAT Bonder must be applied to the concrete and allowed to dry (30 minutes minimum), prior to the application of COVER COAT.

The application characteristics of COVER COAT are similar to those of a lime putty gauging finish. It may be trowelled or floated by adding silica sand to the second coat.

Listed below are some of the problems that can develop when the material is not applied in accordance with the manufacturer's directions, as well as remedies and preventitive measures.

CONDITION	CAUSE	REMEDY OR PREVENTION
Delamination	1. Improper surface preparation.	1. No remedy—clean surface and use COVER COAT Bonder as directed.
Bond separation between first and second coat of COVER COAT.	1. Too heavy application of second coat.	1. No remedy—fill imperfections with first coat—apply second coat to a maximum of 1/16".
Fine cracks—random pattern—check cracking	1. Insufficient troweling. 2. Material setting too slow. 3. Plaster exposed to hot, dry winds.	1. Apply thin skim coat. 2. Accelerate with solution of aluminum sulphate. 3. Cover window and door openings during hot weather.
Dryouts—soft, chalky surface—mottled appearance. (Not as serious as in regular plaster)	1. Plaster exposed to hot, dry winds. 2. Too slow set. 3. Insufficient water troweling.	1. Spray with fine spray. 2. Same as above. 3. Same as above.
Poor Working	1. Insufficient mixing. Cold mixing water.	1. Mix COVER COAT thoroughly with warm mixing water, minimum 70° F.
Blisters	1. Application over green concrete or green 1st coat of COVER COAT. 2. 2nd coat applied too thick.	1. No remedy—apply COVER COAT in 2 coat operation and allow first coat to dry. 2. Apply 2nd coat to a maximum of 1/16".
Rust Spots	1. Usually caused by plain steel in surface of concrete, particularly reinforcing bar supports.	1. Use galvanized bar support legs. 2. Remedy—seal off COVER COAT surface with conventional oil type sealer prior to painting.
Wavy finished surface	1. Too thin COVER COAT application.	1. Remedy—apply thin skim coat. 2. Prevent by applying COVER COAT to a full 1/8" thickness over a properly prepared surface.
Lumps in material	1. Cold mixing water. 2. Insufficient mixing.	1. Use mixing water of at least 70° F. 2. Mix material thoroughly to a smooth consistency.

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How To Inspect A Plaster Job

Approximately 80% of the visible wall surface in the average building is plaster. It is fundamental that all those involved in the plastering operation cooperate to obtain the best possible job. This section attempts to point the way to achieving such an objective—a *quality plaster job.*

Proper inspection of a lathing and plastering job requires a complete understanding of job details, schedules and specifications. All walls must be judged within the framework of the drawings and the specifications on which the contract is based. It is most important that these drawings and specifications be complete, accurate and easily interpreted.

SCHEDULE OF INSPECTION

Job inspections should be made at the following stages:—

A. When job is ready for lathing and plastering.

1. Determine that the brands and types of materials delivered to the job are in accordance with specifications and approvals granted.

2. Determine that proper storage facilities are provided for the materials. (*See page 31, paragraph 3.*)

B. When lathing has started but before plastering has begun.

C. When base coat plaster is being applied.

D. When finish coat is being applied.

E. When job is completed.

PLASTER BASES

A. A plaster job is only as good as the base over which it is applied. Generally, plaster bases can be classified under these headings:

1. Suction Type—Gypsum lath and fiber insulating lath in which the water of the plaster mix carries gypsum into the porous surface, forming tiny keys which hold the plaster to the base.

2. Mechanical Type—Metal lath, in which the lath is embedded in the plaster and, in effect, forms a reinforced plaster slab.

3. Combination Type—Gypsum block, clay tile, other masonry and perforated gypsum lath, in which both suction and mechanical key combine to hold the plaster to the base.

B. The most commonly used bases, along with points that should be checked prior to base coat application are:

1. Unit Masonry (gypsum block, clay tile, porous brick or rough concrete block)

a. Has correct mortar been used for laying? (*See pages 17-19.*)

b. Are walls straight and true?

c. Are any structural cracks evident?

d. Have proper grounds been installed? (*See pages 17 and 97.*)

2. Gypsum Lath

a. Has it been applied according to manufacturer's specifications. (*See page 16.*)

b. Have proper grounds been established, angles and corners reinforced? (*See pages 16 and 97.*)

3. Metal Lath

a. Have specifications of manufacturer been followed for proper nailing or tieing? (*See pages 26-28.*)

b. If suspended, furred or contact work, have proper weights of lath and spacing of supports been maintained. (*See pages 26-27.*)

c. Have proper grounds been provided?

4. Insulation Fiber Board Lath

a. Check for correct application. (*See page 20.*)

b. Check for proper grounds, angle and corner reinforcement.

5. Monolithic Concrete

a. When bond plaster is used, has surface been prepared and material applied according to manufacturer's specifications? (*See page 38.*)

b. If RED TOP COVER COAT is being used, have the necessary steps been taken to assure a straight and level surface?

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GROUNDS

The thickness of base coat plaster is one of the most important elements of a good plaster job. To insure proper thickness, grounds should be properly set and followed. Grounds may be defined as wooden strips, corner beads (plumbed and straight), metal base screed, or metal casing beads applied at the perimeter of all openings and other locations. In addition to these, and especially on walls with no openings, and on ceilings, plaster screeds should be installed to insure plumb and level surfaces. Plaster screeds are either dots or continuous strips of plaster applied to required ground thickness to permit proper plumbing and leveling.

Grounds should be set to obtain the following minimum plaster thicknesses:

1. Over gypsum lath, gypsum block, fiber insulating lath	$\frac{1}{2}$"
2. Over brick, clay tile, or other masonry	$\frac{5}{8}$"
3. Over metal lath, measured from face of lath	$\frac{7}{8}$"

PLASTERING MATERIALS

The plastering materials generally in use today are gypsum cement plaster (*See page 36*), gypsum mill-mixed base coat plasters (*See pages 37, 38 & 39*), hydrated finish limes (*See page 42*), gypsum gauging plaster (*See page 43*), sand (*See page 31*), vermiculite (*See page 32*), perlite (*See page 32*) and water (*See page 33*).

After determining what materials are specified for use on the job, reference to the pages indicated above will describe the nature of each material and point out precautions that should be taken for storing it before it is mixed into plaster.

JOB CONDITIONS

See pages 34-35—This phase of the inspection is most important and, in many cases, will determine the success of the entire operation. An accurate check of the following points will prove well worthwhile:

A. Storage

1. Has material been properly stored on the job *for* maximum protection from weather and dampness?

B. Heating and Ventilation

1. Have proper heating and ventilation been provided?

At no time should any plastering be performed without proper heating and ventilation. A principal reason for this is that circulation of air at the right temperature is necessary to carry off the excess water in the plaster, helping to avoid "sweat out" conditions.

2. In enclosed areas where adequate normal ventilation through doors and windows is not provided, supplementary artificial ventilation *must* be provided.

3. In colder climates during the late fall, winter and early spring, the building should be heated in the normal range of 55 to 70 degrees for some time prior to plastering and

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maintained at a uniform temperature in this range during all plastering and after the completion of the plaster work.

TWO COAT VERSUS THREE COAT WORK

See page 34—The architect's specifications and the plaster base will determine what plastering method will be used. There are two general ways of applying plaster:

1. Two-coat work.
2. Three-coat work.

Except over metal lath, fiber insulation lath, and wood lath, either of these two methods with the plaster properly mixed and applied can be employed.

MIXING

See page 33—A mechanical mixer is preferred to box mixing, because it is easier to assure that the plaster aggregate and water are more evenly mixed. Keep the mixer continually clean, which is *most* important, because partially set material is a powerful accelerator.

When mixing by hand, plaster and sand first should be mixed dry to a uniform color in a mixing box, and the water added and the plaster hoed into the water immediately and thoroughly mixed to a proper consistency. Remember a number 2 shovel generally used to add sand to the mix carries approximately 15 pounds. Therefore, a 1:1 mix would use 6 to 7 number 2 shovels to 100 pounds of gypsum plaster. A 1:2 mix is 12 to 14 shovels, and 1:3 mix is 18 to 21 shovels.

When perlite or vermiculite aggregate is used instead of sand, remember the proportioning is *weight* of gypsum to *volume* of aggregate. (*See page 31* for proper mixing proportions.)

SCRATCH COAT

Section III—"Plaster Bases"—stated that there are three general types of plaster base: suction type, mechanical type, and a combination of both. Let's approach the actual application with this in mind and, as a result, know what to look for to help assure a *good job.*

A. Application over *Suction Type*

1. Is the base properly applied and ready for plaster? (*See pages 16-20.*)
2. Is the correct aggregate being used in the proper proportion? (*See pages 30-33.*)
3. Is the building properly heated and/or ventilated, as suggested under Section VI—"Job Conditions"?
4. Is scratch coat being applied to correct thickness and left in proper condition to receive the brown coat? (*See page 34.*)

B. Application over *Mechanical Type*

Observance of the same precautions as indicated above should be checked, and it is recommended that fibered plaster be used, as fiber prevents the passage of excessive mortar through the keys and holds plaster to lath until set.

C. Application over *Combination Type*

The same requirements as apply in (A) above should be followed.

BROWN COAT

Once the scratch coat has set and is partially dry (usually overnight is sufficient), the brown or second coat is applied. Of course, precaution must be taken by the inspector to assure himself that the plaster is being prepared with the proper aggregate correctly proportioned. (*See page 31 & 32.*) This coat of plaster, together with the scratch coat, forms the backbone of the plastered wall or ceiling, and it is important to see that it is applied to full grounds. All brown coat work should be left *rough* under the rod or darby to provide "tooth" for the finish coat. The use of excessive water in rodding or darbying the brown coat, which leaves the surface smooth and slick, *is not good practice.*

SET OF BASE COAT PLASTER

The proper setting time for base coat plasters is generally from 2 to 4 hours after mixing, and this should be checked for close conformity on both the scratch coat and the brown coat operation. The danger of "quick set" plaster is that there will not be sufficient time to get the plaster from the mixer to the walls without retempering on the mortar board, and such retempering will produce a plaster of lower than normal strength. The correction for "quick set" is to add the proper amount of retarder in solution with water at the mixer.

If plaster does not set for 5 to 6 hours, no harm will be done to the resulting plaster surfaces, but a "slow set" of the plaster (generally one taking more than 6 hours) should be avoided by adding accelerator in a dry state at the mixer, as such plaster may be subject to a "dry out" (*See page 87*), particularly in hot, dry weather, and will have a lower than normal strength when finally set.

The setting of base coat plaster is indicated by the hardening of the plaster and by a darkening of the surface as the set takes place. The portion of the plaster which has set but has not yet thoroughly dried will be darker in color than the unset portion of the plaster. This accounts for the mottled effect in base coat plaster which appears as the set is taking place.

FINISH COAT

In addition to gypsum-lime putty trowel finish (*See page 42*), the most common types of finishes are Keene's cement-lime putty finish (*See page 44*), prepared gypsum trowel finish (*See page 45*), gypsum-sand float finish (*See page 45*), ORIENTAL Interior finish (*See page 46*), RED TOP Acoustical Plaster (*See page 48*), SABINITE Acoustical Plaster (*See page 49*) and COVER COAT Finishing Plaster (*See page 52*).

Generally, all finish coats (with the exception of COVER COAT) are applied to a properly prepared base coat of gypsum plaster (*See page 41*).

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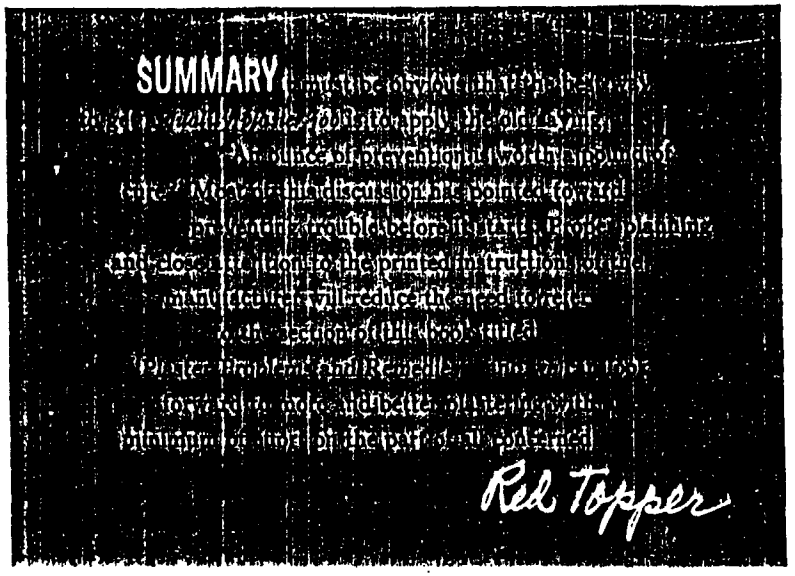
In the mixing and application of finish coats, it is most important that the recommendations of the manufacturer be followed. These recommendations, along with mixing directions, are printed on each bag and can also be found in the finish plaster section of this book. (*See page 41.*) The visible success of the job is now at stake, and the required measures should be taken to finish correctly.



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