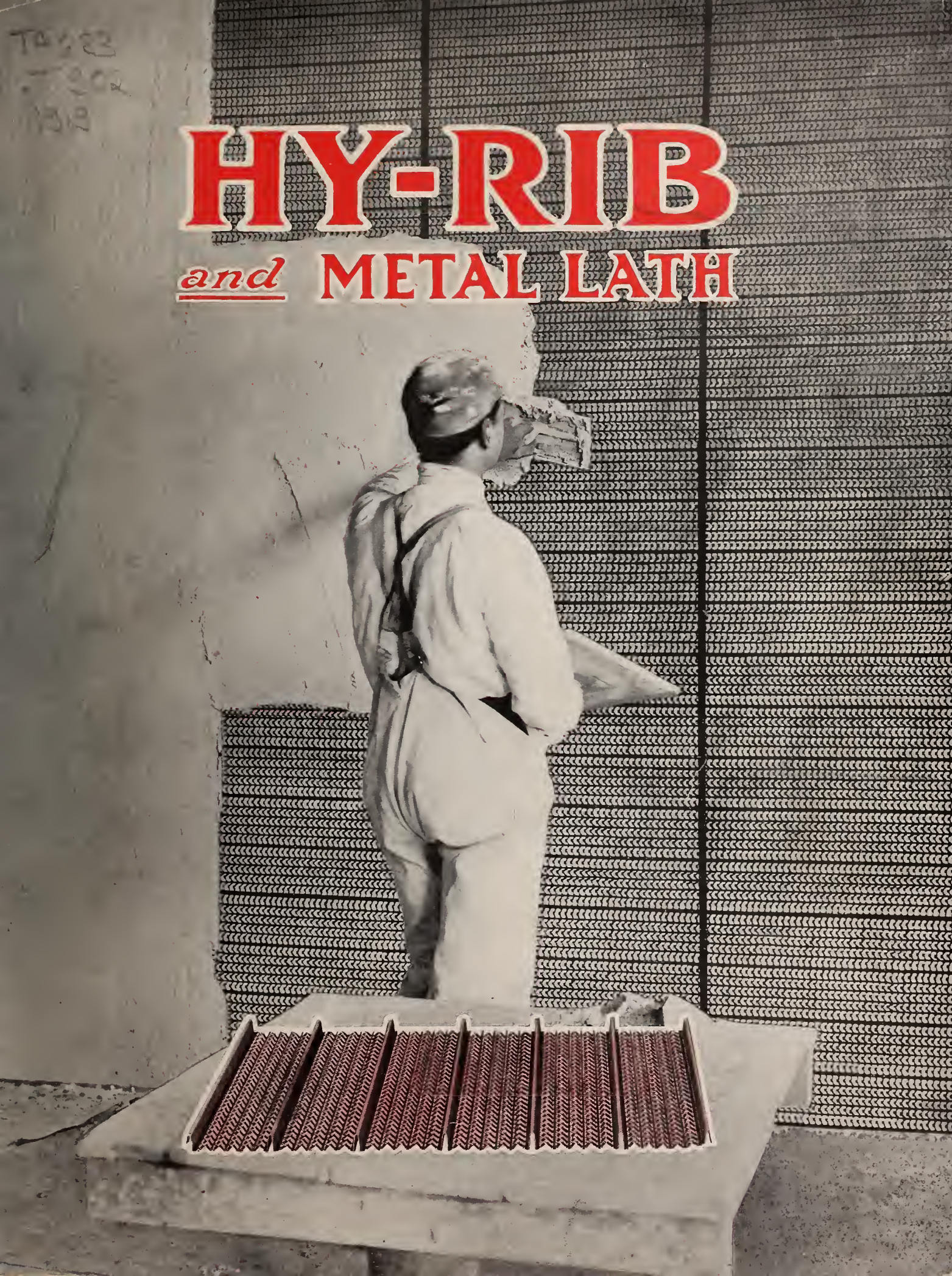
HY-RIB

and METAL LATH



Hy-Rib *and* Metal Lath

for

Concrete, Stucco *and* Plaster

IN ROOFS, FLOORS, WALLS, SIDINGS
PARTITIONS, CEILINGS, FURRING
ARCHES, CONDUITS AND TANKS

Seventeenth Edition

TRUSCON STEEL COMPANY
(FORMERLY TRUSSED CONCRETE STEEL CO.)
YOUNGSTOWN, OHIO.
WAREHOUSES AND REPRESENTATIVES IN PRINCIPAL CITIES

Plant and General Sales Offices of Truscon Steel Company, Youngstown, O., where Hy-Rib and Metal Lath, Reinforcing Steel, Pressed Steel, Steel Windows, Steel Buildings, Etc., are manufactured and stocked. Warehouses, sales offices and distributors in principal cities. This plant is built with Hy-Rib concrete roofs and walls, and steel windows.

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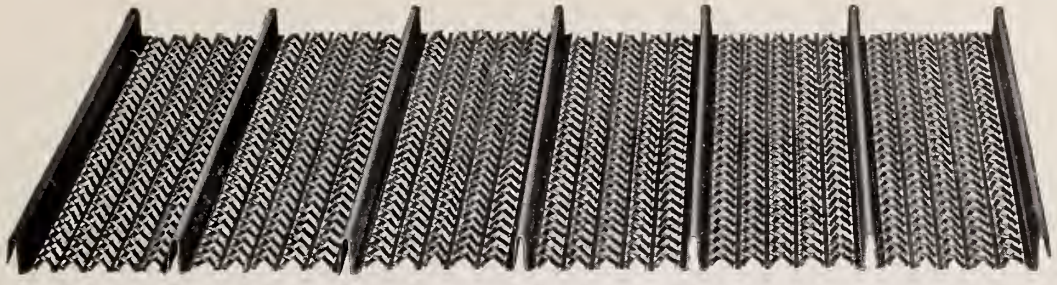
METAL LATH

Because *Metal Lasts*



HY-RIB AND METAL LATH

Hy-Rib is a steel mesh stiffened by rigid ribs all manufactured from a single plate of steel. The Hy-Rib and Metal Lath line includes all depths and weights to exactly meet all requirements (see following pages). The mesh of the Hy-Rib and Lath provides a perfect key for the plaster, and a rigid surface to work against.

In concrete floors and roofs Hy-Rib (using $1\frac{5}{16}$" and $1\frac{1}{2}$") provides thorough reinforcement and eliminates forms. In sidings, partitions and ceilings Hy-Rib and Metal Lath permit wide spacing of supports, saving in channels and wiring. For arches and tanks $1\frac{5}{16}$" Hy-Rib is furnished curved by our factory (see page 7).

Why You Should Use The Hy-Rib Line

Eliminates all forms for concrete.
Saves channels and wiring.
Reinforces the concrete and plaster.
Insures fireproofness and permanence.
Permits wide spacing of supports.
Reduces weight of construction.
Increases available floor space.
Saves time, labor and material.

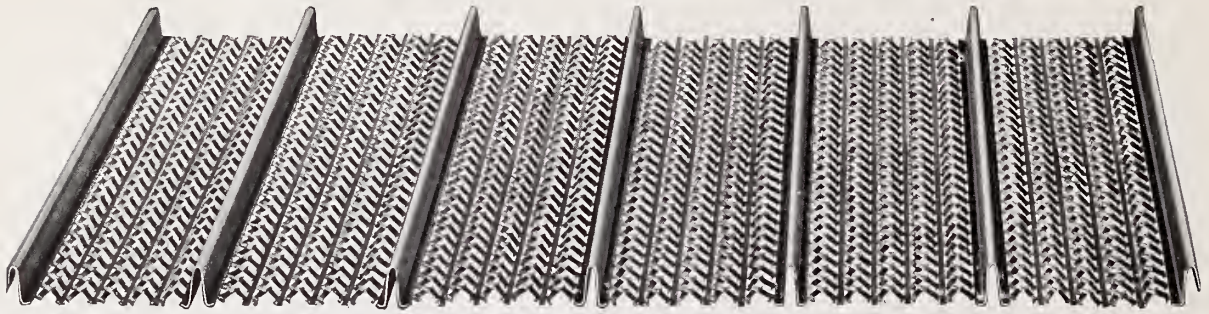
Where You Should Use Hy-Rib

In all buildings, large or small—in roofs, floors, walls, sidings, partitions, ceilings and furring; in arched floors, culverts, conduits, sewers, silos and tanks.

The Hy-Rib line lowers the cost of building because it eliminates forms, requires less labor, uses less materials and thus saves time in erection. Hy-Rib provides an enduring fireproof construction that is more economical than short-lived materials which burn, decay and depreciate.

This book is arranged in sections starting with general descriptions of Hy-Rib products, followed by their general applications, such as roofs, floors, sidings, partitions, ceilings, etc. It is impossible within space limitations to show the hundreds of uses of Hy-Rib and Metal Lath products, nor to go into all the details of the general applications. We invite inquiries from prospective builders as to their particular requirements, and will gladly furnish without obligation detailed suggestions on the use of these products.

DEEP-RIBBED TYPES OF HY-RIB



15/16" HY-RIB (SEVEN-RIB). Ribs 15/16 in. high, 4 in. apart; sheets 24 in. wide. Gauges 24, 25 or 28—Standard lengths, 6, 8, 10 and 12 feet.

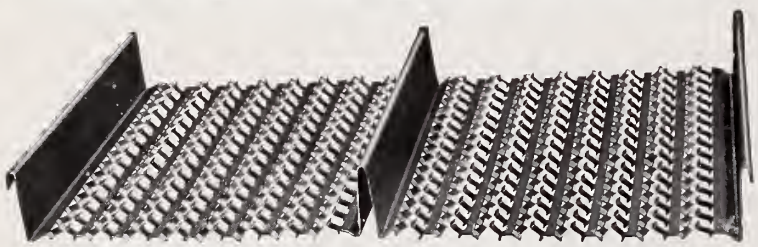
15/16" Hy-Rib, flat or curved, is generally used for reinforcing concrete floors, roofs, culverts, tanks, etc., also for the wider spans of ceilings and sidings and for the higher partitions built without channels.

13/16" Hy-Rib is used in partitions without channels and for sidings and ceilings.

1½" Hy-Rib is used in the heavier-loaded and wider spans of roofs and floors.

All types are useful for furring where considerable air space is desired.

13/16" HY-RIB (THREE RIB). Ribs 13/16 in. high, 8 in. apart; sheets 16 in. wide. Gauges (U. S. Stand.) 24, 26 or 28—Standard lengths, 6, 8, 10 and 12 feet.



1½" HY-RIB (DEEP-RIB). Ribs 1½ in. high, 7 in. apart; sheets 14 in. wide. Gauges (U. S. Stand.) 24 or 26—Standard lengths, 6, 8, 10 and 12 feet.

Properties of Hy-Rib

Type of Hy-Rib	Formerly Called	Height of Ribs	Spacing of Ribs	Width of Sheets	Gauge Nos. U. S. Stand.
1½" Hy-Rib	Deep-Rib	1½"	7"	14"	24, 26
15/16" Hy-Rib	7-Rib	15/16"	4"	24"	24, 26, 28
13/16" Hy-Rib	3-Rib	13/16"	8"	16"	24, 26, 28

Other gauges are furnished on special order.

Standard lengths, 6, 8, 10 and 12 feet.

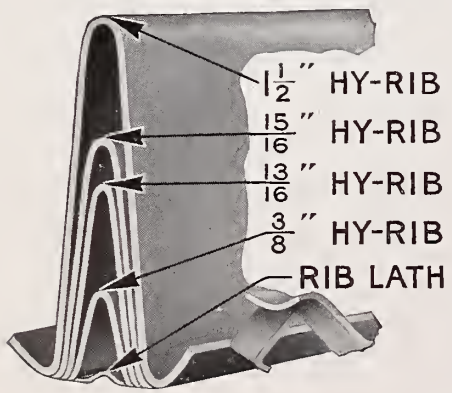
Other lengths are cut from standard lengths without charge except for waste.

In ordering no allowance need be made for side laps, as these are provided in the Hy-Rib. Allow 2" for end laps where splice occurs over supports; otherwise, eight inches.

1½" and 15/16" Hy-Rib are shipped in bundles of eight sheets; 13/16" and 3/8" Hy-Rib in bundles of sixteen sheets.

Hy-Rib is supplied either painted or unpainted; in Open Hearth or Copper Bearing Steel.

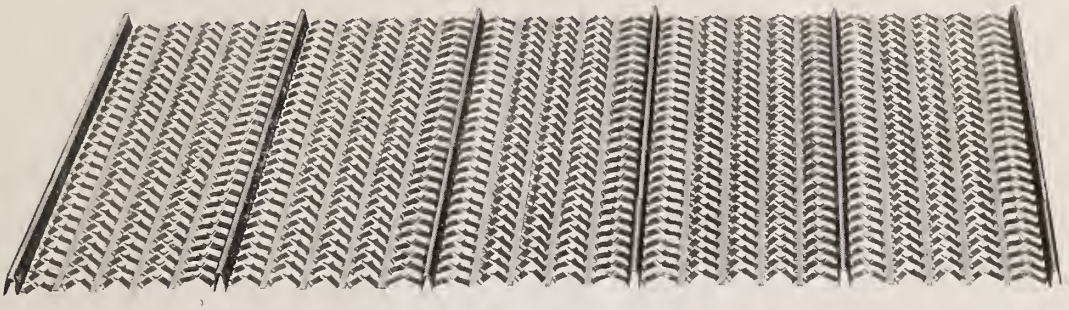
15/16" Hy-Rib (only) is furnished curved to any radius greater than 13 inches in any segment less than one-third circle.



It's the Depth of the Ribs that Counts

Specify Hy-Rib by its depth. Choose the depth of ribs that most closely meets your exact requirements. Our complete line includes all depths from flat metal lath to Hy-Rib with 1½" ribs: three types of deep Hy-Ribs; three types of Hy-Rib Laths; two types of Diamond Lath—all in various gauges. The correct material at an economical cost is thus assured for every possible use in building construction.

HY-RIB METAL LATHS



⅜" HY-RIB LATH. Ribs ⅜ in. high, 4 in. apart; sheets 20 in. wide. Gauges (U. S. Stand.) 24, 26 or 28—Standard lengths, 6, 8, 10 and 12 feet

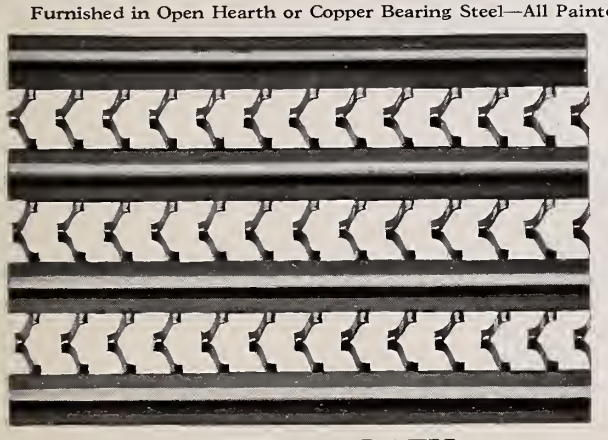
⅜" HY-RIB LATH

⅜" Hy-Rib Lath is a self-furring lath, permits wide spacing of studs and saves channels and wiring. Used generally for stucco and plaster work in ceilings, partitions with channels, sidings, furring, etc.

Furnished in Open Hearth or Copper Bearing Steel—All Painted.

Gauge	Weight per Square Yard	Stud spacing for walls and partitions	Spacing of supports for ceilings
28	3.57 lbs.	24" to 30"	22" to 26"
26	4.28 lbs.	32" to 36"	30" to 33"
24	5.71 lbs.	36" to 42"	33" to 35"

Width—20 inches. Lengths—6, 8, 10 and 12 feet.
Shipped in bundles of 16 sheets.



1-A HY-RIB LATH

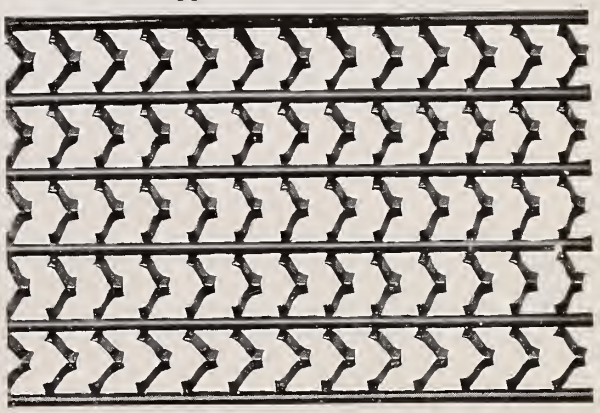
One of the most popular laths for plaster and stucco. Permits wide stud spacing and saves plaster. A rigid surface to work against, and a perfect key for the plaster. Straight edges save lath in the laps.

Size of sheets—15⅝ x 96 inches.

Shipped in bundles containing 16 sheets, or 18½ yards.

Grade	Weight per Square Yard	Stud spacing for walls (c. to c.)	Joist spacing for ceilings (c. to c.)
1-A Hy-Rib Lath	3.66 lbs	18 to 24 inches	16 to 22 inches

Furnished in Open Hearth or Copper Bearing Steel—All Painted.



STANDARD RIB LATH

A ribbed steel lath of medium weight, generally useful in building work. Provides a perfect clinch for plaster and presents a flat, rigid surface to work against. Saves labor and materials. Easy to handle and install.

Size of sheets—21 x 96 inches.

Shipped in bundles containing 12 sheets, or 18½ yards.

Grade	Weight per Square Yard	Stud spacing for walls (c. to c.)	Joist spacing for ceilings (c. to c.)
Rib Lath No. 1	2.74 lbs.	14" to 16"	12" to 14"
Rib Lath No. 2	3.42 lbs.	16" to 20"	14" to 18"
Rib Lath No. 4	4.10 lbs.	18" to 24"	16" to 22"

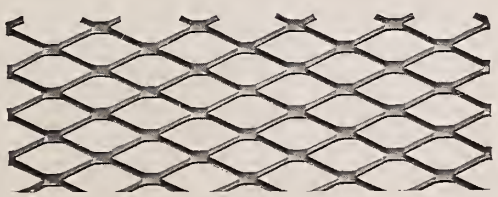
Furnished in Open Hearth or Copper Bearing Steel—All Painted.

DETROIT DIAMOND LATH

Size of Sheets—24 x 96 inches.
Shipped in bundles of 15 sheets or 26⅔ yards.

Gauge No.	Weight per Square Yard Painted	Weight per Square Yard Galvanized
27	2.48 lbs.	2.88 lbs.
26	2.68 lbs.	3.08 lbs.
25	3.10 lbs.	3.50 lbs.
24	3.50 lbs.	3.90 lbs.

Furnished in Open Hearth or Copper Bearing Steel. Painted or Galvanized before Expansion.



UNIVERSAL DIAMOND LATH

Size of Sheets—28 x 96 inches.
Shipped in bundles of 15 sheets, or 26⅔ yards.

Gauge No.	Weight per Square Yard Painted	Weight per Square Yard Galvanized
26	2.30 lbs.	2.70 lbs.
24	3.00 lbs.	3.40 lbs.

Furnished in Open Hearth or Copper Bearing Steel. Painted or Galvanized Before Expansion.

TRUSCON PRESSED STEEL STUDS

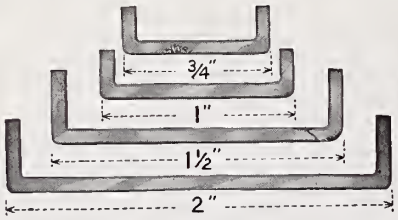
SMALL CHANNELS are used in solid partitions, ceilings, furring, etc. Furnished without prongs in sizes of ¾", 1", 1½" and 2"; with prongs in 2" size.

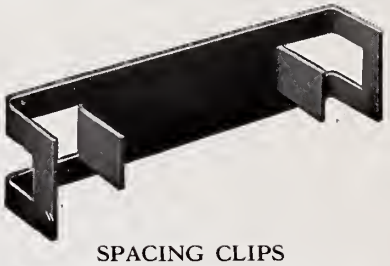
HOLLOW STUDS are formed of two ¾" Steel Channels held rigidly together by spacing clips. The hollow studs are furnished completely assembled, or with channels and spacing clips separate for assembling on the job. These hollow studs are open so as to permit rapid wiring of the lath and allow passage of conduits.

PRESSED STEEL STUDS with prongs are used for bearing partitions, walls, ceilings, etc. The various sizes give a wide range of carrying capacity. Cap and Sill Channels can also be furnished for the various sizes of studs.

Channels without prongs ¾", 1", 1½", 2"

2" Channels with prongs





SPACING CLIPS

Spacing Clips for hollow studs are furnished for assembling on the job or studs are furnished complete as shown.

Standard width, outside dimensions, 2", 3" and 4". Other widths can be furnished on special order.

Hollow Stud, 2", 3", 4"

SMALL TRUSCON PRESSED STEEL CHANNELS WITHOUT PRONGS

No. 16 Gauge

SIZE	¾"	1"	1½"	2"
Weight in lbs. per lineal foot	.276	.332	.442	.553

Stock lengths—12, 14, 16, 18 and 20 feet.
Shipped in bundles of 25 channels.

2-INCH PRESSED STEEL CHANNELS WITH PRONGS

No. 16 Gauge—Weight per lin. ft., 78 lbs.

3", 4", 5" and 6" Channels

3", 4", 5" and 6" H-studs

With or without prongs.

TRUSCON PRESSED STEEL H-STUDS AND I-BEAMS WITH OR WITHOUT PRONGS

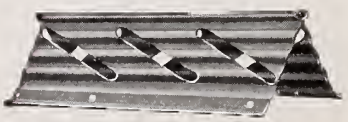
Section Index		Depth of Beam inches	Width of Flange inches	Weight per foot lbs.
B-64	16	6	4	4.4
	14			5.5
B-54	16	5	4	4.0
	14			5.0
B-43	16	4	3	3.1
	14			3.9
B-33	16	3	3	2.7
	14			3.4

TRUSCON PRESSED STEEL CHANNEL STUDS WITH OR WITHOUT PRONGS

Section Index		Height inches	Width of Flange inches	Weight per lin. foot lbs.
C-62	16	6	2	2.19
	14			2.74
C-52	16	5	2	1.98
	14			2.48
C-41½	16	4	1½	1.56
	14			1.95
C-31½	16	3	1½	1.35
	14			1.69
C-21	16	2	1	0.78

Detroit T-Rail Corner Bead

Detroit Steel Corner Bead



Rib Steel Corner Bead

Straight Point Metal Base Screed

CORNER BEADS

We furnish three different types of beads in lengths from 6 to 10 feet, to meet every requirement for the protection of plastered corners.

Detroit T-Rail Corner Bead — see illustration. Galvanized either before or after forming.

Detroit Steel Corner Bead — see illustration — galvanized after forming.

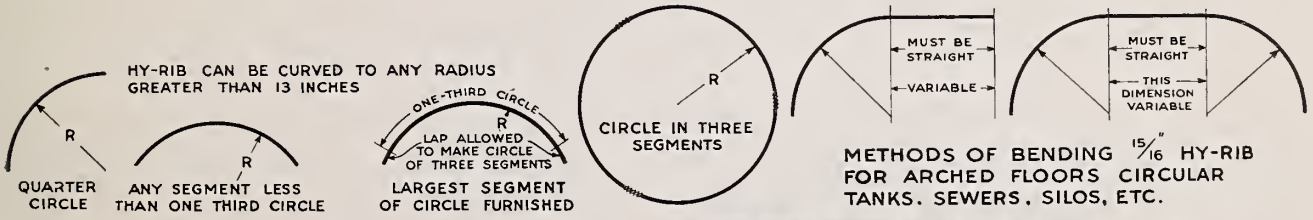
Rib Steel Corner Bead —see illustration—formed from galvanized sheets.

METAL BASE SCREEDS

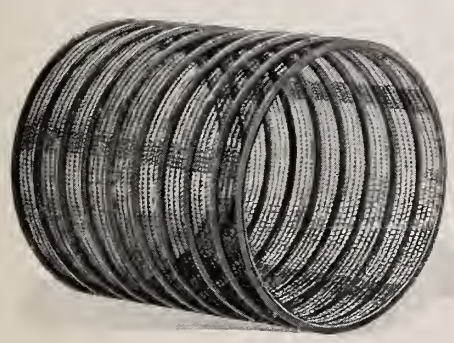
Metal Base Screeds are used in place of wood screeds between cement bases and plastered walls. They provide an excellent ground for the plaster and cement work. Furnished in three types: straight point, curved point, and slant point.

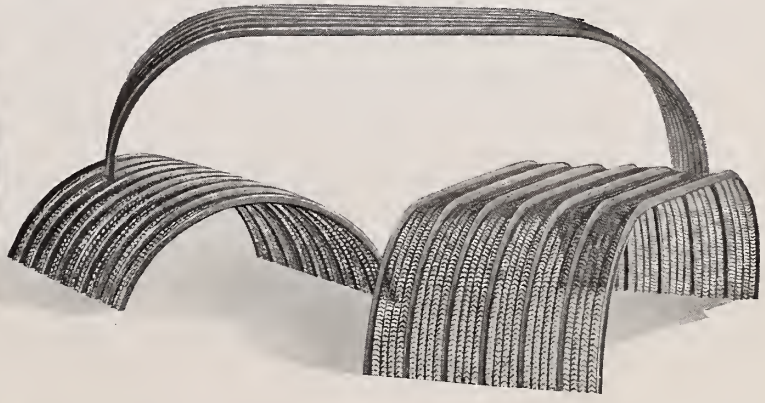
HY-RIB BENT TO CURVE

15/16" Hy-Rib (only) is furnished by our factory curved in the various ways indicated in the diagram below. Curved Hy-Rib effects large savings in concrete construction, as it entirely eliminates the great expense of circular forms.



METHODS OF BENDING 15/16" HY-RIB FOR ARCHED FLOORS CIRCULAR TANKS. SEWERS. SILOS, ETC.





Patented

HAND-POWER HY-RIB BENDER

FOR CURVING 13/16" AND 15/16" HY-RIB.

View shows 15/16" Hy-Rib in Machine.

The Hy-Rib Hand-Power Bender is readily operated by two men, so that Hy-Rib can be shipped in straight sheets and curved locally. This saves greatly in freight and crating charges, as curved Hy-Rib bulks largely and is much more expensive to pack and ship than straight sheets.

The Hand-Power Bender curves Hy-Rib to any circular arc with radius between 13 inches and 20 feet.

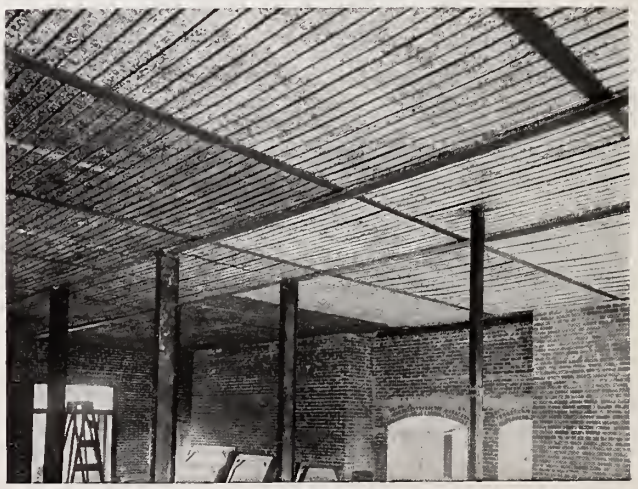
St. Mary's Hospital, Milwaukee, Wis.
Esenwein & Johnson, Archts. J. D. Gregg, Supervising Archt.
Arched Hy-Rib floors throughout. Hy-Rib ready for concreting.

Arched Hy-Rib floors, Hawaiian Pineapple Co., Honolulu, T. H.
View from below showing Hy-Rib ready for concreting.
Clear spans of 7′ 6″ without use of forms or supports.

Pouring concrete floor, reinforced with 1½″ Hy-Rib.
St. Andrew School, Singapore, Straits Settlements.
Note Chinese women carrying concrete in buckets.

Under side of Hy-Rib floor before plastering.
Edward Ford Plate Glass Co., Rossford, Ohio.
De Vore-McGormley Co., Engineers.

Westgate Common Mills, London, England.
Arched Hy-Rib before application of concrete.



Under side of Hy-Rib floor (Type C, p. 10) ready for plastering.
District Court House, Fall River, Mass.

Arched Hy-Rib Floors (Type D, page 10). Also Hy-Rib Ceilings, Furring, etc. Detroit Athletic Club, Detroit, Mich. Albert Kahn, Architect.

FLOORS

(For specifications and tables of carrying capacities of Hy-Rib floors, see Pages 15 to 17.)

In concrete floors, Hy-Rib eliminates forms and rigidly reinforces the concrete. It simplifies construction, saves time, reduces costs and provides flat or arched floors with any type of beam.

The use of Hy-Rib in floors is very simple. Lay the Hy-Rib over the supports with the mesh side down and pour on the concrete above. Only enough concrete flows through the mesh to secure a perfect clinch on the steel. The plaster is applied directly to the under surface. Hy-Rib provides in itself the forms and reinforcement for concrete, greatly reducing the cost of construction and saving time in erection.

Hy-Rib is manufactured with a rib along each side of the sheet, making a perfect interlocking splice when two sheets are joined. A similar interlocking splice is provided at the ends by allowing the two sheets to overlap. In this way absolute continuity of strength and reinforcement is provided throughout the entire floor surface.

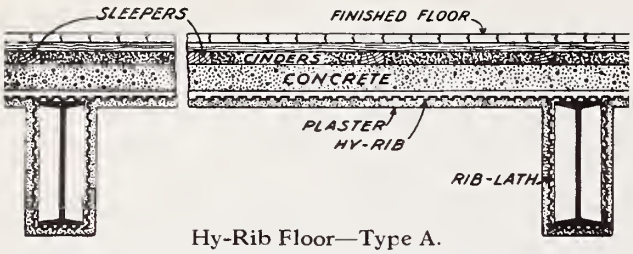
Practical builders know that forms are the most costly and troublesome part of concrete construction. By eliminating all forms, Hy-Rib greatly economizes construction, saving time, labor and money.

Only the deeper types of Hy-Rib ($1\frac{1}{2}''$ and $\frac{15}{16}''$) are ordinarily used in floors, but for short spans less than 3 feet other types may be used.

ARCHED FLOORS

All the expensive circular forms required in arched floor construction are eliminated by using Hy-Rib, which also provides a rigid, substantial reinforcement for the concrete.

Our shops furnish $\frac{15}{16}''$ Hy-Rib bent to the exact curve, ready to set in place between the beams. All types of arched floors are provided (see pages 7 to 11), by this shop-curved Hy-Rib. Note that in many instances the Hy-Rib also furnishes the forms for the sides of the beams, as well as the forms and reinforcement for the floors. The shop bending does away with all special field labor and complicated circular forms.

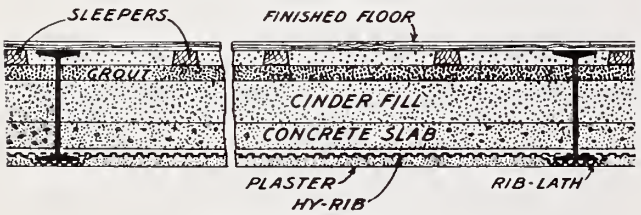


Hy-Rib Floor—Type A.

Hy-Rib sheets are laid on top of steel beams, concrete poured in and under surface plastered; no forms are used. Solid concrete or hollow tile may be substituted for fireproofing of steel beam.

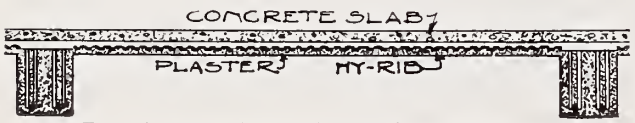
Hy-Rib Floor—Type B.

Finished concrete slab is flush with top of steel beam, giving greater head room below beams. Hy-Rib sheets are supported on the sides of the beam boxes used as forms for the steel beam fireproofing. No other forms are necessary.



Hy-Rib Floor—Type C.

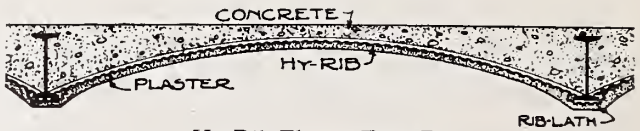
Flat ceiling is secured by constructing Hy-Rib slab on the lower flange of beam. A light cinder fill over the slab brings the finished floor flush with top of steel beam, and no forms are necessary.



Hy-Rib Floors with Reinforced Concrete Beams—Types A, B and C.

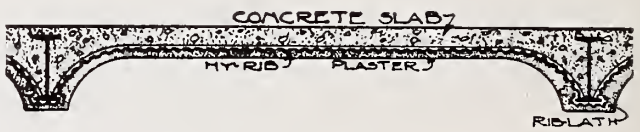
Hy-Rib sheets are supported on the sides of the beam boxes used as forms for the concrete beams; no other forms necessary. If Hy-Rib extends over concrete beams, punch out the lathing between the ribs to permit the filling of the beam.

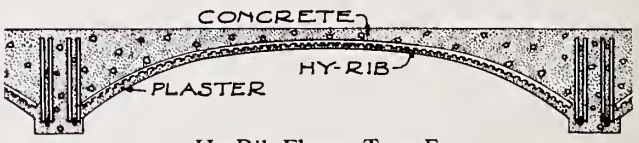
Concrete Bridge Floor reinforced with 1½" Hy-Rib—Viaduct over Nolan Creek, Belton, Texas. Hy-Rib in foreground ready for concreting; floor in background completed.



Hy-Rib Floor—Type D.

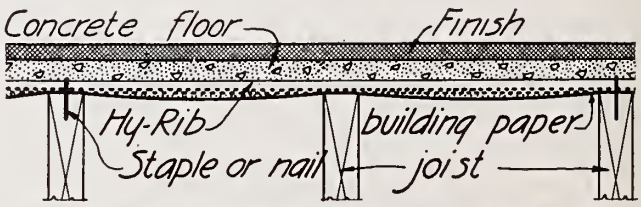
Ends of Hy-Rib sheets are curved (bending done in our shops) and rest on lower flange of beams. Hy-Rib provides the fireproofing of steel beams without the use of forms. With reinforced concrete beams the sides of the beam boxes are eliminated as the ends of the Hy-Rib sheets rest on the bottom board.





Hy-Rib Floor—Type E.

Arched concrete floors used for carrying heavy loads. Hy-Rib comes to the job bent to exact curve. Concrete is poured in above and plaster applied to the under surface. No forms are necessary for the concrete slabs or sides of beams.



Replacing Wood Flooring with Cement, Terrazo, Tile, Etc.

In entrance ways, lobbies, halls, bathrooms, etc., in old buildings, the wood flooring is removed and building paper is tacked to the joists. Hy-Rib is placed and concrete poured to proper thickness. This concrete furnishes the necessary base for tile, terrazo or composition flooring.

Arched Hy-Rib Floor—Union Street Ry., Boston, Mass. Hy-Rib provides the forms for slab and sides of beams. Only formwork required is board at bottom of reinforced concrete beam and a few lines of joists as temporary supports for Hy-Rib.

Load of 1,400 lbs. per sq. ft. after Fire Test of 1700° for four hours.

New York Fire Test on Hy-Rib Arch

(Compiled from official report of Fire, Load and Water Test made upon cinder concrete floor arches at Columbia Fire Testing Station, New York. Test was conducted by Ira H. Woolson, E. M., in co-operation with City Building Bureaus.)

Span of segmental arch, 8 feet; thickness at crown, 4½ inches; total depth at haunches, 15 inches. Concrete—Portland cement 1 part, sand 1 part, unsifted cinders 6 parts.

The concrete floor arch reinforced with Hy-Rib was subjected to a continuous fire below the floor for four hours at an average temperature of 1700 degrees F., floor carrying at the same time a distributed load of 150 lbs. per square foot. At the end of the four hours the under side of floor while still red hot was subjected to an 1⅛ inch stream of cold water for five minutes. Then the upper side of the floor was flooded and afterwards the stream was again applied on the under side for five minutes.

After cooling, the arch was subjected to a load of 600 lbs. per square foot. Later a 6 ft. wide section was cut out of the floor arch and this section was loaded to 1400 lbs. per square foot. Under this severe load the deflection was only ¼ inch.

As a result of this test the Building Departments of Manhattan and Brooklyn have approved the use of cinder concrete arches reinforced with Hy-Rib, 4 inches thick at the crown, for loads up to 350 lbs. per sq. ft. and span of 8 feet.

Loads Carried by Arched Hy-Rib Floors

Arched Concrete Floors are capable of carrying very heavy loads, as has been frequently demonstrated in actual tests. (See New York Fire Test, on this page.) Curved Hy-Rib is an ideal type of combined centering and reinforcement for arched floors. Expensive circular forms are eliminated and the Hy-Rib, curved in our own shops, is exceptionally economical in placing and handling. Curved Hy-Rib sheets have far greater stiffness as centering than straight sheets, thus permitting of a wider spacing of temporary supports.

The theoretical design of arches assumes absolutely rigid abutments. The thrust per lineal foot may then be figured by means of the following formula:

$$T = \frac{1.5\ WL^2}{R}$$

Where W = the load per square foot
L = span in feet between supports, and
R = rise of the arch in inches.

The crown thickness may be determined by the following formula:

$$C = \frac{T}{12S}$$

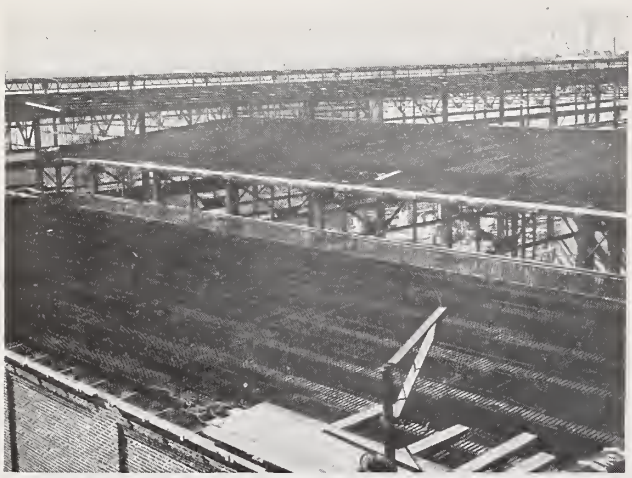
Where C = the crown thickness in inches
T = the thrust per lineal foot, and
S = the allowable fibre stress per sq. inch.

In actual building construction, it is practically impossible to secure absolutely rigid abutments, unless tie rods are used, and the crown thickness must therefore be materially increased over the depth determined by the above formula. There is no question that an Arched Concrete Floor is capable of carrying considerably more load than a flat slab of the same thickness. For loads on flat slabs, see pages 16 and 17.

Our engineers have had wide experience in the design of arched floors under varying conditions. We would be glad to submit our detailed suggestions on the design of arched floors to meet any particular condition.

Arched Hy-Rib Floor in Joseph Bendt Store, Kenosha, Wis., used in conjunction with reinforced concrete beams.

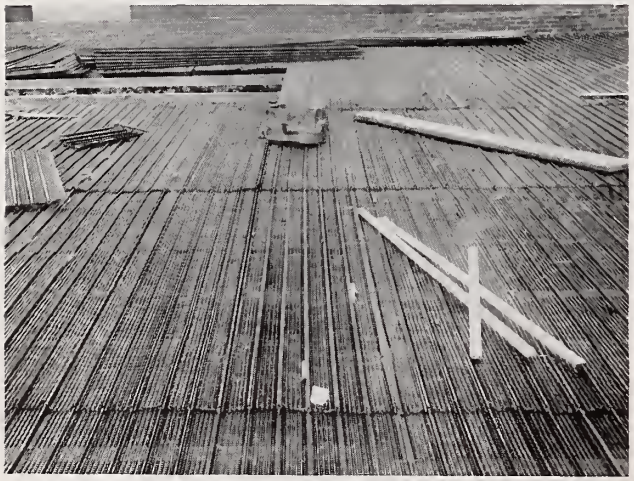
K. of P. Orphanage, Weatherford, Texas. Hy-Rib Floor ready for concreting.



Hy-Rib Roofs before Concreting. Edward Ford Plate Glass Co., Rossford, O. DeVore-McGormley Co., Toledo, O., Engineers. Over 1,000,000 sq. ft. of Hy-Rib Construction.

Hy-Rib Concrete Sawtooth Roofs and Side Walls, Western Sugar Refining Co., San Francisco, Cal.

Hy-Rib Roofs, Featherstone Foundry, Chicago, Ill. Arnold Co., Engineers.
Note Steel Purlins ready for Hy-Rib Sheets, and Hy-Rib ready for Concrete.



Hy-Rib Concrete Roof, Pennsylvania Rubber Co., Jeannette, Pa. W. G. Wilkins Co., Architects and Engineers.

Hy-Rib Concrete Saw-tooth Roofs and Sidings. Jackson Cushion Spring Co., Jackson, Mich.

Hy-Rib Roof for Packard Motor Car Co., Detroit, Mich.
Albert Kahn, Architect. Ernest Wilby, Associate.

Hy-Rib Roof ready for concreting, Hayden Pump Co., Quincy, Ill.
No forms required.

ROOFS

(For specifications and tables of carrying capacities of Hy-Rib roofs, see Pages 15 to 17.)

Thin concrete roofs, light in weight, are built with Hy-Rib without the use of forms. The great saving in dead weight reduces the size and cost of purlins, roof trusses, columns and foundations.

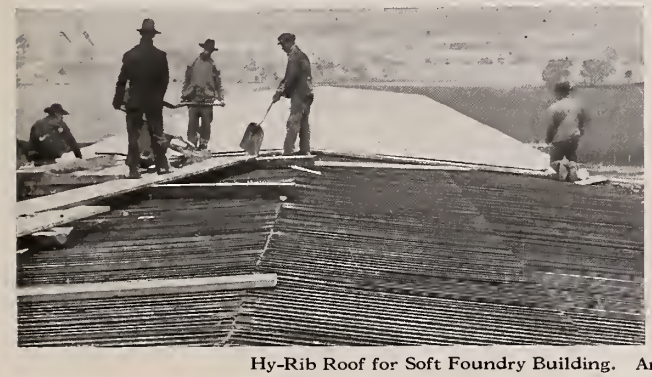
This thin slab also saves in concrete materials and in the labor of placing them.

No forms are required with Hy-Rib concrete roofs. Consider the tremendous saving in false work, especially in industrial plants, where the roofs are often 20 to 50 feet above the ground. Hy-Rib provides a perfect fireproof construction at economical cost—easily and rapidly installed.

The construction is very simple. Hy-Rib sheets are placed over purlins, concrete applied and under surface plastered. The simple scaffolding for the plasterers is readily hung from the steel trusses.

The permanent nature of Hy-Rib concrete makes it far more economical than materials which rust, decay or depreciate. Hy-Rib concrete roofs entail no expense for maintenance. Owing to the insulating qualities of the concrete construction, a marked saving in cost of heating the building is effected.

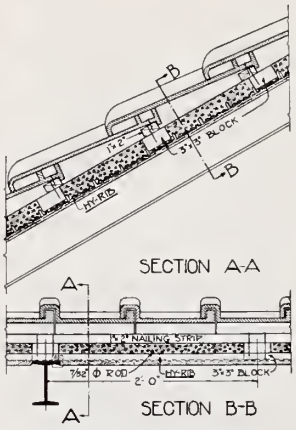
Only the deeper types of Hy-Rib (1½″ and 15⁄16″) are ordinarily used in roofs, but for short spans less than 3 feet other types may be used.



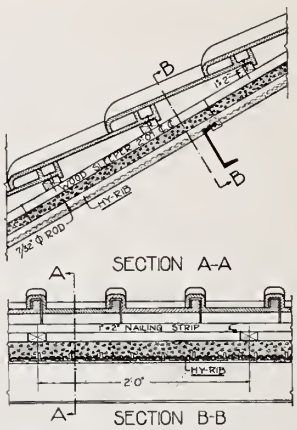
Hy-Rib Roof for Soft Foundry Building. American Car & Foundry Co., Berwick, Pa.

HY-RIB AND METAL LATH

Concreting 1½" Hy-Rib on roof of a building at our Youngstown Plant.

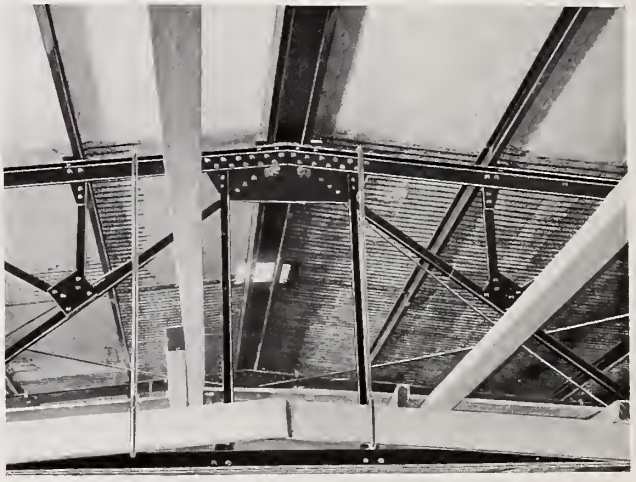


DETAIL OF ROOF TILE SUPPORTS WITH RIBS OF HY-RIB EXTENDING HORIZONTALLY

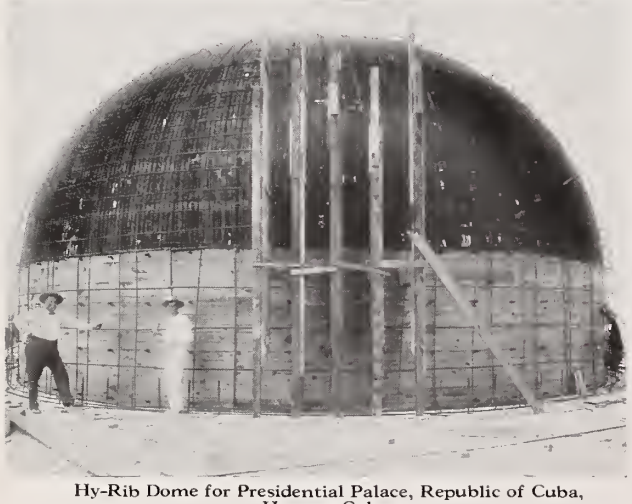


DETAIL OF ROOF TILE SUPPORTS WITH RIBS OF HY-RIB EXTENDING IN DIRECTION OF ROOF SLOPE

Hy-Rib Saw-tooth Roofs before concreting., Oliver Chilled Plow Co., Hamilton, Ont.
David Dick & Son, Contractors. Prack & Perrine, Architects.



Under side of Hy-Rib Roof, partly plastered.
Note plasterer's scaffold suspended from steel truss.
Only one coat of Cement Plaster necessary.



Hy-Rib Dome for Presidential Palace, Republic of Cuba, Havana, Cuba.

Roof of 1½" Hy-Rib, Fairview Mausoleum, Milwaukee, Wis.

SPECIFICATIONS FOR HY-RIB FLOORS and ROOFS

REINFORCING STEEL

Provide Hy-Rib, Type....., Gauge..... for all floors and roofs.

Place all Hy-Rib sheets with the lath surface downward. Interlock all adjoining sheets of Hy-Rib at sides and ends. Sheets shall be securely fastened together every 24 inches along the sides and at every rib at the ends by wiring or by clinching of the lapped ribs with special punch. Where end splices occur between supports, splices in adjacent rows must be at least two feet apart. Allow a lap of 2 inches where splices occur over supports, otherwise 8 inches.

Hy-Rib shall be rigidly attached to steel framing by means of clips or strong galvanized wire, and to wood framing by staples or nails. These attachments shall be located at the interlocking side splices at least every 12 inches for $\frac{15}{16}$" Hy-Rib, and every 14 inches for 1½" Hy-Rib.

Hy-Rib sheets shall be supported as required by centering tables, page 17, while concrete is being poured, and, if necessary, temporary supports shall be provided.

No loads shall be placed on Hy-Rib before concreting and not until the concrete has thoroughly set. Planks for trucking shall be so arranged as to come over supports.

MATERIALS

The materials composing the concrete or plaster shall consist of:

(a) Portland Cement which has been carefully tested and found to satisfactorily meet the requirements of the Specifications of the American Society for Testing Materials.

(b) Sand which is practically free from organic matter and uniformly graded in size from coarse to fine.

(c) Broken Stone or Gravel which is good, hard, dense stone—clean and of such size as to pass through a half-inch ring.

(d) Hydrated Lime which is uniform in quality and perfectly hydrated.

APPLICATION

Cover the Hy-Rib sheets with a concrete made up as follows:

Portland Cement	1 part
Sand	2 parts
Broken Stone	4 parts

The surface shall be floated smooth to receive a standard roofing applied as directed by manufacturers. When the concrete has set sufficiently, plaster the under side to a thickness of ⅜ to ½ inch with the following mixture:

Portland Cement	1 part
Sand	3 parts
Lime Paste	1/10 part

The cement and hydrated lime, after being thoroughly mixed dry to uniform color, shall be added to the dry sand and the whole manipulated until evenly mixed. Add water to secure proper working consistency and sufficient long cow hair to key. The mortar shall be applied within 30 minutes from time of mixing.

PROTECTION

The concrete work shall be thoroughly protected from too rapid drying and the direct rays of the sun by means of damp burlap or canvas, or by sprinkling. The concrete slab must be kept thoroughly moist in this way for at least two days after placing.

EXPANSION RODS

Where the width of the building is over 200 feet in a direction at right angles to the main ribs of the Hy-Rib place $\frac{7}{32}$ or ¼ inch round rods, spaced 30 inches apart, on top of the high ribs and at right angles to them.

SPECIFICATIONS FOR ARCHED FLOORS

Specifications for arched floors are the same as above except as indicated in following paragraph:

Where curved sheets of Hy-Rib are used for reinforcement of concrete arches it is not necessary to interlock the sheets along the sides, but side ribs shall be thoroughly wired together. Otherwise splice and place Hy-Rib as provided for under Floors and Roofs.

(See also Pages 7, 9 and 11)

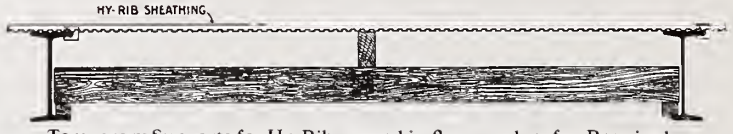
EXPLANATION OF HY-RIB SLAB TABLES

(Page 17)

The left-hand table on Page 17 gives safe loads carried by slab after the concrete has thoroughly set. Safe loads include weight of slab. In floors and roofs weight of the slab must be deducted from the loads given to determine the safe live load. The right-hand tables are used to determine the load Hy-Rib will carry as centering before the concrete has set.

Example: Given a 6 ft. span to carry a safe live load of 110 lbs. per sq. ft. Use tables on Page 17. Opposite 2½-inch slab reinforced with No. 24 15/16″ Hy-Rib read 152 lbs. load. Deduct from this load 36 lbs. (Weight of 2½-inch slab + ½-inch cement plaster underneath), giving safe live load of 116 lbs.

In table at right opposite 2½-inch slab note that No. 24 15/16″ Hy-Rib as centering will not support the weight of 2½ inches of wet concrete on 6 ft. span, but will carry it on a span as great as 3′ 4″. Therefore, use one temporary line of shoring down the center of the span. This shoring is removed after concrete has set.



Temporary Supports for Hy-Rib as used in floors and roofs—Required only in special cases. See right-hand tables, page 17.

DESIGNING DATA FOR HY-RIB.

Hy-Rib is manufactured from the highest grade of Open Hearth Steel Plates, also from Copper Bearing Steel.

Type of Hy-Rib	Cross-Sectional Area of Steel per foot of width including side laps (square inches).			Distance of Center of Gravity from Flat Side
	28 Gauge	26 Gauge	24 Gauge	
13/16″ Hy-Rib	.137	.164	.219	.33 in.
1½″ Hy-Rib		.177	.236	.50 in.

WEIGHTS OF HY-RIB (lbs. per sq. ft.)

Type of Hy-Rib	24 Gauge	26 Gauge	28 Gauge
1½″ Hy-Rib	1.072	.804	
15/16″ Hy-Rib	1.057	.793	.661
13/16″ Hy-Rib	.793	.595	.496
⅜″ Hy-Rib	.635	.476	.397

Terrific heat of 160 gallons of burning kerosene has no effect on Hy-Rib Concrete Tank. Size: 5′ x 5′ x 5′, 3 ins. thick.

2 in. Concrete Slab reinforced with Hy-Rib, 5′ ¾″ clear span. Designed for 112 lbs. per sq. ft. Load carried 625 lbs. per sq. ft.

FIRE AND LOAD TESTS CONDUCTED BY HOWARTH ERSKINE, LTD., SINGAPORE, STRAITS SETTLEMENTS.

15/16" HY-RIB (7-RIB) TABLES

Safe Loads in Pounds per Square Foot for Slabs Reinforced with 15/16" Hy-Rib.

(Safe loads include weight of slab. For safe live loads, deduct weight of slab.)

Thickness of Slabs above Base of Hy-Rib	Gauge No. 15/16" Hy-Rib	Moment of resistance per foot of width	SPAN IN FEET								
			3	4	5	6	7	8	9	10	11
2" thick slab	28	3140	291	164	104	73					
Wt.=24 lbs.	26	3770	348	196	125	87					
per sq. ft.	24	5020	464	261	167	117					
2½" thick slab	28	4080	377	212	136	94	69	53			
Wt.=30 lbs.	26	4900	453	255	163	113	83	63			
per sq. ft.	24	6530	605	340	217	152	111	85			
3" thick slab	28	5020	464	261	167	116	85	65			
Wt.=36 lbs.	26	6020	558	314	200	140	102	78	62		
per sq. ft.	24	8020	742	417	267	186	136	104	82		
3½" thick slab	28	5960	551	310	198	138	101	77			
Wt.=42 lbs.	26	7150	660	371	238	165	122	93	73		
per sq. ft.	24	9530	882	496	317	221	162	124	98	79	
4" thick slab	28	6900	638	358	230	160	117	90	71		
Wt.=48 lbs.	26	8270	768	431	276	192	140	108	86	69	
per sq. ft.	24	11030	1020	572	367	256	188	144	114	92	76

B. M.=$\frac{1}{10}$ wl². For B. M.=$\frac{1}{12}$ wl², add 20% to above loads.
For B. M.=$\frac{1}{8}$ wl², deduct 20% from above loads.

Maximum Spans for 15/16" Hy-Rib as Centering to Support Wet Concrete

Maximum Spans for Centering	Gauge No. 15/16" Hy-Rib	Thickness of Slabs above Base of Hy-Rib
3'–0"	28	2" thick slab
3'–3"	26	Wt.=24 lbs.
3'–9"	24	per sq. ft.
2'–8"	28	2½" thick slab
2'–11"	26	Wt.=30 lbs.
3'–4"	24	per sq. ft.
2'–5"	28	3" thick slab
2'–8"	26	Wt.=36 lbs.
3'–1"	24	per sq. ft.
2'–3"	28	3½" thick slab
2'–6"	26	Wt.=42 lbs.
2'–10"	24	per sq. ft.
2'–1"	28	4" thick slab
2'–4"	26	Wt.=48 lbs.
2'–8"	24	per sq. ft.

For greater spans use temporary supports.

1½" HY-RIB (DEEP-RIB) TABLES

Safe Loads in Pounds per Square Foot for Slabs Reinforced with 1½" Hy-Rib.

(Safe loads include weight of slab. For safe live loads, deduct weight of slab.)

Thickness of Slabs above Base of Hy-Rib	Gauge No. 1½" Hy-Rib	Moment of resistance per foot of width	SPAN IN FEET										
			3	4	5	6	7	8	9	10	11	12	13
2½" thick slab													
Wt.=30 lbs.	26	4870	451	254	162	113	83	63					
per sq. ft.	24	6500	601	338	216	150	110	85					
3" thick slab													
Wt.=36 lbs.	26	6090	563	317	203	141	104	79	63				
per sq. ft.	24	8120	751	423	270	188	138	106	84				
3½" thick slab													
Wt.=42 lbs.	26	7310	676	380	243	169	124	95	75				
per sq. ft.	24	9740	901	508	324	225	165	127	100	81			
4" thick slab													
Wt.=48 lbs.	26	8530	789	443	284	197	145	111	88	71			
per sq. ft.	24	11370	1052	592	379	263	194	148	117	95	78		
4½" thick slab													
Wt.=54 lbs.	26	9740	901	508	324	225	165	126	100	81			
per sq. ft.	24	12990	1202	678	433	301	221	170	134	108	89	75	
5" thick slab													
Wt.=60 lbs.	26	10960	1013	570	365	254	186	142	113	91			
per sq. ft.	24	14620	1352	761	487	338	248	190	152	122	100	84	
5½" thick slab													
Wt.=66 lbs.	26	12180	1123	632	406	281	207	158	125	102			
per sq. ft.	24	16240	1500	845	541	376	276	211	167	135	112	94	

B. M.=$\frac{1}{10}$wl². For B. M.=$\frac{1}{12}$wl², add 20% to above loads.
For B. M.=$\frac{1}{8}$ wl², deduct 20% from above loads.

Maximum Spans for 1½" Hy-Rib as Centering to Support Wet Concrete

Maximum Spans for Centering	Gauge No. 1½" Hy-Rib	Thickness of Slabs above Base of Hy-Rib
3'–10"	26	2½" thick slab
4'–5"	24	Wt.=30 lbs. per sq. ft.
3'–6"	26	3" thick slab
4'–1"	24	Wt.=36 lbs. per sq. ft.
3'–3"	26	3½" thick slab
3'–9"	24	Wt.=42 lbs. per sq. ft.
3'–0"	26	4" thick slab
3'–6"	24	Wt.=48 lbs. per sq. ft.
2'–10"	26	4½" thick slabs
3'–4"	24	Wt.=54 lbs. per sq. ft.
2'–8"	26	5" thick slab
3'–2"	24	Wt.=60 lbs. per sq. ft.
2'–7"	26	5½" thick slab Wt.=
3'–0"	24	66 lbs. per. sq. ft

For greater spans use temporary supports.

General Panoramic View of Curtis Bay Distilling Plant, Curtis Bay, Md. Hy-Rib Concrete Side Walls Used Throughout.

U. S. Bonded Warehouse, Curtis Bay Distillery.
Hy-Rib applied to side walls ready for plastering.

Cooperage Building, Curtis Bay Distillery.
Hy-Rib Concrete Reinforcement for Walls.

Hy-Rib Sidings of Grain Elevator, Husted Milling Co., Buffalo, N. Y.
A. E. Baxter & Co., Consulting Engineers. Monarch Engineering Co., Contractors. James G. Davis, Plastering Contractor.

Hy-Rib Concrete Sidings, Mark Manufacturing Co., Evanston, Ill.
Steel windows in walls and monitors furnished by Truscon Steel Co.

Texas State Fair Assoc., Dallas, Tex., Restaurant Row (500′ x 44′).
Hy-Rib Concrete Walls, Truscon Reinforced Concrete,
Steel Windows and Doors.

Sunset Publishing Co., San Francisco, Cal.
Geo. W. Kelhane, Architect.
The exterior concrete walls are built with Hy-Rib on wood studs.

WALLS AND SIDINGS

For specifications and details for walls of industrial buildings, see Pages 25 to 27.
For descriptions and details for stucco on wood studs for residences, etc., see Pages 28 to 39.
For overcoating old buildings, see Pages 36-37.

Monolithic concrete walls, costing one-half the price of brick, are built of Hy-Rib Metal Lath plastered with cement. Walls are only 2″ thick, and thus add 12 to 20 inches to the floor space on the interior as compared with brick or masonry walls. These walls have great strength and rigidity and are built without forms.

Hy-Rib concrete is ideal for sidings and curtain walls of industrial buildings, factories, power plants, warehouses, car barns, etc. Such a wall is much less expensive than other types of permanent construction, and much more economical than old-style constructions which rust, decay and require constant maintenance.

For stucco residences, garages, stores and all types of buildings, Hy-Rib Metal Lath furnishes ideal reinforcement. Studs to carry the weight of floors and roof are provided, the Hy-Rib Lath is attached directly to them and the cement plaster applied. The extreme stiffness of Hy-Rib permits wide spacing of the supporting members. For detailed information on stucco with wood studs, see Pages 28 to 39.

Hollow walls are readily obtained by applying Hy-Rib Lath and plastering it on the interior. A substantial air space for insulation is thus secured between the outer and inner wall. No furring is necessary, as would be required for ordinary brick or masonry. The air space makes a building that is easy to heat in winter and one that keeps cool in summer.

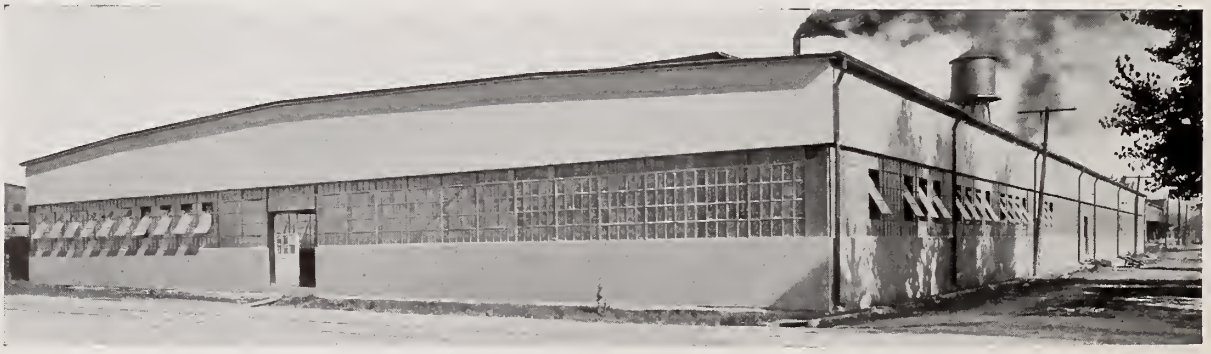
An old-style building with wooden sidings can be transformed into a modern stucco structure, by applying Hy-Rib Lath and plastering with cement—the ribs of Hy-Rib furnish the necessary furring. See Pages 36 and 37.

The Hy-Rib Laths (3/8″ and 1-A) are most generally used in walls, sidings and stucco—but for wider spacings of supports the deeper Hy-Ribs are recommended and for closer spacings lighter laths are suitable. See table, Page 27.

American Well and Prospecting Co., Corsicana, Texas. Hy-Rib Roofs and Sidings. Steel Windows Furnished by Truscon Steel Co.

Hy-Rib Concrete Roofs and Sidings, Industrial Works, Bay City, Mich. Albert Kahn, Architect.

Hy-Rib Sidings and Ceilings, Thawing Plant, Eastern Coal Dock Co., Greenwich Point, Philadelphia.



Hy-Rib Concrete Sidings, Favorite Stove & Range Co., Piqua, Ohio. William E. Russ, Architect.

Bureau of Standards Investigates Stucco

An extensive practical investigation is being conducted by the Bureau of Standards, of the United States Government on the permanency of stucco as applied to various bases and with various mixtures. A test structure 200 ft. long, 26 ft. wide and two stories high was divided into panels 10 x 15 ft. Metal lath was used in 19 panels, while the remaining 37 panels were of wood lath, plaster board, terra cotta tile, brick, monolithic concrete or gypsum block. Various mixtures of stucco were used.

Stucco was applied by a practical plasterer in the fall of 1915. Bulletin No. 70 of the Bureau of Standards reports conditions up to December 9, 1916. Of the 56 panels, only one —No. 15—has received a rating of "excellent" in all inspections. This panel is of *ribbed metal lath on metal furring attached directly to studs with lath back plastered between studs; stucco mixture (parts by weight), 1 cement, 0.1 high magnesian hydrated lime, 3 sand.

Summarizing the Report on Structural Condition in Bulletin No. 70, and considering percentage of panels rated "Fair" or better:

(1) Metal Lath attached to studs without sheathing and back-plastered has a full 100% rating.

(2) Metal Lath of all types of construction has a higher rating than all other materials, except brick and monolithic concrete, which are not comparable owing to much greater cost.

(3) A metal lath panel is the only one which has received a rating of "Excellent" in all inspection.

(4) Back-plastered metal lath attached to studs without sheathing shows better results than where wood sheathing is used.

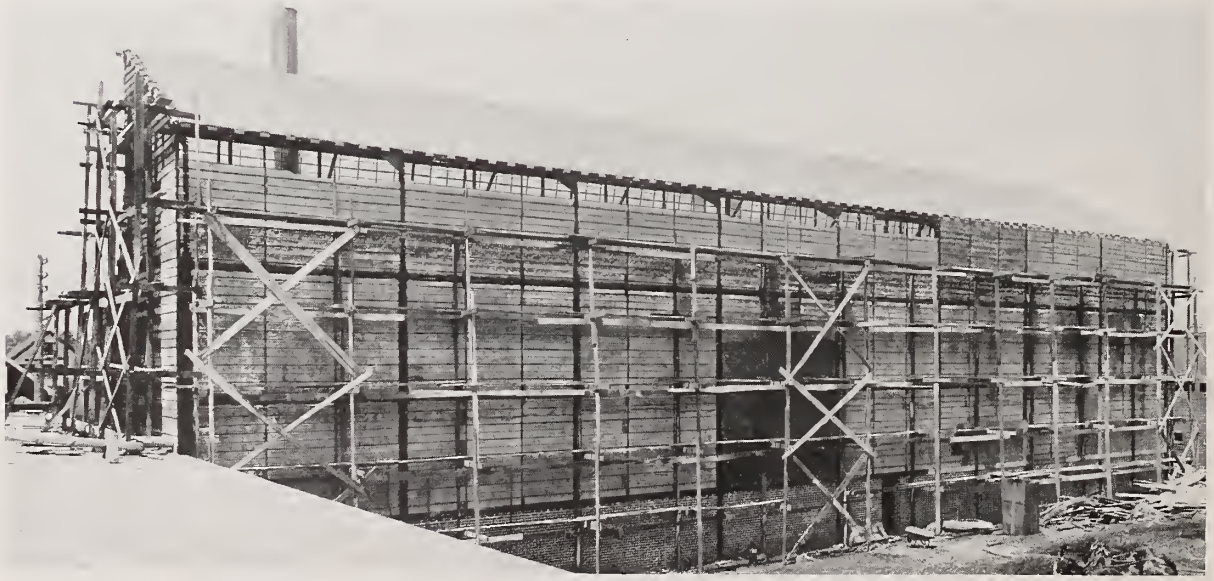
In general, the investigation to date has proven that stucco on metal lath stands in the first rank of building methods.

Bulletin No. 70, Bureau of Standards, may be procured from Supt. of Documents, Government Printing Office, Washington, D. C., at 15 cents. Digest of Bulletin No. 70 is furnished Free by Associated Metal Lath Manufacturers, Cleveland, Ohio.

*Rib Lath furnished by Truscon Steel Company.

Hy-Rib Stucco Siding showing method of plastering. Note Truscon Steel Windows above.

Hy-Rib Concrete Sidings and Steel Windows by Truscon Steel Co. Columbus Machine & Tool Co., Columbus, O.



Construction of Hy-Rib Concrete Sidings at Chas. B. Bohn Foundry Co., Detroit, Mich.
Martin Burkheiser, Contractor. Christian Brandt, Architect.

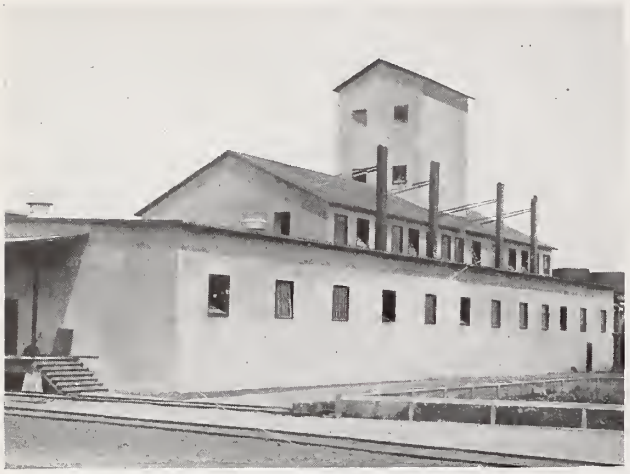
Hy-Rib Roofs and Partitions. Steel Windows by Truscon Steel Co. Repair shops, Louisville Railway Co., Louisville, Ky., J. B. and E. T. Hutchings, Architects.

Hy-Rib Concrete Roofs and Sidings, Continental Motor Corp., Detroit, Mich. Albert Kahn, Architect.

Hy-Rib Concrete Roofs and Sidings, Ford Motor Co., Detroit. Albert Kahn, Architect.

Hy-Rib Concrete Roofs, International Harvester Co., Springfield, O. De Vore-McGormley Co., Engineers.

HY-RIB AND METAL LATH



Hy-Rib Concrete Sidings and Roofs.
Lake Superior Iron and Chemical Co., Manistique, Mich.

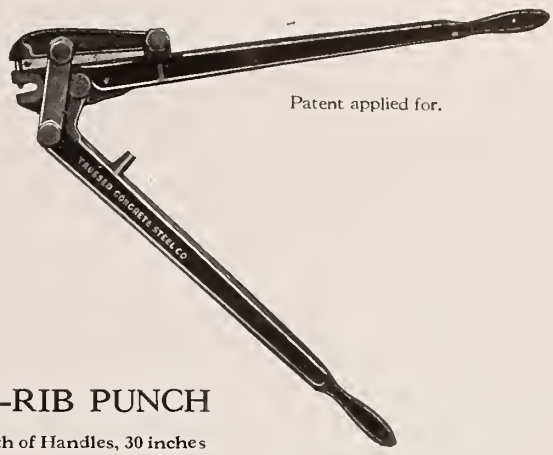
Hy-Rib Concrete Roofs and Sidings, Gas Producer Building, Open Hearth Dept., Maryland Steel Co., Sparrows Point, Md.

Coach Repair Shop, N. Y., Westchester & Boston R. R., New York.
Hy-Rib Concrete Sidings. Steel Windows by TrusconSteel Co.

Hy-Rib Concrete Roofs and Sidings, Glenmore Distillery, Owensboro, Ky.

Barry Mfg. Co., Muscatine, Ia.
Hy-Rib Concrete Sidings and Roofs. Truscon Steel Windows.

Hy-Rib Concrete Siding, Power House, Gainesville, Texas.



HY-RIB PUNCH

Length of Handles, 30 inches

The Hy-Rib Punch has two uses:

1st. For fastening Hy-Rib sheets together by merely clamping the interlocked ribs, doing away with all wiring.

2nd. For punching holes through the ribs when Hy-Rib is attached to structural steel with plate clips, as shown in above illustration. The edge of the punch is lined up with the edge of the plate clip which is seen through the Hy-Rib mesh. The small point of the punch engages the hole in the clip and a wire or nail slipped through the hole rigidly fastens the Hy-Rib to the steel work. On roofs the use of the punch is similar; the operator can stand erect while working.

PLATE CLIPS FOR ATTACHING HY-RIB TO STRUCTURAL STEEL

(Patented)

These clips are made of spring steel and when driven on to the flange of the steel work, bite into the steel, gripping it like the jaws of a vise. A simple, rigid, and inexpensive method of attaching Hy-Rib to structural steel. Plate Clips should be located at the interlocking side splice between sheets. See Hy-Rib Punch above.

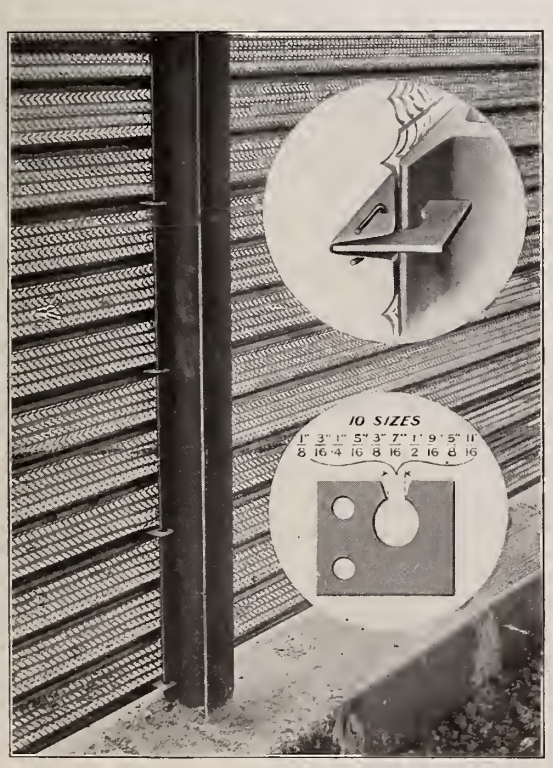


Plate Clips for Standard American Sections

I-Beams		Size of Plate Clips
Depth Inches	Weight Lbs.	
18	55	1/2"
15	42	7/16"
12	31.5	3/8"
10	25	5/16"
9	21	5/16"
8	18	5/16"
7	15	5/16"
6	12.25	1/4"
5	9.75	1/4"
4	7.5	1/4"
3	5.5	3/16"

Channels		Size of Plate Clips
Depth Inches	Weight Lbs.	
15	33	7/16"
13	32	3/8"
12	20.5	3/8"
10	15	5/16"
9	13.25	1/4"
8	11.25	1/4"
7	9.75	1/4"
6	8	1/4"
5	6.5	1/4"
4	5.25	1/4"
3	4.5	3/16"

Angles

Size of plate clip is always the same as thickness of angles: i. e., 7/16" angle requires a 7/16" plate clip.

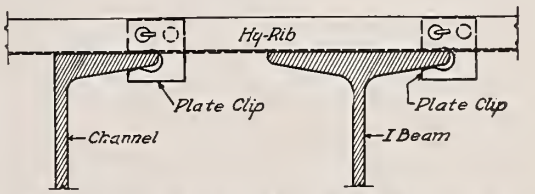


Plate Clip Connection with Hy-Rib for Floor or Roof Construction

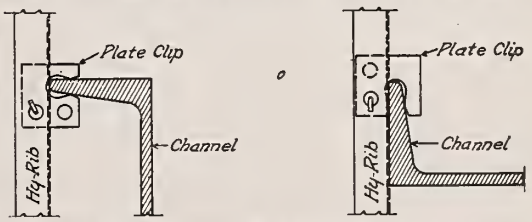


Plate Clip Connection with Hy-Rib for Wall Construction

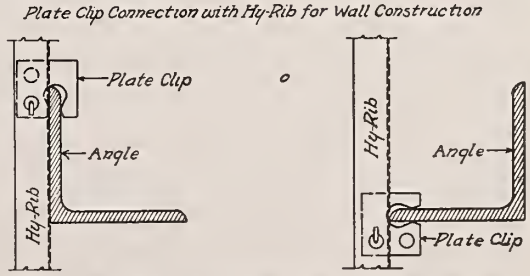
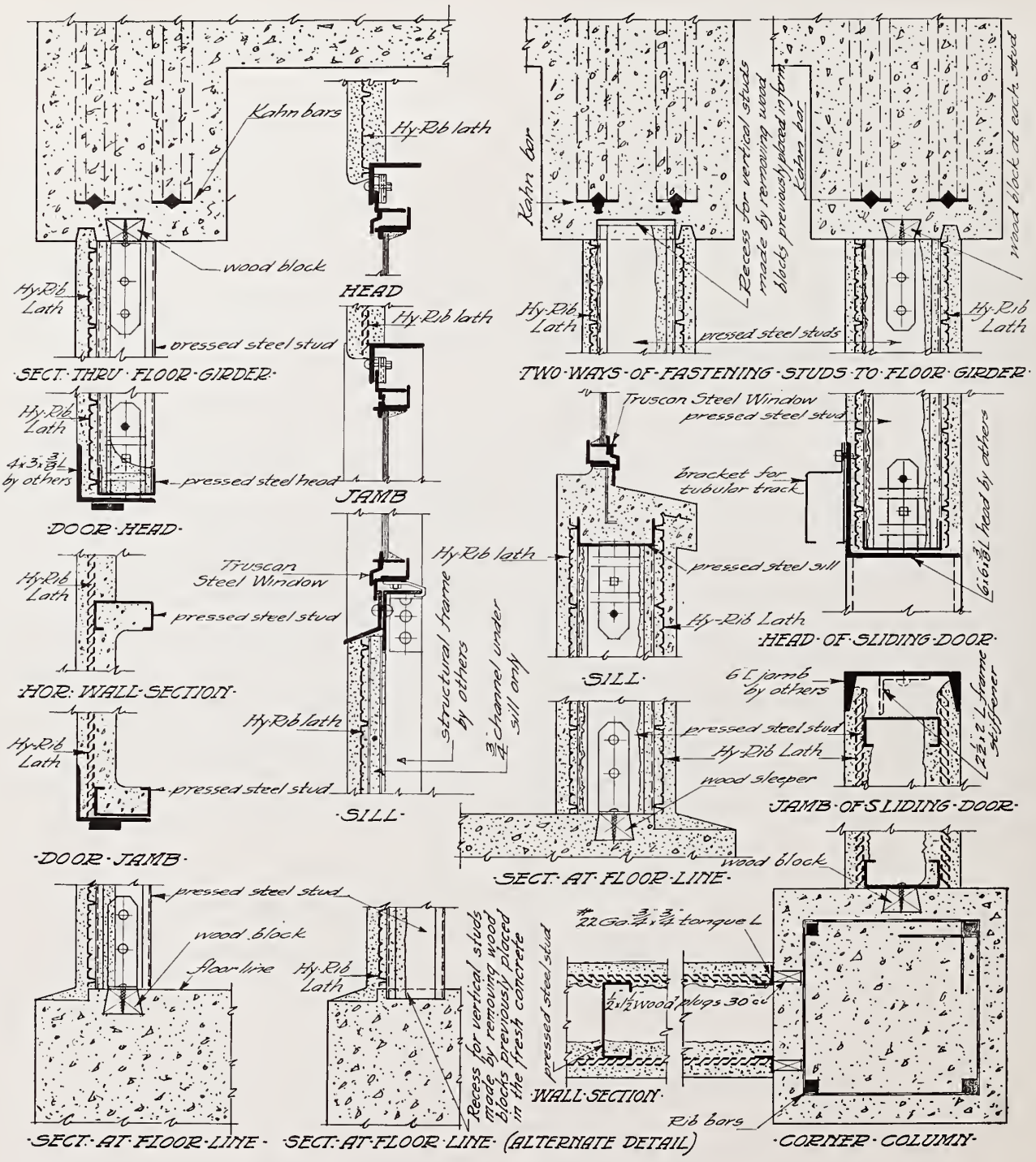


Plate Clip Connection with Hy-Rib for Wall Construction

DETAILS OF PLATE CLIP CONNECTIONS



SOLID EXTERIOR HY-RIB LATH WALL AS USED IN CONNECTION WITH RE-INFORCED CONCRETE CONSTRUCTION

HOLLOW EXTERIOR HY-RIB LATH WALL AS USED IN CONNECTION WITH RE-IN-FORCED CONCRETE CONSTRUCTION

Specifications for Hy-Rib Walls and Sidings

*REINFORCING STEEL

Provide Hy-Rib, Type ....., Gauge ....., for all walls and sidings.

Interlock all adjoining sheets of Hy-Rib at sides and ends. Sheets shall be securely fastened together every 24 inches along the sides and at every rib at the ends by wiring or by clinching of the lapped ribs with special punch. Where end splices occur between supports, splices in adjacent rows must be at least 2 feet apart. Allow a lap of 2 inches where splices occur over supports, otherwise 8 inches.

Hy-Rib shall be rigidly attached to steel framing by means of clips or strong galvanized wire, and to wood framing by staples or nails. Such attachments shall be located at the interlocking side splices between sheets and shall occur at least every 8 inches. Where Hy-Rib is attached to structural steel with plate clips, place lath side against the steel; where attached to wood supports, place lath side away from the wood.

MATERIALS

The materials composing the plaster shall consist of:

(a) Portland Cement which has been carefully tested and found to satisfactorily meet the requirements of the Specifications of the American Society for Testing Materials.

(b) Sand which is practically free from organic matter and uniformly graded in size from coarse to fine.

(c) Truscon Waterproofing Paste, Concentrated, as manufactured by The Truscon Laboratories.

(d) Hydrated Lime which is uniform in quality and perfectly hydrated.

APPLICATION

The plaster for the inside wall and for the first coat of outside wall shall be made up as follows:

Portland Cement.....1 part
Sand.....3 parts
Lime Paste.....1/10 part

The cement and hydrated lime, after being thoroughly mixed dry to uniform color, shall be added to the dry sand and the whole manipulated until evenly mixed. Add water to secure proper working consistency. The mortar shall then be thoroughly worked until perfectly homogeneous. This composition shall only be made up in lots that can be immediately applied, and any material that has been mixed with water longer than 30 minutes before applying shall be rejected.

PLASTERING OF WALLS

Plastering on the Hy-Rib may be started either on the exterior or the interior, beginning at the bottom of the wall. Plaster surfaces to receive additional coats shall be "scratched," while still wet, to form a key for the next coat. The first coat of plaster applied shall be of the mixture above specified with the addition of cowhair or approved fibre for key. All other plaster coats shall be of the above mixture without cowhair or fibre, except that in the last outside coat the hydrated lime shall be omitted and Truscon Waterproofing Paste, Concentrated, shall be added to the mixing water, in the proportions of one part paste to 18 parts of water. The waterproofed finish coat shall be at least 1/2" thick, and shall be free from any porous imperfections. The interior finish coat shall be troweled to a smooth finish.

The thickness of the plaster coat on the exterior shall be at least 1 1/8", measured from the face of the lath. The thickness of the plaster on the interior shall be at least 5/8" measured from the face of the lath. The total thickness of the wall shall be at least 1 3/4".

PROTECTION

Thoroughly protect the finished work from too rapid drying and the direct rays of the sun by means of damp canvas or sprinkling. The finished work must be kept thoroughly moist in this way for at least two days after plastering.

EXPANSION RODS

In walls and sidings where it is found necessary to run the main ribs of the Hy-Rib vertically, place 7/32 or 1/4 inch rods, spaced 30 inches apart, at right angles to the ribs.

SIDE WALLS REINFORCED WITH HY-RIB AND METAL LATH

(Minimum Requirements.)
(Ribs of Hy-Rib running horizontally.)

Spacing of Supports	Thickness of Wall	REINFORCEMENT
1'–4"	1 3/4"	Rib Lath No. 2
1'–8"	1 3/4"	Rib Lath No. 4, or 1-A Hy-Rib Lath
2'–0"	1 3/4"	No. 28, 3/8" Hy-Rib Lath
2'–8"	1 3/4"	No. 26, 3/8" Hy-Rib Lath
3'–6"	1 3/4"	No. 28, 13/16" Hy-Rib, or No. 24, 3/8" Hy-Rib Lath.
6'	1 3/4"	No. 26, 13/16" Hy-Rib, or No. 28, 15/16" Hy-Rib
8'	2"	No. 24, 13/16" Hy-Rib, or No. 26, 15/16" Hy-Rib.
10'	2"	No. 26, 15/16" Hy-Rib.
12'	2 1/2"	No. 24, 15/16" Hy-Rib.

Temporary bracing should be used vertically every 5 ft. for 13/16" Hy-Rib, and 6 ft. for 15/16" Hy-Rib.

*Whenever it is possible the structure should be so designed that the main ribs of the Hy-Rib will extend horizontally; Where the ribs extend vertically, place 7/32 in. or 1/4 in. rods 30 inches apart at right angles to the ribs.

Hy-Rib Residence for Miss Alice Henck, Santa Barbara, Cal.
Thomas Nixon, Architect.

Hy-Rib Concrete Residence—Dr. Terriberry, Fisher's Island, N. Y.
James Sweeney, Architect.

STUCCO RESIDENCES AND SIMILAR BUILDINGS

BEAUTY—The stucco house has a distinctive beauty which makes it attractive and desired everywhere. The absence of fire danger and upkeep expense adds a permanent satisfaction which increases as the years go by.

ECONOMY—The cost of stucco construction is exceptionally low when applied to Hy-Rib Metal Lath, as shown in accompanying details. In fact, the cost is barely more than wood sheathing and clapboard sidings, which are less desirable because of the fire risk and the continual painting expense. Stucco on metal lath costs less than other types of permanent construction, and is more desirable than most of them.

U. S. BUREAU OF STANDARDS—Test panels made by the United States Bureau of Standards on various bases for stucco (including metal lath, wood lath, plaster board, terra cotta tile, brick, concrete and gypsum block) show an exceptionally high standard of efficiency for metal lath. A panel of back-plastered Metal Lath (the type recommended in this pamphlet) was the only one of all tested to receive a rating of "Excellent" in all inspections. See page 21 for further information on these tests.

FIRE RESISTANCE—The fire resistance of cement stucco on metal lath has been demonstrated in many actual fires, and in severe fire tests by official building bureaus. There is no question that this construction will withstand intense fires. When used with wood studs on exteriors it will prevent the spread of conflagrations, as the fire could be extinguished long before the flames had time to reach the wood studding.

LOCAL MATERIALS—The materials to build a stucco house are easily available, as practically all of them are obtained locally. Sand, the principal material, is found in all localities; cement is stocked generally, as is also metal lath. Stucco on metal lath is the most rapidly erected type of permanent construction, owing to its extreme simplicity and the small amount of materials to be handled.

INSULATION—Because of the air-tightness of the monolithic concrete wall and the the ample air space in the wall, Hy-Rib stucco houses provide exceptional insulation against outside weather conditions. Such houses keep cool in the summer and are easy to heat in the winter; are absolutely protected against water and dampness.

Stucco on Hy-Rib Metal Lath. Residence of Harvey Whipple, Detroit, Michigan.

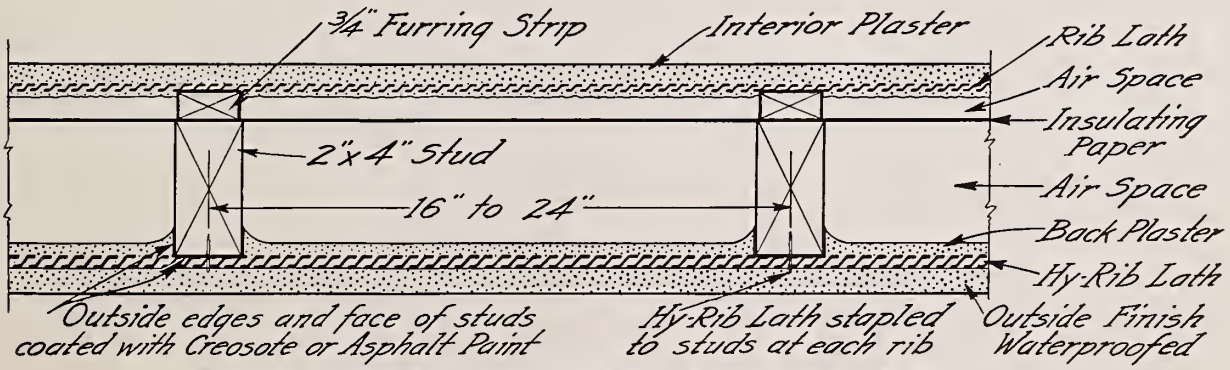
Hy-Rib Plastered with Cement Stucco. Residence of N. J. Spaulding, Ionia, Michigan.

How to Build a Hy-Rib Stucco House

WHY HY-RIB LATH?—No furring strips are necessary with Hy-Rib Lath, as the ribs keep the lath surface away from the wood. The ribs also give exceptional stiffness so that studs can be readily spaced 24″ centers, as contrasted with 12 to 16 inches for other constructions. The mesh of the Hy-Rib Lath provides a perfect key for the plaster and the straight, rigid surface makes an ideal surface to work upon. The interlocking ribs along sides of sheets avoid waste of lath in laps.

The complete specifications on following pages and the accompanying details give full information on how to build stucco residences. Two types of wall construction are shown. Type A, consisting of Hy-Rib Lath attached directly to the studs and back-plastered, is the construction which we strongly recommend because of its superior behavior in tests, and its qualities of economy, simplicity and permanence. Type B construction, consisting of studding with wood sheathing and waterproofing, to which the metal lath and stucco is applied, has, however, been successfully used in great numbers of excellent residences.

Referring to the back-plastered metal lath (type A), the construction is very simple. Substantial wood framing, such as required for any good construction, is erected with 2″ x 4″ studs spaced 16″ to 24″ and braced with bridging between floors. The outer face of studs and an inch back on sides are coated with asphalt or creosote paint. The ⅜″ Hy-Rib Lath with ribs horizontal and lath surface away from studs is stapled to the studs and plas-



HORIZONTAL SECTION THROUGH WALL

tered and back-plastered, all as covered by specifications which follow. Use Truscon Waterproofing Paste, Concentrated, in the mixing water of the last coat.

Thus is secured a monolithic reinforced concrete wall more rigid and weathertight than matched sheathing and lap siding. It is a permanent, fire-resisting wall and requires no expense for painting or upkeep.

Additional insulation in the wall is provided by fastening heavy waterproofing to the inside face of the studs, nailing ¾" furring strips on the studs and applying lath and plaster. Thus a double air space is provided in the wall. This extra insulation, however, can ordinarily be omitted, in which case the lath is attached directly to the studs and plastered.

In selecting the lath for back-plastered construction (type A), we usually recommend ⅜" Hy-Rib Lath for the exterior and 1-A Hy-Rib Lath for the interior. For stucco over sheathing, either 1-A Hy-Rib Lath or ⅜" Hy-Rib Lath give very excellent results. Other types of lath such as Standard Rib Lath or Diamond Lath also are satisfactory, but no lath weighing less than 3.4 lbs. per square yard should be used. We ordinarily do not advise the use of the deeper Hy-Ribs (13/16", 15/16", or 1½") for stucco houses, as stud spacings are usually moderate and do not call for the heavier reinforcement.

A Fire Resisting Crackless Interior

By all means, metal lath should be used throughout the interior for walls and ceilings because of its all-around permanence and economy. Metal lath reinforces the plaster, preventing the appearance of cracks and stopping the falling of plaster, thus saving greatly in the expense of repairs and re-decoration. Metal lath is permanent, fireproof and vermin-proof. Metal lath prevents streaking of plastered walls and ceilings.

Under all circumstances, metal lath should be used for all ceilings and around corners, under granolithic, tile or terrazo finish, and throughout in bathrooms, kitchens and vestibules.

Studding is set up for the interior the same as for ordinary types of frame construction, and the metal lath applied to it. Hy-Rib Metal Lath presents particular advantages, as its great stiffness permits wider spacing of studs, thus saving in the cost of studding and erecting it. The excellent key and stiffness save plaster and assure speedy work.

NON-BEARING PARTITIONS—In the case of interior walls and partitions which do not carry any loads, we recommend the use of solid plastered partitions, consisting of ⅜" Hy-Rib Metal Lath attached to small steel channels. spaced 24" to 36" centers. The metal lath is plastered on both sides to a total thickness of about 1¾". Such a partition is extremely rigid, fire-resisting and soundproof. Being less than 2" thick, it adds 4 inches to the size of the room at each partition. It is economical in cost and quickly erected. See complete details, specifications, etc., for these partitions, pages 42 to 44.

Hy-Rib Stucco Residence of K. Hammond, London, Ontario.
Watt & Blackwell, Architects.

Hy-Rib Lath for Walls, Partitions and Ceilings.
Residence of J. B. Book, Jr., Detroit, Mich.

Specifications for Stucco on Metal Lath

Adapted from the Standard Specifications of the Associated Metal Lath Manufacturers, in harmony with practice recommended by the Portland Cement Association, and in conference with representatives of the United States Bureau of Standards.

In these specifications, the paragraphs marked "Type A" apply only to wall construction consisting of wood studs to which the Hy-Rib Metal Lath is directly applied and back-plastered without the use of sheathing boards. The paragraphs marked "Type B" apply to construction consisting of wood studs with wood sheathing upon which the metal lath is applied and plastered. All other paragraphs apply to both types of construction.

MATERIALS

1. **CEMENT**—The cement shall meet the requirements of the Standard Specifications for Portland Cement of the American Society for Testing Materials.

2. **FINE AGGREGATE**—Fine aggregate shall consist of sand, or screenings from crushed stone or crushed gravel. It shall be well graded from fine to coarse particles, passing when dry a screen having eight (8) meshes to the lineal inch and should be clean and free from organic or other objectionable foreign matter.

3. **LIME**—Only hydrated lime of a standard brand shall be used. This eliminates the possibility of unslaked lime particles appearing in the mixture.

NOTE: If added dry, the lime should be first mixed with the cement and this mixture screened to make sure that no lumps get into the mortar. Or the lime may first be put in water, forming a milky liquid (which liquid must be free from lumps), and then added to the mortar as it is mixed.

4. **HAIR OR FIBRE**—There shall be used only first quality long cow hair, free from foreign matter, or a long cocoanut fibre well combed out.

5. **COLORING MATTER** — Only mineral colors shall be used, but no coloring matter which is affected by lime, Portland Cement or the elements is permissible.

6. **WATER**—Water shall be clean, free from oil, strong alkalies or vegetable matter.

7. **MIXING**—The ingredients of the mortar shall be thoroughly mixed to a uniform color, sufficient water added to obtain the desired consistency and the mixing shall continue until the cement and lime are uniformly distributed and the mass is uniform in color and homogeneous.

The hair or fibre shall be added during the process of wet mixing.

8. **MEASURING PROPORTIONS**—Methods of measurements of the proportions of the various ingredients including the water shall be used which will secure separate uniform measurements at all times. A sack of cement (94 lbs. net) is assumed to contain 1 cubic foot. Hydrated lime shall be assumed to weigh 40 lbs. per cubic foot. (An 8-quart pail holds approximately 10 lbs.)

9. **QUANTITY**—There shall not be mixed at one time more mortar than will be used within one hour. Mortar which has begun to stiffen or take on its initial set shall not be used.

10. **MIXING**—If hand mixed, the mixing shall be done in a clean water-tight box and the materials shall be turned until they are homogeneous in appearance and color. If machine mixed, a batch mixer suitable for mortar should be used and the mixing continued for at least one minute.

11. **CONSISTENCY**—The materials shall be mixed so as to provide sufficient water to insure a proper binding and a dense mortar free from voids.

12. **RETEMPERING** — Retempering mortar, i. e., remixing with water after it has partially set, shall not be allowed.

STRUCTURE

13. **FRAMING**—Studs shall be run from foundation to rafters without any intervening horizontal grain in the wood. These studs shall be tied together just below the floor joists with 1″ x 6″ boards which will be let into the studs on their inner side, so as to be flush and securely nailed to them. These boards will also act as sills for the floor joists, which, in addition, will be securely spiked to the side of the studs.

14. **BRACING**—The frame of the building shall be so rigidly constructed and braced as to avoid cracking the stucco.

"Type A": At least once between each two floors, brace between the studding with 2″ x 3″ bridging, or pieces of 2″ x 4″ on edge, keeping the bracing back at least one-half (½) inch from the outer faces of the stud.

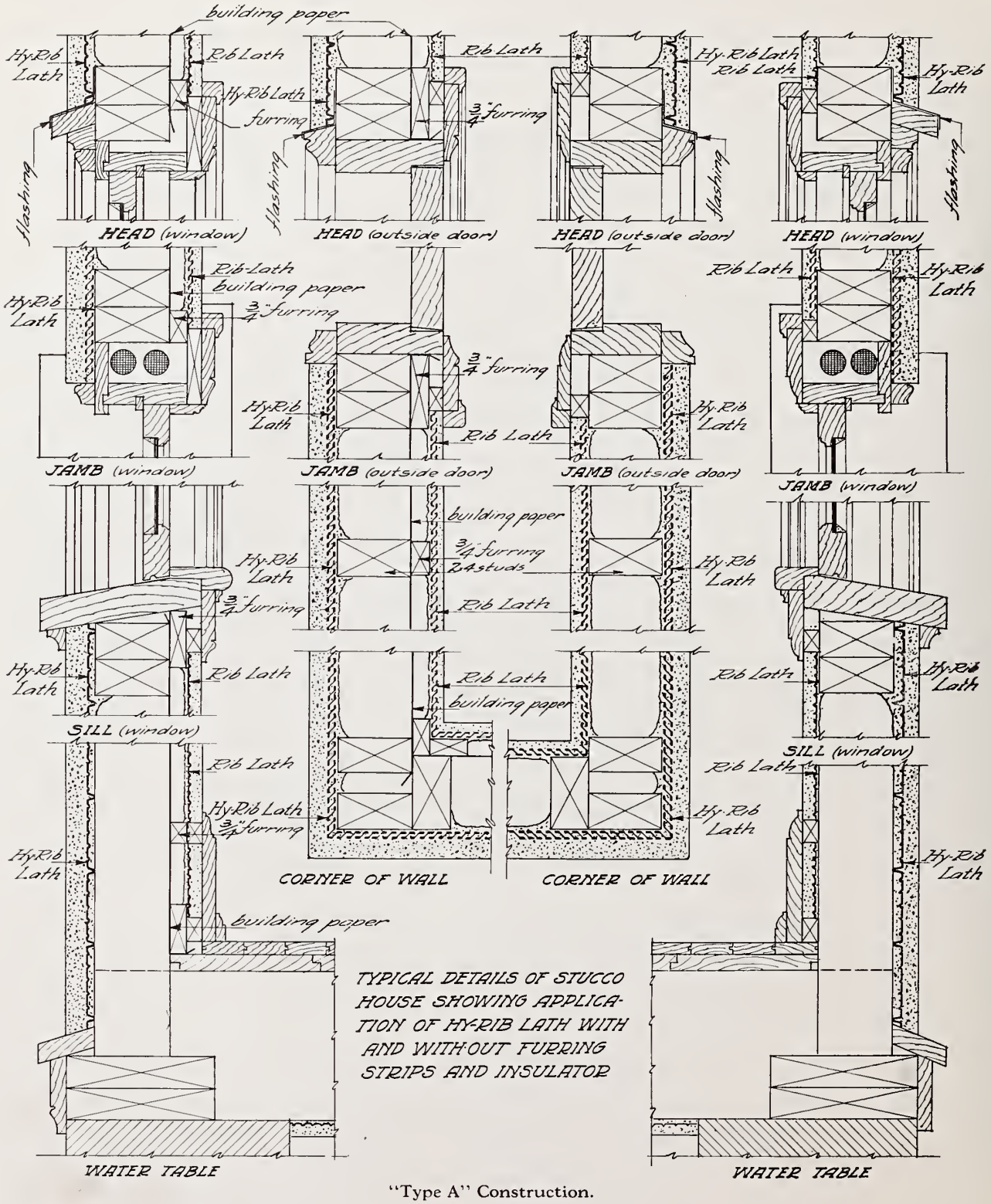
"Type B": Bracing may be omitted, as the sheathing boards act as bracing.

15. **SHEATHING**—"Type A": The lath is to be fastened direct to the studding and back plastered, and no sheathing boards are to be used. The ribs on Hy-Rib Lath provide the necessary furring.

"Type B": Sheathing boards shall be not less than 6 inches or more than 8 inches wide, dressed on one or both sides to a uniform thickness of ⅞″. They shall be laid horizontally across the wall studs and fastened with not less than 2 8d nails at each stud.

16. **WATERPROOFING BEHIND STUCCO**
(This inside waterproofing is optional.)

"Type A": The outer face of the stud and for one inch back of the face on each side where the plaster



TYPICAL DETAILS OF STUCCO HOUSE SHOWING APPLICATION OF HY-RIB LATH WITH AND WITHOUT FURRING STRIPS AND INSULATOR

"Type A" Construction.

may come in contact with them, shall be thoroughly waterproofed with creosote or asphalt.

"Type B": Over the sheathing boards shall be laid, in horizontal layers beginning at the bottom, a substantial paper, well impregnated and thoroughly waterproofed with tar or asphalt. The bottom strips shall lap over the base board at the bottom of the wall, and each strip shall lap the one below at least 2 inches. The paper shall lap the flashings at all openings. When required, the lower horizontal edge of each strip shall be cemented with hot or liquid tar or asphalt compound to the strip below and to the grounds of flashings at all openings. All tacking shall be within 2 inches of the top horizontal edge, where tacks will be covered by the lap of the strip above.

17. FURRING—"Type A": Furring strips are unnecessary where 3/8" Hy-Rib Lath, 1-A Hy-Rib Lath or Rib Lath are used. These metal laths are applied directly to the studs and sufficient furring away from the studs is provided by the ribs and the mesh.

"Type B": Where 3/8" Hy-Rib Lath or any of the deeper Hy-Ribs are used, no furring strips are required, the metal lath being applied directly to the wood sheathing with the ribs extending horizontally. With other types of Truscon laths, galvanized or painted metal furring strips shall be fastened over the sheathing paper and directly along the line of the studs, using 1¼" x 14-gauge staples (galvanized or painted preferred) placed 12" apart. The same depth of furring shall be adhered to around curved surfaces and furring strips shall be placed not less than 1½" or more than 4" on each side of and above and below all openings.

18. PREPARATION OF ORIGINAL SURFACE—All roof gutters shall be fixed and downspout hangers and all other fixed supports and fasteners shall be put up before the plastering is done, so there will be no break made in the plastering where they are permanently fixed.

Wall copings, balustrade rails, chimney caps, cornices, etc., shall be built of concrete, stone, tile, or metal, with ample overhang drip groove or lip and water-tight joints to keep water from behind the plaster.

If wood sills are used, they should project well from the face of the plaster and have ample drip groove or lip.

Metal lath shall be stopped far enough above the level of the ground to be free from ground moisture.

Care should be taken to provide for placing all trim the proper distance from the studding or furring to show its right projection after the plaster is on.

19. METAL LATH—Metal Lath shall be galvanized or painted, and weigh not less than 3.4 pounds to the square yard. The metal lath used shall be a product of the Truscon Steel Co.

20. APPLICATION OF LATH—Apply the Hy-Rib Metal Lath with the ribs extending horizontally and lath surface away from the studs, rigidly attaching it with staples (galvanized or painted preferred), stapling over each rib of the 3/8" Hy-Rib Lath and in no case over 8" apart. Interlock the sheets of Hy-Rib Metal Lath along the ribs at the sides and at the ends, fastening together where necessary with No. 18 gauge wire to secure continuous reinforcement and flat surface for plastering.

21. CORNERS—There shall be 6" strips of metal lath (Use Kornerite), placed around the corner and stapled over the lath or the sheets of metal lath shall be bent at right angles around the corners, a distance of at least 3 inches and stapled down as applied.

22. INSULATION—(The adding of the insulation is optional). "Type A": After the Metal Lath on the outside has been back-plastered, additional air space may be provided by applying heavy building paper, quilting, felt or other suitable insulations on the inner face of the studs, fastening it to the studs by nailing ¾" wood furring strips to the studs as indicated in details. Insulating paper may be fastened to studs before attaching furring strips if preferred. The lath for the interior plastering can then be applied to the furring strips, thus providing additional air space between the interior plaster and insulating material.

"Type B": When building felt or other insulating material is to be used, it shall be applied to the sheathing boards under the waterproofing behind stucco.

MORTAR COAT

23. PLASTER—The first coat shall be mixed in the proportion of not more than three (3) cubic feet of sand to one (1) sack of cement, and ten (10) pounds of hydrated lime. Hair or fibre should be added in sufficient quantity to bond the mortar.

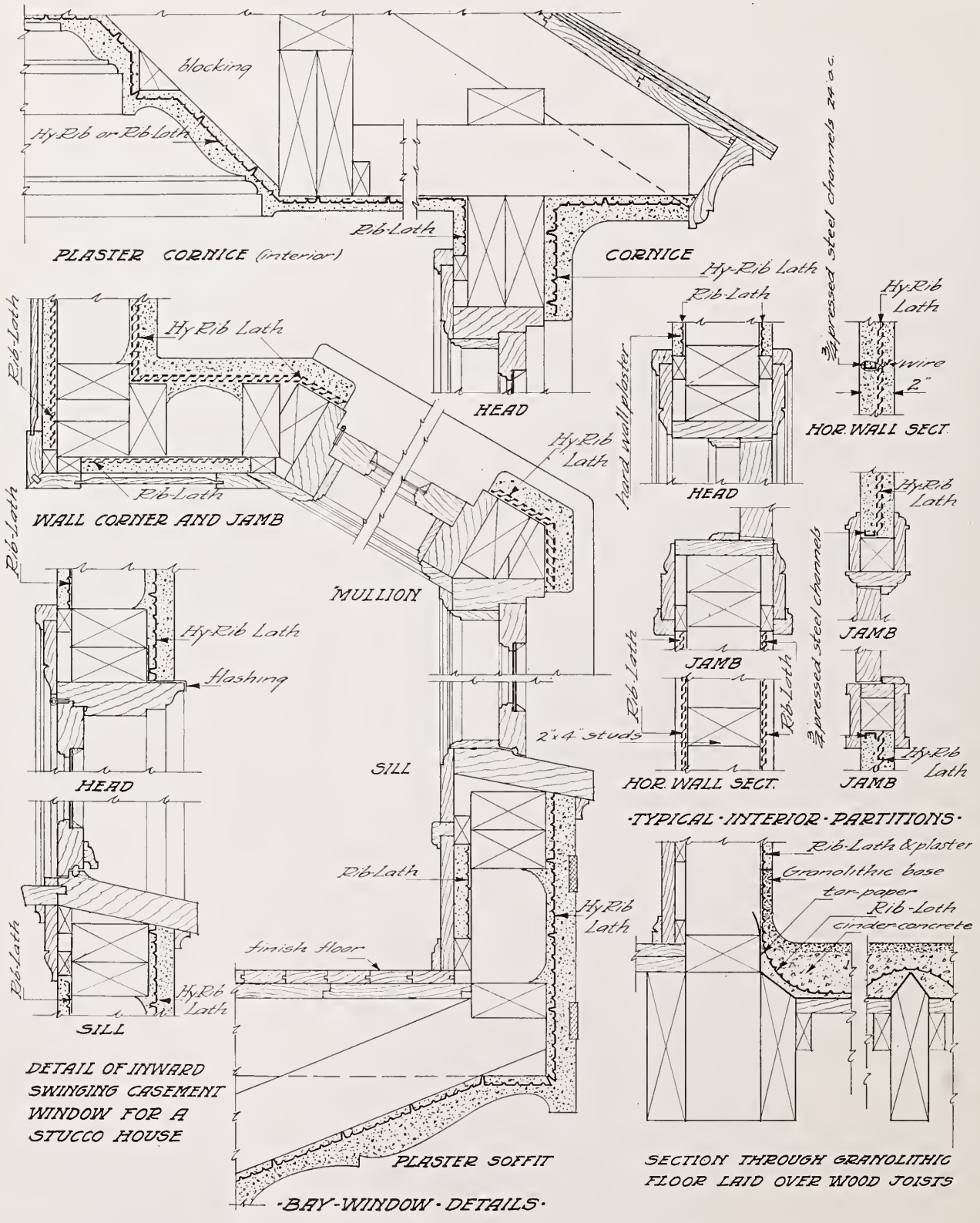
The second coat shall be mixed in the proportion of not more than three (3) cubic feet of sand to one (1) sack of cement, and if hydrated lime is used, not more than ten (10) pounds to one (1) sack of cement.

For third coat the proportion of sand to cement shall not be less than three (3) cubic feet of sand to one (1) sack of cement. Hydrated lime should be omitted and Truscon Waterproofing Paste, Concentrated, added to the mixing water in proportions of 1 part paste to 18 parts water.

24. APPLICATION—The plastering should be carried on continuously in one general direction, without allowing the plaster to dry at the edge. If it is impossible to work the full width of the wall at one time, the joint should be at some natural division of the surface, such as a window or door.

"Type A": The first coat shall be applied to the outside of the lath and pushed through sufficiently to give a good key. Over the face of the studs, the plaster shall be forced well through the lath in order to fill entirely the space between the lath and

HY-RIB AND METAL LATH



the studs. The backing coat shall be applied to the back of the lath and shall be thoroughly troweled so that the lath shall be entirely covered.

"Type B": The first coat shall be applied to the lath and thoroughly pushed through against the inside waterproofing so as to completely imbed the metal of the lath on both sides. Special care shall be taken to fill all voids around furring strips and where the lath laps.

25. BACK PLASTERING may be applied any time after the scratch coat has received its initial set.

26. ROUGHING—Soon after applying and before the initial set has taken place, the surface of the coats which are to receive succeeding coats shall be roughened with a saw-toothed paddle or other suitable device.

27. DAMPENING—Before applying mortar the surface of the preceding coat shall be wetted to saturation to prevent absorption of water from the fresh mortar.

28. THICKNESS OF COAT—"Type A": The completed stucco wall including back-plastering shall be not less than one and one half (1½) inches thick.

"Type B": The completed stucco wall shall not be less than one (1) inch thick from the face of the lath.

29. DRYING OUT—The final coat shall not be permitted to dry out rapidly and adequate precaution shall be taken, either by sprinkling frequently after the mortar has set hard enough to permit it or by hanging wet burlap or other material over the surface.

30. FREEZING—Stucco should never be applied when the temperature is below freezing.

FINISH

31. SMOOTH TROWELED—The finishing coat shall be troweled smooth with a metal trowel with as little rubbing as possible.

32. STIPPLED—The finishing coat shall be troweled smooth with a metal trowel with as little rubbing as possible, and then shall be lightly patted with a brush of broom straw to give an even stippled surface.

33. SAND FLOATED—The finishing coat, after being brought to a smooth even surface, shall be rubbed with a circular motion of a wood float with the addition of a little sand to slightly roughen the surface. The floating shall be done when the mortar has partially set.

34. SAND SPRAYED—After the finishing coat has been brought to an even surface it shall be sprayed by means of a wide, long fibre brush; a whisk broom does very well dipped into a creamy mixture of equal parts of cement and sand, mixed fresh every 30 minutes and kept well stirred in the bucket by means of the whisk broom or a paddler This coating shall be thrown forcibly against the surface to be finished. This treatment shall be applied while the finishing coat is still moist and before it has attained its final set, i. e., within 3 to 5 hours. To obtain lighter shades, add hydrated lime of 5 to 15 per cent of the volume of the cement.

35. SPLATTER DASH OR ROUGH CAST—After the finishing coat has been brought to a smooth even surface and before attaining final set it shall be uniformly coated with a mixture of one part cement and two parts of sand thrown forcibly against it to produce a rough surface of uniform texture when viewed from a distance of 20 feet. Special care shall be taken to prevent the rapid drying out of this finish.

36. PEBBLE DASH—After the finishing coat has been brought to a smooth even surface and before attaining initial set, clean round pebbles or other material as selected, not smaller than ¼" or larger than ¾" previously wetted, shall be thrown forcibly against the mortar so as to imbed themselves in the fresh mortar. They shall be distributed uniformly over the surface of the final coat and may be pushed back into the mortar with a clean wood trowel but no rubbing of the surface shall be done after the pebbles are imbedded.

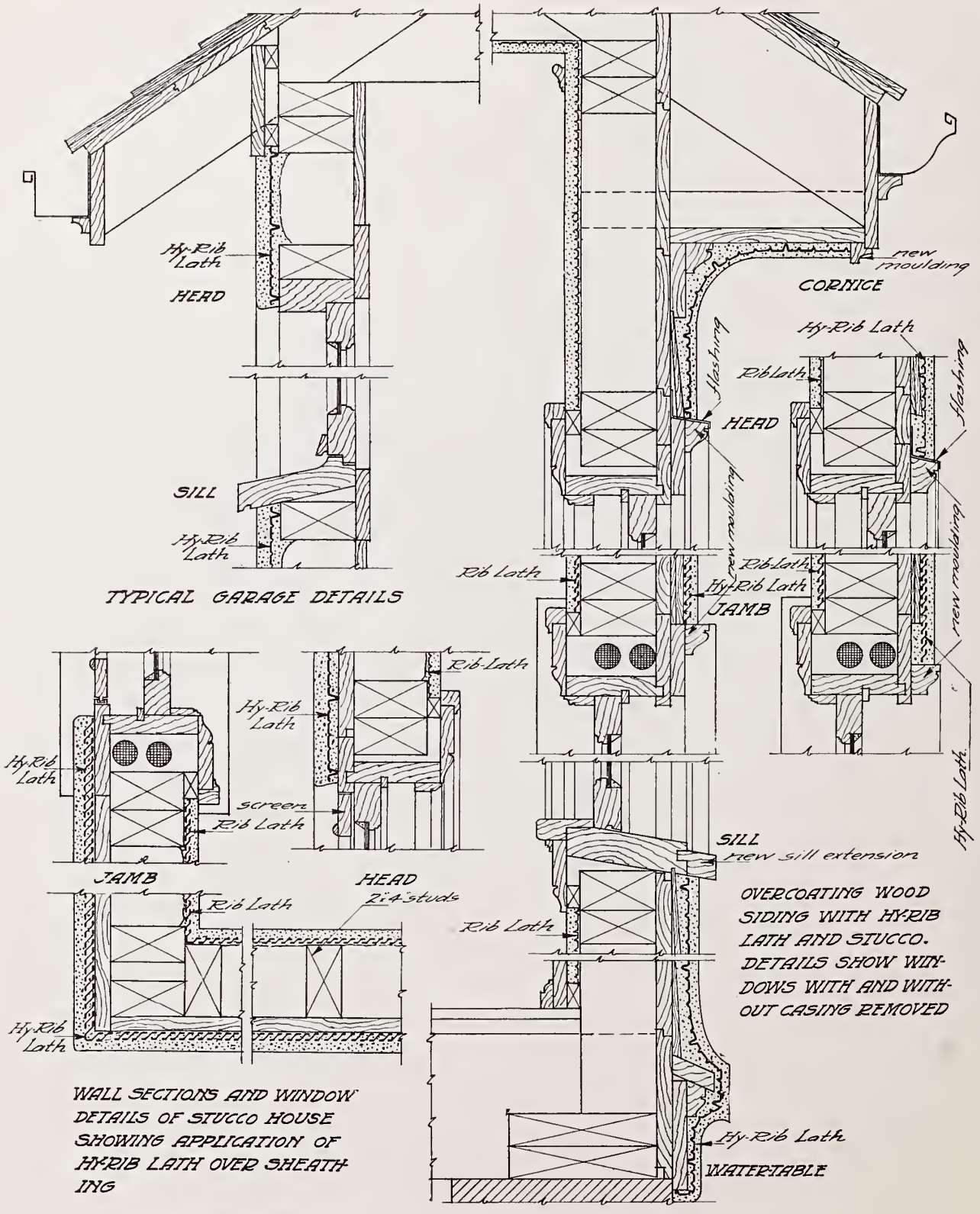
37. EXPOSED AGGREGATES—The finishing coat shall be composed of an approved selected coarse sand, marble dust, granite dust or other special material, in the proportion given for finishing coats and within 24 hours after being applied and troweled to an even surface shall be scrubbed with a stiff brush and water. In case the cement is too hard, a solution of one part muriatic acid in four parts of water by volume can be used in place of water. After the aggregate particles have been uniformly exposed by scrubbing, care shall be taken to remove all traces of the acid by spraying with a hose.

38. MORTAR COLORS—When it is required that any of the above finishes shall be made with colored mortar, not more than 10% of the weight of Portland Cement shall be added to the mortar in the form of finely ground coloring matter. A predetermined weight of color, shall be added dry to each batch of dry fine aggregate before the cement is added. The color and fine aggregate shall be mixed together and then the cement and lime mixed in. The whole shall then be thoroughly mixed dry by shoveling from one pile to another through a ¼" mesh wire screen until the entire batch is of uniform color. Water shall then be added to bring the mortar to a proper plastering consistency.

MACHINE STUCCO

39. STUCCO may be applied by machine provided the results obtained are equal to those produced by hand work.

NOTE: For overcoating specifications, see page 37.



"Type B" Construction

Wonderful transformation of forty-five year old wood frame house to modern stucco residence. 3/8" Hy-Rib Lath was applied directly to the old siding without the use of furring strips. David Stott Estate, 1700 E. Jefferson Ave., Detroit, Mich. John Shea, Plastering Contractor.

"OVER-COATED" HOUSES

An old wood frame building can be readily transformed at nominal expense into a fine stucco building by the use of Hy-Rib Lath. Furring strips are eliminated by the use of 3/8" Hy-Rib Lath, which is nailed directly to the siding with the ribs running horizontally.

The cement stucco plaster is applied directly to the Hy-Rib Lath. Materials, application and finishes are the same as for specifications for stucco on the preceding pages. The last exterior coat should be waterproofed with Truscon Waterproofing Paste, Concentrated.

The transformation made in a house by overcoating is truly remarkable. The property is enhanced in value by much more than the cost of the overcoating, and is protected from depreciation and fire. The saving in painting bills alone pays handsome dividends on the investment in overcoating.

Residence of Arnold Kaichen, Cincinnati, Ohio.
An Old Wooden House Transformed into a Modern, Permanent Residence by Overcoating with Hy-Rib Lath and Stucco.

Overcoating Specifications

(Continuation of Stucco Specifications from page 35.)

40. A tight roof is essential.

Where the lath is applied over the old sheathing or weather board, some provision must be made for extending the old window or door frames. Where 3/8" Hy-Rib Lath is used, no furring strips are required, as these are provided by the ribs of the Hy-Rib Lath. Also where the old lap siding is such as to provide proper space for embedding lath with mortar, no furring strips are required. Where required by lath and conditions, apply furring strips over the old sheathing.

In case the weather boarding is removed, it is not necessary to provide for extending the window and door frames and the new stucco finish will have the same relations as the old weather boarding. If the weather boarding is in poor condition, it should be removed and Hy-Rib Metal Lath applied over the sheathing to which waterproofing has previously been fastened. It may be advisable also to tear off the sheathing, in which case brace between the studs and apply Hy-Rib Metal Lath.

The application of the Hy-Rib Metal Laths and stucco in overcoating is the same as for "Types A" and "B" construction described in the specifications, pages 31 to 35.

Hy-Rib Garage for W. E. Parker, Grosse Pointe, Mich.

Hy-Rib Concrete Garage for Luke Cates, Webster Groves, Mo.

HY-RIB STUCCO GARAGES

The stucco garage is always attractive in appearance, harmonizing with the simplest or most elaborate garden setting. It costs, in the first place, but little more and in the long run is much more economical than the unsightly shack which is short-lived and requires continued expense for painting and repairs. The Hy-Rib stucco garage provides a suitable protection for a valuable property against the ravages of fire, time and weather.

Suitable framework of wood, steel or concrete is provided to which the Hy-Rib Lath is attached and plastered as indicated in stucco house specifications. The simplest and most economical construction is to use 2″ x 4″ wood studs spaced 16″ to 24″ centers. The outside face of studs may be painted with creosote or asphalt as waterproofing. ⅜″ Hy-Rib Lath is stapled to the studs, with lath side away from studs, then plastered and back-plastered to a thickness of about 1½ inches. The outside finish coat should be waterproofed by using Truscon Waterproofing Paste, Concentrated, in the mixing water. Any desired finish can be obtained, as indicated in stucco specifications, which also see for materials and applications.

This solid reinforced stucco wall with studs exposed in the interior provides ample protection against the elements, but if desired the interior may be finished by lining with ceiling boards, lath and plaster, wall-boards, etc.

Stucco Garage of S. M. Fechheimer, Highland Park, Mich.
⅜″ Hy-Rib Lath on Wood Studs, Stuccoed and Back-plastered.

Stucco Garage for Dr. Moran, Detroit, Mich.
Hy-Rib with Concrete Posts.

Hy-Rib Concrete Sidings on wood studs, before plastering. Barns on Walker Bros.' Farm, Walkerville, Ont.

ON THE FARM

(Catalogue, "Hy-Rib Concrete Silos and Farm Buildings" sent on request.)

The day of the unsightly short-lived wood frame buildings is passing, and in their place are found modern concrete structures. The average farm is provided with no means of fighting fire, so that the slightest fire may cause the total loss of a large amount of property. Fireproof construction is a necessity in farm buildings.

Hy-Rib and Metal Lath, owing to their simplicity and ease of application, make it possible for concrete construction to be carried on by the ordinary farm mechanic.

The sand and stone for the concrete are easily accessible in the neighborhood—the Portland cement is secured from local dealers. Hy-Rib is shipped in exact lengths, and, where desired, bent to any curve. Its uses are found in the building of houses, barns, and sheds of all kinds—in constructing culverts, cisterns, tanks and silos. Fences are also built in this way. The methods of application are as shown under the varied uses of these materials throughout this catalog.

We will gladly supply detailed information in regard to any particular work that may be contemplated.

"Wabeek Farm," Birmingham, Mich. James Couzens, owner.
Creamery and Dairy Barn of Truscon Reinforced Concrete.
Hy-Rib Used for Concrete Silos, Fences and Partitions.

Hy-Rib Feed Barn and two Hy-Rib Silos.
Espanore Farm, Lansing, Mich.
Ex-Governor Osborne, Owner.

PARTITIONS

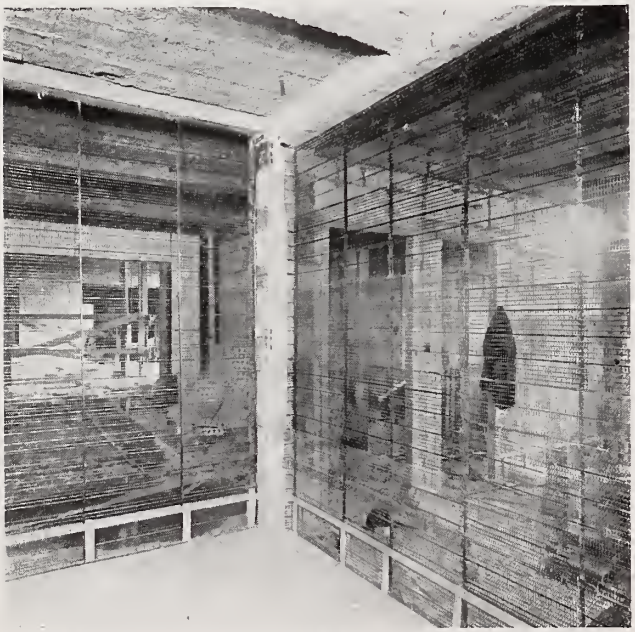
Partitions of plastered Hy-Rib and Metal Lath are rigid, economical, fireproof, soundproof and light in weight. The thorough reinforcement prevents cracking of plaster, saving expense in repairs and decoration. The solid partitions are less than 2″ in thickness, thus increasing the useful floor space and the rental value of the property. The ribs in the Hy-Rib Lath by their stiffness permit wide spacing of supports and in the case of the deeper Hy-Ribs, entirely eliminate channels, thus saving materials, labor and time. The flat, rigid surface and perfect key provide an ideal base for rapid and economical plastering.

SOLID NON-BEARING PARTITIONS

These are of two distinct types, either of which give satisfactory results. In the one type, covered fully on pages 42 to 44, the partitions consist of plastered Hy-Rib Lath on widely spaced channels; the wide spacing saves on channels and the labor of wiring lath to them. In the other type, covered fully on pages 46 to 49, the deeper Hy-Ribs ($1\frac{3}{16}$″ and $1\frac{5}{16}$″) are used with the ribs extending from floor to ceiling, entirely eliminating stiffening channels and the expense of wiring lath to them. The choice between the two types of partitions is a matter of personal preference, often dependent on local costs of materials and labor.

HOLLOW PARTITIONS

Hollow partitions may be bearing or non-bearing, according to the strength of the studs used. In either case the Hy-Rib Lath is attached to the two faces of the studs; the stiffness of the ribs permits wide spacing of studs, thus saving in cost of partition. Studs may be of wood or steel, depending on the nature of the construction. We furnish two types of hollow pressed steel studs (described on page 6): non-bearing, consisting of two $\frac{3}{4}$″ channels separated by spacing bars, and bearing studs, consisting of channel or H shapes provided with prongs for attaching the lath. (See also page 45).



Solid Partitions showing $\frac{3}{8}$″ Hy-Rib Lath on Widely Spaced Channels. Rodin Studio, New York, N. Y.

Solid Partitions without Channels. Ribs of Hy-Rib extend from Floor to Ceiling. Owen Building, Detroit.

Note Grounds for Base-board and Chain Rail.

New York Fire Test on Hy-Rib Partition

(Compiled from official report of Fire and Water Test made at the Columbia Fire Testing Station, New York City, upon plaster partition reinforced with Hy-Rib. Test conducted by Ira H. Woolson, E. M., in co-operation with City Building Bureaus.)

Partitions were of standard size required by the Building Specifications, 14′ 6″ x 9′ 6″. No. 26 Gauge Hy-Rib was installed in partition; plaster used was Rock Wall put on in two inside and two outside coats, the approximate total thickness of partition being two inches. The partition was subjected to a continuous fire for one hour, at an average temperature of 1700 degrees Fahr. A 1⅛″ stream of water at hydrant pressure was then thrown against it for two and one-half minutes.

After the application of fire and water, the final maximum deflection in the Hy-Rib partition was only ¼″, and partition was in excellent condition.

As a result of the test, No. 28 Gauge Hy-Rib plastered two inches thick for solid partitions, or with two thicknesses of metal for hollow partitions, has been approved for use in the Borough of Manhattan.

Soundproofness of Solid Hy-Rib Partitions

A solid monolithic partition stands in the front rank in resistance to passage of sound. The solidity of the construction without joints or interstices affords more effective insulation than block construction. The following sound test made by a leading testing laboratory in London, England, demonstrates the soundproofness of Hy-Rib Partitions.

To ascertain the relative resistance to the transmission of sound of three "Telephone" Cabinets. Size of cabinets—3 feet x 3 feet x 6 feet 6 inches high.

Cabinet A. (VV. 2789.) Built with cement and Breeze partition blocks. 3 feet x 12 inches, 2 inches thick, joints made with cement mortar, 1-3.

Cabinet B. (VV. 2790.) Built with plaster partition blocks. 3 feet x 12 inches, 2 inches thick, joints made with cement mortar, 1-3.

Cabinet C. (VV. 2791.) Built with Hy-Rib Sheet reinforcement (28 gauge) coated each side with cement and sand mortar (1-3), and rendered to a smooth surface inside and out, to a finished thickness of 2 inches.

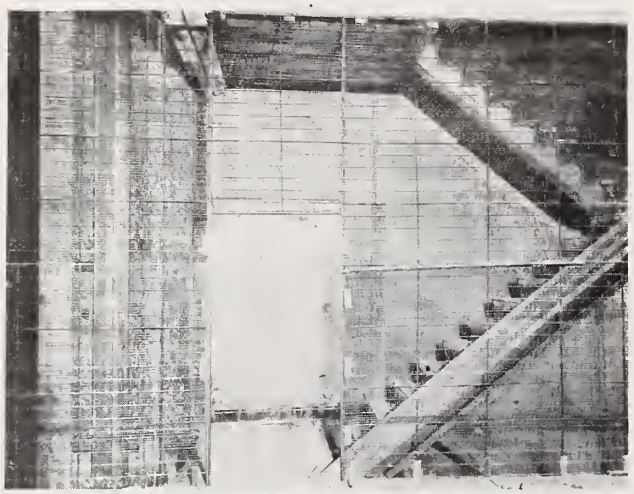
Under varied and repeated series of observations we find that the C. Cabinet (Hy-Rib) shows distinctly greater resistance to the transmission of sound than either A. or B.

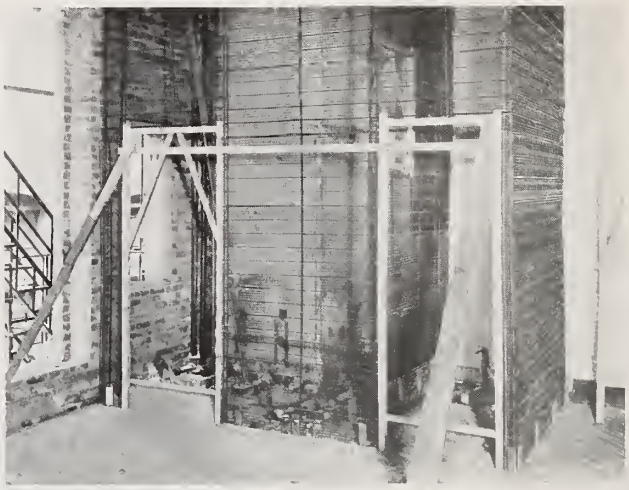
(Signed) DAVID KILKALDY & SON,
Testing and Experimenting Work.

99 Southwark St., London, S. E.

Two-inch Hy-Rib Partitions after bombardment with shot and shell in Y. M. C. A., Mexico City, February, 1913, illustrating the remarkable resistance of Hy-Rib Construction to severest shocks. Plastering holes at nominal cost are all the repairs necessary.

HY-RIB AND METAL LATH

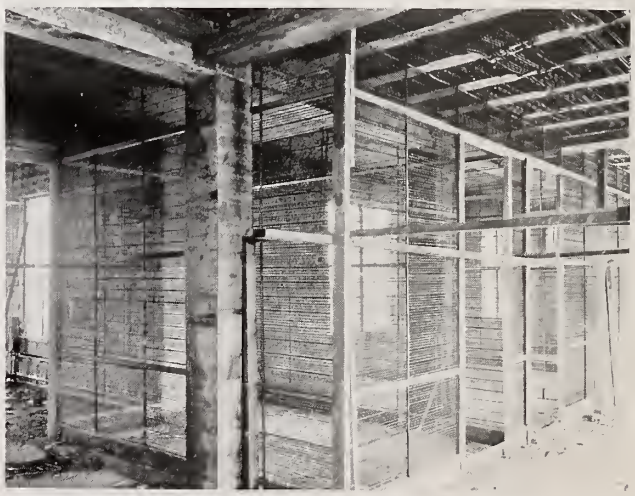




⅜″ Hy-Rib Lath in Conrad-Windisch Bldg., Cincinnati, Ohio. Channels spaced 20″ to 26″ centers. Kruckemeyer & Strong, Architects. Mr. Bunyon, Plastering Contractor.

Hy-Rib Lath throughout interior for partitions and ceilings, Plaza Hotel, Dallas, Texas.
Guidera & Bell, Owners, Architects and Contractors.

Galloway Memorial Hospital, Nashville, Tenn.



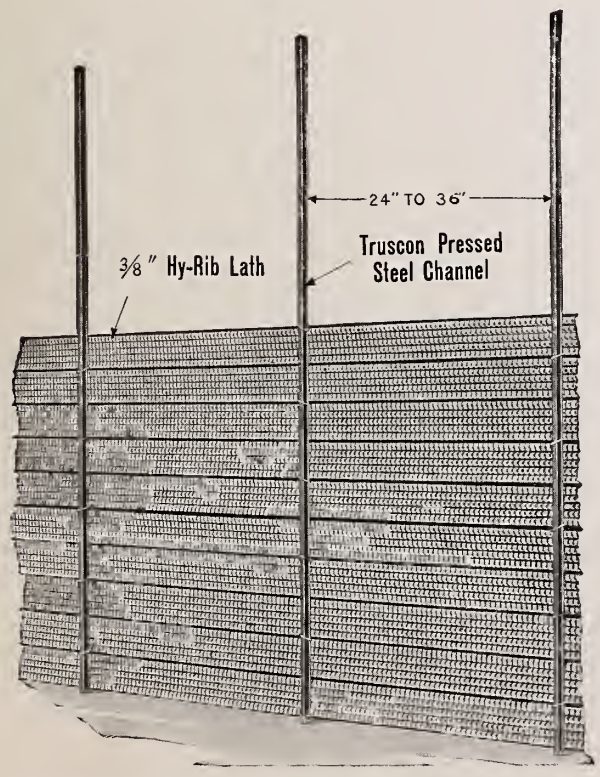
⅜″ Hy-Rib Lath Partition with ¾″ Channels, 36″ Centers. Good Shepherd Home, Portland, Ore. Jacobberger & Smith, Architects. W. D. Strauser, Lathing Con. John O'Hare, Plastering Con.

Solid Partitions of Hy-Rib Lath and Channels

Wide Spacing of Studs.
Saving of Channels and Wiring.
Speed and Economy of Construction.
Perfect Key for Plaster.

The Hy-Rib Lath is wired to the channels (usually ¾″ in size) which extend from floor to ceiling, and plaster is applied to both sides. The construction is very rapidly installed, economical in cost and in every way highly satisfactory. The extreme stiffness of ⅜″ Hy-Rib Lath, owing to the ribs, permits channel spacings of 24″ to 42″, thus using only one-half the channels required with other laths. Consider the large saving not only in the channels but in the labor and time of attaching lath to them. The perfect key for the plaster prevents dropping of plaster back of the lath and the flat rigid surface presents an ideal base to plaster against.

Spacings of channels for various types of lath are given in specifications below, and details of application on the following page. For channels, see page 6.



Solid Partitions with ⅜″ Hy-Rib Lath and widely spaced Studs

SPECIFICATIONS FOR SOLID PARTITIONS OF HY-RIB LATH AND CHANNELS

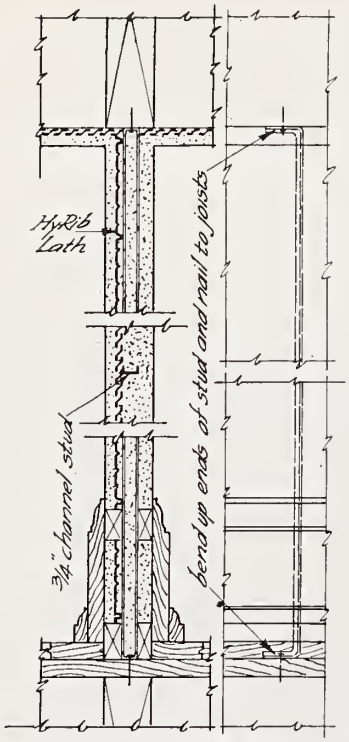
Provide Hy-Rib Metal Lath, type ....., gauge...., and Truscon Pressed Steel Channels, size ....., for all partitions. Attach channels to floor and ceilings and provide for door frames, baseboards, etc., according to details. Space channels according to following table.

Metal Lath	Spacing of Studs or Channels in Partitions
24 ga. ⅜″ Hy-Rib Lath	36″ to 42″
26 ga. ⅜″ Hy-Rib Lath	32″ to 36″
28 ga. ⅜″ Hy-Rib Lath	24″ to 30″
1-A Hy-Rib Lath	18″ to 24″
Rib Lath No. 4	18″ to 24″
Rib Lath No. 2	16″ to 20″
Rib Lath No. 1	14″ to 16″

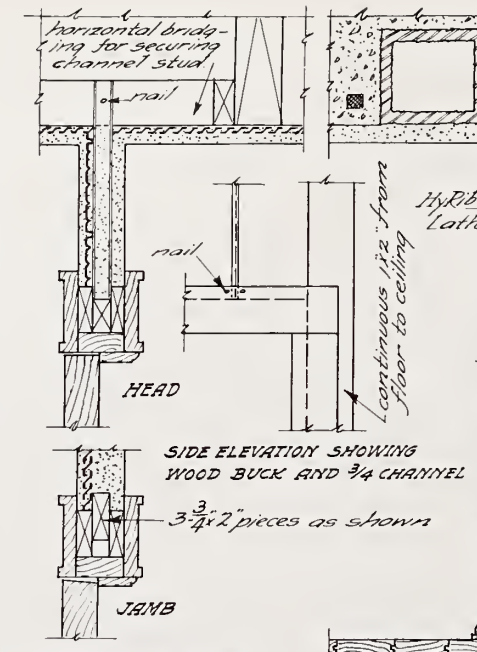
Interlock all adjoining sheets of Hy-Rib Lath at sides and ends. Sheets shall be securely fastened together by wiring every 24 inches along the sides and every 4 inches at ribs at the ends. Hy-Rib Lath shall be rigidly attached to channels or studs at least every 8 inches.

Where end splices occur between supports, splices in adjacent rows must be at least 2 ft. apart. Allow a lap of 2 inches where splices occur over the supports, otherwise 8 inches.

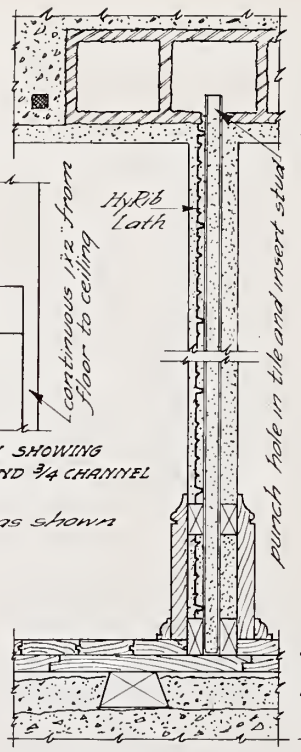
HY-RIB AND METAL LATH



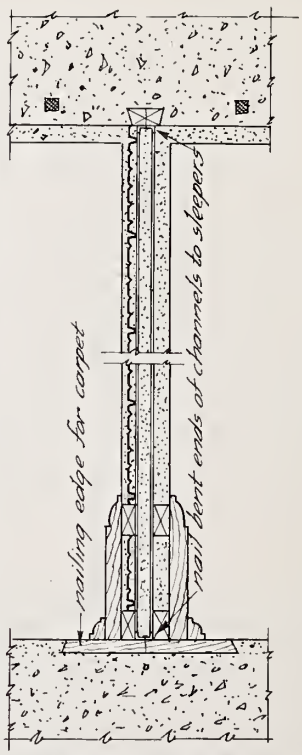
DETAIL OF HYRIB PARTITION IN CONNECTION WITH WOOD FLOOR JOISTS



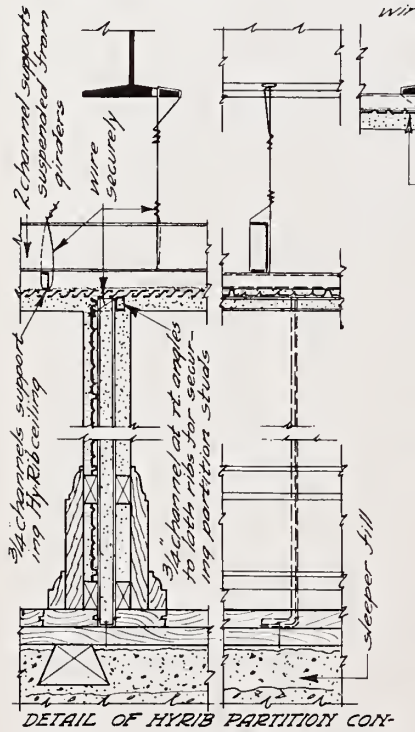
TYPICAL DOOR DETAIL IN HYRIB PARTITION WITH SUGGESTION FOR ROUGH FRAME.



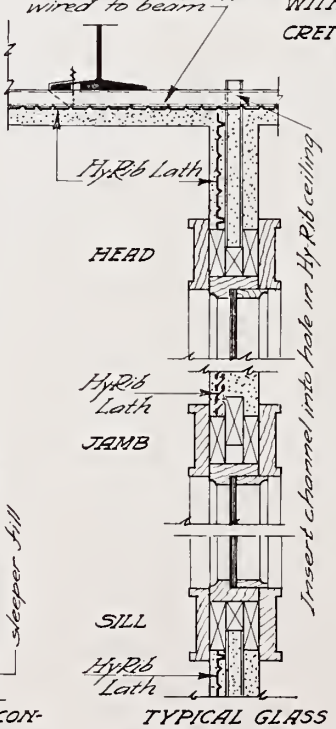
DETAIL OF HYRIB PARTITION IN CONNECTION WITH FLOORS OF CONCRETE AND HOLLOW TILE



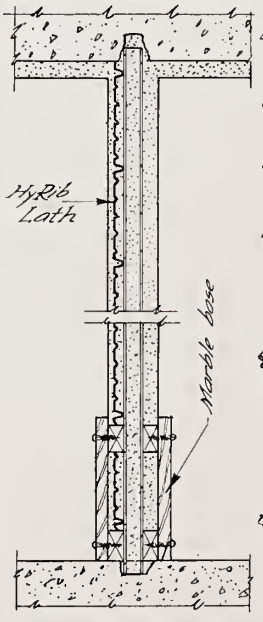
DETAIL OF HYRIB PARTITION IN CONNECTION WITH FLOORS OF SOLID REINFORCED CONCRETE



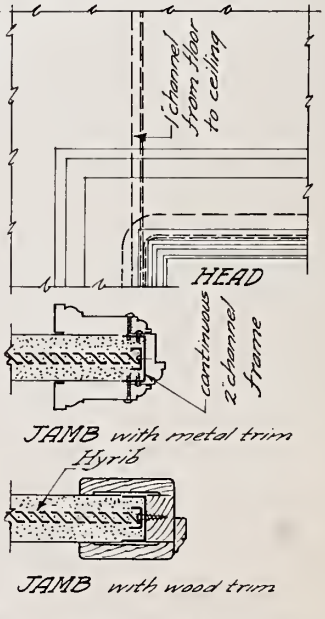
DETAIL OF HYRIB PARTITION CONNECTED TO SUSPENDED CEILING



TYPICAL GLASS PARTITION DETAIL



COMMON METHOD OF APPLYING CHANNEL STUD IN CONCRETE



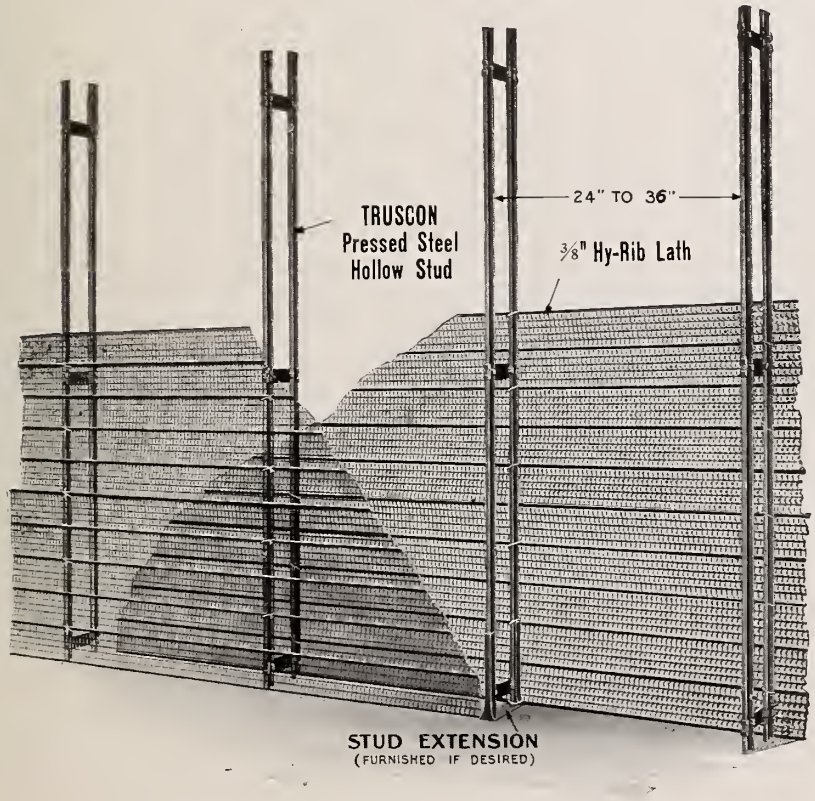
FIRE-PROOF DOOR FRAME IN HY-RIB PARTITION

DETAILS OF PARTITIONS OF HY-RIB LATH AND CHANNEL STUDS

Hollow Non-Bearing Partitions of Hy-Rib Lath and Studs

Non-bearing hollow partitions are only required where extraordinary insulation is required. For practical conditions the solid non-bearing partition meets all requirements of soundproofness, as sound is usually carried between rooms, through doorways or crevices or by the floor. The solid monolithic metal lath partitions are more effective than many hollow block partitions which contain unfilled crevices through which the sound penetrates.

For the non-bearing hollow partition we furnish Truscon Hollow Studs (see Page 6), consisting of two ¾″ channels separated by spacing bars, furnished in sizes to form 4″ to 8″ thick partitions. Hy-Rib Lath has the same advantages as in solid partitions.



Hollow Partitions with ⅜″ Hy-Rib Lath and widely spaced Studs.

SPECIFICATIONS FOR HOLLOW NON-BEARING PARTITIONS

Provide Hy-Rib Metal Lath, type . . . . . gauge . . . . . and Truscon Hollow Studs, size . . . . . , for all partitions. Attach studs to floor and ceilings and provide for door frames, baseboards, etc., according to details. Space studs according to following table.

Metal Lath	Spacing of Studs or Channels in Partitions
24 ga. ⅜″ Hy-Rib Lath	36″ to 42″
26 ga. ⅜″ Hy-Rib Lath	32″ to 36″
28 ga. ⅜″ Hy-Rib Lath	24″ to 30″
1-A Hy-Rib Lath	18″ to 24″
Rib Lath No. 4	18″ to 24″
Rib Lath No. 2	16″ to 20″
Rib Lath No 1	14″ to 16″

Interlock all adjoining sheets of Hy-Rib Lath at sides and ends. Sheets shall be securely fastened together by wiring every 24 inches along the sides and every 4 inches at ribs at the ends. Hy-Rib Lath shall be rigidly attached to channels or studs at least every 8 inches.

Where end splices occur between supports, splices in adjacent rows must be at least 2 ft. apart. Allow a lap of 2 inches where splices occur over the supports, otherwise 8 inches.

Hollow Partitions to Carry Loads

Studs must be of proper strength to carry loads coming on partition, using wood or steel according to type of construction desired. The use of Hy-Rib Laths effects considerable saving by permitting wide spacing of studs as indicated in table above.

We furnish Truscon Pressed Steel Studs in channels and H shapes and various sizes as indicated on Page 6. These are provided with prongs in their flanges, so that the metal lath is quickly attached by merely bending down the prongs over the lath.

Solid Hy-Rib Partitions without Channels or Studs

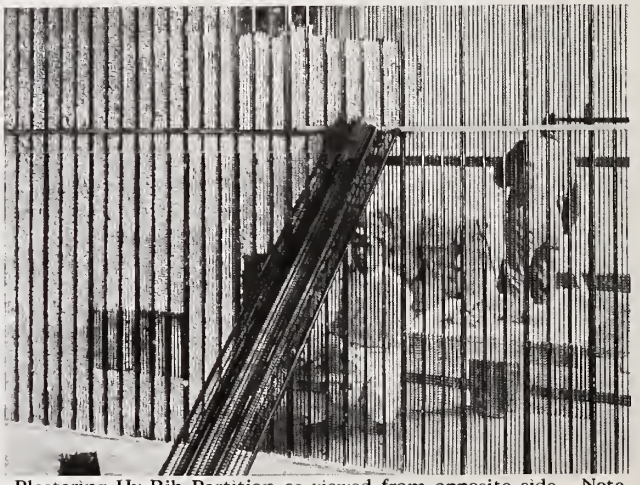
In these solid partitions the deeper types of Hy-Rib ($1\frac{3}{16}$", $1\frac{5}{16}$" or $1\frac{1}{2}$") are used and the ribs extend from floor to ceiling without support. All stiffening channels and studs are eliminated, doing away entirely with their expense and the labor of wiring lath to them. Hy-Rib is a unit of lath and channels, made in a single sheet of steel. The partitions are rigid, fireproof, soundproof and generally satisfactory.

The mesh provides a perfect key for the plaster without its dropping behind; the rigid true surface is an excellent base for rapid plastering. The completed partition is light in weight and less than 2" thick, effecting marked saving in floor space as compared with other types of partitions occupying 6" to 8".

As to the choice between the two types of Hy-Rib partitions with or without channels, each will give equal satisfaction. While the deeper Hy-Ribs eliminate channels, they are necessarily heavier and more costly than the Hy-Rib Laths, so the selection between the two types is usually governed by local costs of delivered material and labor.

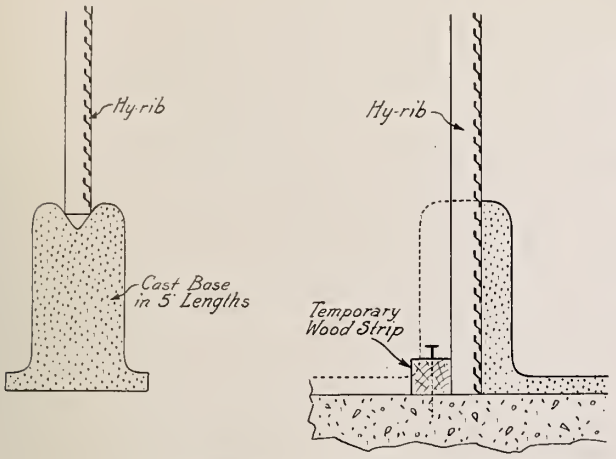
Complete details and specifications are given in the following pages.

Hy-Rib Partitions, 15 feet high, Merchant's Realty Co., Detroit, Mich. Note extreme height without use of studs or supports, also heavy first coat of plaster made possible by key and stiffness of Hy-Rib.



Plastering Hy-Rib Partition as viewed from opposite side. Note perfect clinch with no dropping of plaster.

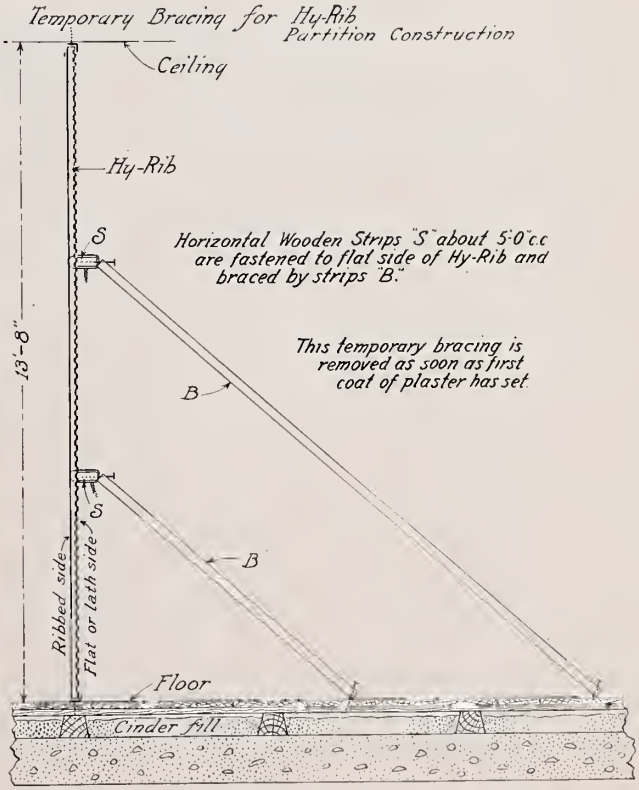
Hy-Rib Partition, without channels, E. W. Browning Apartment Hotel, New York. Showing Hy-Rib, scratch coat, second coat, and finish plaster coat. Fanning Cerra, Inc., Plastering Contractor, Buchman & Fox, Architects.



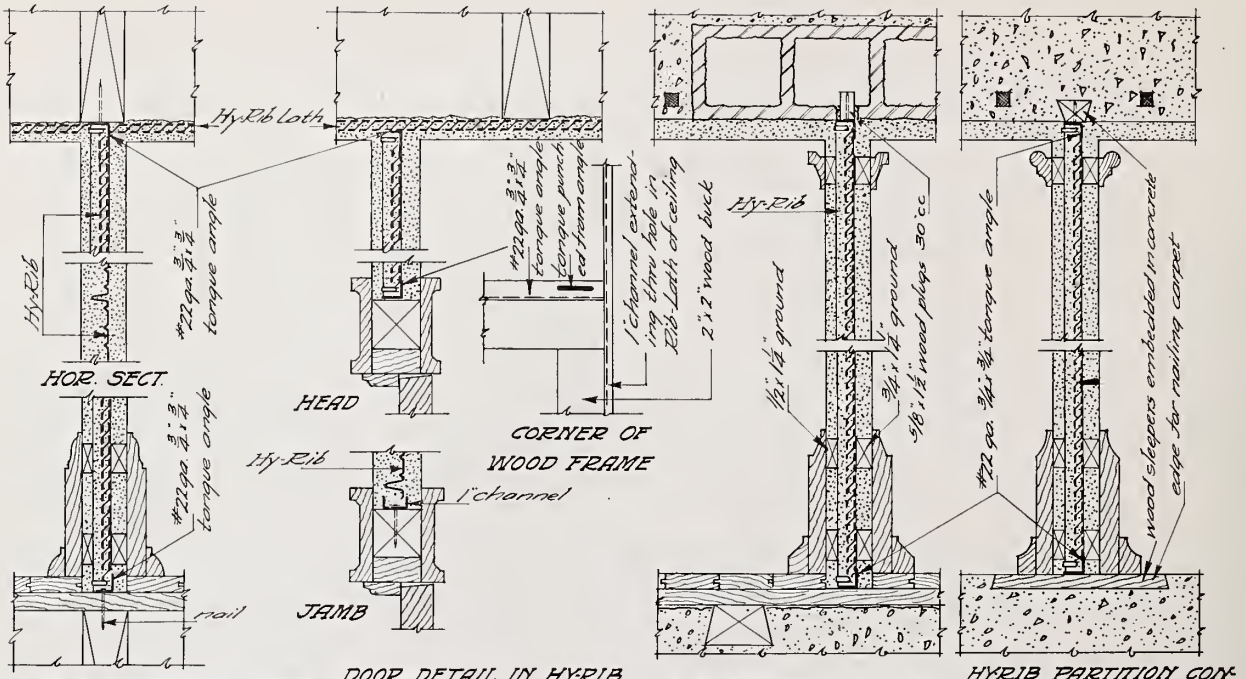
Two Methods of Providing Cement Bases for Hy-Rib Partitions without Channels. Where the cast bases are used the Hy-Rib sets in groove at top. In the other method the cement finish is plastered to proper thickness on one side of the Hy-Rib. The temporary bracing strip is then removed and other side finished. Plaster is applied to the Hy-Rib above the base to a total thickness of two inches.

Raising Hy-Rib en masse with 2 x 4 wooden scantling in which spikes are driven. The ten sheets of Hy-Rib have been previously united by punching the interlocked side ribs.

Hy-Rib partition without channels—Dodge Bros. Power Building, Detroit, Mich. Note simplicity of temporary bracing.



Temporary bracing for Hy-Rib partition without channels. This bracing is removed after the first coat of plaster, applied to ribbed side, has set. No other bracing is required.

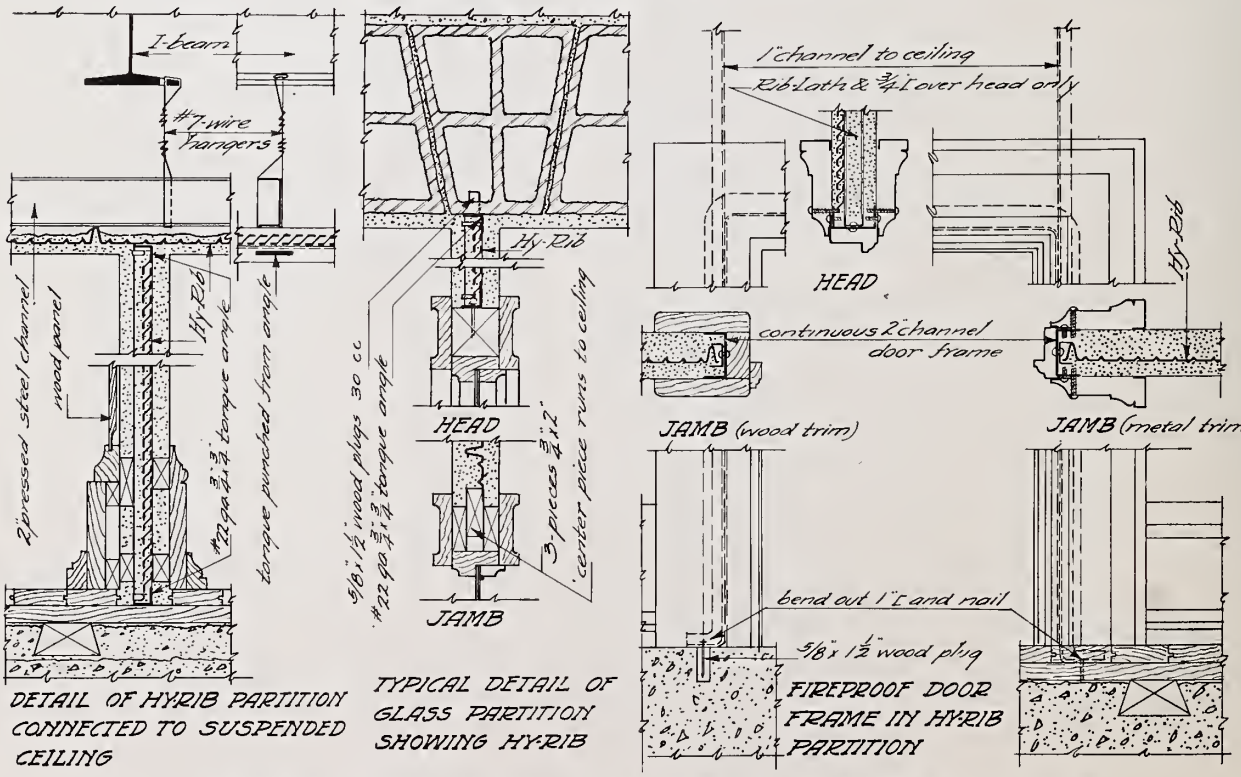


HYRIB PARTITION DETAIL SHOWING CONNECTION TO WOOD FLOOR JOISTS

DOOR DETAIL IN HY-RIB PARTITION WITH FRAME HELD IN PLACE BY 1" STEEL CHANNEL

HYRIB PARTITION CONNECTED TO FLOORS OF TILE AND CONCRETE

HYRIB PARTITION CONNECTED TO FLOORS OF SOLID CONCRETE



DETAIL OF HYRIB PARTITION CONNECTED TO SUSPENDED CEILING

TYPICAL DETAIL OF GLASS PARTITION SHOWING HY-RIB

FIREPROOF DOOR FRAME IN HY-RIB PARTITION

DETAILS OF HY-RIB PARTITIONS WITHOUT CHANNELS OR STUDS

Specifications for Solid Hy-Rib Partitions without Channels or Studs

(Ribs of Hy-Rib Running Vertically.)

Provide Hy-Rib, type ....., gauge ....., for all solid partitions. Interlock all adjoining sheets of Hy-Rib at sides and ends. Sheets shall be securely fastened together every 24 inches along the sides and at every rib at the ends by wiring or by clinching of the lapped ribs with special punch. Where sheets are spliced at the ends, splices in adjacent rows must be at least 2 feet apart, and must lap from 3 to 6 inches depending upon the height of the partition.

Hy-Rib shall be attached to floors and ceilings by means of small angles (or channels, or wooden strips) as indicated in details.

Where cement plaster is used provide $\frac{7}{32}$″ or $\frac{1}{4}$″ rods, spaced 30 inches on center, at right angles to the ribs. Where lime or patented plasters are used, rods are unnecessary.

Temporary bracing should be used horizontally every 5 ft. for $\frac{13}{16}$″ Hy-Rib and 6 ft. for $\frac{15}{16}$″ Hy-Rib.

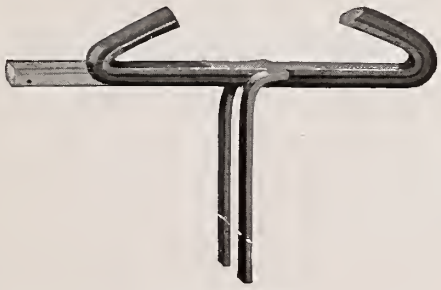
(Minimum Requirements)

Height of Partitions	Thickness of Partitions	REINFORCEMENT
up to 10 feet	$1\frac{3}{4}$″	No. 28, $\frac{13}{16}$″ Hy-Rib
12 feet	2″	No. 26, $\frac{13}{16}$″ Hy-Rib, or No. 28, $\frac{15}{16}$″ Hy-Rib
14 feet	$2\frac{1}{4}$″	No. 24, $\frac{13}{16}$″ Hy-Rib, or No. 26, $\frac{15}{16}$″ Hy-Rib
16 feet	$2\frac{1}{2}$″	No. 26, $\frac{15}{16}$″ Hy-Rib
18 feet	$2\frac{3}{4}$″	No. 24, $\frac{15}{16}$″ Hy-Rib
20 feet	3″	No. 22, $\frac{15}{16}$″ Hy-Rib

For partitions above 25 feet high, structural supports should be erected vertically in accordance with Table for Partition with Channels, page 43, and the Hy-Rib run horizontally. Also in special cases partitions above 12 ft. which will be subjected to constant vibration, such as in factories, may have to be constructed in the same manner.

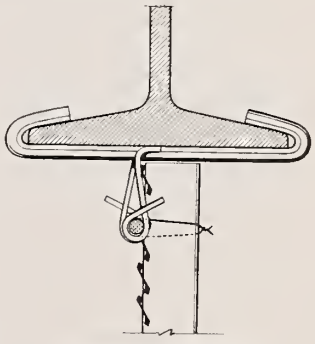
TONGUE ANGLE
(22 Gauge)

For attaching Hy-Rib in Partitions and Walls.
Spacing of Tongues—8″
Length of Angle—5′-0″
Supplied in bundles of 25 Angles

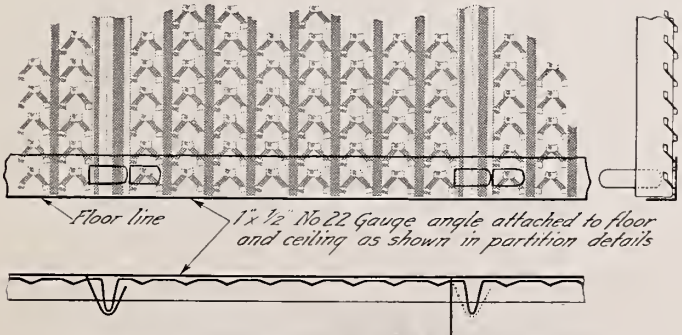


RIB CLIPS

Rib Clips are shipped with one end bent and the other end straight as indicated above. In ordering Rib Clips give width of flange upon which clips are to be used or give size and weight of beams. Rib Clips are used in partitions as here illustrated and for supporting ceilings as shown on Page 53.



Attaching Hy-Rib Partition to bottom of steel beam. The Rib Clips, spaced 24″ apart, are bent over beam and their prongs bent around small steel rod. Hy-Rib is wired to rod.



Application of Tongue Angle at bottom of Hy-Rib partition.
Details of application at top or side are similar.

3/8" Hy-Rib Lath ceilings, joists 24" center to center. Kennedy. Bros. Apartments, Washington, D. C. R. W. Allen, Lathing Contractor. Murray Bros., Plastering Contractors.

3/8" Hy-Rib ceiling supported by Pressed Steel Channels. Miller School, Akron, Ohio. Indiana Engineering & Construction Co., Contractors. Neirmaier Bros., Lathing Contractors.

CEILINGS

Cracks, streaks and falling plaster do not occur in ceilings reinforced with Hy-Rib and Metal Lath, saving expensive repairs and re-decoration. The extreme stiffness of Hy-Rib permits wide spacing of supports, saving 50% of the labor and time in erecting the lath.

The straight, true surface and the exceptional rigidity of the Hy-Rib Metal Lath prevent the waste of plaster in filling out uneven spaces, and eliminate the excess plaster required by the "bowing" of the lath under pressure. The improved form of mesh provides a perfect key for the plaster and prevents its dropping off.

The Hy-Rib and Metal Lath are attached to the lines of supports, using type of lath and spacing of supports according to table in specifications. Note that the heavy types of Hy-Rib will span up to 6'0" without supports, so that the ceilings can often be attached directly to the under side of the beams. For joists with closer spacing, lighter types of lath may be used. The Hy-Rib products meet every requirement from the lightest to the heaviest.

Hy-Rib suspended ceiling, B. J. Johnson Soap Co., Milwaukee, Wis. Lockwood, Greene & Co., Architects and Engineers.

Suspended ceilings are ordinarily built as indicated on next page with main supporting channels and lighter channels at right angles. By using the heavier types of Hy-Rib the light channels can be eliminated, or with the Hy-Rib Laths these light channels are spaced wide distances apart; in either case materials, labor and time are saved.

No plastered ceiling anywhere should be built without metal lath. Cracked, streaked and falling ceilings are the bane of the owner of any building, whether a modest cottage or a magnificient hotel. The slight additional first cost of metal lath is soon more than repaid by the saving in repairs and re-decoration.

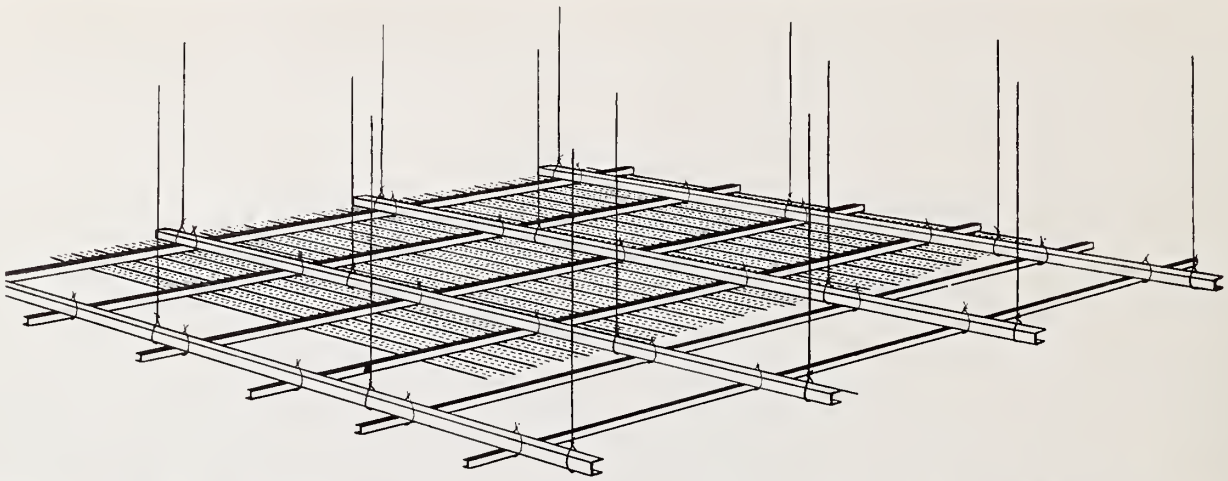
Hy-Rib Ceilings, Bremer Arcade Building, St. Paul, Minn. Buechner & Orth, Architects. Wm. Poppenberger & Sons, Plastering Contractors.
Note method of suspending Hy-Rib without use of small channels. Note also heavy first coat of plaster.

3/8" Hy-Rib Lath on Channels, 30" centers. Crown Building, Cleveland.
Forest City Engineering Co., Architects and Engineers.
Masters & Mullen Company, General Contractors.

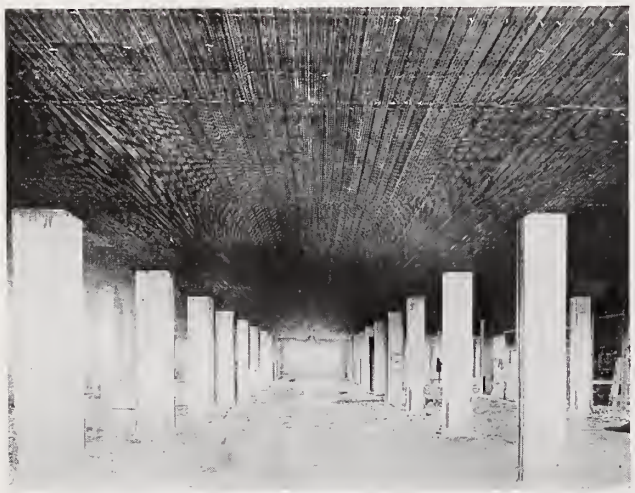
3/8" Hy-Rib Lath Ceiling—Hutchinson High School, Buffalo, N. Y.
H. Osgood Holland, Architect; James G. Davis, Plastering and Lathing Contractors.

Hy-Rib Lath Ceilings. Hill Memorial Hall, University of Michigan,
Ann Arbor, Mich. Albert Kahn, Architect.

Guyon's Dancing Academy, Chicago, Ill.
1-A Hy-Rib Lath in Ceiling.

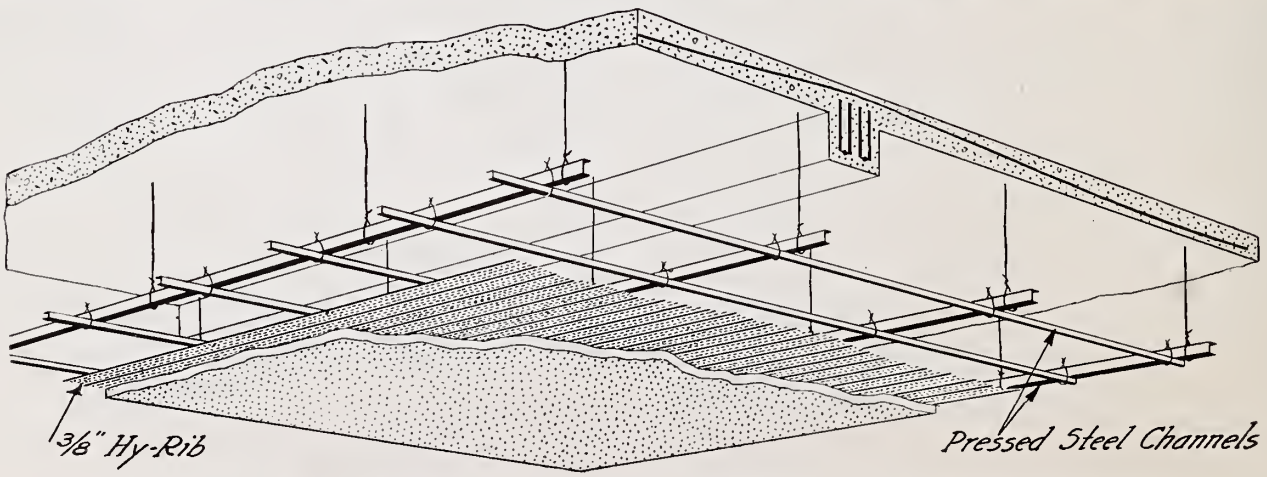


CEILING OF HY-RIB LATH AND CHANNELS - VIEW FROM ABOVE



Diamond Laundry Co., Los Angeles, Cal. 3/8" Hy-Rib Lath in Ceiling.

Hy-Rib Ceiling, Hotel Traymore, Atlantic City, N. J. Price & McLanahan, Architects.



CEILING OF HY-RIB LATH AND CHANNELS - VIEW FROM BELOW

Specifications for Hy-Rib and Metal Lath Ceilings

Suspended ceilings shall be built of Hy-Rib and Metal Lath attached to lines of supports, as indicated in detail; supports to be Truscon Pressed Steel Channels, spaced as indicated in table.

Attach each rib of Hy-Rib at each support.

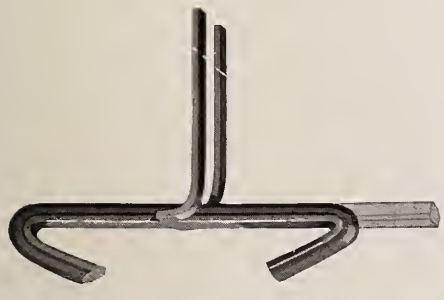
Place Hy-Rib with the flat side downward. Interlock all adjoining sheets of Hy-Rib at sides and ends. Sheets shall be securely fastened together every 24 inches along the sides and at every rib at the ends by wiring or by clinching of the lapped ribs with special punch. Where end splices occur between supports, splices in adjacent rows must be at least 2 feet apart. Allow a lap of 2 inches where splices occur over supports, otherwise 8 inches.

Spacing of Supports	Reinforcement
1′–0″ to 1′–2″	Rib Lath No. 1
1′–2″ to 1′–6″	Rib Lath No. 2
1′–4″ to 1′–10″	1-A Hy Rib Lath or Rib Lath No. 4
1′–10″ to 2′–2″	No. 28, 3/8″ Hy-Rib Lath
2′–6″ to 2′–9″	No. 26, 3/8″ Hy-Rib Lath
2′–9″ to 2′–11″	No. 24, 3/8″ Hy-Rib Lath
2′–11″	No. 28, 13/16″ Hy-Rib
3′–11″	No. 26, 13/16″ Hy-Rib or No. 28, 15/16″ Hy-Rib
4′–11″	No. 24, 13/16″ Hy-Rib or No. 26, 15/16″ Hy-Rib
5′–11″	No. 24, 15/16″ Hy-Rib

RIB CLIPS

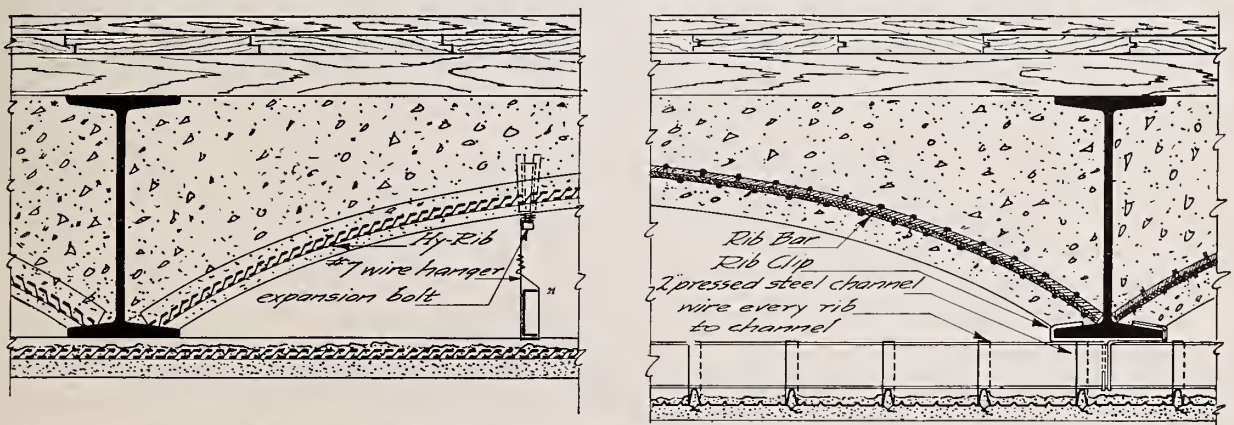
Rib Clips are shipped with one end bent and other end straight as illustrated. In ordering Rib Clips, always give width of flange upon which clips are to be used, or, give size and weight of Channels or I-beams.

Rib Clips are particularly useful for supporting ceilings as shown. Fur use in partitions, see Page 49.

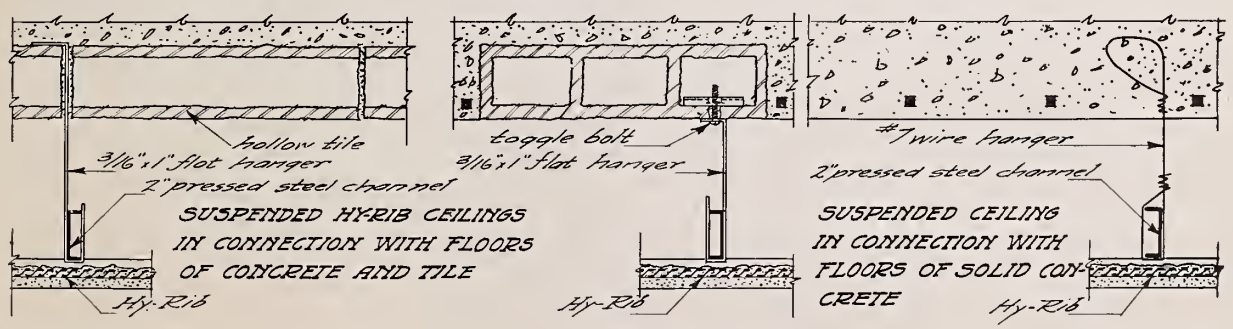


Rib Clip

Rib Clip supporting Hy-Rib Ceiling from steel.



SUSPENDED HY-RIB CEILINGS IN CONNECTION WITH CONCRETE FLOOR ARCH CONSTRUCTION



SUSPENDED HY-RIB CEILINGS IN CONNECTION WITH FLOORS OF CONCRETE AND TILE

SUSPENDED CEILING IN CONNECTION WITH FLOORS OF SOLID CONCRETE

Hy-Rib Lath for Furring, Ceilings and Partitions.
Grace Hospital, Detroit, Mich.

Various stages in overcoating frame building, showing 3/8" Hy-Rib Lath before plastering, after one plaster coat and finished stucco. No furring required for 3/8" Hy-Rib Lath.

FURRING

All furring strips are eliminated by the use of Hy-Rib products, because of the ribs. For furring inside or outside of walls, Hy-Rib is nailed or stapled directly to the wall with the lath side outward, eliminating entirely the expense of furring strips and the labor of applying them. The perfect key prevents plaster dropping behind and the straight, true surface saves labor in plastering.

Where an air space is necessary for insulation against dampness and temperature, either 13/16" or 1½" Hy-Rib should be used, securing in this way an air space of either 13/16" or 1½" as desired. Where the furring is only required as a key for the plaster, 3/8" or 1-A Hy-Rib Lath is entirely ample. The various types of metal laths may also be used with furring strips, spaced as indicated in specifications below.

Hy-Rib is extensively used as a furring for insulation around boilers, in cold storage plants, and on roofs to prevent condensation. The air space between the ribs stops the conduction of heat, cold and moisture.

SPECIFICATIONS FOR FURRING

Provide Hy-Rib, type ....., gauge....., for all furring.

Hy-Rib shall be placed with the lath side away from wall. It shall be fastened to the wall by means of staples or nails. occuring every 36 inches along the length of each high rib, points of fastening being staggered in adjacent rows. Interlock all sheets at ends and sides and allow 1 inch end lap.

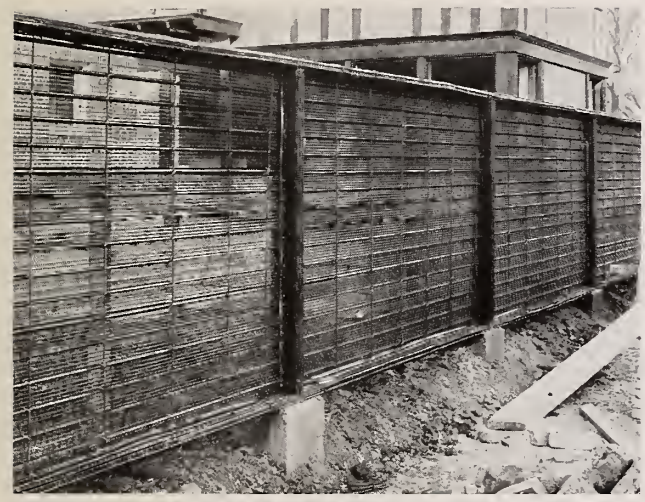
ALTERNATE SPECIFICATIONS USING FURRING STRIPS

Provide Hy-Rib Metal Lath, type ....., gauge..... Rigidly attach furring strips and space as indicated in accompanying table.

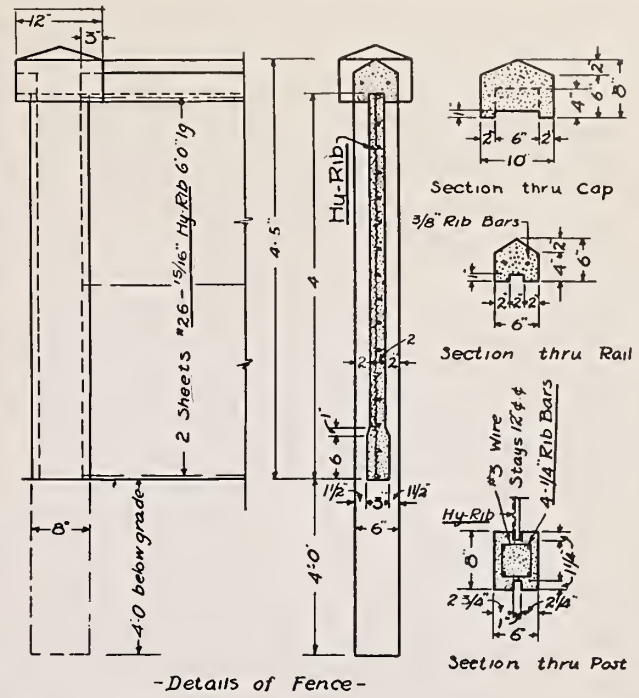
Interlock adjoining sheets of Hy-Rib Lath at sides and ends, securely fastening sheets together where necessary. Attach Hy-Rib Lath to furring strips at least every 8 inches. Where end splices occur at supports a lap of 2 inches should be made; otherwise 8 inches.

Metal Lath	Spacing of Furring Strips
24 ga. 3/8" Hy-Rib Lath	36" to 42"
26 ga. 3/8" Hy-Rib Lath	32" to 36"
28 ga. 3/8" Hy-Rib Lath	24" to 30"
1-A Hy-Rib Lath	18" to 24"
Rib Lath No. 4	18" to 24"
Rib Lath No. 2	16" to 20"
Rib Lath No. 1	14" to 16"

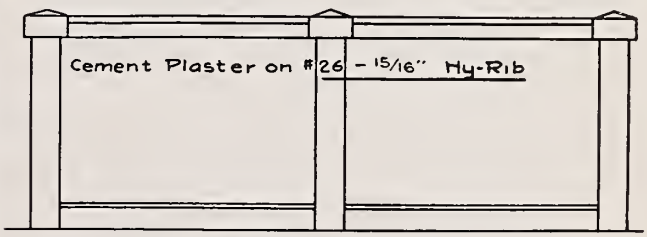
Hy-Rib Fence, E. J. Smith, Detroit, Mich.
Note fence is open below.



Hy-Rib Fence, with Pressed Steel Posts, Herman Strasburg Residence, Detroit, Mich. Marcus R. Burrowes, Architect.



-Details of Fence-



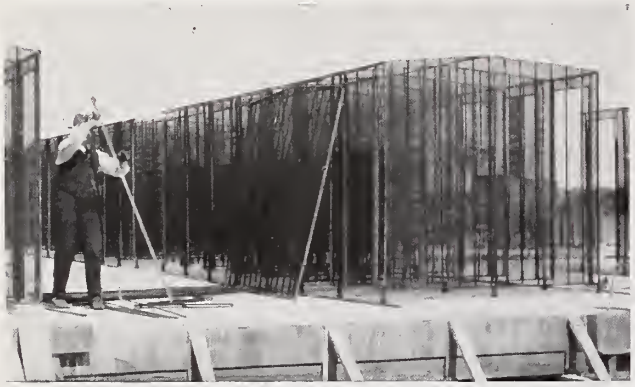
-Front Elevation of Fence-

Details of Hy-Rib Concrete Fence, with Reinforced Concrete Posts.

Hy-Rib Concrete Fence, Minneapolis Ball Grounds. Hy-Rib sheets are united by punching and placed a panel at a time. Note the great saving in labor by the use of Hy-Rib and this method of handling.

Polo Grounds, New York. Snare & Triest Co., Erectors.
Hy-Rib used in all Sidings, Partitions, Ticket Booths, Railings, etc.

National League Baseball Grandstand, Cincinnati, O. Hy-Rib Concrete Partition Walls around boxes, etc.



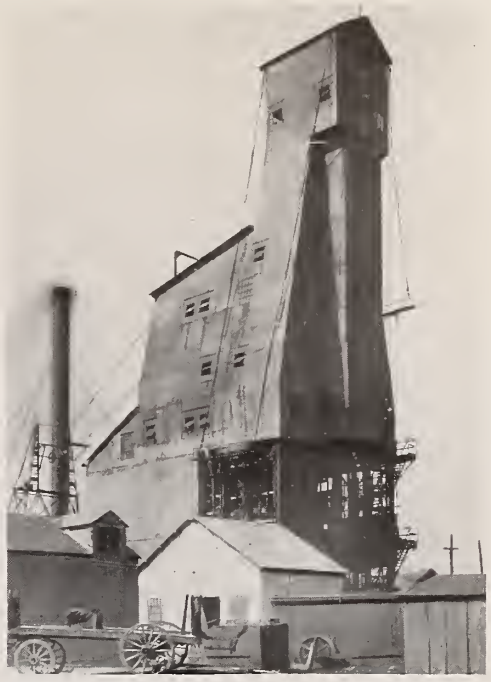
Calhoun Bath House, Minneapolis, Minn. Cecil Bayless Chapman, Architect: F. Gottlieb Magney, Associate.
Panels of Hy-Rib Partitions are handled as a unit.

Fan House built of Hy-Rib Concrete. Birmingham Fuel Co., Birmingham, Ala.

Mausoleum, Detroit Crematorium, Detroit, Mich. Partitions, niches, columns and beams are Hy-Rib Concrete.

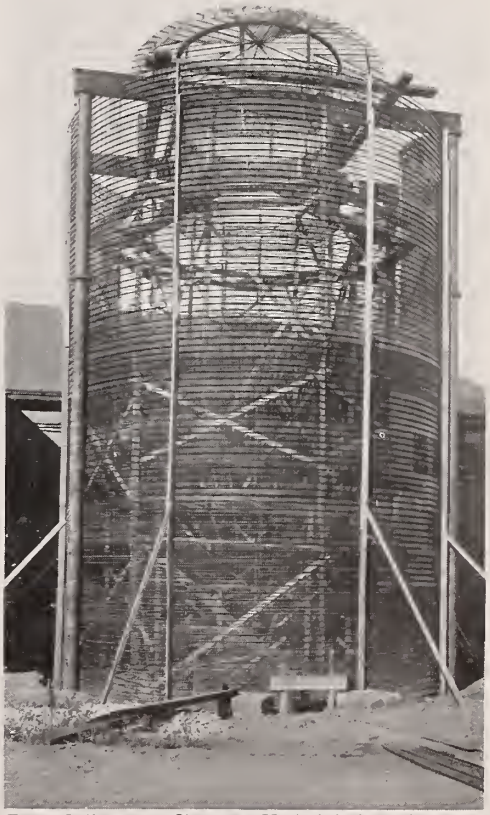
Quarantine Hospital Buildings, Porto Rico. Built of Hy-Rib Concrete Construction.

Hy-Rib Concrete Rest-House at Kaleakala Crater, Hawaiian Islands.
Hy-Rib Concrete Tank at right.

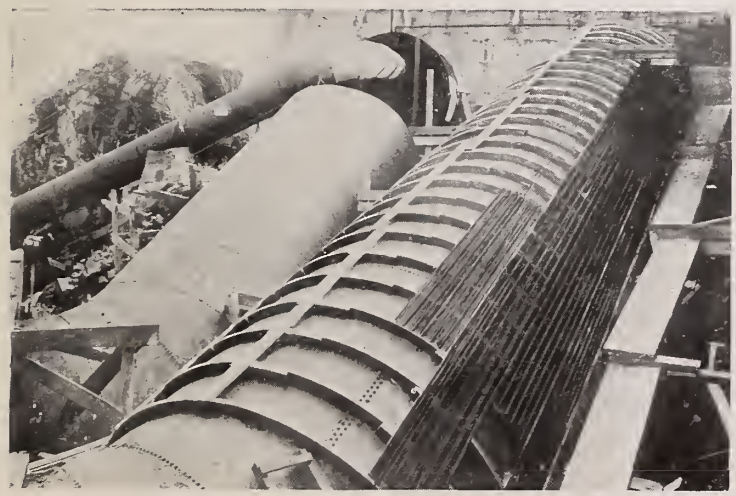


Hy-Rib Sidings for Shaft House, Detroit Salt Works, Oakwood, Mich.

Hand Railing of plastered Hy-Rib on mountain-side viaduct, Columbia River Highway, Oregon.



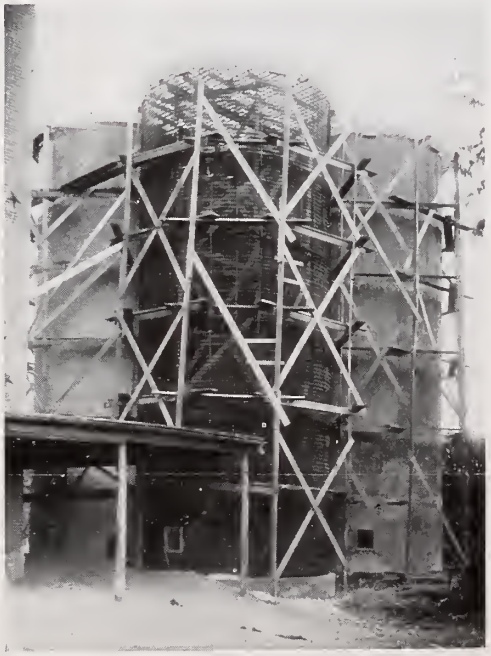
Dust Collector. Showing Hy-Rib before plastering with cement mortar.
Owosso Sugar Co., Owosso, Michigan.



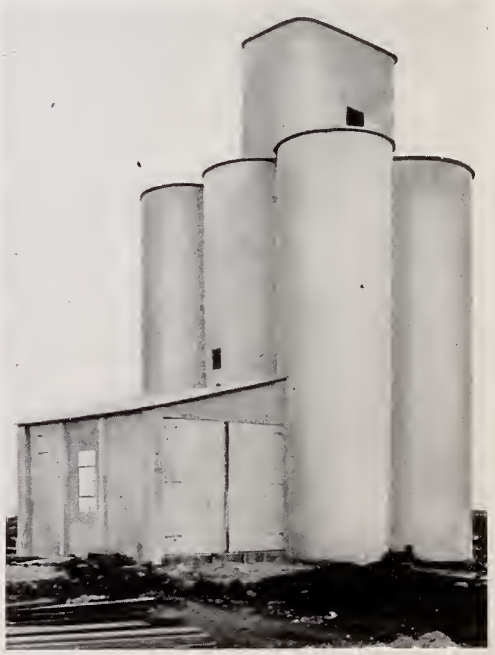
Steel Penstock protected by applying wood strips, attaching Hy-Rib and plastering with cement, eliminating heavy concrete casing and forms.
Oliver Iron Mining Co., Iron Mountain, Michigan.

20,000-Gallon Tank, Marine Biological Station, San Diego, Cal. Irving J. Gill, Architect.
Tanks and Panels are Hy-Rib Concrete.
Posts and Girders are Truscon Reinforced Concrete.

Tank, 110 ft. above ground, at Bay Minette, Ala.
This tank withstood an 80-mile-an-hour hurricane without injury. Hy-Rib reinforcement used.
Concrete Steel Construction Co., Birmingham, Ala.



Construction of 35,000 bushels grain tank for Kuhlman & Meyer Milling Company, California, Mo.
Front tank has Hy-Rib in place ready for plaster, other two tanks have received two plaster coats.



Hy-Rib Concrete Grain Tanks for the Independent Co-operative Grain & Mercantile Company, Stafford, Kansas. Many of this kind have been built by the Concrete Steel Machinery Co., Kansas City, Mo.

Two 14'x30' Hy-Rib Concrete Silos on the McBride Farm, Burton, Mich.

Hy-Rib Concrete Silos for J. R. Cross Co., Jersey Farms, Fairhope, Ala.

Tanks, Reservoirs, Cisterns, Silos, Etc.

(Write for Catalogue, "Hy-Rib Concrete Silos and Farm Buildings"

The curved Hy-Rib sheets are set up on edge and the plaster applied directly to the inner and outer surfaces. No forms of any kind are required. $^{15}/_{16}$" Hy-Rib is furnished bent to curve by our shops. Vertical Rib Bars about 5 feet apart should be used to serve as a guide for the Hy-Rib sheets and to thoroughly tie the concrete work together vertically.

Hy-Rib sheets provide in themselves a thorough interlocking splice at the ends and sides. Lap the sheets at least 8 inches at ends and securely fasten together each spliced rib. Splices in adjacent rings should be at least two feet apart. Follow specifications for Hy-Rib walls and sidings, page 27, for materials and application of plaster.

It is usually difficult to plaster a solid wall to a greater thickness than 4 inches. When heavier solid walls are required we recommend the use of a double layer of Hy-Rib, pouring the concrete in between the two sheets.

Where an air space is desired on walls of silos an inner and outer layer of Hy-Rib is used with our Truscon Pressed Steel Hollow Studs to separate them. The inner wall is plastered on both sides and the outer wall on the outside only.

25,000-gallon Concrete Reservoir, City of Monroe, Ore. Hy-Rib Concrete Construction.

Water Tank (Hy-Rib), Jefferson Powder Co., Birmingham, Ala. Hy-Rib bent to exact curve in our shops.

Hy-Rib Concrete Culvert, Charleroi Mine, Carnegie Coal Co., W. Monessen, Pa.
Note the corrugated metal culvert which has been removed to be replaced by the permanent Hy-Rib concrete construction. Only forms required are those at the sides.

CONDUITS, FLUMES AND CULVERTS

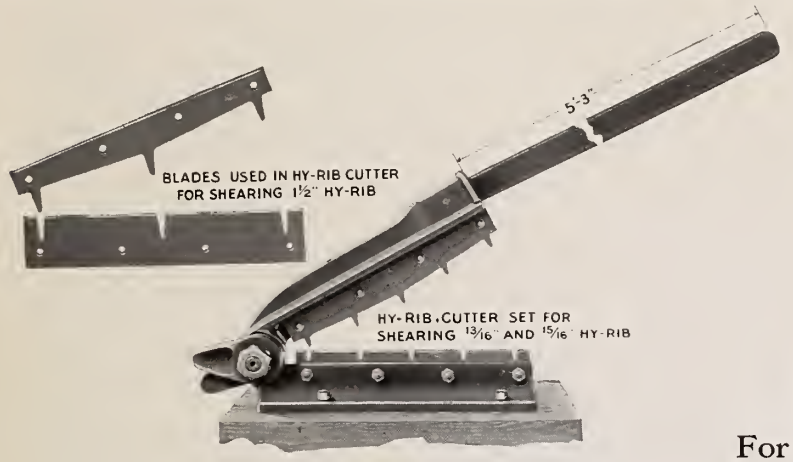
The $15/16$″ Hy-Rib is bent to perfect curve in our shops. Simply set up the curved sheets on the job, and apply the concrete as a plaster.

Absolute continuity of reinforcement is secured by the positive interlocking of the sheets at the sides and ends. No forms (the principal item of expense in conduit construction) or special field labor are required. A few rods, as shown on illustration, extending the length of the conduit, should be provided to keep the Hy-Rib straight in line and as an additional safeguard against any shrinkage and temperature cracks. Rib Bars are recommended for this purpose.

Either side of Hy-Rib may be plastered first.

Hy-Rib Arched Conduit.
South Lawn Subdivision, Greenfield Township, Detroit, Mich.
Otis Cement Construction Co., Contractors.

Hy-Rib passageway connecting buildings of Wayne County Insane Asylum, Eloise, Mich.



(Patented.)

HY-RIB CUTTER

For Shearing All Types of Hy-Rib.

Where Hy-Rib must be cut to various lengths, and fitted around openings, most builders find it more economical to order Hy-Rib in standard lengths, and cut the sheets to the required size on the job.

The Hy-Rib Cutter is a portable shear for cutting Hy-Rib sheets to any desired length. It weighs only 85 lbs., and can be readily carried by one man from one location to another. In jobs of any size, the Hy-Rib Cutter pays for itself many times over. It saves time, labor and expense over the use of the ordinary tinsmith's tools. Many of our representatives have Hy-Rib Cutters which can be rented for use on small-sized jobs.

Hy-Rib Cutters are furnished complete, ready for mounting on suitable base. The shear blades are detachable for sharpening.

The Hy-Rib Cutter is designed so as to shear 13/16" and 15/16" Hy-Rib with the same blades. and 1½" Hy-Rib by merely changing the blades in the cutter. These two sets of blades are furnished with each cutter.

Shearing Sheet of 13/16" Hy-Rib with Hy-Rib Cutter. Also shears 13/16" Hy-Rib without change and 1½" Hy-Rib by substituting another set of blades. Metal laths are readily cut with tinsmith's shears.

Niagara Hotel, Toledo, Ohio. Thomas F. Huber, Architect. Henry J. Spieker, Contractor. Hy-Rib Lath with Truscon Pressed Steel Joists and Studs.

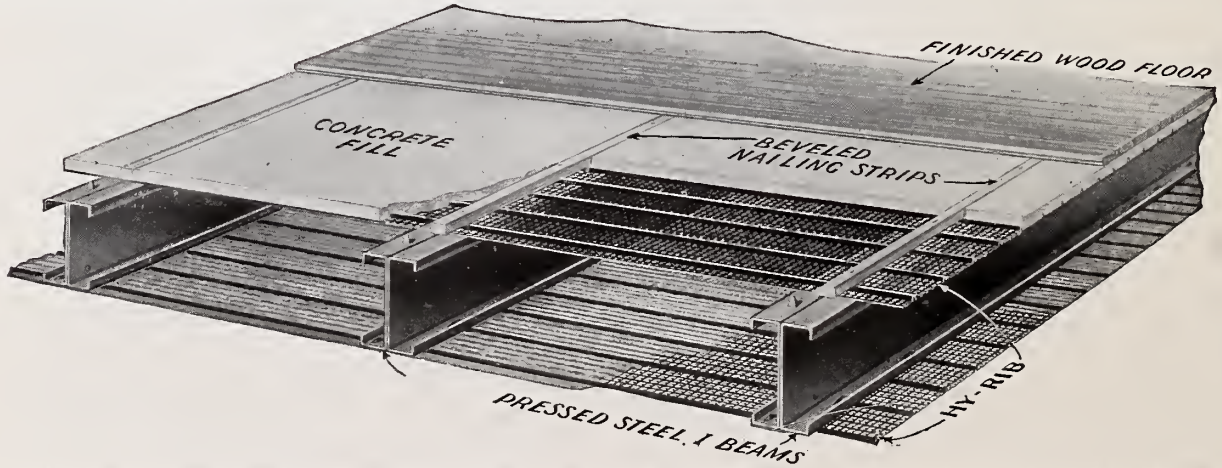
TRUSCON PRESSED STEEL CONSTRUCTION

In buildings of all types, Truscon Pressed Steel Joists and Studs with Hy-Rib Lath provide a permanent, fireresisting construction for floors, roofs, partitions, walls, etc. No forms, no centering and no special equipment are required. Merely set the Pressed Steel members in place and apply the plaster and concrete.

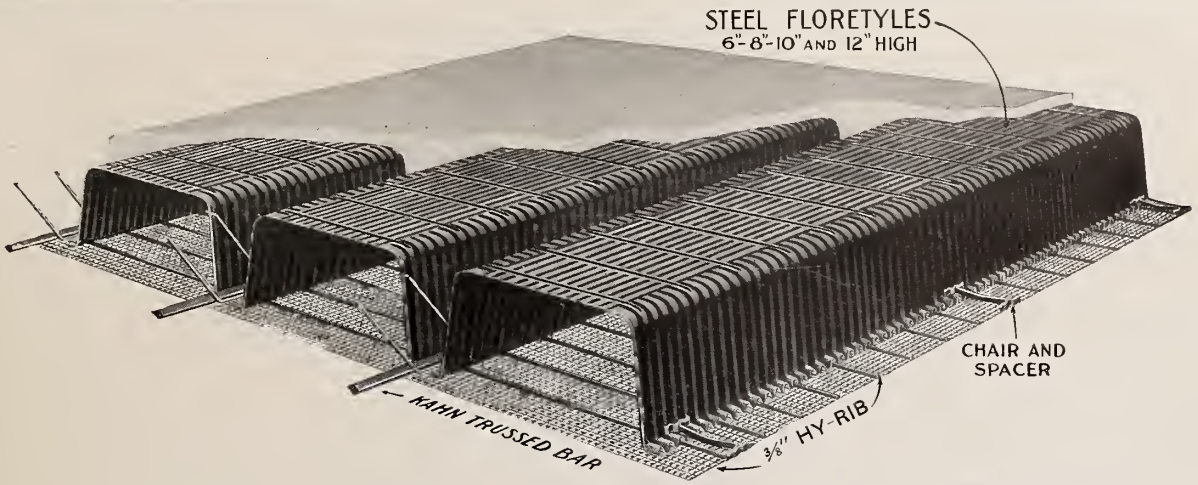
Truscon Pressed Steel is simple to erect, economical in cost, permanent and fireproof. The construction is verminproof—no rats, mice, roaches, nor vermin of any kind to ruin the building. The metal lath prevents cracking, streaking and falling of the plaster.

Truscon Pressed Steel has the advantage of fireproof construction, and can be economically used in buildings of any size. It is erected with equal safety in the coldest weather and is light in weight, saving greatly in the floor itself and in all supporting members.

Truscon Pressed Steel beams may be supported by walls or by means of structural steel or reinforced concrete beams. Otherwise the entire interior construction may be made of bearing partitions formed of Pressed Steel Studs.



Standard Truscon Pressed Steel Floor Construction with Wood Floor Finish.—Equally satisfactory for cement or other type of floor finish.



STEEL FLORETYLE CONSTRUCTION

3/8" Hy-Rib Lath is used for ceilings in connection with Steel Floretyle and Steel Floredome construction, providing a flat ceiling and a perfect surface for plastering.

Steel Floretyle construction consists of rows of hollow steel tile covered with a thin layer of concrete and separated by reinforced concrete joists. The joists, spaced approximately 24½" centers, carry the load directly to the supports while the Floretyle acts merely as a filler, saving concrete and reducing dead load. The corrugated Floretyles have extreme rigidity in the top, especially formed corners, corrugated sides and corrugated flanges along the bottom edges, so as to provide great stiffness in supporting loads.

Steel Floredomes are similar to Floretyles, except that they are only open on the under side, so that joists may extend on all sides of the dome, and carry the loads in two directions to the supports. More complete information on Floretyle and Floredome constructions is furnished in special literature of the Truscon Steel Co.

D. R. Walsh, Architect.

Austin High School, Texas.
Steel Floretyle Construction

Van Horn-Shaw Constr. Co., Contrs.

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