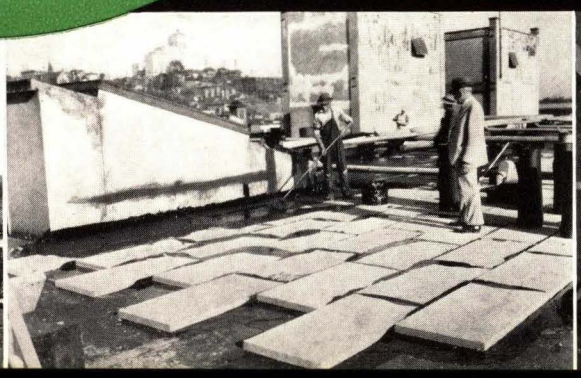
FIR-TEX

Super Insulating Board

NATURE'S GIFT FROM THE GREAT NORTHWEST WOODS



There is a FIR-TEX Insulating Board for Every Purpose

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FIR-TEX "F" FIRKOTE INSULATING SHEATHING

Standard Thickness: 25/32".
Sizes: 4' x 7', 4' x 8', 4' x 8½', 4' x 9', 4' x 9½', 4' x10', 4' x 12'.
Uses: Exterior wall sheathing, exterior pitched roof sheathing, exterior finish.

Description: Square edged. Every fibre waterproofed with asphalt and fused under intense heat. Both surfaces are given additional waterproof treatment, then glazed for easy handling. The exposed surface is marked with guide lines for accurate nailing.

See Sections I and II

FIR-TEX "L" INSULATING PLASTER BASE LATH

Standard Thicknesses: ½", ¾", 1".
Size: 18" x 48".

Description: Long edges shiplapped and beveled, ends beveled only. Made especially to receive and hold plaster.

See Section III

FIR-TEX "BC" IVRYKOTE BUILDING BOARD

Glazed, mottled ivory washable surface.
Standard Thicknesses: ½", 1".
Sizes: 4' x 4', 4' x 5', 4' x 6', 4' x 7', 4' x 8', 4' x 8½', 4' x 9', 4' x 9½', 4' x 10', 4' x 12'.
Uses: Interior finish, sound deadening and insulation of pitched roofs of frame buildings. For these uses, Fir-Tex building board insulates against heat, cold and sound at the cost of insulation alone.

Description: A square-edged building board in standard sizes listed above. Made from natural wood fibres, not reduced to cellulose by chemicals, and pressed into boards with tremendous insulating qualities.

See Section IV

FIR-TEX "B" BUILDING BOARD

Same as Fir-Tex "BC" Ivrykote Building Board except color is neutral tan.

See Sections IV, VII, VIII, IX and XIII

FIR-TEX "BEC" IVRYKOTE ECONOMY BOARD

Same as Fir-Tex "BC" Building Board except it is made only in 3/8" thickness.

See Section VIII

FIR-TEX "BE" ECONOMY BOARD

Same as Fir-Tex "BEC" Ivrykote Economy Board except color is neutral tan.

See Section VIII

FIR-TEX "T" INSULATING TILE

Colors: Fir-Tex "TC" Ivrykote, Fir-Tex "T" neutral tan, or Fir-Tex "TS" sprayed with special acoustical paint in standard colors, namely: white, ivory, cream and buff.
Standard Thicknesses: ½", ¾", 1". Greater thicknesses on special order.
Small Sizes: 6" x 6", 6" x 12", 8" x 8", 8" x 16", *12" x 12", 12" x 24", *16" x 16", 24" x 24".
*Standard sizes.

Large Sizes: *16" x 32", 18" x 32", 16" x 48", 18" x 48", 24" x 48", also Fir-Tex "TCM" (Ivrykote) or Fir-Tex "TM" (Neutral tan) multiple tile board, 48" x 48".
Description: Cut to rectangular shape, beveled on all four edges with a "AA" joint similar to a tongue and groove joint.
Uses: Decorative interior finish, wall and ceiling; for sound absorption and special acoustical work in stores, theatres, broadcasting studios and other places where the quieting of sound is a factor.

See Section V

FIR-TEX "P" INSULATING FINISH PLANK

Standard Thicknesses: ½", 1".

Colors: Fir-Tex "PC" Ivrykote, Fir-Tex "P" neutral Tan or Fir-Tex "PS" sprayed with special acoustical paint in standard colors, namely: white, ivory, cream and buff.

Sizes: 6", 8", 10", 12", 16" wide by 6', 7', 8', 8½', 9', 9½', 10', 12' long; also Fir-Tex "PCM" (Ivrykote) and Fir-Tex "PM" (Neutral tan) multiple Finish Plank, 4' wide, same lengths.

Description: Long edges beveled and beaded with a "AA" joint similar to a tongue and groove joint.

See Section VI

FIR-TEX ACOUSTICAL PRODUCTS

All Fir-Tex building board, Finish Plank and Tile are available in either neutral tan or sprayed with a special acoustical paint.

Uses: For sound absorption and control of the acoustics in stores, offices, theatres, churches, auditoriums, schools, etc.

FIR-TEX "R" ROOF INSULATION BOARD

Standard Thicknesses: ½", 1", 1½", 2" and thicker upon special order.

Sizes: Square edge 24" x 48", and when furnished with offset edges, 22" x 47".

Uses: For insulation of flat decked roofs of wood, steel, concrete, structural gypsum or unit tile, under built-up roofing.

Description: A low density Fir-Tex Board of maximum insulating properties made in one homogeneous board up to 1½" without lamination.

See Sections XI and XII

FIR-TEX "RV" VAPOR-PROOF ROOF INSULATION BOARD

Standard Thicknesses: ½", 1", 1½", 2" and thicker upon special order.

Sizes: Square edge 24" x 48", and when furnished with offset edges, 22" x 47".

A special Fir-Tex Roof Insulation Board wrapped in waterproof paper and sealed.

Uses: For insulation of flat decked roofs of wood, steel, concrete, structural gypsum or unit tile, where severe conditions of moisture or humidity require a super-type of insulation.

See Sections XI and XII

FIR-TEX "Z" REFRIGERATION INSULATION BLOCKS

Standard Thicknesses: 1", 1½", 2", 3", 4" and greater if required.

Sizes: 12" x 36", 18" x 36", 24" x 36", 24" x"8

Uses: Especially made for normal refrigeration and cold storage jobs.

Description: Low density; high insulation value. Made in one homogeneous board up to 1½" without lamination.

See Section X

FIR-TEX "ZV" REFRIGERATOR AND COLD STORAGE LOW TEMPERATURE INSULATION BLOCKS

Standard Thicknesses: 1", 1½", 2", 3", 4" only.

Sizes: 12" x 36", 18" x 36", 24"x 36", 24" x 48".

Uses: For severe service in cold storage work.

Description: Low density blocks wrapped in vapor-tight paper. Moisture-proof, water-proof, vapor-proof.

See Section X

INDEX

PREFACE to FIR-TEX MASTER SPECIFICATIONS

In presenting these specifications, effort has been made to provide all clauses which in ordinary practice apply to average work. It is recognized that problems arise in individual jobs, which require analysis and special treatment. Any attempt to anticipate in these specifications every such problem would tend to complicate the specifications and confuse the reader. We request every architect to consult us freely on all matters pertaining to insulation of any description — write or wire

ENGINEERING DEPT.,
FIR-TEX INSULATING BOARD CO., INC.,
1108 Porter Bldg.,
Portland, Oregon.

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EXTERIOR WALL SHEATHING

FIR-TEX "F" FIRKOTE SHEATHING
Master Specifications

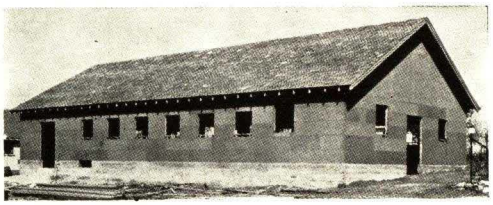
1. **Work Included:**
   (NOTE:—Here list and locate accurately the wall and other areas to be covered.)
2. **Material:** Sheathing shall be Fir-Tex Firkote Sheathing $^{25}/_{32}$″ thick, 4 ft. wide x length as best adapted to framing conditions.
3. Framing members shall be spaced accurately at not to exceed 16″ O.C. 2″ x 4″ headers or cross members shall be installed as may be necessary, so that every end and edge of each Fir-Tex Firkote Sheathing Board shall rest on a nailing base.
4. **Application:** Insulation continuity shall be maintained, and all joints shall center over framing members. The Firkote Sheathing shall be applied with the length paralleling the framing members, and with the guide lines exposed for nail spacing. Boards shall be of sufficient length to completely span between sills and plates or other framing members. The boards shall be spaced approximately ⅛″ apart at sides and ends, but brought to snug contact with door and window frames. *NEVER* under any circumstances shall the boards be forced into place.
5. **Nails:** 8 d. common nails shall be used.
6. **Nailing:** The intermediate members shall be nailed first, spacing nails 6″ apart. The exterior members shall then be nailed, spacing nails 3″ apart and ⅜″ from the edge of the board. All nails shall be driven well home.
7. Flashings of the usual type shall be installed in the usual manner.
8. **Exterior Finishes:**
   (NOTE:—Fir-Tex is not a nailing base.)
   a. **Wood siding** shall be applied directly over the Firkote Sheathing, nailing through to the studs and using nails of sufficient length to penetrate 1″ into the wood. All joints shall butt over the center of framing members.
   b. **Shingles or shakes:** Furring strips 1″ x 2″ shall be securely installed horizontally over the Firkote Sheathing, and spaced to fit the shingles or shakes, using nails of sufficient length to penetrate into the wood member at least 1″. The shingles or shakes shall then be nailed to the furring strips.
   c. **Brick or Stone Veneer:** Metal ties or anchors of the usual type, properly spaced, shall be nailed through the Fir-Tex into the wood member, using nails of sufficient length to penetrate at least 1″ into the stud. The masonry veneer shall be laid in the usual manner, allowing not less than ½″ space between the face of the Fir-Tex and the back of the veneer.
   (NOTE:—It is not necessary to use building paper under any of the above exteriors—siding, shakes, masonry.)
   d. **Exterior Stucco:** All Fir-Tex surfaces beneath exterior stucco shall be covered with a continuous layer of asphalt-coated waterproof paper. The stucco reinforcing metal shall be applied with a furring nail of sufficient length to penetrate 1″ into the wood member, and which will hold the metal tight and accurately in a position approximately ¼″ from the face of the Firkote Sheathing, permitting the mortar to fill the space between the metal and the Fir-Tex.
   (NOTE:—Wood furring strips are not recommended because of their tendency to expand and crack the stucco when they become wet during the application of the stucco.)

SECTION II

EXTERIOR WALL FINISH

FIR-TEX "F" FIRKOTE SHEATHING
Master Specifications

(NOTE:—Fir-Tex Firkote Sheathing is admirably adapted for use as an exposed exterior finish over frame construction in such cases as summer cabins, fishing and hunting lodges, dwellings on large construction projects.)



1. Framing, application, etc.: When Firkote is used as an exterior finish, the procedure in the main shall be as specified for sheathing application with the following exceptions:
   a. Nails shall be galvanized.
   b. Due care shall be exercised in the matter of spacing and application so that the battens covering joints shall be symmetrical.
   c. Firkote sheathing shall be of sufficient length so that no splice be used on any height 12′ or less.
   d. Painting: The Fir-Tex surface shall be given two coats of good lead and oil paint. Painting shall be done before application of battens.
   e. Battens and wood-trim shall be applied with nails of sufficient, length to penetrate at least 1″ into the wood member.

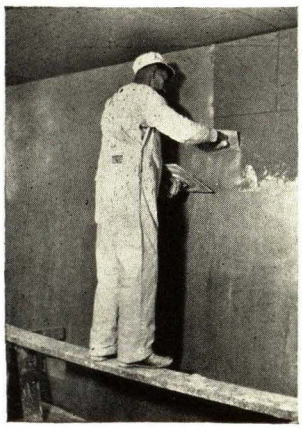
SECTION III

PLASTER BASE

FIR-TEX "L" INSULATING PLASTER BASE LATH
Master Specifications

INSTALLATION AND APPLICATION INSTRUCTIONS

1. **Work Included:**
   (NOTE:—Here list and locate accurately the wall and ceiling areas to be covered.)
2. **Material:** Plaster Base shall be Fir-Tex Insulating Lath, (½″) (¾″) (1″) thick, 18″ wide by 48″ long with shiplapped joints, delivered to the job in the manufacturers' original packages. All packages shall be opened and the contents exposed to the air 24 hours before application.
3. Framing members shall be spaced accurately at not to exceed 16″ O.C.
4. **Application:** In cold or damp weather, extra precaution shall be used. All doors and windows shall be in place and heating plant in operation before application. Plastering shall be commenced as soon as application is completed. Insulation continuity shall be maintained. Fir-Tex Insulating Lath shall be applied horizontally across framing members in a continuous line with all end joints staggered and centered on framing members. Fir-Tex Lath shall be spaced ⅛″ between ends and the ship-lapped edges shall be brought to moderate contact only. The Fir-Tex Lath shall be fitted closely to all openings and to all intersecting surfaces, but in no case shall it be forced into place. Where cutting is necessary, the Fir-Tex Lath shall be sawed with an ordinary carpenter's saw, or scored with a sharp hatchet and broken along the scored line. Where piecing is necessary, use only strips of Fir-Tex.
5. *The Fir-Tex Lath shall not be moistened.*



6. **Nailing:** Nails shall be ordinary galvanized shingle nails with ¼" heads, and of sufficient length to penetrate at least 1" into the framing members. The intermediate members shall be nailed first, using 5 nails to each member, and spacing nails approximately 4" apart, and in each case driving center nail first. Edge nails shall be approximately ½" from the edge.
7. **Reinforcing:** At all interior and exterior corners, a standard metal reinforcing shall be installed over the Fir-Tex Lath, and secured to the framing members. At all exterior corners, metal corner beads shall be installed over the reinforcing and secured to the framing members.

PLASTERING INSTRUCTIONS

1. *The Fir-Tex Lath shall not be moistened.*
2. Use only gypsum plaster.
3. The plaster shall be applied in standard three-coat job as follows:
   a. Scratch coat: Use one part by weight of gypsum plaster to two parts by weight of clean, sharp, well-graded sand. Add sufficient accelerator to obtain set in approximately one hour. Spread scratch coat very thin and even, pressing well into edges and joints. Allow to set hard before proceeding with the brown coat.
   b. Brown coat: Use one part by weight of gypsum plaster to 3 parts by weight of sand. Scratch and brown coats combined shall have a thickness of at least ⅜".
   c. Finish coat: This coat shall not exceed ⅛" in thickness, making the total plaster thickness not less than ½".
4. Plaster shall be protected against freezings and dry-outs. Heat shall be provided in cold weather and openings shall be covered in hot dry weather.

(NOTE:—Due to the moisture-resistant properties of Fir-Tex Lath, all plaster moisture must be carried off by the air within the room, which fact requires that adequate ventilation be provided.)

SECTION IV

INTERIOR FINISH

FIR-TEX "BC" IVRYKOTE BUILDING BOARD
(Mottled ivory, glazed washable surface)

FIR-TEX "B" BUILDING BOARD
(Neutral tan color)

Master Specifications

1. **Work Included:**
   (NOTE:—Here list and locate accurately the wall and ceiling areas to be covered.)
2. **Material:** Interior Finish shall be Fir-Tex Building Board (½"), (1") thick, 4' wide and of lengths best adapted to show a minimum of joints. Surface shall be (Fir-Tex "B"—neutral tan) (Fir-Tex "BC"—Ivrykote).
3. **Framing:** Members shall be spaced accurately at not to exceed 16" O.C. Headers shall be installed back of all baseboards, chair rails and other heavy wood trim. Additional headers, studs and joists shall be installed where necessary. Framing members shall present a true, even surface.

3A. Alternate: Framing members shall be spaced accurately at not to exceed 16" O.C. Sound, dry, wood lining* of uniform thickness shall be installed horizontally on all walls and ceilings and spaced 00"** apart. Shims shall be installed as may be necessary to provide a true even surface.
*(NOTE: Here name any inexpensive dry material not to exceed 6" wide.)
**(NOTE: Here specify 3" if 6" material is used; 2" if 4" material is used.)

3B. Alternate: Masonary Walls: (1" x 2") (1" x 3") sound, dry wood furring strips shall be installed (vertically) (horizontally) securely to masonary walls (12") (16") O.C., and shimmed as may be necessary to present a true, even surface. Header strips of same material shall be installed as may be required to provide adequate support behind all heavy wood trim, and also behind all edges of every sheet.

4. **Cutting and Fitting:**
   a. Exposed joints: All cutting, bevelling, and grooving shall be done in a neat, workmanlike manner with special tools for that purpose.
   (NOTE:—Bevil Devil, Stanley Cutter, and sharp linoleum knife are all excellent tools.)
   b. Joints to be covered: Cutting may be either with special tools or with a sharp fine tooth saw, using rapid strokes with a minimum of pressure.
5. **Application:**
   a. All packages shall be opened and the Fir-Tex boards placed singly on edge around the room at least 24 hours before erection. In localities of exceptionally low humidity the back side of each board shall be moistened lightly and piled 24 hours before erection.
   b. The Fir-Tex boards shall be applied with length (paralleling) (at right angle to) the framing members with (Fir-Tex "BC"—Ivrykote) (Fir-Tex "B"—neutral tan) face exposed. All joints shall center over framing members.
   c. Spacing. Exposed joints: Fir-Tex boards shall be brought to moderate contact but never forced into place.
   Battened joints: Fir-Tex boards shall be spaced ⅛" apart.
   d. Nails: Shall be of sufficient length to penetrate at least 1" into wood member. Exposed nails shall be galvanized finish nails.

Nails concealed by battens shall be galvanized shingle nails with at least ¼" head.
   e. Nailing: Intermediate members shall be nailed first, driving each nail at a slight angle and spacing them 6 inches apart. Exterior members shall then be nailed, driving each nail well home and spacing them 3" apart and ⅜" in from the edge. Same nailing, 3" apart, shall be done at edges of both ends. Once the first nail has been driven in a Fir-Tex board, all necessary nailing of that board shall be done before proceeding to the next. In no instance shall a Fir-Tex board be left partially nailed.
   f. Battens: (Wood) (Metal) Battens (size) and Wood Trim (specify kind, size, etc.) shall be installed with nails of sufficient length to penetrate at least 1" into the wood member.
   g. General suggestions: The following suggestions are recommended by sound, practical experience:
      (1) Plan your work carefully before ordering your Fir-Tex Boards. Purchase only those lengths best adapted to your particular job. The wide range of lengths available permits the reduction of joints to a minimum.
      (2) As a general rule, apply ceiling first and walls last.
      (3) Consider your spacing carefully before driving first nail. Usually a better appearance can be obtained by commencing work in center of area rather than at one end.
      (4) For best results, even when framing members are spaced 16" O.C., we suggest the wood lining as outlined in (3A) alternate, rather than headers as outlined in (3). In all cases where members are spaced greater than 16" O.C. or where members are irregular or uneven, the lining method shall be used. If there is a great deal of header and truing work to be done, the lining produces an incomparably better job and costs little more.
      (5) Where Fir-Tex Interior Finish is to be applied in a new building or one under construction, all doors and windows shall be in place and heating plant shall be in operation before Fir-Tex is delivered on the job. Care shall be exercised that Fir-Tex be not subjected to the moisture incidental to cement and plaster work. Such work should be completed and permitted to dry before Fir-Tex is brought on the job.
      (6) In those cases where transportation or other problems make it necessary to have Fir-Tex boards delivered to job in advance of its use, they shall be left in their tough original packages, and shall be stored in a clean, dry place.

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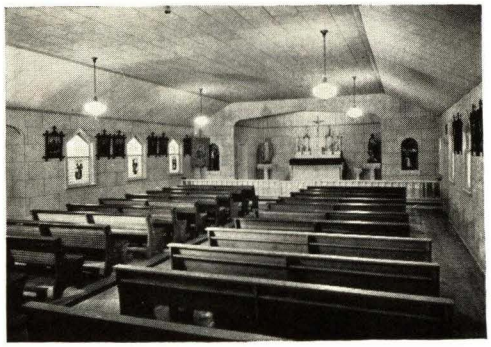
INTERIOR FINISH—FIR-TEX-TILE

FIR-TEX "TC" (Ivrykote finish)
FIR-TEX "T" (Neutral tan color)
FIR-TEX "TS" (Sprayed white, ivory, cream, buff)
FIR-TEX "TCM" (Ivrykote Multiple Tile)
FIR-TEX "TSM" (Sprayed Multiple Tile)



Master Specifications.

1. **Work Included:**
(Here list and locate accurately the ceiling areas to be covered.)

2. **Material:** Ceiling covering shall be Fir-Tex Tile (½") (¾") (1") in thickness and (here specify size — see list of products, page 2) in size with bevelled edges and interlocking joints, delivered to the building site in manufacturer's original packages. Exposed surface shall be (Fir-Tex "T" —neutral tan) (Fir-Tex "TC"—Ivrykote) (Fir-Tex "TS"—sprayed—specify color).

3. **Base:**
   a. Where joists are exposed, or where plastered areas are uneven or in poor condition—
      (1.) Solid wood base: Sound, dry lumber of uniform thickness (1" x 4") (1" x 6"), and (matched) (sized) shall be securely nailed to joists to form a continuous level nailing base. Shims shall be installed as may be required to accomplish this result.
      (1A.) (alternate) Furring strips: Sound, dry lumber of uniform thickness (1" x 3") (1" x 4") shall be securely nailed to joists on centers to conform accurately with the Fir-Tex Tile size and design, but in no case to exceed 16" O.C.
      (NOTE:—Best practice suggests a maximum of 12" O.C. Thus 16" x 32" Fir-Tex Tile would be applied to 8" centers rather than 16".)
   b. Where plastered areas are level, true and in good condition—(See 5 b., this section.) Cementing under Application.

4. **Cutting and Fitting:** All cutting, bevelling and grooving shall be done in a neat, workmanlike manner with special tools for that purpose. (Suggested tools are Bevil Devil, Stanley Cutter, sharp linoleum knife.)

5. **Application:**
   a. (1) Fir-Tex Tile shall be laid in exact accordance with detailed drawings.
      (2) Where ceiling is furred, Fir-Tex Tile shall be laid with long edges paralleling the furring strips. Where application is being made direct to plastered area or to solid backing, Fir-Tex Tile may be laid in any direction indicated.
      (3) Spacing: Fir-Tex Tile shall be brought to snug contact, but never forced into place. All lines and grooves shall be kept straight and true.
   b. Cementing: (This method is advocated in all better class work, but must be attempted only in cases where the plaster is level, even and true, or where adequate, dry, sound furring or solid backing has been installed. This method should be confined to those mechanics experienced in its use.)
      (1) Adhesive: Adhesive shall be best quality acoustical cement. (Suggested brand—Atlas Acoustick made by Atlas Supply Co. of Manayunk, Philadelphia, or other good acoustical cements. Sound practice suggests avoiding ordinary linoleum cements.)
      (2) Spots of adhesive about the size of a half-dollar and at last ⅛" thick shall be applied to the back surface of Fir-Tex small Tile near each corner, and on Fir-Tex large Tile additional spots shall be applied not over 10 inches apart O.C. Press Tile into position, using a sliding sidewise motion, and hold until cement begins to set.
   c. Nailing: Nails shall be spaced not over 6" apart where possible, and at each corner, using galvanized finish nails of sufficient length to penetrate at least 1" into the wood member. Nails shall be driven at slight angle, and kept ⅜" back from the bevel. (This method is sometimes used directly to the joists when spacing of joists coincides with size of tile; (Example: 16" x 32" Tile applied directly on joists spaced 16" O.C.) but best practice suggests that nailing always be done to solid wood backing or to wood furring strips.
   d. Concrete construction: Area shall be inspected and shall be thoroughly clean. Low spots shall be treated with acoustical cement to bring them flush with surface. Fir-Tex Tile shall then be applied as outlined in 5. b. Cementing, this section.

SECTION VI

INTERIOR FINISH—FIR-TEX FINISH PLANK—FRAME CONSTRUCTION

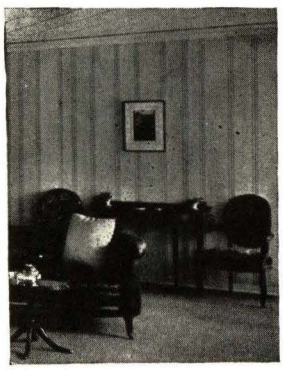
FIR-TEX "PC" (Ivrykote finish)
FIR-TEX "P" (Neutral Tan color)
FIR-TEX "PS" (Sprayed white, ivory, cream, buff)
FIR-TEX "PCM" (Ivrykote Multiple Finish Plank)
FIR-TEX "PSM" (Sprayed Multiple Finish Plank)

Master Specifications.

1. **Work Included:**
(Here list and locate accurately the wall areas to be covered.)

2. **Material:** Wall covering shall be Fir-Tex Finish Plank (½") (1") in thickness and (6") (8") (10") (12") (16") (combination of any or all) in width, and of lengths best adapted to show a minimum of joints.
(NOTE—Fir-Tex Finish Plank is available in lengths up to 12 ft. See list of Products, page 3. Surface shall be [Fir-Tex "P" neutral tan] [Fir-Tex "PC" Ivrykote] [Fir-Tex "PS" Sprayed—specify color].)

3. **Framing:**
(NOTE:—Either of the two methods given below may be used, but the first is incomparably the better method and not a great deal more expensive.)
   a. Sound dry wood lining of uniform thickness (here specify any inexpensive wood lining material. ½" x 6" S1S Dry Com. Fir Crating, or 1" x 4", or 1" x 6" S1S Dry Com. Fir) shall be securely nailed, horizontally, to framing members, spacing lining units (Solid base) (2" O.C.) (3" O.C.). Lining shall be shimmed as may be necessary to present a true-even surface.
(NOTE:—For best results, specify solid base, though it is thoroughly sound practice to space 4" lining 2" apart and 6" lining 3" apart. Lining wider than 6" had best be avoided when possible, as the narrower width makes a smoother wall.)
   b. Headers or cross members shall be installed between studding back of all baseboard, chair rail and other heavy wood trim. Additional headers shall be installed to provide adequate support for individual Fir-Tex Finish Planks.



4. **Cutting and Fitting:** All cutting, bevelling and grooving shall be done in a neat, workmanlike manner, with special tools for that purpose (Bevil Devil, Stanley Cutter, sharp linoleum knife).

5. **Application:**
   a. Fir-Tex Finish Plank shall be applied with joints brought snugly together, but in no case forced into place.
   b. Galvanized finish nails of sufficient length to penetrate one inch into the wood member, shall be driven at a slight angle, and spaced not to exceed 6" apart where possible.

6. **Application with Acoustical Cement:**
(NOTE:—This method is advocated on all better class work, but shall be attempted only where base is solid wood, wood lining, cement or plaster walls in good condition, and shall be confined to mechanics experienced in its use.)
   a. Adhesive shall be best quality acoustical cement (suggested brand, Acoustick, made by Atlas Mfg. Co. of Manayunk, Philadelphia, or other good acoustical cements). Sound practice suggests avoiding ordinary linoleum cements.
   b. Spots of adhesive about the size of a half-dollar and at least ⅛" thick shall be applied to the back surface of each Fir-Tex Finish Plank near each edge, and not over 10" apart. Press Fir-Tex Plank into position using a sliding sidewise motion, holding in place until cement begins to set.

SOUND CONTROL ... Acoustical Correction

FIR-TEX "T" ACOUSTICAL TILE
(Neutral Tan or Sprayed with Acoustical Paint)

FIR-TEX "P" ACOUSTICAL PLANK
(Neutral Tan or Sprayed with Acoustical Paint)

FIR-TEX "B" ACOUSTICAL BOARD
(Neutral Tan or Sprayed with Acoustical Paint)

Master Specifications

Fir-Tex Acoustical Products are available in a wide range of thicknesses, sizes, patterns and colors (See list of products, page 3), and are particularly adaptable for use in theatres, churches, auditoriums, gymnasiums, schools, restaurants, offices.

Each of these Fir-Tex products derives its acoustical qualities from millions of air voids or cells in each square foot of material and it has not been necessary to mar its surface with unsightly punctures in order to accomplish satisfactory results. The smooth, beautiful surface of Fir-Tex acoustical products benefits the architect in many ways and through him his client, viz:

1. The absence of surface defacement permits a wide range of possibilities in the matter of interior decoration which is thus accomplished at the cost of acoustical correction only.
2. The elimination of extra manufacturing expense enables Fir-Tex Acoustical products to be sold at a lower cost per unit of sound absorbed than many other comparable materials.
3. The fact that all Fir-Tex Acoustical products are uniform in thickness throughout the entire area of each unit means that thermal insulation is accomplished without any additional expense.
4. All Fir-Tex Acoustical products are exceedingly light in weight with the resultant advantages apparent to any architect. In some cases, comparable materials are more than twice the weight of Fir-Tex.

The efficiency of Fir-Tex Acoustical products is shown in the following tables summarizing the results of sound absorption tests conducted by Vern O. Knudsen, Ph.D., Consultant on Acoustics.

Frequency of Test Tone	Coefficients of Sound Absorption		
	½" thick	1" thick	1½" thick
128 cycles	.14	.20	.18
256 cycles	.19	.32	.65
512 cycles	.38	.69	.65
1024 cycles	.64	.73	.60
2048 cycles	.80	.85	.58
4096 cycles	.68	.70	.52

SECTION VIII

SOUND CONTROL

Transmission of Sound through Partitions and Floors

FIR-TEX "BC" IVRYKOTE BUILDING BOARD

FIR-TEX "B" BUILDING BOARD

FIR-TEX "BEC" IVRYKOTE ECONOMY BOARD

FIR-TEX "BE" ECONOMY BOARD

FIR-TEX "L" INSULATING PLASTER BASE LATH

FIR-TEX INSULATING INTERIOR FINISH (Fir-Tex "T" Tile and Fir-Tex "P" Finish Plank)

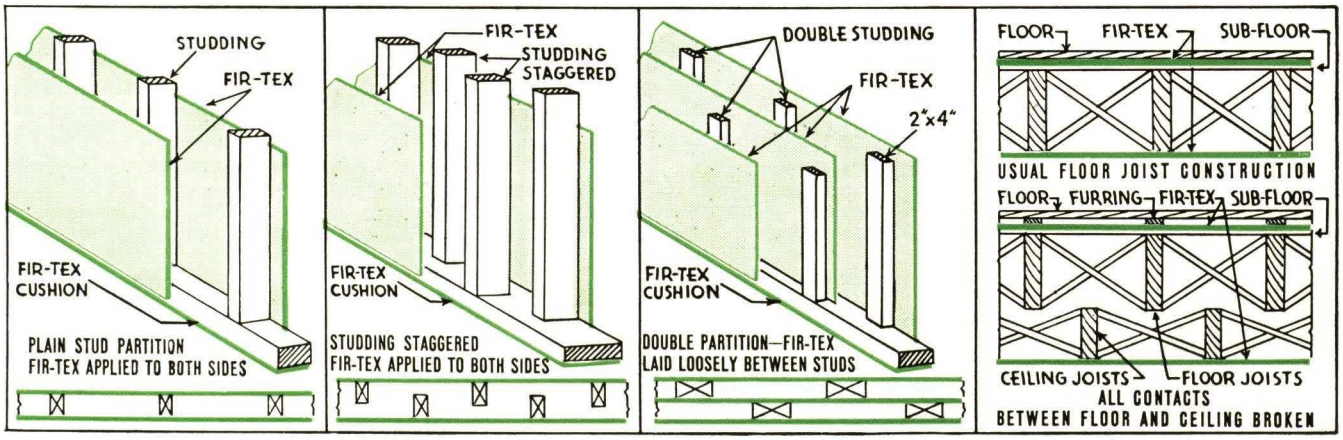
(NOTE:—A single ½" thickness of Fir-Tex, used either as a plaster base or as interior finish, is more resistant to the transmission of sound than is ordinary wood lath and plaster. Used as a plaster base in the ordinary manner on all walls and partitions, Fir-Tex satisfactorily solves the usual problems of sound transmission within a home. For unusual conditions where more adequate sound deadening is required, the following drawings are submitted.)

Drawing No. 1 shows average partition with studs spaced 16" O.C., and with Fir-Tex applied to each side of the partition, either as Insulating Plaster Base Lath (see pages 4-5), or as Interior Finish (see pages 5-6), Building Board, Finish Plank and Tile, etc.). 2" x 4" top and bottom plates have been further cushioned by letting them rest on a narrow strip of ½" Fir-Tex Building Board just the width of the plate.

Drawing No. 2 shows 2" x 4" studding staggered on cushioned 2" x 6" top and bottom plates as illustrated. NOTE:—Here *each* wall area should be 16" O.C. which means the use of double the number of studding. This method is excellent procedure. It is so simple that it can be handled on any job, and does not greatly increase the cost. It will be found effective in silencing most of the usual problems.

Drawing No. 3 goes still further. Here cushioned 2" x 6" top and bottom plates, as illustrated, are used and for studding 2" x 2" or 2" x 4" are placed sideways and with each wall 16" O.C. In the space gained by using 2" studs is placed loosely a sheet of Fir-Tex Building Board. Each wall is then Fir-Texed either with Insulating Plaster Base Lath or Fir-Tex Interior Finish.

Drawing No. 4 shows normal joist construction in frame building where Fir-Tex Insulating plaster Base Lath and plaster or Fir-Tex Interior Finish has been applied to the underneath side of the joists making finished ceiling for the room below. Top side of the joists have been treated in either of two ways: (See next page.)



1. 1st, wood sheathing sub flooring applied directly to joists and nailed securely; 2nd, Fir-Tex Building Board or Fir-Tex ⅜" Economy Board has been laid on top of sub floor and tacked lightly in place; 3rd, finish floor has been laid over Fir-Tex and nailed securely through the Fir-Tex into the wood sheathing, using nails of sufficient length to penetrate 1" into the wood member.
2. 1st, Fir-Tex Building Board or Fir-Tex ⅜" Economy Board has been laid over joists with edges centering over framing members and tacked lightly in place; 2nd, wood sheathing sub flooring has been laid over Fir-Tex and nailed securely through the Fir-Tex into the joists; 3rd, finish floor has been laid over the sub floor and nailed securely in place.

The first method is preferable in practically all cases.

Drawing No. 5 (see page 7) shows method commonly used to overcome unusual problems of sound transmission through floors. 1st, two sets of joists are used. One set, employed as floor joists, is hung in the usual manner 16" O.C. and bridged. The second set, employed as ceiling joists of the room below, is hung independently, staggered between the floor joists, and bridged. This construction of itself acts in the same manner as staggered studs and prevents sound being "telegraphed" from one room to the other. There must be no contact between the two sets of joists or bridging. The Fir-Tex treatment is as follows: Ceiling of room below—Fir-Tex is applied to underneath side of ceiling joists either as Fir-Tex Insulating Plaster Base Lath (see pages 4-5) or as Fir-Tex Interior Finish (see pages 5-6). Floor of room above — 1st, wood sheathing sub floor has been applied in the usual manner and nailed securely to the joists. 2nd, Fir-Tex Building Board or Economy Board in large sheets has been laid on top of the sub floor, sheets being spaced approximately ⅛" apart at ends and sides, and tacked lightly in place. Next 1" x 3" sound, dry wood furring strips or sleepers (such as 1" x 3" No. 1 Com. Dry Douglas Fir S1S to ¾" or 25/32") of uniform thickness have been laid 16" O.C. on top of the Fir-Tex and nailed securely with nails spaced 48" apart and reaching through the sub floor. Last, the finish floor is laid in the usual manner directly to the sleepers.

Architects will be pleased with the results accomplished in the isolation of a room if they employ a combination of staggered stud walls and floating joists.

SOUND TRANSMISSION TESTS

Conducted by Vern O. Knudsen, Ph.D., Consultant on Acoustics

Frequency of Test Tone	Transmission Loss in Decibels	
	½" thick	1" thick
128 cycles	18.6	14.5
256 cycles	18.8	15.4
512 cycles	21.0	19.9
1024 cycles	24.2	27.8
2048 cycles	30.2	33.2
4096 cycles	28.4	32.6

SECTION IX

DECORATION OF FIR-TEX

FIR-TEX INTERIOR FINISH

Nail Heads: When it is planned to decorate the finished job of Fir-Tex Interior Finish with plastic paints, paints, or wall coverings, use ordinary galvanized shingle nails instead of finish nails. These nails are driven well home and permitted to "dimple." Using an ordinary putty knife, treat each head with Swedish putty or some prepared product such as Laux Insulation Joint Filler or Spackle. This material is pressed well into the crevices, smoothed off with putty knife, and permitted to dry thoroughly. The surface is then sanded level and true, using No. 1 sandpaper on wood block.

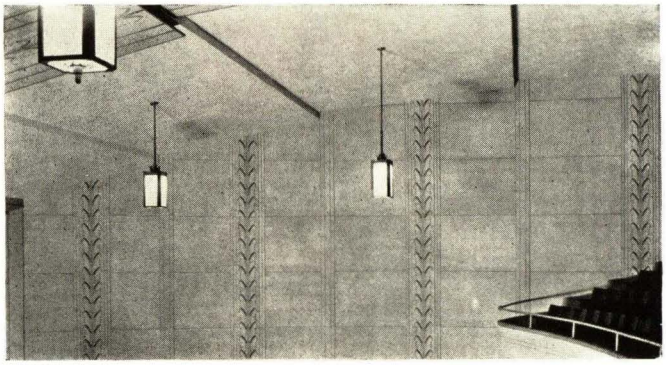
(CAUTION:—You will note that this treatment of nail heads is to be used *only* when the Fir-Tex Interior Finish is to be painted or covered and not when it is to be used in its natural finish.)

Joint Treatment: With coarse sandpaper rub down an area from 4 inches to 6 inches wide at the joints. Strip these joints with galvanized annealed wire mesh, 12 or 16 to the inch, bonding the screening to the Fir-Tex with bonding cement. The wire mesh should not be nailed or tacked in place except when starting a joint and occasionally on ceiling strips to hold in place while applying cement. Hold one end of strip while the bonding cement is applied to the surface of the wire and pressed through the mesh with a 4-inch painter's scraping knife. Spread the bonding cement beyond the edges of the screen for not less than 1 inch so that the edge of the wire cloth will not show through the plastic paint finish. In bonding the wire over the joints, press firmly against the Fir-Tex and fill mesh well with the bonding cement applied in the consistency of putty. Apply, similarly, a strip of wire cloth bent around all corners and re-entrant angles.

Cold Water Paints: The surface of Fir-Tex Interior Finish, particularly the surface of the Ivrykote finish, which sells for the same price as Neutral Tan Insulating Board, lends itself admirably to application of calcimines and cold water paints of all grades.

Recent developments in the casein base paint field have been so rapid and so highly successful that the use of these paints in preference to paints of other base and ordinary calcimines is increasing rapidly. There are many good casein base paints on the market today. Some of them are Laux Vello, Rayolite, Muraltone, Hylite, Luminall and Sunflex. For best results the paint is applied directly to the Ivrykote surface of Fir-Tex which has been factory sized and baked. Two coats produce a most pleasing result. Some painters will sand very lightly the first coat before applying the second, using a fine sandpaper, but this step may be omitted. These paints will be found very inexpensive and their coverage is highly satisfactory. One advantage is that successive coats may be applied many times when redecorating, without chipping or scaling.

Stains: In cases where it is desired to change the color but not the texture of the Fir-Tex, a glue stain may be employed. Glue stain is made by: 1st, dissolve ¾ lb. of flake or ground glue in one pint cold water; 2nd, mix dry color with sufficient cold water to make a paste; 3rd, dilute the pint of glue with one gallon boiling water; 4th, add the color paste and stir till thoroughly mixed. This preparation should be applied while still warm. Mix only as much stain as will be used at one time. Try the stain on samples or scraps of Fir-Tex before applying it to actual job.



Oil or Varnish Paints: Fir-Tex Ivrykote is factory pre-sized. Neutral tan Fir-Tex must first be sized like ordinary insulation boards before treating with oil or varnish paints. Sandpaper lightly between coats for best results. We suggest that oil and varnish paints be used only when some special result is desired. Under all normal conditions casein paints will produce much more pleasing results as well as being less expensive.

Plastic Paints: The best plastic paints for use over Fir-Tex are casein base, such as Laux Blue Label Wall Texture. When mixed with cold water in accordance to manufacturer's recommendations, they form a thick paint which can be textured by manipulation of the brush, celluloid triangle, etc. When dry, this surface is given a coat of casein paint or other treatment. This work should be completed before application of mouldings or battens over the joints.

Wall Coverings: Fir-Tex Ivrykote presents the best surface for wall paper or other coverings. Its surface has been factory pre-sized and lends itself to a smooth, even job. The procedure is as follows:

1st. Apply Fir-Tex Building Board to framing members as in Section IV but using galvanized headed nails as in paragraph 1, this section.

2nd. Treat nail heads as in paragraph 1, this section.

3rd. Apply wall paper in usual manner making sure that you can locate all joints even after they are covered.

4th. Treat all joints in Fir-Tex with wood, metal or Fir-Tex mouldings or batten strips. Paint mouldings before they are applied rather than afterwards.

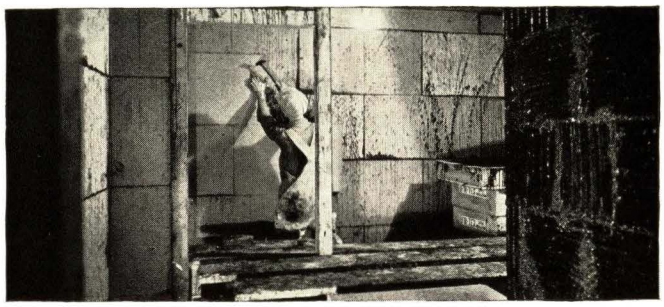
Stencils: Many interiors can be toned up and made more attractive by utilizing stencils, particularly on borders. Pleasing stencil patterns will be found in local paint or wall paper stores. They should be cut from oil paper (or metal, if used many times) and held in place by hand or with thumb tacks while the color is being applied. Colors ground in Japan are most satisfactory, thinned to the desired consistency with mixture of 6 parts turpentine, 3 parts linseed oil, 1 part Japan drier.

REFRIGERATION AND COLD STORAGE INSULATION

FIR-TEX "Z" REFRIGERATION INSULATION BLOCKS
FIR-TEX "ZV" REFRIGERATOR AND COLD STORAGE LOW TEMPERATURE INSULATION

Master Specifications

(NOTE:—No single specification can be adopted for general use. Each job must be analyzed before specific thicknesses can be recommended, due to different types of construction and thickness of the walls in the building in which Fir-Tex is to be used. For detailed information, write to the Engineering Dept., Fir-Tex Insulating Board Co., 1108 Porter Bldg., Portland, Ore. Give all the particulars in your possession, such as: building already constructed, or to be constructed; frame, tile, brick or concrete; number of stories; size, location and exposure of room or rooms in building, temperatures to be maintained; size and kind of ice machines.)



CONCRETE CONSTRUCTION

1. **Work Included:**
   (NOTE:—Here list and locate accurately the wall, floor and ceiling areas to be insulated, specifying in each instance the total thickness of Fir-Tex Insulation to be used and the number of layers in which it shall be applied.)
2. **Material:** Insulation shall be Fir-Tex ("Z" Refrigeration Insulation Blocks) ("ZV" Refrigerator and Cold Storage Low Temperature Insulation wrapped in vapor tight paper), (here specify) inches in thickness, and (12" x 36") (18" x 36") (24" x 36") (24" x 48") as best adapted to the particular area to be insulated.
3. **Cutting and Fitting:** All cutting and fitting shall be done in a neat workmanlike manner. Cutting shall be done with a sharp, fine tooth saw, using rapid strokes and a minimum of pressure.
   (NOTE:—When electricity is available, a portable power saw does an excellent job and speeds up the work.)
4. **Base:** All surfaces shall be thoroughly dry, smooth, clean, and free from grease or paint. All rough surfaces and hollows shall be trued up with waterproofed Portland Cement which shall be allowed to dry thoroughly before proceeding.
   (NOTE:—The above is for use in existing concrete buildings. When the architect is supervising the erection of the building as well as the insulation, he can control the entire problem. In such cases he will find the following suggestions helpful:
   a. All walls, floors and ceilings of area which is to be insulated, shall be poured with integrally waterproofed concrete.
   b. All surface areas shall be finished off smoothly to present an even surface for the application of Fir-Tex.
   c. In cases where the soil is other than sand and gravel, he will find the following good practice for the floor slab:
      (1) Spread 4" of cinders or gravel over the area to be covered.
      (2) Pour 2" of integrally waterproofed concrete over cinders or gravel.
   d. Be sure that all concrete is cured and thoroughly dry before permitting next step.
5. **Application Floor:**
   a. Entire floor area shall be sprayed with priming coat of cut-back asphalt (asphalt emulsion diluted with water).
   b. Floor area shall then be flooded with smoking hot asphalt, using 35 lbs. asphalt per 100 sq. ft. Only sufficient area to provide complete embedment of each Fir-Tex sheet being mopped at one time.
   c. Fir-Tex sheet shall then be firmly embedded in the hot asphalt, spacing sheets ⅛" apart. Asphalt shall be thick enough on floor to squeeze up through joints.
   d. When entire floor area has been covered with Fir-Tex, successive layers shall be applied in same manner, each time flooding the exposed area of the preceding layer with 35 lbs. per 100 sq.ft. smoking hot asphalt, and then embedding Fir-Tex sheet, making sure that each layer be staggered to break all joints of preceding layer.
   e. When final layer has been embedded in the hot asphalt of preceding layer, all open joints shall be filled or calked with ground-up Fir-Tex fibre mixed with asphalt. Exposed area of this top layer shall then be flooded with two successive coats of smoking hot asphalt, using 25 lbs. of asphalt per 100 sq. ft. to each coat. When top layer has cooled, it shall be dusted with Portland Cement.
   f. Concrete finish floor: Three inches of integrally waterproofed cement shall next be poured on top of the finished Fir-Tex floor. This concrete shall be reinforced with (here specify gauge, size of mesh, etc.) metal reinforcing, care being taken that reinforcing be held at least 1" off the floor.
   (NOTE:—This may be accomplished either through using self-furring mesh or by the applicator digging into the concrete (as it is poured) with the claws of his hammer and lifting the mesh until it is suspended in the mass of concrete.)
6. **Application—Walls and Ceiling:**
   a. Entire wall and ceiling area shall be sprayed with priming coat of cut-back asphalt (asphalt emulsion diluted with water).
   b. Using ice picks to hold the Fir-Tex sheet, totally submerge the sheet in smoking hot asphalt and apply to walls and ceiling. Each sheet shall be held firmly in place until asphalt has cooled enough to support the sheet. Sheets shall be spaced ⅛" apart at sides and ends. Extreme care should be exercised that no air spaces form between wall and Fir-Tex or between successive layers of Fir-Tex. This is accomplished by sliding Fir-Tex into place.
      Start at top of wall and work down to avoid drippings of asphalt collecting on surfaces. Remove any drippings which may collect on concrete to avoid air spaces between Fir-Tex and concrete.
   c. Succeeding layers of Fir-Tex shall then be applied in the same manner, each sheet being dipped in the smoking hot asphalt and held in place by butcher skewers or galvanized nails. Sheets shall be spaced ⅛" apart and staggered to break all joints of preceding layer.
   d. Exposed surface of last layer then shall be sprayed with smoking hot asphalt, using 25 lbs. of asphalt per 100 sq. ft.
   e. When thoroughly dry and cool, entire wall and ceiling area shall be:
      (1) sprayed with (one) (two) coats of (specify brand or quality) aluminum paint—or
      (2) trowelled with a coat of mastic.

SECTION XI

INSULATION OF FLAT DECKED ROOFS
(Of Steel, Concrete, Structural Gypsum or Unit Tile under Built-up Roofing)

FIR-TEX "R" ROOF INSULATION
FIR-TEX "RV" VAPOR-PROOF ROOF INSULATION
(NOTE:—Where high humidities are maintained, use vapor cut-off as in Section XII, No. 6A.)

1. **Work Included:**
   (NOTE:—Same as Master Specifications Section XII, No. 1.)
2. **Insulation Material:**
   (NOTE:—Same as Master Specifications Section XII, No. 2.)
3. **Wood Nailing Strips:**
   (NOTE:—Same as Master Specifications Section XII, No. 3.)
4. **Roof Deck:**
   a. General: The surface of the roof deck shall be thoroughly dry and broomed clean, free from dirt and loose material and all rough spots shall be removed. Where deck is of tile construction, the joints of all tiles shall be properly pointed up.
   b. Application:
      (1) Priming the Deck: Deck shall be thoroughly primed with cut back asphalt (asphalt emulsion diluted with water).
      (2) Mopping the Deck: Deck shall then be mopped with smoking hot asphalt, using 35 lbs. of asphalt to 100 sq. ft.
      (NOTE:—In tile construction, spot or strip mop the individual tiles or units.)
      Only sufficient area to provide complete embedment of each Fir-Tex sheet shall be mopped at one time. Each Fir-Tex sheet shall then be firmly embedded in the hot asphalt mopping. In the case of two layer insulation, the first layer shall be mopped in the same manner as the deck and the second layer then embedded in the hot mopping.

INSULATION OF FLAT DECKED ROOFS
(Of Wood under Built-up Roofing)

FIR-TEX "R" ROOF INSULATION

FIR-TEX "RV" VAPOR-PROOF ROOF INSULATION

Master Specifications

1. **Work Included:**
(NOTE:—Here list and locate accurately the roof areas to be covered. If different thicknesses are required on some of the areas, list and locate each area separately.)

2. **Insulation Material:** Roof Insulation shall be (Fir-Tex "R" Roof Insulation) (Fir-Tex "RV" Vaporproof Roof Insulation) (½") (1") (1½") (2") thick, 22" x 47", with (square) (offset) edges, and laid in (one) (two) layer(s).

3. **Wood Nailing Strips:**
(NOTE:—Fir-Tex is not a nailing base. Therefore, wood strips, securely nailed or bolted, shall be provided to serve as adequate nailing base for all flashings, metal work, etc.) (Architect will here insert his instructions that this work be done before roofing crew comes on the job. This work is usually done by the general contractor.)

4. **General:** All Fir-Tex shall be kept dry before, during, and after its application. Only as much Fir-Tex shall be applied in any one day as will be covered by the finished roofing that same day. Fir-Tex sheets shall be laid in parallel courses, staggered to break joints, and shall be spaced ⅛" apart at sides and ends. When applied in two layers, the Fir-Tex sheets in the second layer shall be laid parallel with those of first layer and staggered to break all joints. Where the roof meets vertical surfaces such as parapets, etc., the Fir-Tex sheets shall be cut and fitted snugly in a neat workmanlike manner, but never forced into place.

5. **Roof Deck:** The surface of the roof deck shall be thoroughly dry and shall be broomed clean and free from dirt and loose material. All loose or springy boards shall be securely nailed before Fir-Tex is applied.

6. **Building Paper:**
The entire roof area shall be covered with (rosin sized building paper) (6 lb. coated felt), lapped half, making two plies. Nail sufficiently to hold in place until the Fir-Tex is laid over it.

6A. **(alternate) Vapor Cut-off:**
(NOTE:—Use this clause only where high humidities are maintained and prevention of condensation is necessary.)

The entire roof area shall be covered with asphalt prepared roofing 34 lbs. per square and having one side coated. Lay coated side down and lapped half, making two plies. Nail the back edge of each sheet with tin capped, galvanized, barbed roofing nails spaced 12" O.C. All laps shall be mopped back 12" with hot asphalt. Do not mop over this membrane until just prior to the laying of the Fir-Tex.

7. **Application of Fir-Tex Roof Insulation:**
a. When laid in one layer over building paper—
(1) Nails shall be galvanized roofing nails with 5/16" heads and of sufficient length to pass through Fir-Tex and penetrate at least 1" into the roof deck, but in no case shall the nail penetrate entirely through the roof deck.
(2) Nailing: Each Fir-Tex sheet shall be secured in place by nails spaced 12" apart along each edge and staggered along the longitudinal center line.
(3) Mopping: After Fir-Tex has been nailed in place, the exposed surface shall be mopped with smoking hot asphalt, using 35 lbs. of asphalt to 100 sq. ft., and the first layer of roofing felt shall be embedded in the asphalt while hot.

b. When laid in two layers—
(1) Nails shall be galvanized roofing nails with 5/16" heads and of sufficient length to pass through both layers of Fir-Tex and penetrate at least 1" into the roof deck, but in no case shall the nail penetrate entirely through the roof deck.
(2) Nailing shall be through the top layer only, spacing to be same as one layer method in 7. a. (2).

c. When laid in one layer over Vapor Cut-off—
The exposed area shall be mopped liberally with hot asphalt, only sufficient area to provide complete embedment of each Fir-Tex sheet being mopped at one time. The Fir-Tex sheet shall then be embedded firmly in the mopping while still hot.

d. When laid in two layers over Vapor Cut-off—
(1) First layer of Fir-Tex shall be applied as 7c. above.
(2) Exposed area of applied Fir-Tex shall then be mopped as before and second layer embedded.

e. Water Cut-offs—
NOTE:—Advocated to prevent the spread of water beyond predetermined isolated areas in the event of leaks due to damage to the roofing or defective flashings, parapet walls, copings, etc.

The insulation, whether laid in one (1) or two (2) layers, shall be cut to the line designated for the water cut-off.

Water cut-offs shall consist of strips of (coal tar pitch) (asphalt) saturated roofing felt 8" to 10" wide stuck in bitumen to the roof, carried over the edge of the insulation, and turned over and stuck in bitumen to the top surface of the insulation.

They shall be located approximately 24" from and parallel to all vertical walls, such as parapets, penthouses, skylight curbs, etc., and around all leader heads, soil pipes, vents, ventilators, etc. The body or field of the roof shall be divided into rectangular areas approximately 30' on a side, each area isolated with a water cut-off. Insert a water cut-off surrounding each day's work if the stop is not made at the designated water cut-off.

At least one (1) ply of the finished roofing shall be mopped to the water cut-off each night.

SECTION XIII

INSULATION OF PITCHED ROOFS OF FRAME BUILDINGS

FIR-TEX "B" BUILDING BOARD

FIR-TEX "F" FIRKOTE SHEATHING

Master Specifications

1. **Work Included:** (Here list and locate accurately the roof areas to be insulated.)

2. Insulation shall be Fir-Tex ("B"—½" Building Board) ("B" —1" Building Board) ("F"—25/32" Firkote Sheathing).

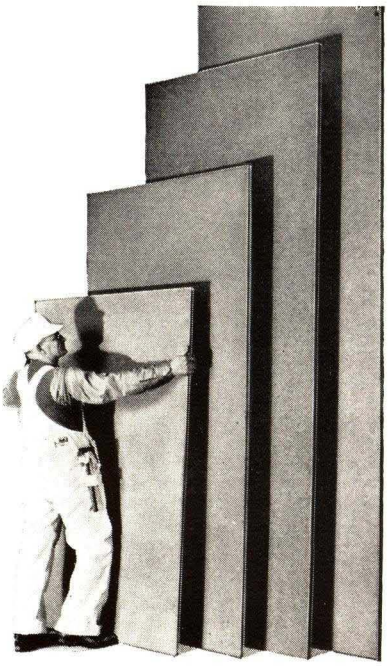
3. **Framing:** Rafters shall be accurately spaced (specify) inches on centers.
(NOTE:—In many sections rafters are spaced 24" O.C. even though studs, joists, etc. be spaced 16" O.C.) Additional 2" x 4" headers or cross members shall be installed as may be required to serve as nailing base for all ends of Fir-Tex sheets.

4. **Application:** Large Fir-Tex sheets of lengths best adapted to cover area with fewest possible joints shall be applied directly to top of rafters, with all side and end joints centering over wood members, and nailed sufficiently to hold in place until wood roof sheathing or shingle lath has been applied.

5. **Shingle Lath:** Wood strips (specify) x (specify) inches of (specify) grade shall be applied directly over the Fir-Tex, spaced (inches O.C.) (to conform with shingle units), and nailed securely through the Fir-Tex and into the wood members with nails of sufficient length to penetrate at least 1" into the wood member. All ends of Fir-Tex sheets shall be nailed securely to cross member over which they center, this nailing to be done through the shingle lath when lath spacing coincides with Fir-Tex joint, or otherwise directly through the Fir-Tex.

6. **Shingles:** Shingles shall be applied directly to shingle lath as in usual practice.
(NOTE:—The above specifications cover the normal pitched roof of frame building under wood shingles. If rigid asbestos shingles, slate or tile roofing is used, a continuous course of good quality waterproof felt, well lapped, shall be applied over the Fir-Tex and under the wood strips. If composition roofing or asphalt shingles are used, a solid base of D & M wood sheathing shall be substituted for the wood strips and the waterproof felt applied over the sheathing.)

ADVANTAGES OF FIR-TEX SEMI-RIGID INSULATION BOARD OVER OTHER TYPES OF INSULATION



1. Greater strength.
2. Once in place, always in place. Fir-Tex is an integral part of home. In case of alteration or repairs when opening is made in ceilings and sidewalls, there is no trickle of Fir-Tex because Fir-Tex is a building *board.*
3. Fir-Tex does not creep or settle. Fir-Tex is nailed solidly to framing members and is a permanent part of the building and remains where put. Vibrations caused by trucks and street cars, etc., have no settling effect on Fir-Tex insulation board.
4. With Fir-Tex there are no spaces for moths or other insects to crawl through and make their nests.
5. Fir-Tex sheets being semi-rigid are easy and clean to handle. One man can lift and apply a large sheet because it will support its own weight while being nailed.
6. Fir-Tex provides an unbroken area of uniform insulation continuity. This is particularly true when Fir-Tex is used as a plaster base as the mechanic necessarily must insulate from floor to ceiling and from eave to eave.
7. In most cases, Fir-Tex takes the place of some other building material and provides both insulation and building material at the cost of insulation alone. This also eliminates one cost of application.

TESTS

Sound transmission tests of Fir-Tex are given on page 8; sound absorption tests on page 7. Below are results of other important tests made September 21, 1937, by Robert W. Hunt Company, Engineers, Chicago, Illinois. Additional information may be obtained by writing the Engineering Department, Fir-Tex Insulating Board Co., Inc., 1108 Porter Bldg., Portland, Oregon.

TENSILE TESTS

	½″ Building Board Average thickness 0.491″		1″ Building Board 13-lb. Material Average thickness 0.982″	
	Longitudinal	Crosswise	Longitudinal	Crosswise
Tensile Strength Lbs. per square in.	232 247 235	251 244 236	46 45 48	42 43 46
Average	238	244	46.3	43.7
Average of three longitudinal and three crosswise tests	241		45.0	

THERMAL CONDUCTIVITY TEST

Guarded hot plate method, oven dried specimen

	½″ Building Board	1″ Building Board 13-lb. Material
Mean Temperature—°F.	75	75
Thickness—Inches	0.490	0.975
Density—Lb. per cu. ft.	15.5	12.3
Conductivity—B.t.u. per hour per sq. ft. per degree. F. difference in temperature	0.654	0.305
Conductivity calculated to a 1″ thickness	0.320	0.298

LINEAR EXPANSION

Expansion in changing from 50% to 97% relative humidity.

	½″ Building Board			1″ Building Board 13-lb. Material		
	Longitudinal	Crosswise	Average	Longitudinal	Crosswise	Average
% elongation in 10″	0.20	0.25	0.22	0.10	0.15	0.125

ABSORPTION TEST

Dried at 160° F. for 24 hours, 2 hours immersion in water at 70° F.

	½″ Building Board	1″ Building Board 13-lb. Material
% absorption by volume	4.7	3.4

TRANSVERSE TESTS

Specimens 3″ wide by 18″ long, supported on 12″ span, load concentrated at mid-span.

	½″ Building Board		1″ Building Board 13-lb. Material	
	Longitudinal	Crosswise	Longitudinal	Crosswise
Maximum load—lbs.	14.8 14.2 14.2	12.6 12.8 12.2	17.2 18.2 18.8	17.0 16.6 18.4
Average	14.4	12.5	18.1	17.3
Average of three longitudinal and three crosswise tests	13.5		17.7	
Maximum deflection—inches	0.65 0.75 0.80	0.90 0.90 1.00	0.45 0.50 0.50	0.50 0.45 0.55
Average	0.73	0.93	0.48	0.50
Average of three longitudinal and three crosswise tests	0.83		0.49	

FIR-TEX

FIR-TEX

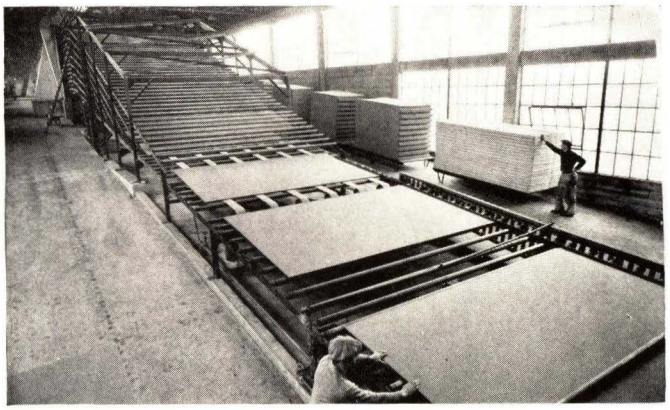
NATURE'S GIFT FROM THE GREAT NORTHWEST WOODS

Fir-Tex is made in the heart of the great lumber producing country of the Northwest. Here are trees that have taken hundreds of years to grow. Fir-Tex shreds the sound strong wood and interlaces the fibres to produce an insulating board with millions of air cells per square inch of the material. These myriad air cells are what gives such tremendous insulating properties to Fir-Tex.

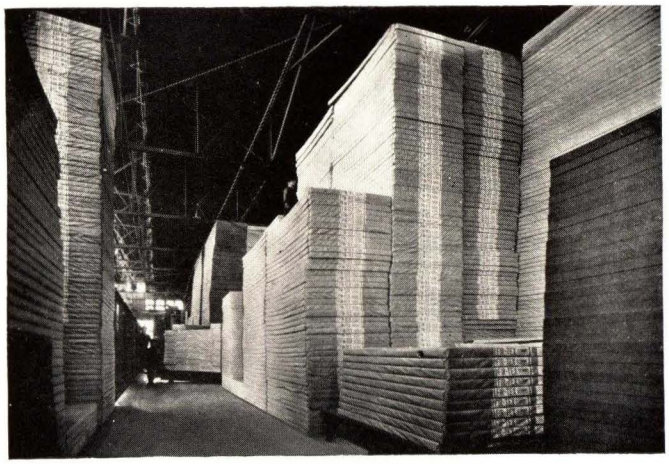
There are other fine insulating boards but none equal Fir-Tex for insulating value, for strength, for durability. Fir-Tex superiority is due to:

1. Fir-Tex is all wood, made from sound wood fibres in the natural fibre length.
2. Each individual fibre is thoroughly sterilized and waterproofed in the manufacturing process so there is no tendency in the finished product for dry rot to set in or the growth of fungus to develop or for the fibres to provide or harbor food for insects or vermin.
3. In no instance has the physical color been obtained by the introduction of any chemical or extraneous matter. The light tan color results from the removal of the natural tannic acids and resins. On the Fir-Tex boards used for interior finish, the beautiful Ivrykote finish is applied at the plant by coating the surface with the highest quality casein paint. The Ivrykote surface is glazed and can be washed many times without discoloration.

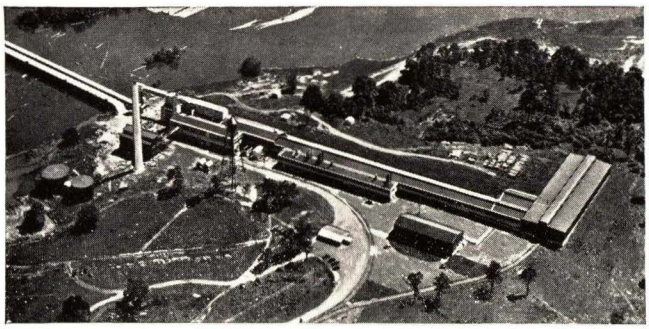
Fir-Tex is made by the Fir-Tex Insulating Board Company in a $2,500,000 plant located on the Columbia River near St. Helens, Oregon. The product is distributed throughout the United States and many foreign countries by Dant & Russell, Inc., Portland, Oregon, through following:



After the wood fibres are sterilized, felted and pressed into boards, they emerge from a battery of dry kilns, ready for shipment to all world markets.



Warehouse at the plant, St. Helens, Oregon.



$2,500,000 plant of the Fir-Tex Insulating Board Company, St. Helens, Oregon.

Sales Representatives

FIR-TEX OF WASHINGTON
1171 Smith Tower
Seattle, Washington

FIR-TEX OF SO. CALIFORNIA
1515 East Seventh Street
Los Angeles, California

FIR-TEX OF NO. CALIFORNIA
324 Sheldon Building
San Francisco, California

MORRISON-MERRILL & COMPANY
Salt Lake City, Utah

FIR-TEX OF COLORADO
412 Denham Building
Denver, Colorado

FIR-TEX OF MISSOURI-KANSAS
1805 Grand Avenue
Kansas City, Missouri

J. E. SCHWARZ
Roosevelt Building
St. Louis, Missouri

FIR-TEX OF MICHIGAN
439 Penobscot Building
Detroit, Michigan

FIR-TEX OF GEORGIA
Arcade Building
Atlanta, Georgia

FIR-TEX OF ILLINOIS
333 North Michigan Avenue
Chicago, Illinois

FIR-TEX SALES CO.
P. O. Box 1790
Birmingham, Alabama

FIR-TEX OF MARYLAND
506 South Central Avenue
Baltimore, Maryland

FIR-TEX OF MINNESOTA
702 Vandalia Street
St. Paul, Minnesota

FIR-TEX OF NEW JERSEY
214 North Clinton Street
East Orange, New Jersey

CHARLES W. CALEY
144 E. 36th Street
New York, New York

FIR-TEX OF NEW YORK
North Tonawanda, New York

BUILDING MATERIAL WHOLESALERS, INC.
510 Rutherford Avenue
Charlestown, Massachusetts

FIR-TEX OF FLORIDA
Fort Lauderdale, Florida

FIR-TEX INSULATING BOARD COMPANY

DANT & RUSSELL, INC.

NATIONAL DISTRIBUTORS **PORTLAND, OREGON**