# CELOTEX

*for*

# BUILDINGS

*with*

# SPECIFICATIONS

LA COOPERATION INDUSTRIELLE
MAX RAYBAUD & Cie.
6, Rue Stamboul - ALEXANDRIE

Digitized by:




ASSOCIATION FOR PRESERVATION TECHNOLOGY
www.apti.org

For the

BUILDING TECHNOLOGY HERITAGE LIBRARY

https://archive.org/details/buildingtechnologyheritagelibrary

From the collection of:

Tulane University | Southeastern Architectural Archive
Special Collections
Howard-Tilton Memorial Library

http://seaa.tulane.edu

# USES OF

# CELOTEX IN BUILDINGS

SPECIFICATION NO. 10. *Issued March* 1, 1928.
*Supersedes all previous specifications.*

*Wholesale Distributors for England, Wales and Ireland:*

THE MERCHANT TRADING Co., Ltd.
52 Bishopsgate - - London, E.C.2

*Wholesale Distributors for Scotland:*

WILLIAM BEARDMORE & Co., Ltd.
Parkhead Steel Works, Parkhead, Glasgow, E.

THE CELOTEX COMPANY OF GREAT BRITAIN Ltd.,
323-6 AUSTRALIA HOUSE, LONDON, W.C.2.

CELOTEX
INSULATING LUMBER

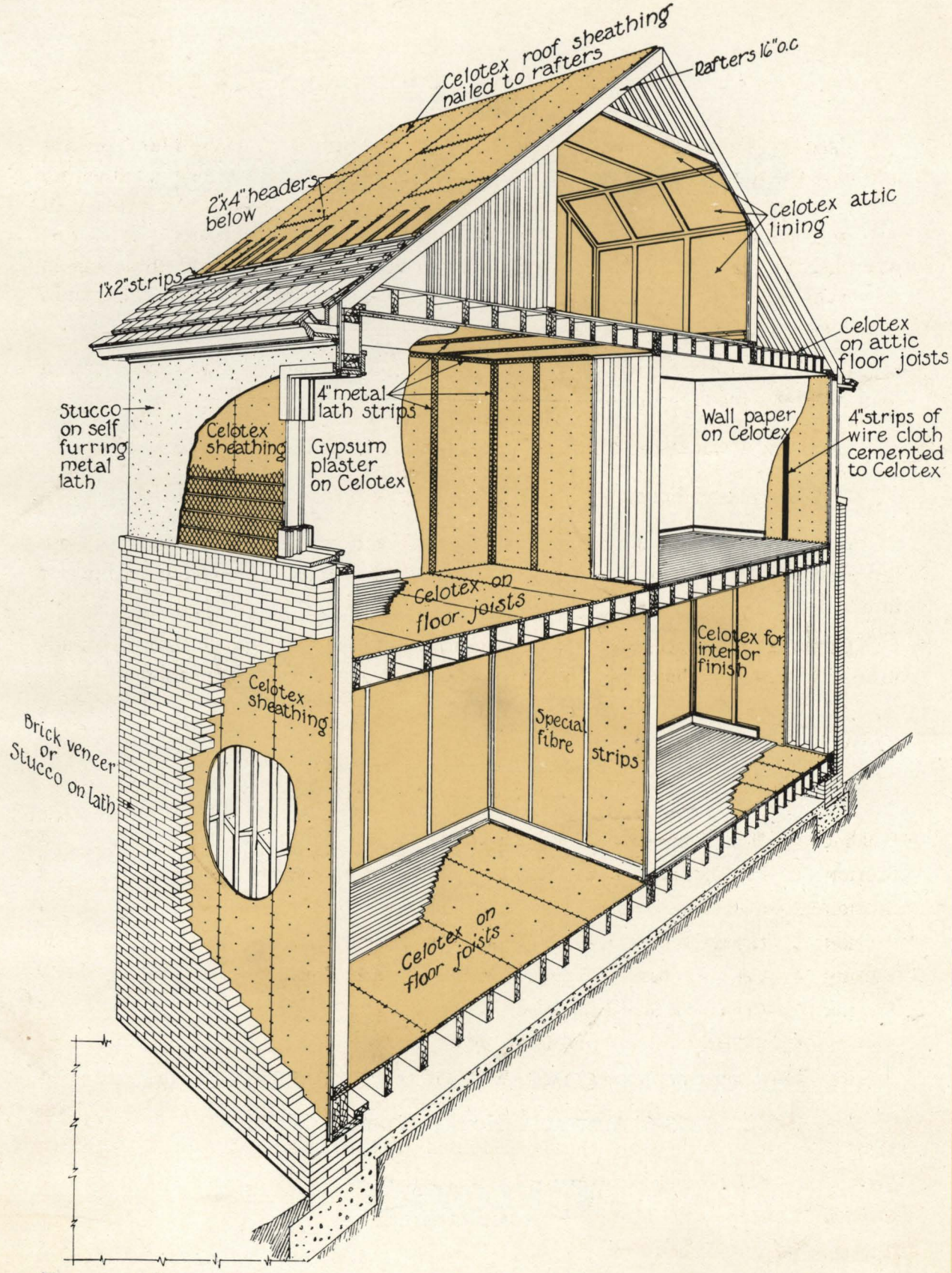



FIG:- 1. SECTION OF BUILDING SHOWING TYPICAL USES OF CELOTEX

# CELOTEX IN BUILDINGS.

CELOTEX is a building material made of sugar-cane fibres by a continuous process of felting the tough fibres of the cane into a broad board. It has incorporated within it myriads of minute air cells, which contribute insulation against the passage of heat and sound. On account of the heat-insulating value of CELOTEX it saves fuel when used in place of lath and plaster, or when used in place of wood sheathing in the walls or roof. It prevents sudden temperature changes, and eliminates condensation on walls.

It has structural strength, so that framed buildings made of it are better braced than buildings made of ordinary wood boarding.

CELOTEX is waterproofed during manufacture so that its use insures dry walls.

Gypsum plaster bonds to it with greater strength than to wood lath.

CELOTEX can be painted or distempered, and is extensively used as a base for plaster. In its natural tan colour CELOTEX also finds great favour as interior finish.

CELOTEX has exceptional sound-absorbing properties, and CELOTEX sound-insulating partitions have high efficiencies for overcoming sound transmission.

## TABLE OF CONTENTS.


| | PAGE. |
|---|---|
| Building Section showing typical uses of Celotex | 2 |
| SECTION 1.—Panelled, painted, distempered or natural Celotex interiors | 4 |
| SECTION 2.—Celotex for Ceilings | 7 |
| SECTION 3.—Celotex as base for Wallpaper and Plastic Paints | 10 |
| SECTION 4.—Celotex as base for Interior Plaster and Exterior Stucco | 12 |
| SECTION 5.—Celotex for Sound Insulation | 14 |
| SECTION 6.—Celotex for Roof Insulation | 17 |
| SECTION 7.—Celotex for Facing Concrete Walls and Ceilings | 20 |
| SECTION 8.—Celotex for Insulating Brick Walls | 23 |
| SECTION 9.—Celotex for Sound Quieting and Acoustical Correction | 26 |
| SECTION 10.—Celotex under Carpets and Linoleum | 29 |
| SECTION 11.—Celotex for Building Exteriors | 30 |
| Technical Information on Celotex | 32 |

## Section 1.

# PANELLED, PAINTED, DISTEMPERED, OR NATURAL CELOTEX INTERIORS.

*RESULTS OBTAINED.*

1. *The burlap-like texture and colour of Celotex is favoured by leading architects and decorators the world over as a surface for interior finish. The Celotex can be left in its natural tan colour, or painted or distempered.*
2. *Houses lined with Celotex are well insulated and therefore economize fuel.*
3. *Houses lined with Celotex are dry, comfortable, and quickly heated.*

Fig. 2.—A typical CELOTEX room in a steel house of the Lochend Housing Scheme, Edinburgh.

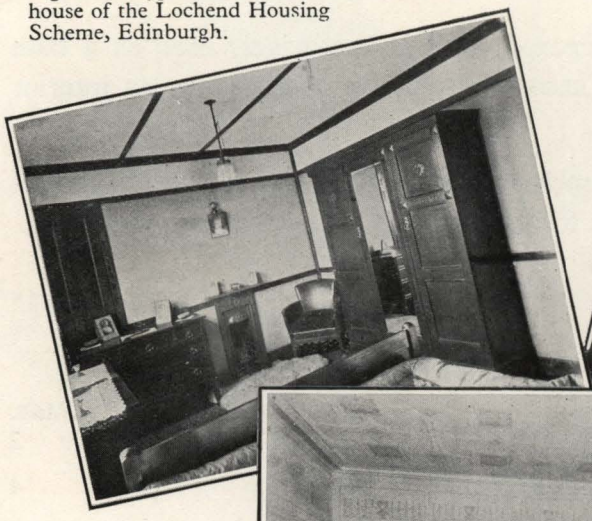


Fig 3.—CELOTEX panelled room in a residence at Welwyn, Herts.

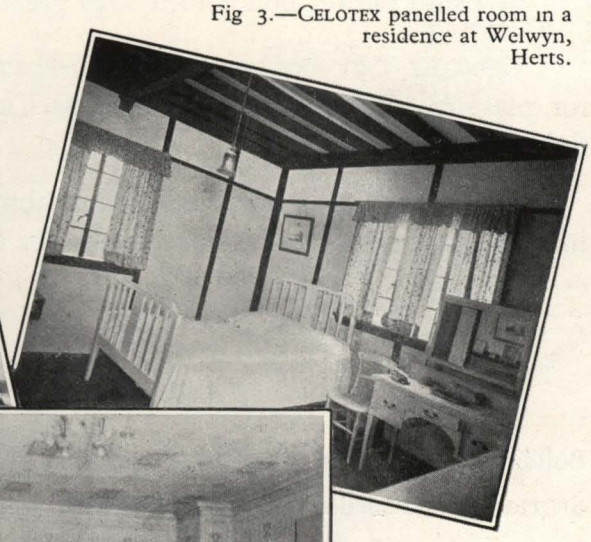




Fig. 4.—Library with panelled CELOTEX walls and ceilings. Note stencilling.

## Section 1.

# PANELLED, PAINTED, DISTEMPERED, OR NATURAL CELOTEX INTERIORS.

*SPECIFICATION.*

### *Framing.*

CELOTEX is nailed to wood framing members or furring, which must be on 12-in. or 16-in. centres. Only in the case of 36-in. CELOTEX boards may the framing members be on 18-in. centres.

A continuous nailing base must be provided for each of the four edges of every CELOTEX board.

When panel strips are not used over joints, the studs at joints should be placed to conform to the actual width of the CELOTEX which is either 47 $\frac{13}{16}$ or 35 $\frac{13}{16}$-in.

### *Application of Celotex to Walls.*

CELOTEX for building interiors is best cut to size, and fitted in place with a few nails driven into intermediate framing members to hold it in place. The day after fitting and loosely applying as described, the entire board should be firmly nailed to intermediate framing members and then along the edges.

V-groove joints or round-edge joints as shown in Figs. 5 and 6, should be nailed with 1$\frac{1}{2}$-in. galvanized panel pins driven at a sharp angle, alternating the direction of the angle. Panel pins should not be more than 4in. apart, and not less than $\frac{3}{8}$in. away from the edge. The holes left by driving the heads into the CELOTEX may be closed by rubbing the surface with a small piece of CELOTEX.

For the type of decoration shown in Fig. 7, the nails should be driven in pairs, spacing the pairs equal distances apart. If the CELOTEX is painted or distempered, ornamental nails should be driven after painting.

For joints of the types shown in Figs. 9 and 10, the CELOTEX should be nailed first with 1$\frac{1}{4}$-in. galvanized slate nails 12 or 13 gauge, driven not more than 4in. apart, and not less than $\frac{3}{8}$in. away from the edge of the CELOTEX. Along intermediate framing members panel pins may be driven as previously described, 6in. apart. The appropriate joint covering is then applied.

Do not attempt to fill the joints with a cement or putty. If the joints are to be covered with a muslin strip, the nail-heads must first be inspected to see that they are slightly below the surface and the muslin should be stretched over the nail-heads and the joint to span these.

### *Painting.*

The natural tan colour of CELOTEX is preferred by many architects and decorators, but if it is to be painted the following procedure should be noted :

Before painting CELOTEX it should be well glue-sized or primed. A good size is prepared by dissolving $\frac{3}{4}$lb. ground glue in one gallon of hot water and applying the same to the CELOTEX in a heavy coat, while it is still warm. CELOTEX fibres that may extend outward after glue-sizing are quickly removed by lightly sanding the surface with sand-paper after the sizing has dried.

### *Distempering.*

CELOTEX that is to be distempered need not be glue-sized. If two coats of distemper are applied, it is desirable to rub over the first coat with sand-paper after it has dried.

### *Stencilling and Staining.*

Beautiful wall decorations are obtained by stencilling CELOTEX.

CELOTEX may also be stained with any commercial stain used for dyeing wood.

# Section 2.

# CELOTEX FOR CEILINGS.

*SPECIFICATION.*

## *Framing.*

CELOTEX ceilings should be nailed to ceiling joists spaced 12in. or 16in. centre to centre. Only in the case of 36-in. boards may they be placed 18in. centre to centre. It is very desirable that all four edges of every CELOTEX board be provided with a continuous nailing base.

In cases where ceiling joists are in place and irregularly spaced the CELOTEX is sometimes nailed across the joists, in which case all joints must be covered, either with substantial wood strips, as shown in Fig. 20 or with special fibre strips, as shown in Fig. 19.

It is desirable to plan the ceiling panelling before placing the ceiling joists, so that the latter can be placed to conform with the requirements of the panelling.

Several typical panelled CELOTEX ceilings, with accompanying arrangement of ceiling joists, are shown in Fig. 14 to Fig 17. For rooms not exceeding 14ft. in width the CELOTEX may be placed in one length across the room as shown in Fig. 14. For very wide ceilings the CELOTEX may be used in two lengths with a joint along the centre of the ceiling, as shown in Fig. 15.

## *Application of Celotex.*

CELOTEX for ceilings should be nailed by first driving nails into the intermediate ceiling joists and then nailing the edges of the CELOTEX. Galvanized slate nails 1¼in. long, 12 or 13 gauge, should always be used on the edges. These nails should be driven not less than ⅜in. away from the edge of the CELOTEX, nor more than 4in. apart around the edges, and not more than 6in. apart along imtermediate ceiling joists.

For exposed nailing, i.e., nails driven into intermediate ceiling joists, 1½in. galvanized panel pins or small-headed galvanized nails may be used, driven at a sharp angle, and succeeding nails should be driven at opposing angles. Galvanized wire nails are recommended for high ceilings. Nail the CELOTEX to intermediate joists before nailing it on the edges. Never use panel pins in CELOTEX ceilings driven directly, i.e., at right angles to the surface.

Note in particular the special fibre strip treatment for the joints.

If the joints are stripped with muslin, butt the edges together and go over the joint with sand-paper wrapped around a block of wood before applying the muslin strips. The nail-heads should be inspected to see that they are slightly below the surface, and the cloth should be stretched over the joint and nail-heads to span these depressions.

Corner mouldings are recommended at the junction of the walls with the ceiling, but if no corner moulding is used it is important that the plaster on the walls be separated from the CELOTEX ceiling, as shown in Fig. 18, by cutting the plaster with a trowel while it is still soft.

Other typical corner treatments are shown in Figs. 19 to 21. V-groove and round-edge joints may also be used.

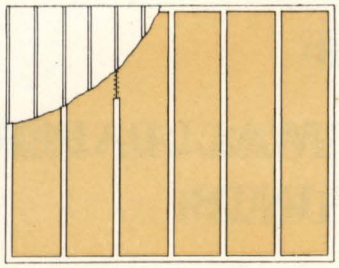
## *Painting.*

Before painting CELOTEX ceilings the surface should be primed or glue-sized, for which purpose ¾lb. of ground glue should be dissolved in one gallon of hot water. The glue-size should be applied hot, and in a heavy coat. Any good linseed oil paint may be used. Highly decorative effects are obtained by means of metallic paints.

## *Distempering.*

When CELOTEX is distempered it need not necessarily be glue-sized. One heavy coat of distemper is frequently used for CELOTEX ceilings, but for superior results two coats should be applied, lightly rubbing over the first coat with fine sand-paper after this coat has dried.

FIG:- 14.
CELOTEX BOARDS IN ONE LENGTH ACROSS CEILING IN EITHER 3FT. OR 4FT. WIDTHS, JOISTS 12", 16", OR 18" CENTRE TO CENTRE. SPECIAL FIBRE STRIP OR WOOD OVER JOINTS.



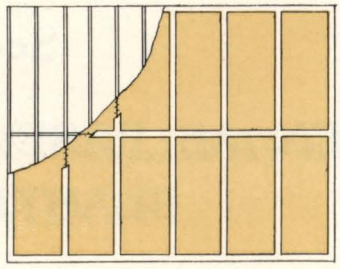
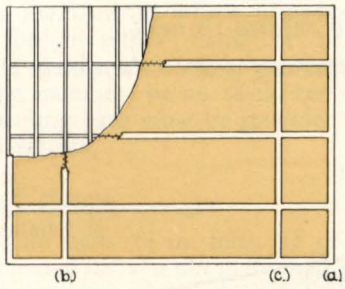


FIG:- 15.
FOR VERY WIDE CEILINGS USE CELO TEX BOARDS IN TWO LENGTHS WITH JOINT ALONG CENTRE OF CEILING SPECIAL FIBRE STRIP OR WOOD OVER JOINTS.

FIG:- 16.
CELOTEX IN ONE LENGTH FROM (a) TO (b) BATTEN AT (c) TO CORRESPOND WITH BATTEN OVER JOINT AT (b). EITHER SPECIAL FIBRE OR WOOD STRIPS MAY BE USED.



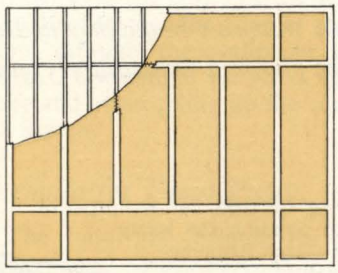



FIG:- 17.
PANELLED CEILING OF THIS TYPE PERMITS THE USE OF VARIOUS LENGTHS OF CELOTEX BOARDS CELOTEX JOINT UNDER EACH FIBRE OR WOOD STRIP.

## TYPICAL CELOTEX CEILING PLANS.

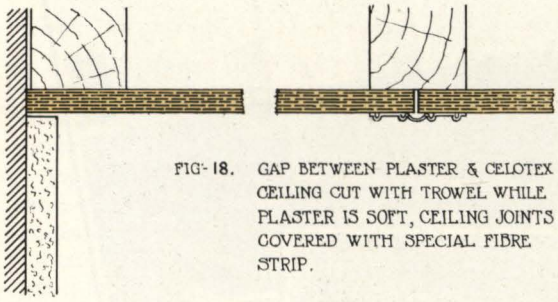


FIG:- 18. GAP BETWEEN PLASTER & CELOTEX CEILING CUT WITH TROWEL WHILE PLASTER IS SOFT, CEILING JOINTS COVERED WITH SPECIAL FIBRE STRIP.

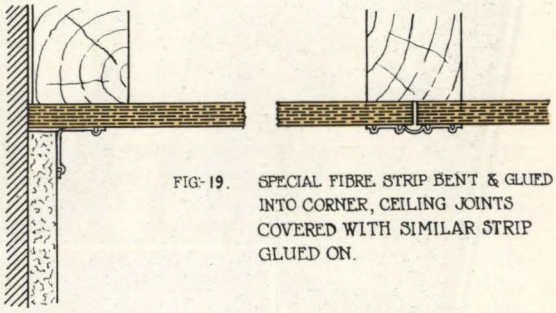


FIG:- 19. SPECIAL FIBRE STRIP BENT & GLUED INTO CORNER, CEILING JOINTS COVERED WITH SIMILAR STRIP GLUED ON.

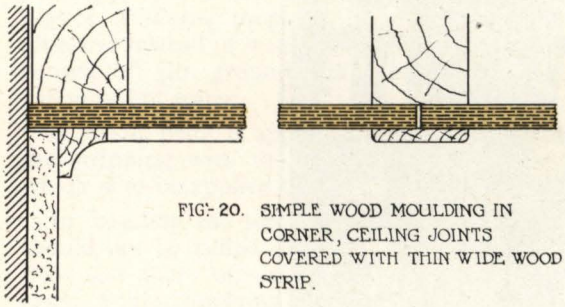


FIG:- 20. SIMPLE WOOD MOULDING IN CORNER, CEILING JOINTS COVERED WITH THIN WIDE WOOD STRIP.

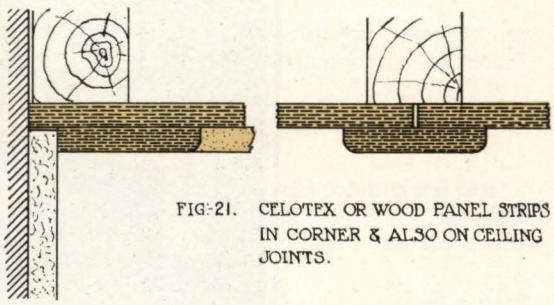


FIG:- 21. CELOTEX OR WOOD PANEL STRIPS IN CORNER & ALSO ON CEILING JOINTS.

## TYPICAL CORNER CONSTRUCTIONS BETWEEN WALLS AND CELOTEX CEILINGS.

SECTION 2

## Section 3.

# CELOTEX AS BASE FOR WALLPAPER AND PLASTIC PAINTS.

*RESULTS OBTAINED.*

1. *A warm, dry house in winter, and a cool house in summer.*
2. *A home that can be quickly heated and that retains its heat.*
3. *May be papered immediately, and paper staining due to dampness is eliminated.*

Fig. 22.—Preparing CELOTEX for wallpaper or plastic paints. (*a*) Sanding the joints. (*b*) Applying wire-screen stripping. (*c*) Applying wallpaper.

Fig. 23 —Paper on CELOTEX on walls of Edinburgh University Class Room.




Fig. 24.—Plastic paint on CELOTEX walls in residential drawing-room.

# Section 3.

# CELOTEX AS BASE FOR WALLPAPER AND PLASTIC PAINTS.

*SPECIFICATION.*

## *Wood Framing.*

The framing members to which CELOTEX is nailed should be on either 12-in. or 16-in. centres. Only in the case of 36-in. boards may the framing members be on 18-in. centres. A continuous nailing base must be provided for every edge of CELOTEX.

## *Applying the Celotex.*

Galvanized slate nails $1\frac{1}{4}$-in. long, 12 or 13 gauge, should be used, driven not more than 4in. apart along the edges, and not less than $\frac{3}{8}$in. away from the edge. The CELOTEX should first be nailed to the intermediate framing members with slate nails, driving the nails not more than 6in. apart.

## *Covering Joints.*

Smooth down the CELOTEX at the joints as shown in Fig. 22, using coarse sand-paper wrapped round a block of wood, sanding the area to be covered by the wire cloth.

Point up the nail-heads with paint putty or with plaster of Paris, and apply 4-in. strips of annealed galvanized wire screening, 12-mesh (obtainable from CELOTEX distributors), over all joints and corners, bonding these to the CELOTEX as follows :—

In case of wallpaper applications use either paint putty, as given in the formula below, or plaster of Paris, prepared by mixing it with glue-size instead of water. The glue-size should consist of $\frac{3}{4}$lb. ground glue, dissolved in one gallon of hot water.

If plastic paint is applied to the surface bond the stripping with the particular plastic paint which is to be applied over the entire surface.

In bonding the screening to the CELOTEX it should not be nailed or tacked in place, except here and there on ceiling strips, to hold the same while applying the bonding cement. One end of the screen is held with one hand, while the paint putty, plaster of Paris or plastic paint is pressed through the mesh in one or two strokes with a 4-in. painter's scraping knife as illustrated in Fig. 22. Spread the bonding cement over the edges of the screen for not less than 1in., so that the edge of the screen will not show through the wallpaper or plastic paint finish. Use ample pressure with the scraping knife and avoid piling up the cement underneath the screen.

## *Formula for Paint Putty.*

The following formula for paint putty has been found satisfactory as a bonding cement for wire screening, and when thinned down slightly is also satisfactory as a plastic paint :—

12 lb. whiting bolted.
$\frac{1}{2}$ gallon glue-size (6 oz. ground glue to $\frac{1}{2}$ gallon of hot water).
$\frac{1}{2}$ pint of paint (light in colour).
$\frac{1}{2}$ pint of varnish.

## *Applying Wallpaper.*

Before applying wallpaper the CELOTEX must be well glue-sized. For this purpose dissolve $\frac{3}{4}$lb. of ground glue in one gallon of boiling water and apply the glue-size warm with a brush in a *heavy* uniform coat over the entire surface. It is desirable to rub over the dry glue-sized CELOTEX with sand-paper before applying the paper.

Apply the wallpaper in the usual manner with paperhanger's paste.

The application of wallpaper directly to CELOTEX as per these instructions is illustrated in Fig. 22.

## *Applying Plastic Paint.*

Paint putty, or an approved commercial plastic paint, may be applied directly on CELOTEX after the joints have been prepared as described above.

The plastic paint is applied to the surface with a brush to the desired thickness, using an old ceiling or wall brush. Sufficient material should always be applied to completely cover the texture of the CELOTEX and the joints.

## Section 4.

# CELOTEX AS BASE FOR INTERIOR PLASTER AND EXTERIOR STUCCO.

*RESULTS OBTAINED.*

1. *A warm dry house in winter and a cool house in summer.*
2. *A home that is quickly heated and that retains its heat.*
3. *Superior bonding of plaster or stucco and no lath marks.*
4. *Finish coat can be applied directly to Celotex.*

Fig. 25.—CELOTEX interior ready for plaster, showing joint stripping.

Fig. 26.—CELOTEX used as plaster base on walls and ceilings in the new extension of the Royal Academical Institute, Belfast.

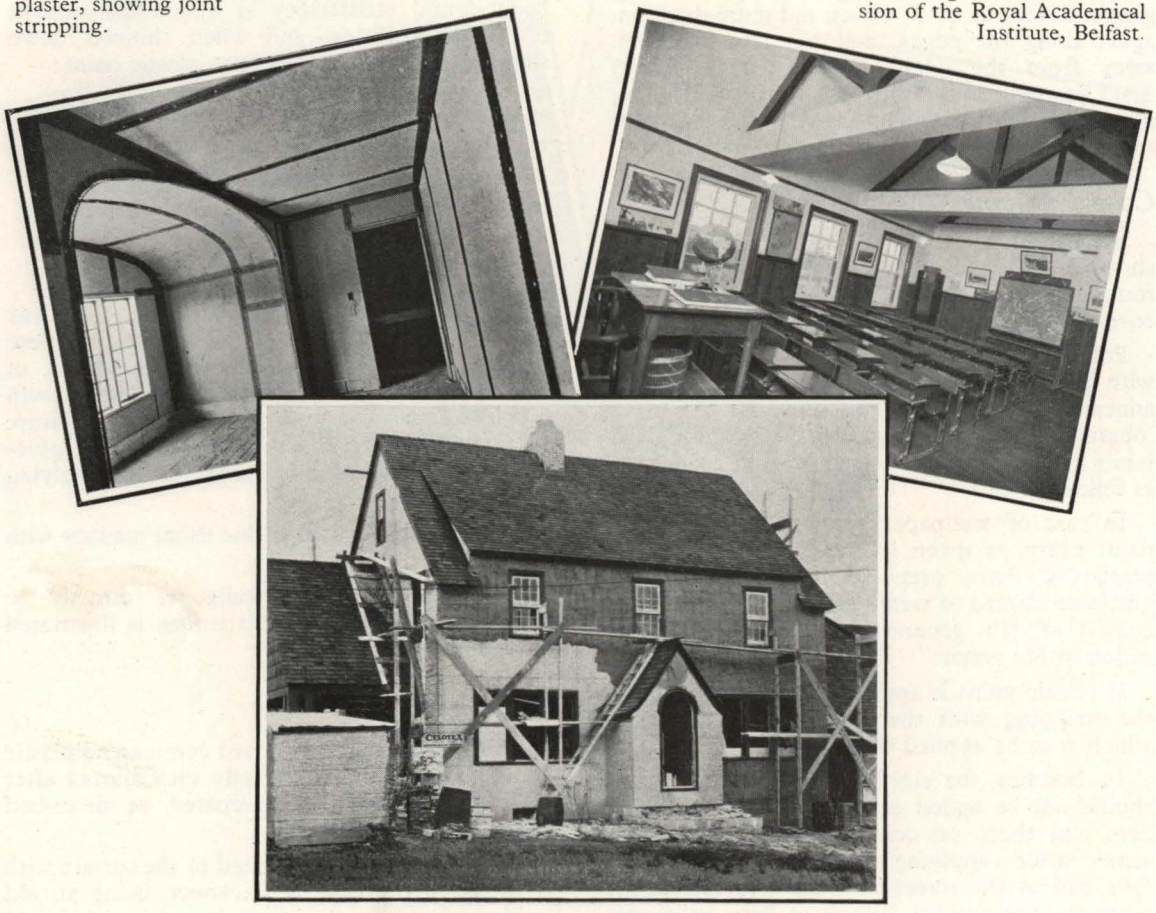


Fig. 27.—CELOTEX applied to wood framing as a base for stucco Note steel wire mesh nailed over CELOTEX to reinforce stucco.

## Section 4.

# CELOTEX AS BASE FOR INTERIOR PLASTER AND EXTERIOR STUCCO.

*SPECIFICATION.*

### *Wood Framing.*

The framing members to which CELOTEX is nailed should be on either 12-in. or 16-in. centres. Only in the case of 36-in. boards may the framing members be on 18-in. centres. A nailing base must be provided for every edge of CELOTEX.

### *Application of Celotex.*

CELOTEX boards should be nailed lengthwise to all framing members, with ample bearing surface for nailing the edges of the CELOTEX. Leave $\frac{3}{16}$in. space at all joints between boards as the CELOTEX is cut scant in width and length to allow for this space. Nail the CELOTEX first to intermediate framing members with the nails 6in. apart, and then nail around all edges of each board, placing the nails not less than $\frac{3}{8}$in. away from the edge and not more than 4in. apart.

Use only $1\frac{1}{4}$in. galvanized slate nails 12 or 13 gauge and drive the nails until the heads are slightly below the surface of the CELOTEX.

### *Plaster and Stucco Reinforcement.*

On account of the excellent bonding of gypsum plaster to CELOTEX, it is only necessary to reinforce the plaster at the joints and corners. Strips of expanded metal lath, or of galvanized wire mesh 4in. wide, should be applied over all joints between boards, and at all junctions of CELOTEX with walls and ceilings, where such strips should be bent to a right angle.

When the plaster application is thinner than $\frac{1}{4}$in., use 4-in. strips of annealed galvanized wire netting 12-mesh, but do not nail these strips except at ends, or as necessary on ceilings.

When CELOTEX is used on building exteriors as a base for stucco, the stucco, as in all other types of construction, should be reinforced with galvanized wire mesh or expanded metal lath nailed over the CELOTEX, the nails being driven through the CELOTEX into the wood framing.

### *Plastering on Celotex.*

Use gypsum plaster or Keene's cement. Do not use lime plaster in the scratch or brown coats. Use a clean coarse and dry sand of the proportion of not more than two parts of sand to one part of plaster. The plaster must be applied in sufficient thickness to produce a smooth, continuous surface.

For thin one-coat gypsum plaster applications on CELOTEX use neat plaster without sand in a thickness of about $\frac{1}{8}$in.

Apply the plaster directly to the CELOTEX, forcing it well into the joints.

Darby strokes must be in the direction of the framing members, being careful always to span two framing members with the rod or darby.

Thoroughly ventilate with fresh air from open windows, especially in cold weather.

### *Applying Stucco.*

Only standard Portland cement or magnesite stucco should be applied to CELOTEX, and the former should be about 1in. thick. The wire reinforcement for magnesite stucco must be galvanized.

## Section 5.

# CELOTEX FOR SOUND INSULATION.

*RESULTS OBTAINED.*

1. *Tests made on Celotex sound insulation partitions show that they excel other light-weight partitions in keeping sound from going from one room to the next room.*
2. *Celotex used in floors deadens floor noises.*



Fig. 28.—Astoria Picture Palace and Dance Hall, London. CELOTEX used in floors of this auditorium for sound insulation.

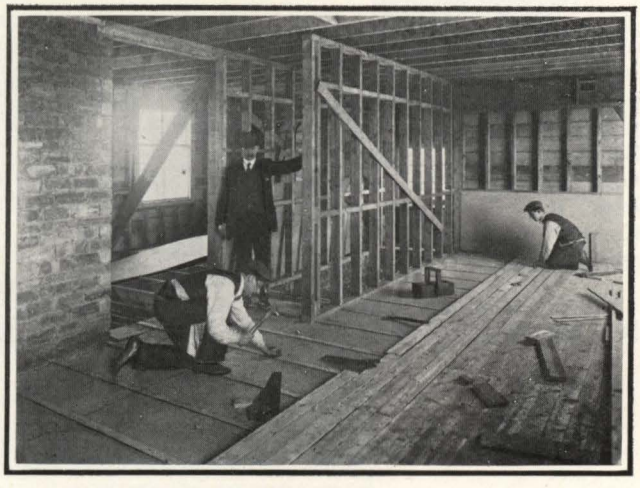


Fig. 29.—CELOTEX as used for sound insulation in floors by the Glasgow Corporation in their Shettleston Housing Scheme.

# Section 5.

# CELOTEX FOR SOUND INSULATION.

*SPECIFICATION.*

## 1. *Celotex Sound Insulating Partitions.*

Tests made on various types of CELOTEX partitions have shown that :—

(*a*) Hollow partitions in which the studs are placed 16in. on centres with CELOTEX nailed on both sides and plastered give superior sound insulation to partitions with lath and plaster on both sides.

(*b*) For better sound insulation partitions it is imperative that the wall surface upon which the sound-waves strike be separated by an air space from the opposite wall surface, i.e., there must be no physical connection between these two surfaces except at the floor and ceiling. The conventional staggered-stud partition in which alternate studs belong to the receiving surface and intervening studs to the transmitting surface, with plastered CELOTEX on both sides, has been tested and found to give superior sound insulation to the conventional hollow tile plastered partitions.

(*c*) The double 3-in. tile partition plastered on the exposed faces, and with a layer of CELOTEX loosely placed between the two tile sections, is practically opaque to sound. A partition of this type is illustrated in Fig. 31.

(*d*) A very important contribution to the science of sound insulation is the CELOTEX light-weight double-stud partition shown in Fig. 30. Under test it was found that this partition gave a higher degree of sound insulation than any other light-weight partition tested. Whenever a non-load bearing sound insulation partition is wanted the double-stud partition shown in Fig. 30 is to be recommended.

### *Summary.*

For moderate sound insulation the ordinary wood-stud partition (*a*) with plastered CELOTEX on both sides may be used.

For superior results the staggered stud partition (*b*) should be used.

For still better results the double-tile partition (*c*) is recommended ; but for the highest degree of sound insulation the special double-stud partition (*d*) should be used.

A strip of CELOTEX should be used under the sill and over the plate of all sound-insulating partitions, likewise at walls.

## 2. *Insulating Floors against Sound Transmission.*

CELOTEX in floors contributes a high degree of sound insulation. Two typical methods of using CELOTEX in floors for this purpose are illustrated in Figs. 30 and 31. For reducing the transmission of sounds due to physical impact on the floor, as by walking, etc., it is desirable that the floor be fastened to the supporting beams at as few points as possible. In other words, it should " float " as nearly as possible. This can be obtained as shown in Fig. 31 by nailing the wood sleepers with a minimum number of nails. Generally, the nails are driven about 4ft. apart. The floor boards are nailed to the sleepers with the standard nailing.

Only soft wood flooring can be nailed through the CELOTEX to breeze concrete. For this purpose the breeze concrete must be well packed, as by rolling, and the nails should penetrate it for a depth of about 1½in. Hardwood flooring must be nailed through the CELOTEX to wood strips embedded in the concrete.

In addition to the use of CELOTEX on concrete floors as shown in Fig. 31, CELOTEX is also used underneath carpets and linoleum where it also contributes excellent sound insulation.

(For the use of CELOTEX under carpets or linoleum see Section 10, and for further details on sound-insulating partitions and floors write to THE CELOTEX COMPANY OF GREAT BRITAIN, LIMITED, 325 AUSTRALIA HOUSE, LONDON, W.C.2.)

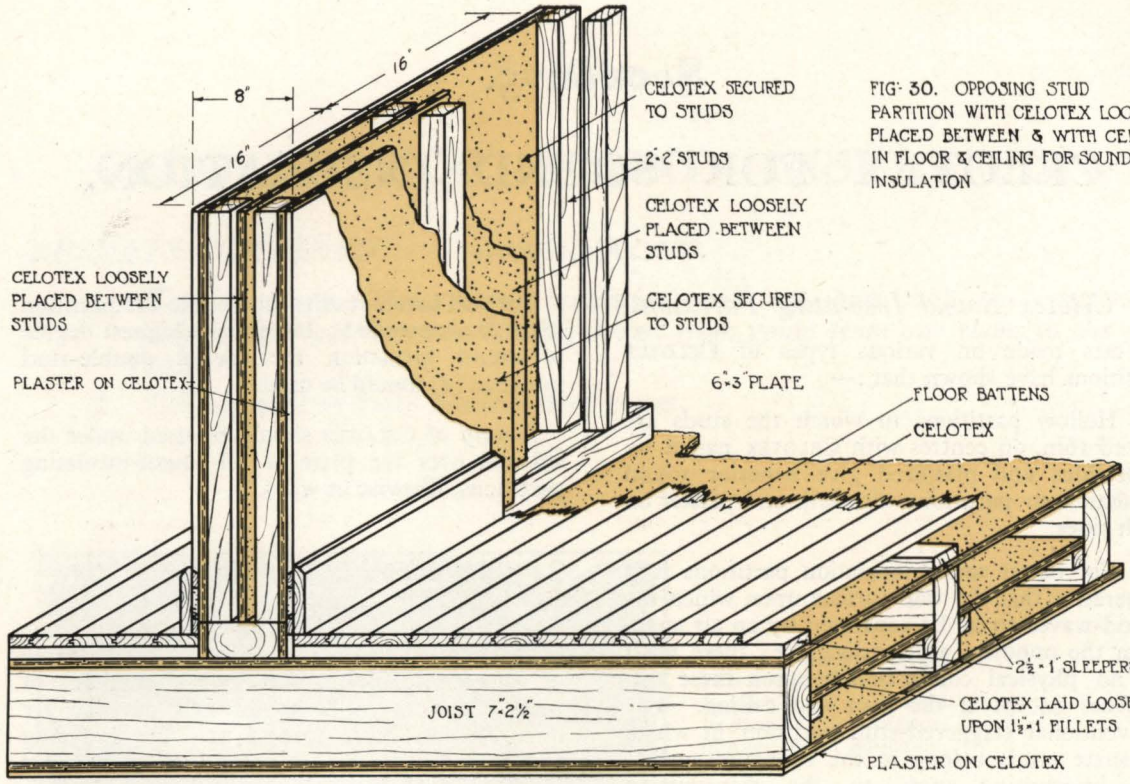



FIG: 30. OPPOSING STUD PARTITION WITH CELOTEX LOOSELY PLACED BETWEEN & WITH CELOTEX IN FLOOR & CEILING FOR SOUND INSULATION

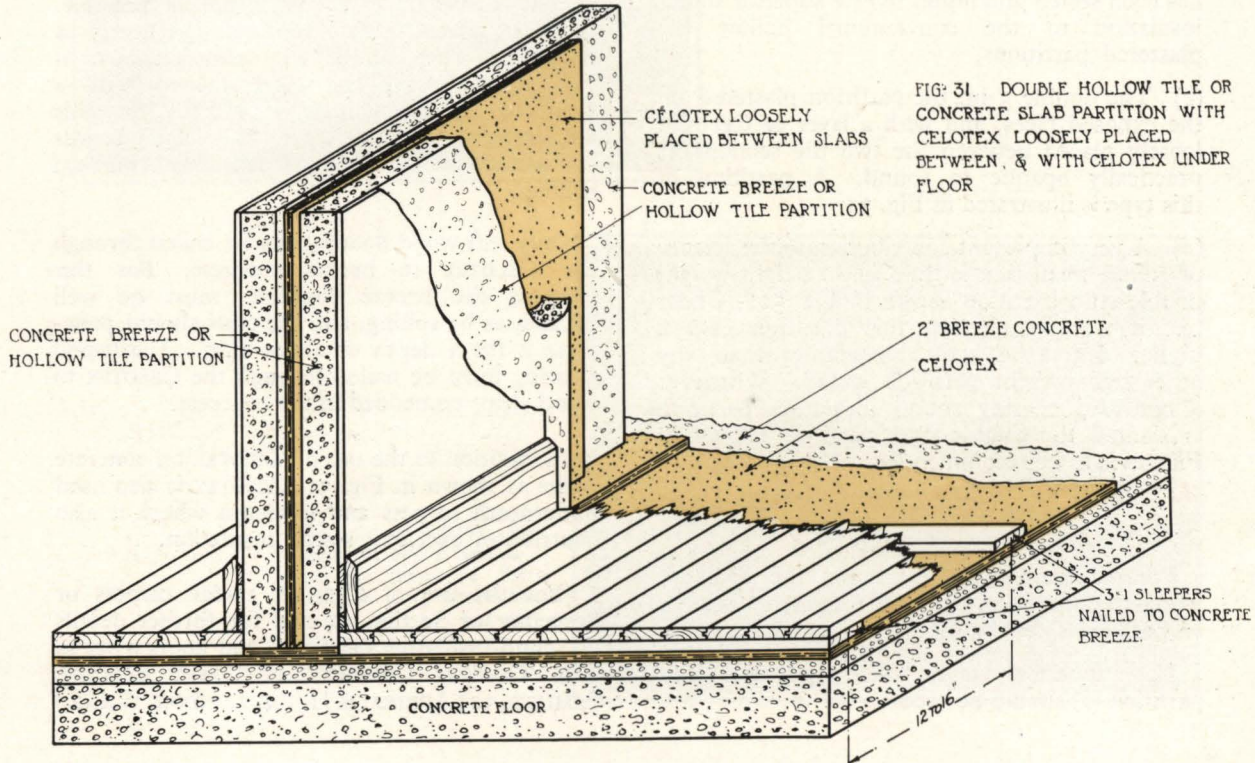



FIG: 31. DOUBLE HOLLOW TILE OR CONCRETE SLAB PARTITION WITH CELOTEX LOOSELY PLACED BETWEEN, & WITH CELOTEX UNDER FLOOR

## CELOTEX SOUND INSULATING PARTITIONS AND FLOORS

SECTION 5

## Section 6.

# CELOTEX FOR ROOF INSULATION.

*RESULTS OBTAINED.*

1. *Fuel Saving.—One of the chief reasons for insulating roofs in cold climates is to save fuel. The roofs of industrial buildings in particular are generally constructed of materials that offer relatively little resistance to the passage of heat. On account of the large area of such roofs the heat lost during the winter months is a very substantial item, and this unnecessary waste can be largely eliminated by insulating the roof with Celotex.*
2. *Prevention of Condensation.—In manufacturing establishments where high humidities are maintained condensation frequently forms on the ceilings and introduces an annoyance and a loss to the manufacturer. By insulating the roof with Celotex this condensation can be eliminated.*
3. *Protection from Summer Heat.—In buildings having metal, tile, slate or asbestos roofs that conduct heat readily, the downward roof radiation on summer days frequently becomes oppressive to those within the building. These conditions can be eliminated by using Celotex in the roof. Attics may be made habitable by means of Celotex.*
4. *Expansion stresses in concrete roofs are reduced.*



Fig. 32. — Application of CELOTEX to roof of Royal Waterloo Hospital, London. CELOTEX covered with Asphalte.

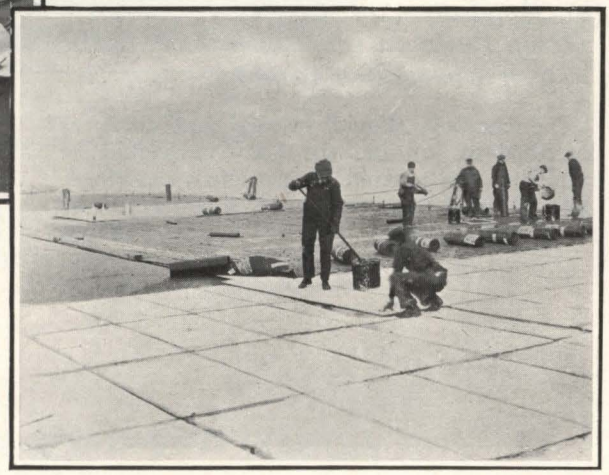


Fig. 33. — Application of CELOTEX to Concrete Roof of an industrial building. CELOTEX covered with roll or composition roofing.

# Section 6.

# CELOTEX FOR ROOF INSULATION.

*SPECIFICATION.*

## (*a*) *Application of Celotex to Concrete Roof Decks in conjunction with asphalte roofing.*

The concrete roof deck should be reasonably smooth and the surface should be cleared of all dirt and loose materials before the CELOTEX is applied. The concrete should be dry and well cured, and should be mopped with hot asphalte or pitch, using not less than 30 lb. per square of 100 square feet. Sufficient area should be mopped at one time to provide for the complete embedding of each CELOTEX board. The CELOTEX should be applied in 4-ft. by 4-ft. or 3-ft. by 3-ft. squares. Care should be taken to ensure complete adhesion of all CELOTEX edges by pressing down the edges into the mopping, while it is still hot.

Where CELOTEX is applied in more than one layer the top surface of each layer should be coated with a uniform mopping of hot asphalte or pitch to bond the next succeeding layer. Only as much CELOTEX should be laid in one day as can be covered by asphalte during that day. The asphalte should be applied according to the manufacturer's specifications.

A typical method of flashing a CELOTEX insulated roof deck covered with asphalte is illustrated in Fig. 34.

## (*b*) *Application of Celotex to Concrete Roof Decks in conjunction with built-up or composition roofing.*

The concrete should be dry and clean, as described in (*a*) and the CELOTEX should be bonded to the concrete as previously described. Only as much CELOTEX should be laid as can be covered in one day. The roof covering should be bonded to the CELOTEX, in accordance with manufacturer's or architect's specifications.

A concrete roof deck insulated with CELOTEX and covered with a composition or felt roofing is shown in Fig. 35.

## (*c*) *Application of Celotex over Wood Roof Decks in conjunction with built-up or composition roofing.*

When CELOTEX is applied to a wood roof-deck it is nailed with galvanized slate nails, driven about 12in. apart. When only one thickness of CELOTEX is used, No. 12 or 13 gauge galvanized slate nails $1\frac{1}{4}$in. long should be used, and when more than one layer of CELOTEX is applied galvanized nails of appropriate length to pass through the total CELOTEX thickness and into the wood-supporting surface should be used.

The roof covering should be applied in accordance with manufacturer's or architect's specifications.

When CELOTEX is used over a wood roof subjected to high humidities two layers of waterproof paper should separate the first layer of CELOTEX from the wood roofing.

## (*d*) *Celotex under Slate or Tile Roofing.*

The CELOTEX should be nailed on top of the roof rafters and wood lath should be nailed over the CELOTEX, and through it to the rafters, lengthwise to the rafters. The horizontal furring strips to which the slate or tile are fastened are nailed across these laths to the rafters. This leaves a space between the furring and the CELOTEX equal to the thickness of the lath, which permits the drainage of any roof leakage in case of defective or broken tile.

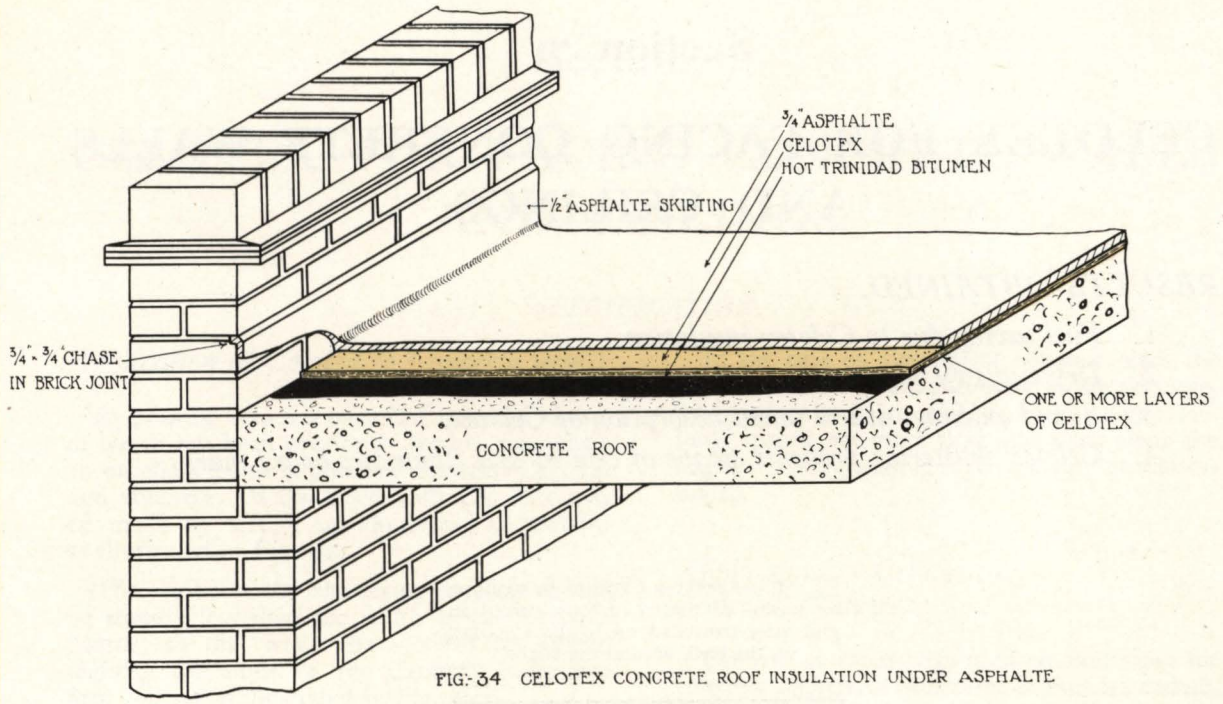



FIG:-34 CELOTEX CONCRETE ROOF INSULATION UNDER ASPHALTE

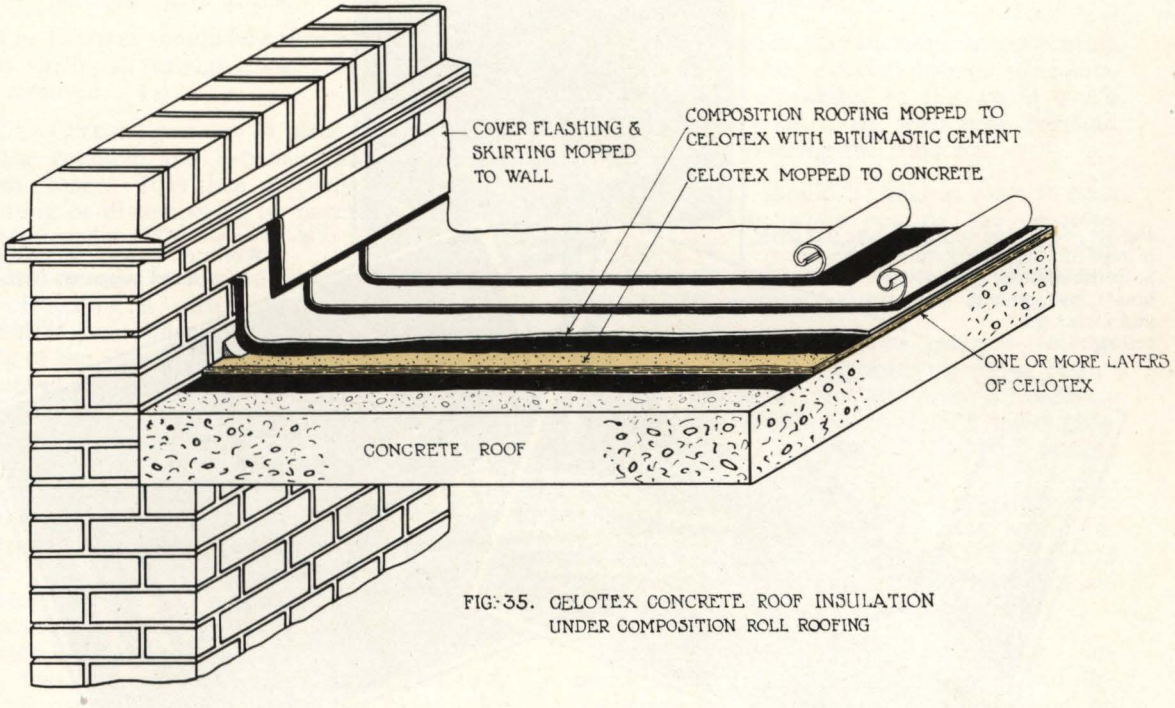



FIG:-35. CELOTEX CONCRETE ROOF INSULATION
UNDER COMPOSITION ROLL ROOFING

## Section 7.

# CELOTEX FOR FACING CONCRETE WALLS AND CEILINGS.

*RESULTS OBTAINED.*

1. *Fuel saving due to Celotex insulation.*
2. *Dry walls by eliminating condensation.*
3. *Sound quieting, due to sound absorption of Celotex.*
4. *Celotex shuttering prevents escape of cement and eliminates board marks.*

Fig. 36.—Applying CELOTEX to a ceiling by means of plaster of Paris mixed in glue-size, trowelled on to the CELOTEX on the back around the edges.

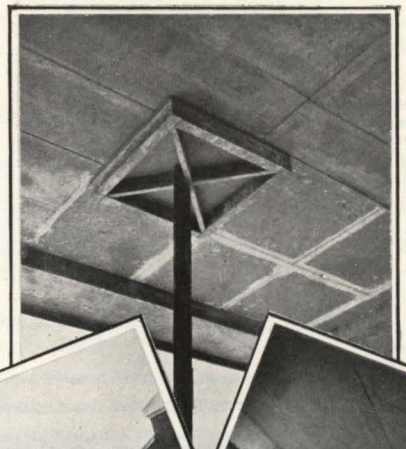


Fig. 37.—Pouring concrete over CELOTEX in roof of a new margarine factory at Southampton. CELOTEX bonds to concrete and forms the ceiling

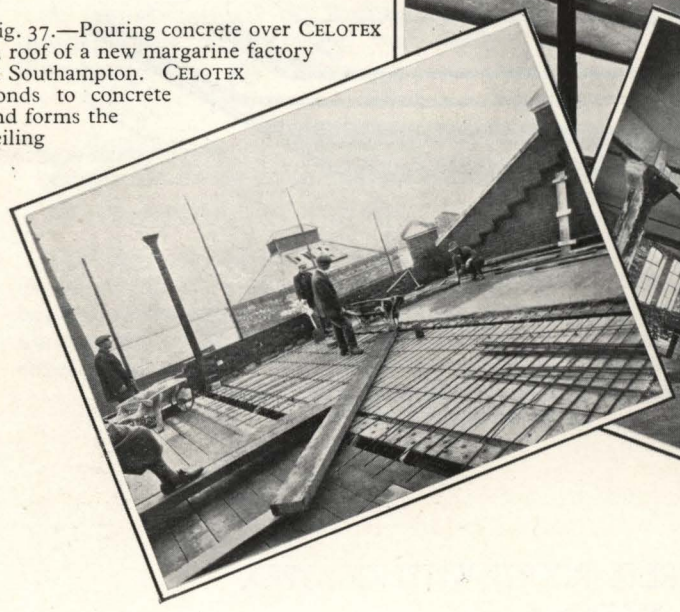
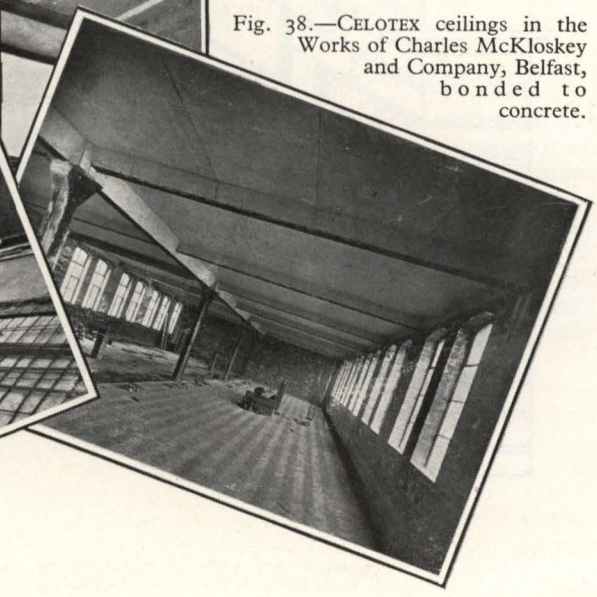


Fig. 38.—CELOTEX ceilings in the Works of Charles McKloskey and Company, Belfast, bonded to concrete.



# Section 7.

# CELOTEX FOR FACING CONCRETE WALLS AND CEILINGS.

*SPECIFICATION.*

## *Application of Celotex to Concrete Walls.*

By pouring concrete over CELOTEX, the surface of which has been previously freshly moistened, an excellent bond is obtained between CELOTEX and concrete. Walls faced with CELOTEX may be made by setting up shuttering in sections as illustrated in Fig. 39.

The width of the shuttering sections should be slightly less than the width of the CELOTEX boards, so that when the sections are bolted together the edges of the CELOTEX come into firm contact as illustrated in Fig. 40.

The boarding to which the CELOTEX is lightly pinned can be separated with a gap of 2 or 3 inches between board edges.

The CELOTEX should be nailed with a few panel pins which pull through it when the form sections are removed.

The CELOTEX remains in place firmly bonded to the concrete and becomes the wall surface of the room. It is then properly decorated by painting or distempering or papering, or it can be plastered.

CELOTEX may be applied to dry concrete walls by cementing it with *neat* gypsum plaster or plaster of Paris, mixed in glue-size, applied to the back of the CELOTEX on all edges, to a thickness of about $\frac{1}{4}$in. Projecting ridges or nodules of concrete should be removed before applying the CELOTEX, as they hold the CELOTEX away from the wall and prevent intimate bonding on the edges. The best results are obtained with the CELOTEX cut into boards not exceeding 24in. in width. Such units are pressed against the wall while the gypsum plaster is still soft. The plaster should be sufficiently soft, and the pressure sufficiently great, so that some of the plaster is squeezed out along the edges. The part that is squeezed out must be scraped away before pressing the next board into place. See Section 8 for illustrations of a suitable frame for pressing the CELOTEX against the wall.

In the case of dry breeze concrete walls the CELOTEX may be nailed directly to the concrete, using galvanized slate nails 12 or 13 gauge, $1\frac{1}{4}$in. long, spaced not more than 4in. apart along the edges. The remaining surface should be scatter-nailed.

## *Application of Celotex to Concrete Ceilings.*

CELOTEX is extensively used on shuttering for concrete ceilings, as illustrated in Figs. 41 and 42. In both constructions illustrated, the CELOTEX should be moistened with water immediately prior to pouring the concrete to ensure proper bonding to the concrete.

Various methods may be used for preventing the flow of the thin concrete through the joints. One method is illustrated in Fig. 43, in which the joints are pointed up with neat Portland cement before pouring the concrete.

The CELOTEX should be held in place to keep it from shifting while pouring the concrete. This may be done by means of weights or with 1in. panel pins, the heads of which pull through the CELOTEX when the shuttering is removed.

For bonding CELOTEX to concrete ceilings that are in place neat gypsum plaster or plaster of Paris mixed in glue-size may be used, as described for wall applications. A good glue-size is prepared by dissolving $\frac{3}{4}$lb. of ground or concentrated glue in a gallon of hot water. (See Fig. 36.) Generally, the supporting frame may be removed by the time the next square is ready for application. The CELOTEX squares should not be larger than 2ft. by 2ft. to facilitate application.

(See Section 1 for various types of joint treatments and for instructions on painting and distempering, and Section 3 for information on papering, with the exception that cloth stripping may be used over joints.)

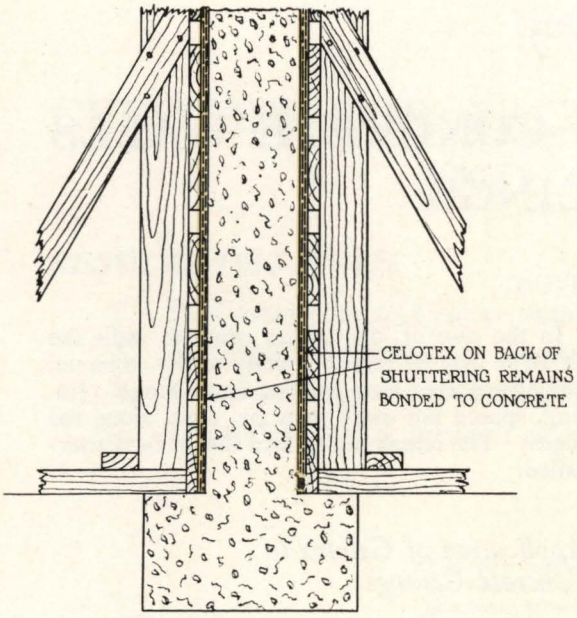



FIG:- 39 CELOTEX FOR FACING VERTICAL CONCRETE WALL SHUTTERING

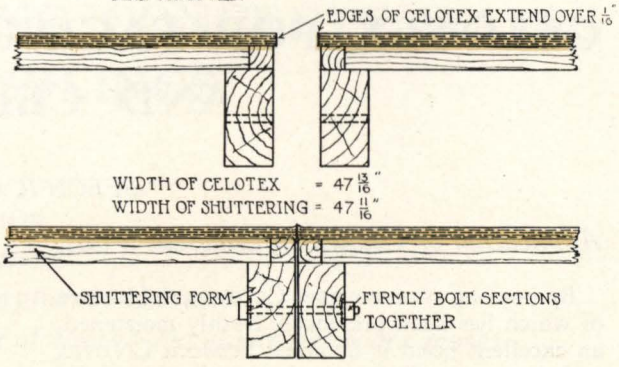



FIG:- 40 METHOD OF SEALING VERTICAL JOINTS WHEN CELOTEX IS USED FOR WALL CENTERING FORMS ARE IN SECTIONS 47 11/16" WIDE BOLTED TOGETHER TO BE RE-USED CELOTEX REMAINS BONDED TO CONCRETE

FIG:- 41. CELOTEX ON SHUTTERING FOR CONCRETE BEAMED CEILINGS, BONDED TO CONCRETE

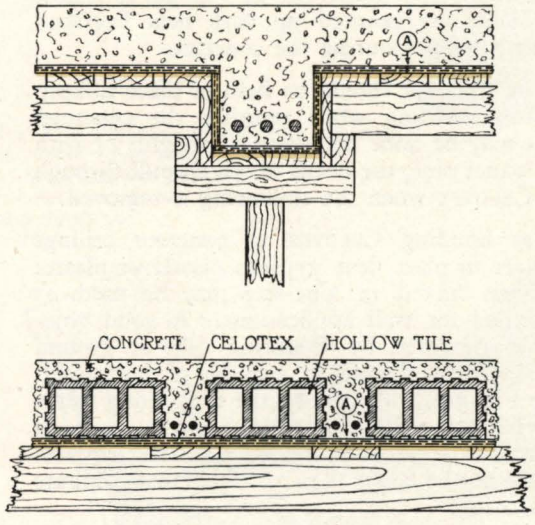



FIG- 42 CELOTEX ON SHUTTERING FOR HOLLOW TILE CEILING, BONDED TO CONCRETE

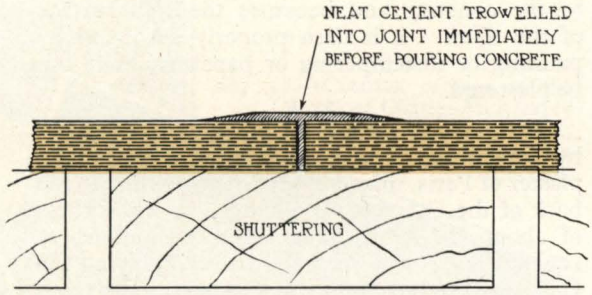



FIG:- 43 METHOD OF SEALING CELOTEX JOINTS AS AT "A" IN FIGS. 41 & 42 CELOTEX IS NAILED SPARINGLY TO WOOD WITH 1" PANEL PINS THAT PULL THROUGH THE CELOTEX WHEN THE SHUTTERING IS REMOVED

## CELOTEX FOR CONCRETE FORM WORK

SECTION 7.

## Section 8.

# CELOTEX FOR INSULATING BRICK WALLS.

*RESULTS OBTAINED.*

1. *Dampness on walls is eliminated by facing them with Celotex.*
2. *Fuel is saved and a building interior is obtained which is quickly heated in winter and which retains its heat.*



Fig. 44.—Applying CELOTEX to a brick wall by means of *neat* gypsum plaster, or plaster of Paris mixed in glue-size, spread on the back of the CELOTEX along the edges The frame must be pressed against the CELOTEX until some of the plaster is squeezed out along the edges when it is removed and the next board is pressed into place.

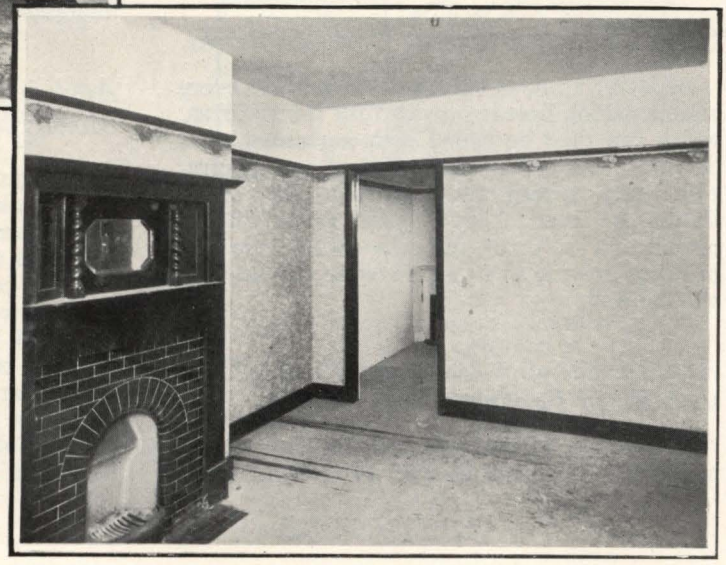


Fig. 45.—Holders' Hill Estate Bungalows, London. CELOTEX applied to brick walls and to partitions by furring.

# Section 8.

# CELOTEX FOR INSULATING BRICK WALLS.

*SPECIFICATION.*

## *Application of Celotex directly to Brick Walls by means of neat Gypsum Plaster.*

When CELOTEX is cut into widths not exceeding 2ft. it can be bonded directly to dry brick walls by using the following procedure.

A light straight frame is made, as illustrated in Fig. 44. This frame should be an inch or two narrower and shorter than the CELOTEX board, and the CELOTEX should be placed upon it, back up, while *neat* gypsum plaster or plaster of Paris, mixed in glue-size, is trowelled along the edges to a depth of about ¼in., and width of 2 to 3 inches. For rough walls a thicker ridge of plaster may be necessary. A good glue-size is made by dissolving ¾lb. of ground or concentrated glue in a gallon of hot water. The brick wall is then brushed with water, after which the CELOTEX is pressed against it with the frame. The plaster should be sufficiently soft so that when the frame is slapped against the CELOTEX several times some of the plaster is squeezed out along the edges. This should be scraped off and the edges sealed in with a brush dipped in water. When CELOTEX is to be applied to a brick wall the mortar joints should be trowelled down, while the bricks are being laid.

## *Celotex nailed to Breeze Concrete Bricks.*

By laying a row of breeze concrete bricks every 16in. a nailing base is provided for the CELOTEX, which can then be nailed with horizontal rows of nails. Galvanized slate nails, 12 or 13 gauge, 1¼in. long, spaced not more than 6in. apart, should be used. The breeze bricks should extend out a small distance away from the bricks to provide an air gap between the CELOTEX and the wall.

## *Application of Celotex to Brick Walls with Wood Furring.*

A common method of applying CELOTEX to brick walls is shown in Fig. 48. Wood strips 12 or 16in. on centre, not less than 2in. wide and ¾in. thick, are fastened to the brick wall. CELOTEX is nailed to these furring strips by means of 12 or 13 gauge 1¼in. galvanized slate nails, placing the nails not more than 4in. apart around the edges nor less than ⅜in. away from the edge, and not more than 6in. apart along intermediate furring strips.

## *Application of Celotex to Wood Strips Embedded in Mortar Joints.*

Another method of fastening CELOTEX to brick walls is shown in Fig. 49. Galvanized slate nails 1¼in. long, 12 or 13 gauge, spaced not more than 6in. apart, should be used for fastening the CELOTEX to the wood strips. The position of these wood strips is readily found by tapping the CELOTEX lightly with a hammer.

The joints between CELOTEX boards may be covered with CELOTEX strips, wood strips, or special fibre strips, described in Section 1.

The surface can then be painted or distempered or the CELOTEX can be plastered, in which case the instructions given in Section 4 should be followed.

## *Application of Celotex to Moist Plastered Walls.*

CELOTEX may be bonded directly to moist but smooth plastered walls by means of a suitable cold bitumastic waterproofing cement or paint. The wall surface must be dry when the waterproofing cement is applied to it, and if it is not possible to wait for the surface to dry naturally it should be dried with a torch. The waterproofing cement or paint must be applied in a heavy coat on the wall and the CELOTEX pressed into place while the paint is soft and adhesive, using a block of wood and striking it with a hammer if necessary.

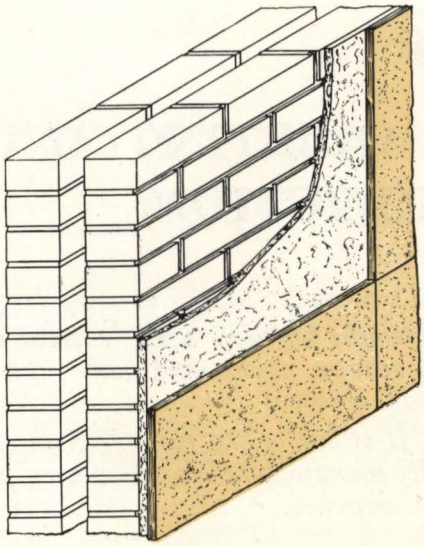


FIG:-46. CELOTEX APPLIED DIRECTLY TO HOLLOW BRICK WALL OR TO PARTITION BY BONDING WITH NEAT GYPSUM CEMENT

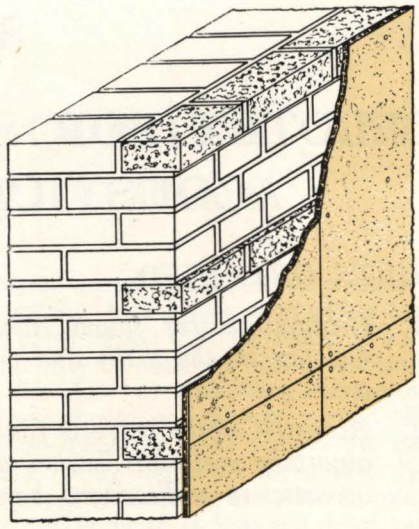


FIG:-47. CELOTEX NAILED TO ROWS OF BREEZE BRICKS NOT MORE THAN 16" APART.

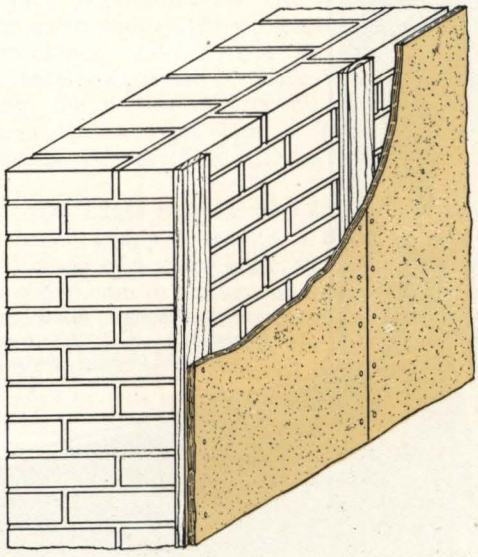


FIG:-48 CELOTEX NAILED TO WOOD GROUNDS NOT MORE THAN 16"APART.

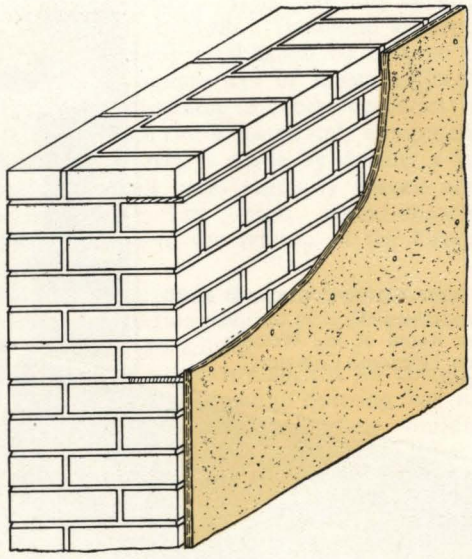


FIG:-49. CELOTEX NAILED TO HORIZONTAL WOOD FILLETS EMBEDDED IN WALL IN MORTAR JOINTS, NOT MORE THAN 16"APART.

## APPLICATION OF CELOTEX TO BRICK WALLS.

SECTION 8.

## Section 9.

# CELOTEX FOR SOUND QUIETING AND ACOUSTICAL CORRECTION.

*RESULTS OBTAINED.*

1. *Celotex absorbs sound, whereas hard smooth surfaces cause reverberation. Celotex on the walls and ceilings greatly reduces noises, and makes the room quiet.*
2. *Acousti-Celotex corrects faulty acoustics. It is one of the most efficient sound-absorbing materials known, and is especially manufactured for producing proper acoustics in auditoriums, banks, offices and churches.*

Fig 50.—CELOTEX stone decoration in the halls of a residence. Also note ACOUSTI-CELOTEX stencilled in colour on the ceilings.

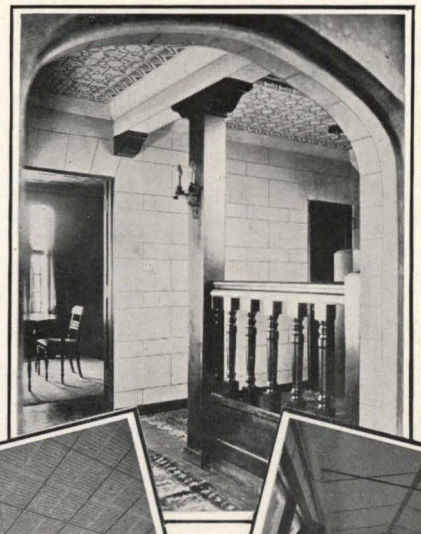


Fig. 51.—ACOUSTI - CELOTEX used for sound-quieting in the Tele phone Room of the Western Union Telegraph Company, London.

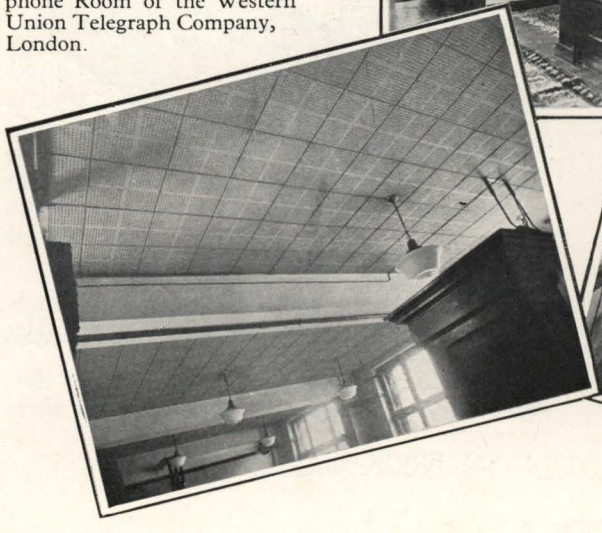
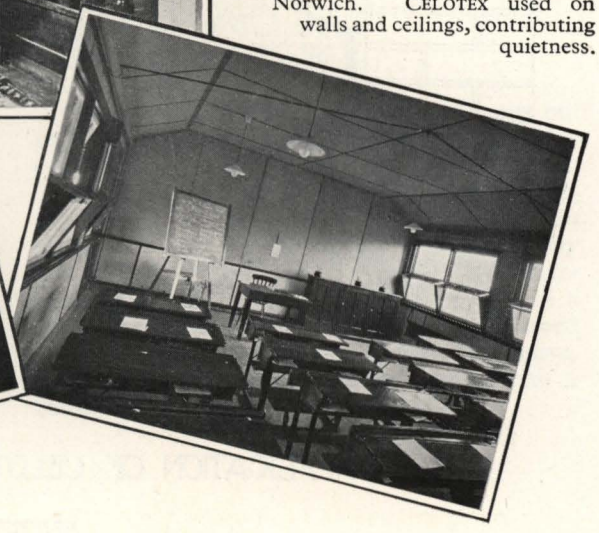


Fig. 52.—Sabin Road School, Norwich. CELOTEX used on walls and ceilings, contributing quietness.



## Section 9.

# CELOTEX FOR SOUND QUIETING AND ACOUSTICAL CORRECTION.

### 1. *Application of Celotex Standard Building Board for Sound Quieting.*

CELOTEX in its natural condition absorbs sound. It has been found by test that CELOTEX Standard Building Board absorbs sound with six times the efficiency of plaster and about ten times that of concrete.

Generally when CELOTEX is used for sound quieting it is applied either as stone decoration, or in some panel design.

When CELOTEX is applied as stone decoration it may be cemented directly to a suitable background, or it may be applied as illustrated in Figs. 53 and 54.

When CELOTEX is nailed as illustrated in Fig. 54, it is generally cut into horizontal strips of the same width as the thickness of the stone it represents. These strips are bevelled and, after they are nailed in place with concealed nailing, the vertical V-grooves are cut to represent the vertical joints. The V-grooves should be of the same size as the horizontal joints.

CELOTEX edges may be bevelled by means of sand-paper wrapped around a block of wood, or by means of a sharp knife, such as a knife for cutting linoleum or leather, or the edges may be bevelled on a circular saw tilted to the proper angle or, as a final method, the edges may be bevelled by means of a special bevelling tool.

When CELOTEX is applied to a gypsum plaster or Keene's cement wall or ceiling surface, or to a masonry or concrete background, it is best to cement the CELOTEX as individual blocks with the four edges bevelled on the exposed surface.

A good bonding cement is prepared by mixing plaster of Paris in glue-size, prepared by dissolving $\frac{3}{4}$ lb. of powdered or concentrated glue in a gallon of hot water. This cement is applied to the back of each piece of CELOTEX around the edges, with a trowel or scraping knife. The consistency of the bonding cement should be such that, when the CELOTEX block is pressed into place, some of the cement is squeezed out along the edges. The part that is squeezed out is scraped away before the next block is pressed into place.

For rigid wall surfaces intimate bonding can be assured by holding a piece of wood over the CELOTEX and striking this wood with a hammer.

For applying the CELOTEX blocks to a ceiling, pressure may be obtained with a pole extending from the floor or scaffolding to the ceiling. This pole should bear against a wood block or frame of about the same size as the piece of CELOTEX being applied. Generally, two or three pieces of CELOTEX are pressed into place before the pressure is removed from the first piece.

### 2. *Acousti-Celotex for Acoustical Correction.*

ACOUSTI-CELOTEX is a patented sound absorbing material possessing remarkable capacity for absorbing sound. It is generally furnished in squares 12in. by 12in. Its sound absorption has been definitely established by test, so that the number of square feet of ACOUSTI-CELOTEX necessary for obtaining the best acoustics in a given auditorium can be accurately computed.

ACOUSTI-CELOTEX is made by drilling a large number of small holes regularly spaced across the surface. The high sound-absorbing efficiency is due to the texture of the CELOTEX in these holes.

ACOUSTI-CELOTEX is the only material used for acoustical correction which can be painted or distempered or stencilled.

The value of ACOUSTI-CELOTEX for correcting faulty acoustics and for sound quieting has been demonstrated in many important buildings throughout the world. It is used in auditoriums for eliminating echoes and extraneous noises; in banks and offices to eliminate the fatigue caused by distracting noises; in the lecture-rooms and halls of schools and universities; in churches to eliminate echoes due to hard wall and ceiling surfaces; in the corridors of hospitals, to reduce disturbing noises, and in many other places, such as in restaurants and court-rooms.

For particulars in regard to sound absorption of ACOUSTI-CELOTEX and for analyses of particular jobs that require acoustical correction, address THE CELOTEX COMPANY OF GREAT BRITAIN, LIMITED, 325 AUSTRALIA HOUSE, LONDON, W.C.2.

STUDDING OR GROUNDS 16 IN. CENTRES.

CELOTEX, WOOD, OR GYPSUM PLASTER BACKING.

CELOTEX IN STRIPS WITH BEVELLED EDGES GLUED & NAILED TO BACKING.

VERTICAL "V" GROOVES ACROSS CELOTEX STRIPS.

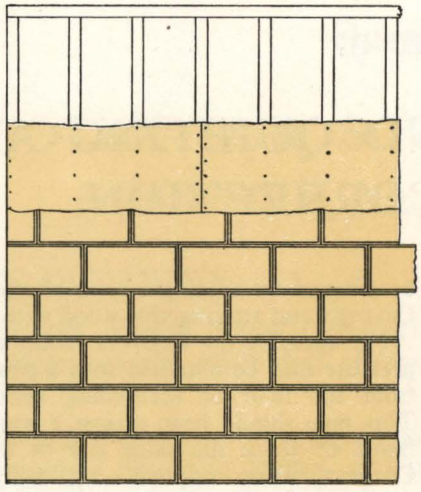
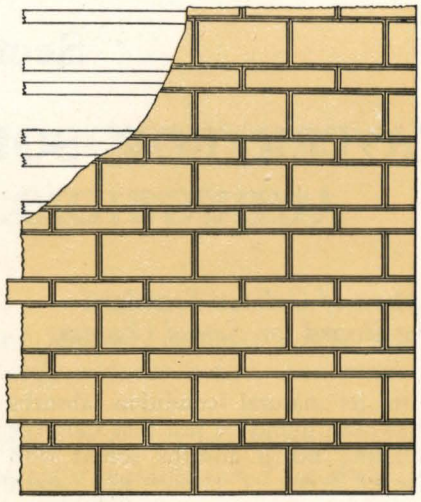


FIG. 53. CELOTEX NAILED & GLUED TO GYPSUM PLASTER, WOOD OR CELOTEX BACKING.



GROUNDS 2"×1" AT EACH HORIZONTAL JOINT SECURED TO BRICKWORK OR TO WOOD FRAMING

CELOTEX IN HORIZONTAL STRIPS WITH BEVELLED EDGES GLUED & NAILED TO GROUNDS.

VERTICAL "V" GROOVE ACROSS CELOTEX STRIPS

FIG. 54. CELOTEX NAILED & GLUED TO HORIZONTAL WOOD GROUNDS.

## SEC 9. CELOTEX WALL DECORATION & INSULATION TO REPRESENT STONEWORK

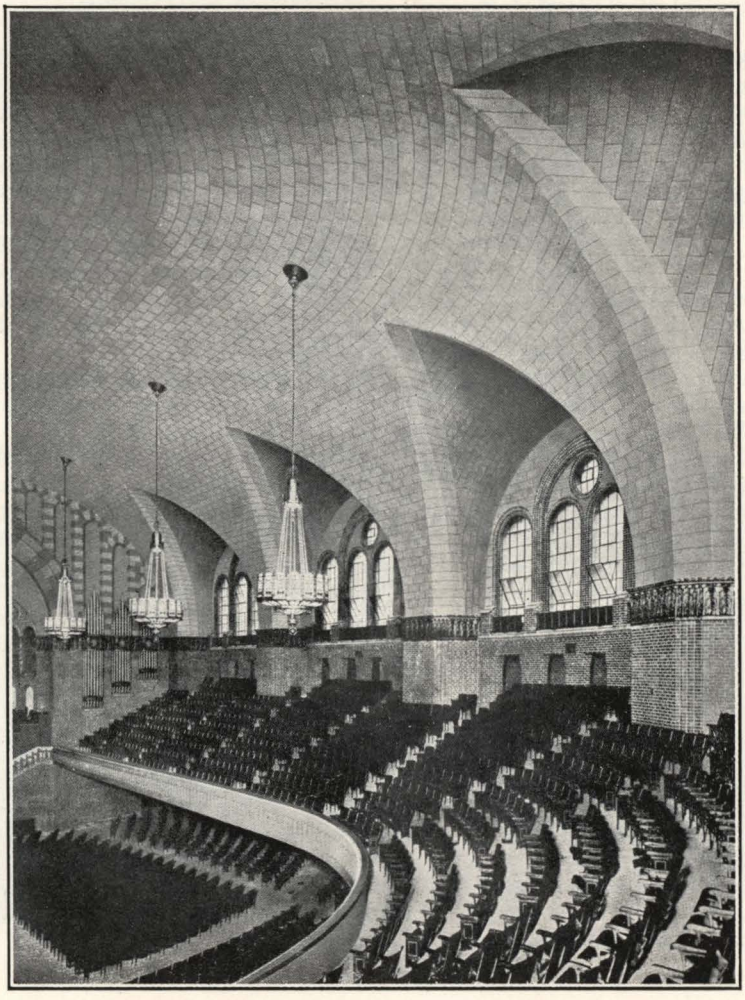


Fig. 55. — CELOTEX Ashlar stone decoration in ceiling of a large auditorium.

## Section 10.

# CELOTEX UNDER CARPETS AND LINOLEUM.

### *RESULTS OBTAINED.*

1. *Noises due to impact, as of walking, are deadened by the use of Celotex under linoleum.*
2. *Celotex under carpets deadens sound and increases life of carpet.*
3. *In both cases Celotex contributes resiliency to walking, and eliminates the tired feeling that results from walking on hard flooring.*

### *Celotex under Carpets.*

Many prominent hotels recently built have CELOTEX under the carpets. Generally these hotels have concrete floors, for which the method of applying CELOTEX is illustrated in Fig. 59. The CELOTEX is not bonded to concrete, but fits loosely into the area enclosed by the carpet nailing strip. This strip is fastened to the concrete in various ways, and the carpet is tightly stretched across the CELOTEX, without being fastened to it, as it is fastened along the walls to the carpet nailing strip.

### *Celotex under Linoleum.*

The linoleum placed over CELOTEX should not be less than 3mm. thick. The CELOTEX should be cemented to the concrete floor with asphalte or an equivalent cement, and the linoleum should be cemented to the CELOTEX with waterproof linoleum cement.

It is recommended that heavy pieces of furniture, especially pianos, kitchen equipment, etc., be supported on discs, to distribute the pressure over a wider area. Ordinary glass discs or sliding shoes may be used as shown in Fig. 60.

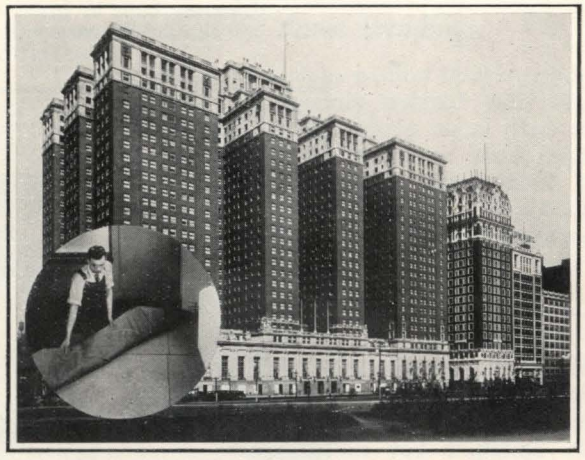


Fig 58.—The Stevens Hotel, Chicago, the world's largest hotel, containing three thousand rooms, has CELOTEX under the carpets of every room. More than 600,000 square feet of CELOTEX were used under the carpets in this hotel.

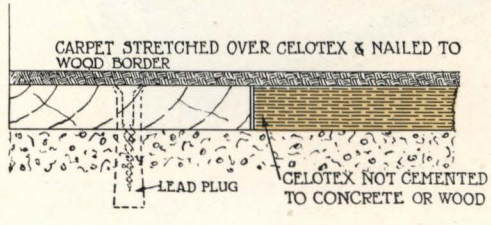



Fig. 59.—CELOTEX under carpets.

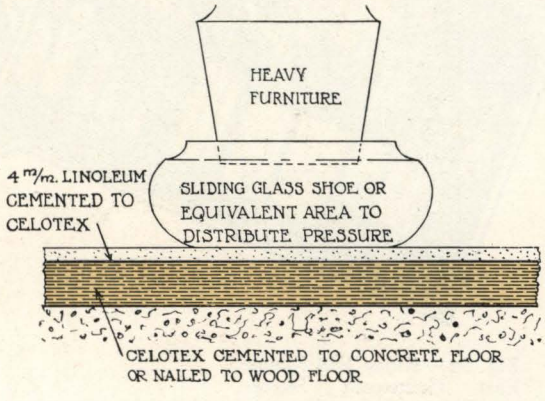



Fig. 60.—CELOTEX under linoleum.

## Section 11.

# CELOTEX FOR BUILDING EXTERIORS.

*RESULTS OBTAINED.*

1. *Celotex contains no glue or binder of any kind, and as it is waterproofed during the process of manufacture it may be used for building exteriors.*
2. *It provides heat insulation and therefore economizes fuel.*
3. *It also contributes year-round comfort to the occupants of the building.*
4. *Celotex is an ideal material for farm buildings.*

Fig. 61.—The original Works Office of the CELOTEX Company built in 1922. This building is still in use, and the CELOTEX with which it is sheathed is in excellent condition.

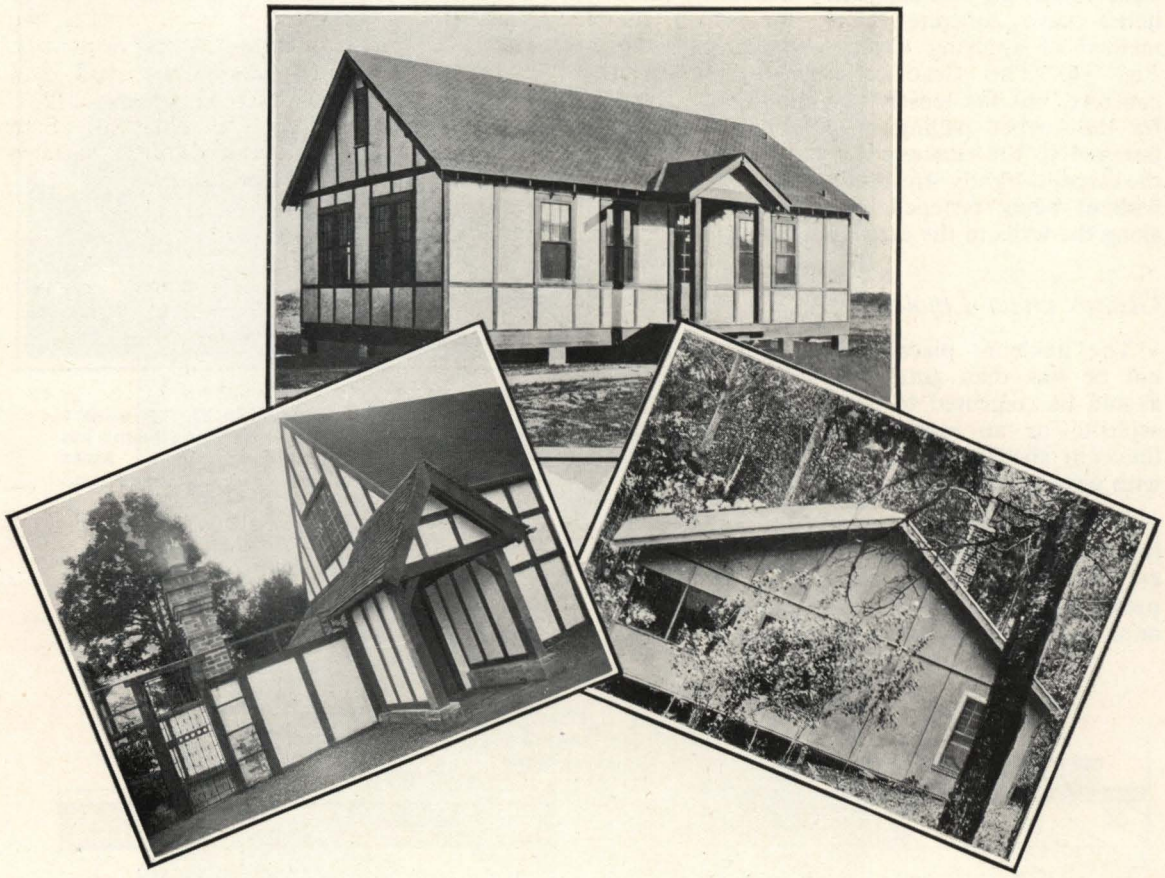


Fig. 62.—Ridge Hill Manor, East Grinstead, Sussex. CELOTEX on exterior.

Fig. 63.—CELOTEX summer cottage. CELOTEX used for exterior of building, painted.

## Section 11.

# CELOTEX FOR BUILDING EXTERIORS.

*SPECIFICATION.*

### *Wood Framing.*

CELOTEX for building exteriors is almost always nailed to wood framing. The studs should be 16in. or 12in. centre to centre. Only in the case of 36in. CELOTEX boards may they be 18in. centre to centre.

A nailing base should be provided for every CELOTEX edge and 2-in. by 4-in. headers must be provided at all horizontal joints.

### *Application of Celotex.*

CELOTEX should be nailed to the framing with 1¼in. galvanized slate nails 12 or 13 gauge.

The nails should be driven not more than 4in. apart around the edges, not less than ⅜in. away from the edges, and not more than 6in. apart along intermediate studs. The CELOTEX boards should be nailed to intermediate studs first, beginning at the top.

### *Joint Covering.*

The joints between CELOTEX boards should be covered with CELOTEX or wood strips. The size of the latter should preferably be about ¾in. by 4in. It is recommended that the CELOTEX be painted before covering the joints.

### *Painting Celotex.*

Before painting the CELOTEX it should be glue-sized, or given a priming coat quickly brushed over the surface. The following glue-size may be used. Dissolve ¾lb. ground or concentrated glue in hot water and apply it with a brush while warm, in a heavy coat.

One or two coats of good linseed oil paint should follow, after the glue-sizing is dry.

In place of glue-sizing the CELOTEX it may be given a priming coat, consisting of equal parts of turpentine, boiled linseed oil, and paint.

### *Painting Celotex Farm Buildings.*

Farm buildings, such as poultry houses, made of CELOTEX are frequently painted with two coats of a paint made by mixing equal parts of Portland cement and clean, fine sand, and adding skim-milk instead of water until a good brushing consistency is obtained. Both the exterior and the interior CELOTEX surfaces of poultry houses should be painted.

### *Whitewashing Celotex.*

A whitewash for exterior use may be made as follows: (1) Slake 1 bushel of quick-lime with 12 gallons of hot water; (2) Dissolve 2 pounds of common salt and 1 pound of sulphate of zinc in 2 gallons of boiling water; pour (2) into (1), then add 2 gallons of skim-milk, and mix thoroughly.

NOTE.—See Section 4 for instructions on applying stucco to CELOTEX. Stucco bonds to CELOTEX, but the application of stucco without wire reinforcement is not recommended.

# TECHNICAL INFORMATION ON CELOTEX.

## *Sizes.*

CELOTEX is furnished in the following stock sizes :—

Thickness, $\frac{7}{16}$in.

Width, 3ft. and 4ft.

Lengths, 8, 8½, 9, 10, 12 and 14 feet.

## *Weight.*

About 60 lb. per 100 square feet.

## *Conductivity.*

The thermal conductivity of CELOTEX is 0·33 B.t.u. per hour, per square foot, per inch, per deg. F. difference in temperature. Its thermal conductivity is approximately the same as that of pure cork.

When tested by the hot box method, which includes surface resistances, the conductivity of 1in. Celotex is 0·251 B.t.u.

One inch of CELOTEX is equal in insulating value to 3 inches of wood, 7 inches of plaster, 13 inches of brick, and 25 inches of concrete.

## *Strength.*

When used in walls in place of horizontal wood sheathing CELOTEX contributes superior bracing and therefore greater strength to the building. This will be seen from the following data obtained from pulling or " tug-of-war " tests between two wall sections, one made of CELOTEX and the other of wood sheathing.

| Test No. | Pull in lb. | Distortion in Inches. | |
|---|---|---|---|
| | | CELOTEX-sheathed Partition. | Wood-sheathed Partition. |
| 1 | 1600 | ·04 | 5·54 |
| 2 | 1600 | ·035 | 4·10 |
| 3 | 1600 | ·30 | 5·02 |

It will be seen that under forces as set up by wind pressure, or the settling of foundations, CELOTEX-sheathed walls distort less than one-tenth as much as wood-sheathed walls.

## *Plaster Bond.*

Tests made on the bonding of gypsum plaster to CELOTEX have shown that the plaster bonding strength exceeds 700 lb. per square foot. The bond greatly exceeds the adhesion of the plaster to wood lath, due to keying.

## *Sound Absorption.*

The sound absorption of CELOTEX Standard Building Board has been found by test to be about six times as great as that of plaster, and about ten times as great as that of concrete. Where the highest sound absorption is necessary, as in auditoriums, churches and many other public buildings, ACOUSTI-CELOTEX should be used. Sound absorption coefficients for ACOUSTI-CELOTEX can be obtained from THE CELOTEX COMPANY OF GREAT BRITAIN, LIMITED, AUSTRALIA HOUSE, LONDON, W.C.2.

## *Cutting and Bending.*

CELOTEX is sawed like ordinary wood boards. It can be bent by grooving one face, or by wetting one face and slowly wrapping it around a hot tube with the wet side in contact with the tube ; or, in case of radii greater than about two feet, it can be bent directly on to the supporting frame to which it is to be fastened.

## *Nailing.*

Generally CELOTEX is nailed to wood framing for which 1¼in. No. 12 or 13 galvanized slate nails are used. One pound of such nails are required for about 100 square feet of CELOTEX. For concealed nailing, 1½in. or 1¾in. galvanized panel pins should be used, driven at a sharp angle.

## *Painting.*

CELOTEX may be painted with any good linseed oil or cold-water paint. Prior to painting CELOTEX with a linseed oil paint the surface should be primed or glue-sized. A priming coat containing one part each of turpentine, boiled linseed oil and paint, or a priming coat consisting of a thick paint, to which a drier has been added, may be used. A good glue-size is made by dissolving ¾lb. of ground or concentrated glue in a gallon of hot water. No attempt should be made to fill the joints with a cement or putty. The joints should be treated in any of the ways described and illustrated in Section 1.

LONDON:
RIDDLE, SMITH & DUFFUS,
REGENT HOUSE,
89 KINGSWAY, W.C.2.