CSI Div. 3 • A.I.A. File No. 37-B-1

wall, formboard and roof deck systems

FLINTKOTE®

1970 catalog

FLINTROCK®

CSI Div. 3 • A.I.A. File No. 37-B-1

features

THE FLINTKOTE COMPANY
INSULROCK PRODUCTS
RICHMOND VIRGINIA
Underwriters' Laboratories, Inc.
LISTED
STRUCTURAL CEMENT FIBER UNIT
NOT OVER 1000 BD. FT. ISSUE NO.
FIRE HAZARD CLASSIFICATION
BASED ON 100 FOR UNTREATED RED OAK
FLAME SPREAD 10
FUEL CONTRIBUTED 15
SMOKE DEVELOPED 0
WIND UPLIFT CLASS 90
ROOF DECK CONSTRUCTION NO. NM 506

NON-COMBUSTIBLE:
INSULROCK panels meet requirements of the National Board of Fire Underwriters for non-combustibility and are listed by Underwriters' Laboratories, Inc., under label Service No. 40 U8.20. INSULROCK panels are also rated incombustible under Federal Specifications SS-A-118-b, Class "A".

DESCRIPTION:
INSULROCK roof decking and formboard are manufactured under rigid testing and control procedures from select, chemically treated, long wood fibers that are coated and pressure bonded with a fire-retarding, moisture resistant Portland Cement binder. INSULROCK panels are lightweight, insulating, acoustical, non-combustible and resistant to termites, fungus and rot.

DISTRIBUTION:
Available nationally through franchised distributors. Also available for shipment to Canada and most foreign countries. Write to: General Sales Office, 480 Central Ave., East Rutherford, New Jersey 07073, for the names of distributors in your area.

DESIGN FEATURES:
STRUCTURAL: INSULROCK tile and plank panels are capable of supporting a minimum uniformly distributed load of 200 pounds per square foot over recommended spans. Test procedure ASTM E72-61.

DIMENSIONAL STABILITY:
Expansion, both linear and transverse, does not exceed 0.2% when tested by exposure to a 50% relative humidity followed by exposure to 97% relative humidity both at temperature of 70°F. Complies with Federal Specification LLL-I-535, and ASTM D-1037.

DURABILITY:
INSULROCK panels do not show damage or deterioration from termites or fungi in prolonged laboratory exposure. The Portland Cement coated wood fibers are also highly resistant to rot. Special treatment bonds surface fibers for abrasion resistance.

FIRE RATED:
INSULROCK panels have been tested in accordance with Standard Method of Fire Tests of Building Construction ASTM E-119 and have received a 4-hour rating. 3 inch thick panels assembled into a partition have attained a 2-hour fire resistance rating when run in accordance with ASTM Method of Test E-119.

WIND UPLIFT RESISTANT:
INSULROCK tested by Underwriters' Laboratories, Inc., and rated Class 90 (90 P.S.F.) — Construction No. NM 506.

LIGHTWEIGHT:
INSULROCK panels adapt well to all types of roof framing. The low dead load frequently permits a lighter framing than that required for heavier deck materials.

INSULATING:
INSULROCK panels have a built-in K-Factor of 0.51.

ACOUSTICAL:
INSULROCK panels have an N.R.C. of up to .85 depending upon thickness. This property provides multi-purpose functional roof deck systems that allow economy, rapid erection, and a great latitude in design flexibility.

APPEARANCE:
INSULROCK panel's random textured surface is both attractive and durable.

LIGHT REFLECTANCE:
INSULROCK deck's attractive factory primed white underside has a measured 60-70% light reflectance. Many installations require no further painting beyond some touching up to effect an attractive interior finish. When ceiling finish is to be aesthetically critical or when concrete or other type fill is to be poured over the top of the INSULROCK deck, a field coat of paint may be necessary. INSULROCK deck may be painted with practically any type nonbridging paint. If the INSULROCK deck becomes wet, allow it to dry prior to painting.

roof deck systems

TILE SYSTEMS

For spanning between purlins on bulb tees. These systems use the bulb tee sub-purlin and INSULROCK panels which have a Flo-easy chamfer on the longitudinal sides, and square cut ends for meeting over purlins or tongue and grooved ends with painted bevels for meeting between purlins.

PLANK SYSTEMS

Standard Plank For spanning between purlins. This system uses an INSULROCK panel that is clipped or nailed to the purlin. The application is completely dry. The panels are tongue and grooved with painted bevels on the longitudinal sides with square cut ends.

Long Span Plank For application direct to purlins. This system uses a specially formulated INSULROCK panel. The application is completely dry and allows an additional six inches in spans over Standard Plank Systems. The panels are tongue and grooved with painted bevels on the longitudinal sides and have square cut ends.

DUAL-TEE™ SYSTEM

For spanning between purlins. This system combines a painted DUAL-TEE sub-purlin with INSULROCK panels. The application is completely dry and provides a suitable surface for the attachment of the roofing membrane. The panels are kerfed on the longitudinal sides and have square cut ends.

FORMBOARD SYSTEMS

STRUCTO-FORM™ Formboard for use as a permanent formboard in the application of structural concretes. This system may use INSULROCK tile or plank panels. The STRUCTO-FORM formboard provides a good bonding surface.

INSUL-FORM™ Formboard for use as a permanent formboard in the use of lightweight and gypsum concretes. This system provides a formboard that readily bonds to the concrete as well as being conducive to good deck drying characteristics. The panels are one inch thick with square cut longitudinal sides and ends.

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acoustical wall system

For application on interior wall surfaces. This system uses INSULROCK panels and DUAL-TEE structural members with special galvanized steel clips. Intended primarily for installation in structures where noise control is a vital factor — an absorber of inside sounds, a barrier against outside sounds.

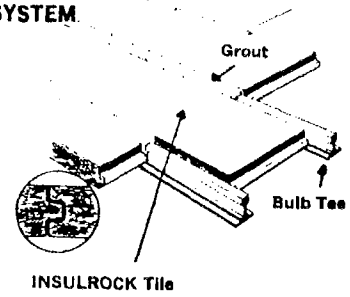
FLINTKOTE **INSULROCK PRODUCTS**
480 Central Avenue, E. Rutherford, N. J. 07073

Member Structural Cement Fiber Products Association

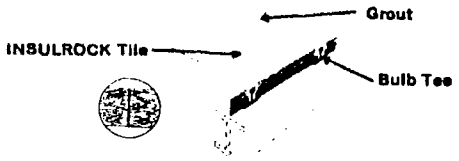
roof deck tile systems

Tile Systems:
Two types of tile systems combining INSULROCK tiles with bulb tee sub-purlins for spanning between purlins.

STANDARD TILE SYSTEM



REGULAR TILE SYSTEM



STANDARD TILE SYSTEM (tongue & groove ends) — This system uses the bulb tee sub-purlin and INSULROCK standard tile. Sides are chamfered for grout application and ends are tongue and groove with painted bevels for exposed end joint installation.

REGULAR TILE SYSTEM (square cut ends) — This system uses the bulb tee sub-purlin and INSULROCK regular tile. Sides are chamfered for grout application and ends are square cut to standard lengths.

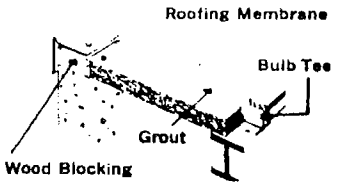
Design Data for INSULROCK Tile System

thickness inches	acoustical absorption	"U" value includes roofing	approximate design weight	minimum ultimate uniformly distributed load	design load safety factor(4)
1½"	.55—.65	0.25	4.8	164	41
2"	.60—.70	0.20	6.0	200	50
2½"	.70—.80	0.17	7.25	200	50
3"	.75—.85	0.15	8.0	200	50

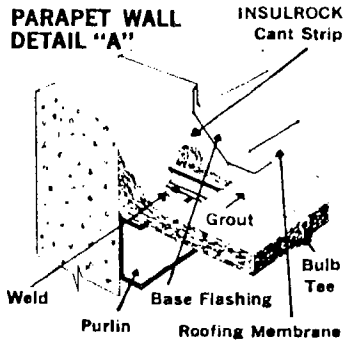
Regular Tile Sizes: width 32" — lengths 48", 60", 66", 72", 78", 80", 84", 90", 96", 102", 108", and 120".

Standard Tile Size: width 32" — length 48" (47½" surface measurement). 1½" INSULROCK not available as Standard Tile (square cut ends only).

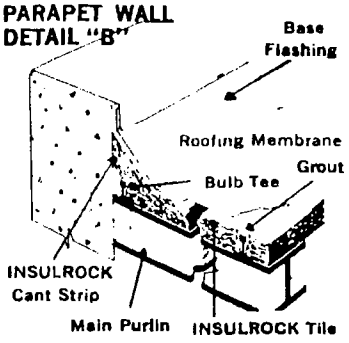
FLUSH EAVE DETAIL



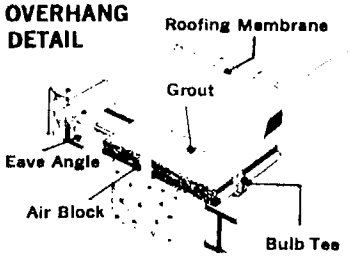
PARAPET WALL DETAIL "A"



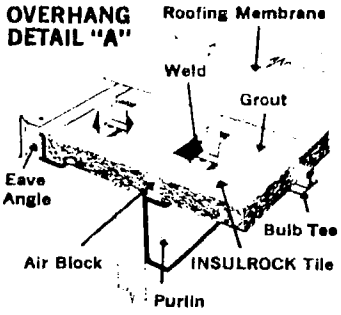
PARAPET WALL DETAIL "B"



OVERHANG DETAIL



OVERHANG DETAIL "A"



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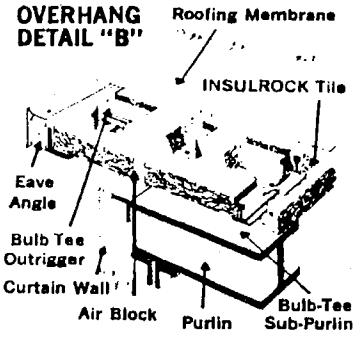
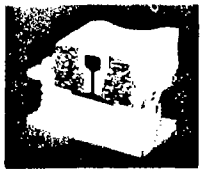




• bulb tee design data

Allowable support spacing for bulb tees continuous over three spans with uniform load as limited by deflection. Steel in sections smaller than V-200 or I-200 has 39,600 psi design stress. Sizes 200 and above have 33,000 psi design stress.

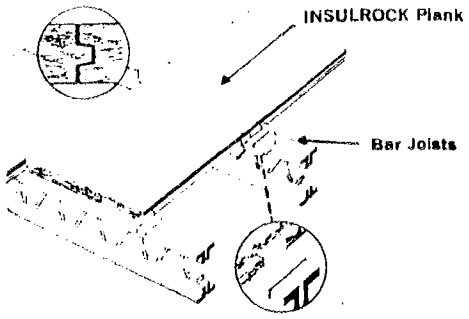
Combined Dead and Live Load in Pounds Per Square Foot
Span Limited by Deflection of 1/240 or 1/180

Bulb Tee Section	Weight lbs. per lin. ft.	Section Modulus (inches)³	Spacing inches	35		40		45		50		55		60	
				1/240	1/180	1/240	1/180	1/240	1/180	1/240	1/180	1/240	1/180	1/240	1/180
V-1120	1.24	0.109	32½	5'- 2"	5'- 8"	5'- 0"	5'- 6"	4'- 9"	5'- 3"	4'- 7"	5'- 1"	4'- 5"	4'-11"	4'- 3"	4'- 9"
I-112	1.40	0.126	32½	5'- 5"	6'- 0"	5'- 2"	5'- 9"	5'- 0"	5'- 6"	4'-10"	5'- 4"	4'- 8"	5'- 1"	4'- 6"	4'-11"
V-158	1.47	0.167	32⅛	6'- 0"	6'- 7"	5'- 9"	6'- 4"	5'- 7"	6'- 1"	5'- 4"	5'-10"	5'- 2"	5'- 8"	5'- 1"	5'- 7"
I-158	1.60	0.172	32⅛	6'- 0"	6'- 8"	5'- 9"	6'- 4"	5'- 7"	6'- 1"	5'- 5"	5'-11"	5'- 3"	5'- 9"	5'- 1"	5'- 7"
I-168 WF(1)	2.00	0.240	32⅛	6'-10"	7'- 7"	6'- 7"	7'- 3"	6'- 4"	7'- 0"	6'- 1"	6'- 9"	5'-11"	6'- 6"	5'- 9"	6'- 4"
V-168 (1)	1.65	0.242	32⅛	7'- 2"	7'-10"	6'-10"	7'- 6"	6'- 7"	7'- 3"	6'- 4"	7'- 0"	6'- 2"	6'- 9"	6'- 0"	6'- 7"
I-168 LW(1)	1.65	0.245	32⅛	7'- 2"	7'-11"	6'-10"	7'- 7"	6'- 7"	7'- 3"	6'- 5"	7'- 0"	6'- 2"	6'-10"	6'- 0"	6'- 7"
I-178 WF(1)	2.50	0.340	32⅛	7'-10"	8'- 8"	7'- 6"	8'- 3"	7'- 3"	7'-11"	7'- 0"	7'- 8"	6'- 9"	7'- 5"	6'- 6"	7'- 3"
V-178 (1)	1.95	0.343	32¾	7'- 8"	8'- 4"	7'- 4"	8'- 1"	7'- 1"	7'- 9"	6'- 9"	7'- 6"	6'- 7"	7'- 3"	6'- 5"	7'- 1"
I-178 LW(1)	1.95	0.318	32¾	7'- 9"	8'- 6"	7'- 5"	8'- 1"	7'- 1"	7'-10"	6'-10"	7'- 7"	6'- 8"	7'- 4"	6'- 5"	7'- 1"
V-200	2.90	0.473	32⅛	8'- 9"	9'- 6"	8'- 4"	9'- 2"	8'- 0"	8'-10"	7'- 9"	8'- 6"	7'- 6"	8'- 3"	7'- 3"	8'- 0"
I-200	3.00	0.460	32⅛	8'- 8"	9'- 7"	8'- 3"	9'- 2"	8'- 0"	8'-10"	7'- 9"	8'- 6"	7'- 6"	8'- 3"	7'- 3"	8'- 0"
V-218	3.00	0.523	33	9'- 3"	10'- 2"	8'-10"	9'- 9"	8'- 6"	9'- 4"	8'- 2"	9'- 0"	7'-11"	8'- 9"	7'- 9"	8'- 6"
I-218	3.00	0.520	33	9'- 3"	10'- 2"	8'-10"	9'- 9"	8'- 6"	9'- 4"	8'- 2"	9'- 0"	7'-11"	8'- 9"	7'- 8"	8'- 6"
V-228	3.65	0.737	33⅛	10'- 6"	11'- 6"	10'- 0"	11'- 0"	9'- 8"	10'- 7"	9'- 4"	10'- 3"	9'- 0"	9'-11"	8'- 9"	9'- 8"
I-228	3.65	0.736	33⅛	10'- 6"	11'- 6"	10'- 0"	11'- 0"	9'- 7"	10'- 7"	9'- 3"	10'- 2"	9'- 0"	9'-11"	8'- 9"	9'- 7"
V-258	4.67	1.056	33⅛	12'- 2"	13'- 4"	11'- 8"	12'- 9"	11'- 3"	12'- 4"	10'- 9"	11'-10"	10'- 6"	11'- 6"	10'- 3"	11'- 3"
I-258	4.67	1.057	33⅛	12'- 3"	13'- 6"	11'- 8"	12'-11"	11'- 3"	12'- 4"	10'-10"	12'- 0"	10'- 6"	11'- 7"	10'- 2"	11'- 3"

NOTES:

1. The I-168 WF (wide flange) is 1¼ in. high with a flange width of 1⅝ in. The V-168 and I-168LW (light weight) are 2 in. high with flange widths of 1½ in.
   The I-178 WF (wide flange) is 1⅛ in. high with a flange width of 1.9 in. The V-178 and I-178 LW (light weight) are 2 in. high with flange widths of 1⅝ in.
2. One and two span conditions reduce spacings to approximately 9/10 of the above.
3. Maximum eave overhang and deflection will vary with requirements of structural design. Generally, overhang should not exceed approximately 4/10 of adjacent span. Allowance should be made for weight of eave framing and facia assembly.
4. Consult individual manufacturers for more detailed information. I indicates INLAND STEEL CO. and V indicates CONNORS STEEL DIVISION, H. K. PORTER CO., INC.
5. For KEYDECK SUBPURLIN information consult KEYSTONE STEEL AND WIRE CO., Peoria, Illinois.

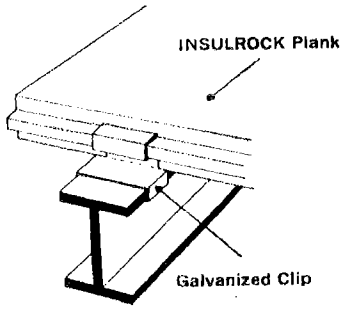
roof deck plank systems

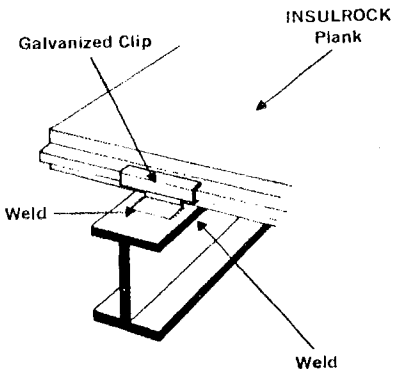


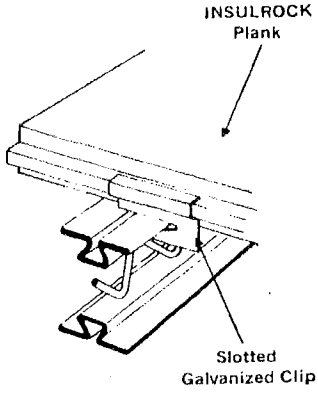
STANDARD PLANK SYSTEM

The INSULROCK Standard Plank System is easily fastened to steel, wood or concrete purlins or box sub-purlins. The longitudinal edges of the INSULROCK planks are tongue and grooved with painted bevels forming attractive V joints. Plank ends are square cut and must occur over purlins, or box sub-purlins.

INTERLOCKING CLIP DETAILS







Design Data for INSULROCK Standard Plank

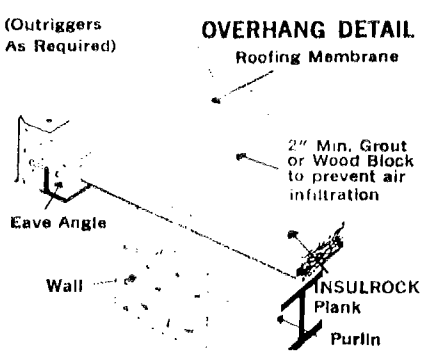
thickness inches	acoustical absorption	"U" value includes roofing	approximate design weight	max. span inches o. c.	minimum ultimate uniformly distributed load	design load safety factor(4)
2″	.60—.70	0.20	6.0	36″	200	50
2½″	.70—.80	0.17	7.25	42″*	200	50
3″	.75—.85	0.15	8.0	48″	200	50

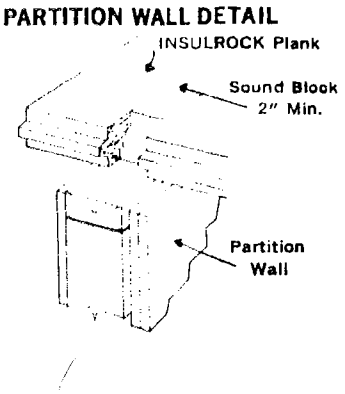
Standard Sizes: width 32″ — lengths 48″, 66″, 72″, 78″ 80″, 84″, 90″, 96″, 102″, 108″, and 120″.

* 2½″ INSULROCK Slabs **may be used on 48″ span where codes allow 20 psf live loads. Ultimate load 150 psf.**

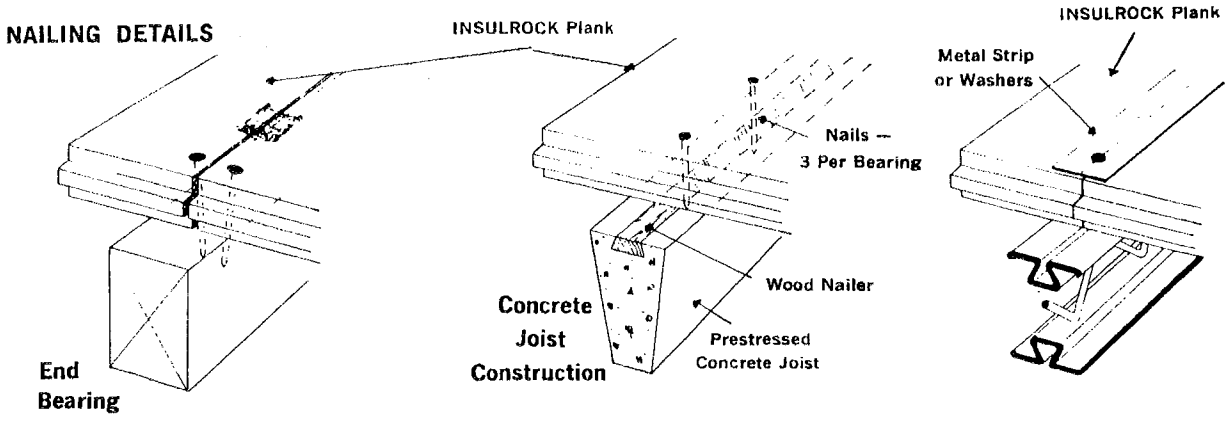
LONG SPAN PLANK SYSTEM

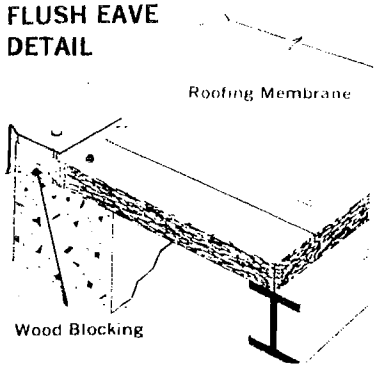
The INSULROCK Long Span Plank System is designed for direct application to steel, wood, or concrete purlins. The longitudinal edges of the INSULROCK planks are tongue and grooved with painted bevels. The ends are square cut and must occur over purlins. The system is clipped or nailed into place. The specially formulated INSULROCK planks provide for spans of up to 54 inches on center.





LONG SPAN PLANK SYSTEM





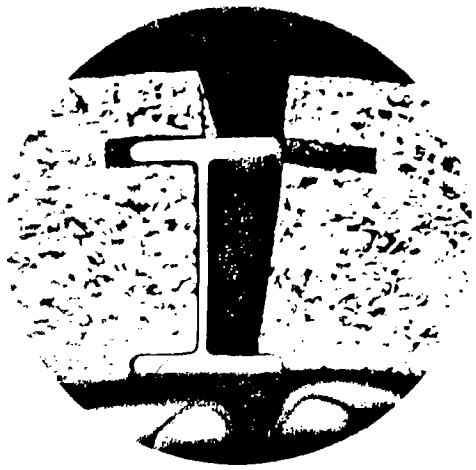
Design Data for the Long Span System

thickness inches	acoustical absorption	approx. design weight	max. span inches o. c.	minimum ultimate uniformly distributed load	design load safety factor (4)
2"	.60—.70	6.6	42"	200	50
2½"	.70—.80	7.6	48"	200	50
3"	.75—.85	9.6	54"	200	50

Standard Sizes: width 32". Lengths: 2" thick, 84" long • 2½" thick, 48" and 96" long • 3" thick, 54" long.

Design data for Long Span Plank is an ultimate uniformly distributed load of 200 lb./sq. ft., equalling a design load of 50 lbs./sq. ft. with a safety factor of 4.

roof deck
dual-tee systems



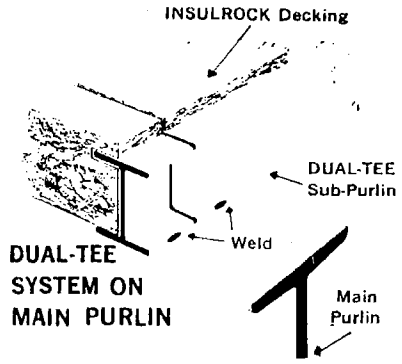
The DUAL™-TEE System* for INSULROCK roof decks incorporates an INSULROCK panel with a specially designed corrosion resistant sub-purlin of cold rolled 18 gauge steel which has a factory applied prime painted finish. The DUAL-TEE sub-purlin is inserted on the job into a pre-cut kerf in the INSULROCK panel.

The DUAL-TEE System lets you make better use of structural capabilities and, in many instances, achieves significant economies. This is a basically simple yet dramatically improved concept of roof deck construction on sub-purlins. By all measures, this represents the greatest advance in roof deck systems in more than a decade:

FIVE DISTINCT FEATURES with INSULROCK DUAL-TEE System

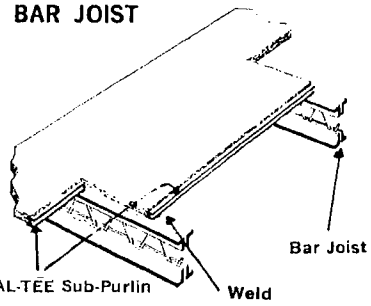
I Improved insulation at joints
II Eliminates need for grouting
III Provides a superior roofing surface
IV Speeds deck erection
V Decoratively painted, corrosion resistant sub-purlins

*Patent Applied For



DUAL-TEE SYSTEM ON MAIN PURLIN

DUAL-TEE SYSTEM ON BAR JOIST



Design Data for DUAL-TEE System for INSULROCK Roof Decks

thickness inches	acoustical absorption	"U" value includes roofing	approximate design wgt.	max. span inches. O. C.	minimum ultimate uniformly distributed load‡
2"	.60–.70	0.20	6.35#	72"	131 lb./sq. ft.

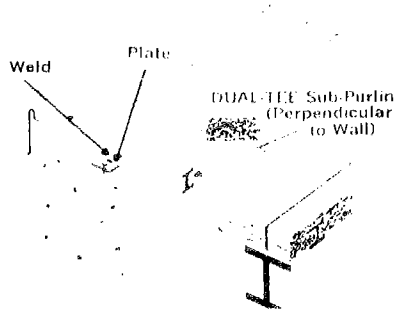
The DUAL-TEE Sub-Purlin designed for use with 2" INSULROCK Roof Deck panels may be used with 2½" and 3" thick INSULROCK Roof Deck panels when lower U. values and greater acoustical absorption are required.

Standard Sizes: INSULROCK Roof Deck Panels: Width 32" — Lengths 48", 60", 72", 78", 80", 84", 90", 96", 102" and 108".

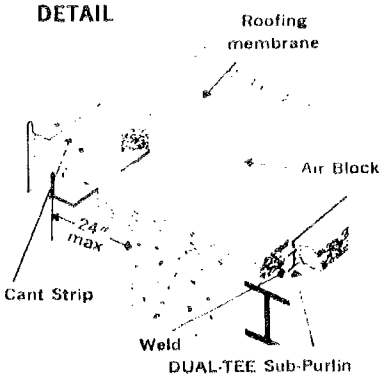
DUAL-TEE Sub-Purlins: Width 1", Height 1 6", Lengths as specified.

‡On DUAL-TEE System, not on INSULROCK alone.

FLUSH EAVE DETAIL

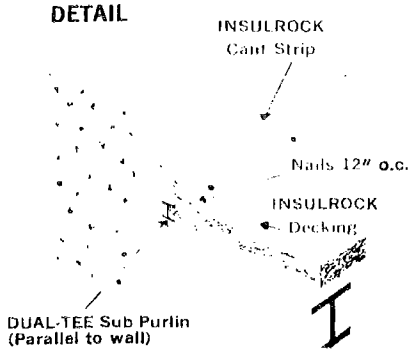


OVERHANG DETAIL

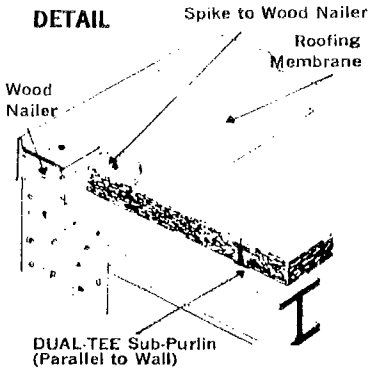


TODAY'S MOST ADVANCED IMPROVEMENT IN STRUCTURAL WOOD FIBER ROOF DECK DESIGN

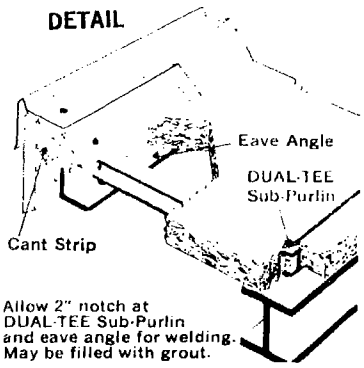
PARAPET WALL DETAIL

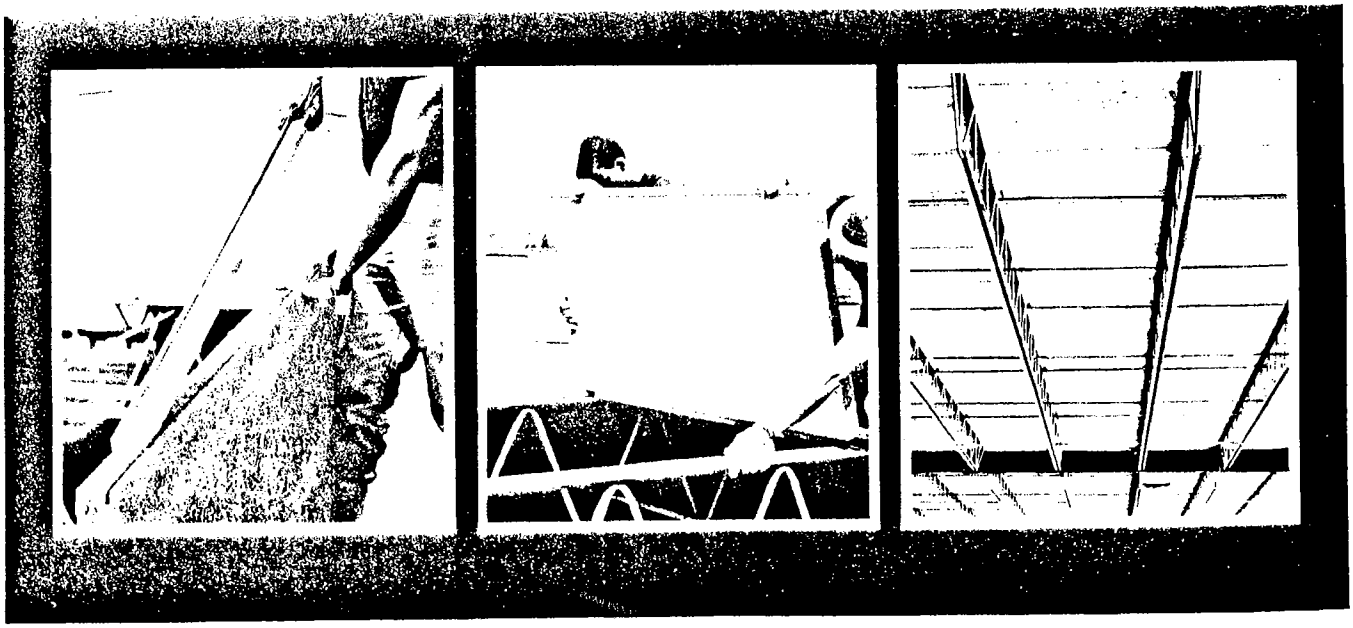


FLUSH EAVE DETAIL



EAVE ANGLE DETAIL





roof deck formboard systems

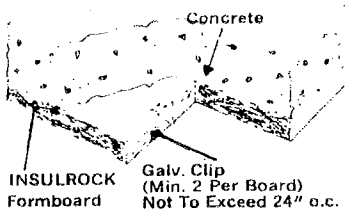
(STRUCTO-FORM & INSUL-FORM)

STRUCTO-FORM™ FORMBOARD

The STRUCTO-FORM Formboard System is designed for use as a permanent formboard in the application of structural concretes. The STRUCTO-FORM formboard is available in tile for bulb-tee sub-purlin application, in plank for use in spanning between purlins, or for use over temporary shores.

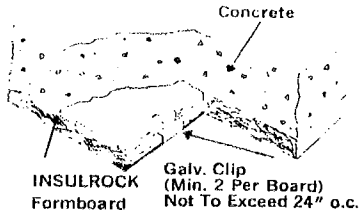
The STRUCTO-FORM Formboard System provides insulation, sound absorbing acoustical ceiling and eliminates the need for stripping, cleaning, grinding and finishing concrete. The top surface of random spaced fibers readily accepts the concrete which keys in to form an exceptionally strong bond.

1" & 1½" CLIP DETAIL

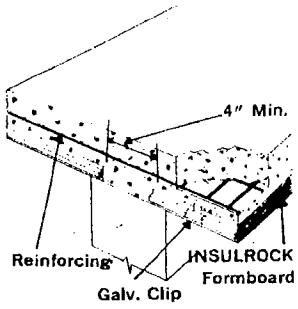


Available only in square cut longitudinal edges and ends.

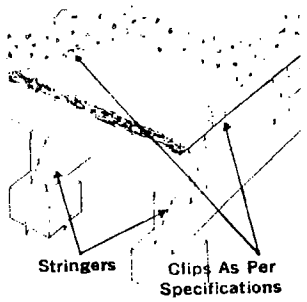
T & G CLIP DETAIL



LOAD BEARING WALL



TYPICAL SHORING DETAIL



SPECIFICATIONS — INSULROCK STRUCTO-FORM Formboard System

The STRUCTO-FORM Formboard shall act as a forming material during construction and be left in place to serve as the finished ceiling after the removal of shoring.

NOTE: Materials, refer to Plank & Tile System Materials Specifications as modified by the STRUCTO-FORM Formboard Design Data.

INSTALLATION:

To be in conformance with INSULROCK installation manual which accompanies each shipment of material.

1. The STRUCTO-FORM Formboard shall be installed on post and beam type shoring.

2. Shoring members in contact with the STRUCTO-FORM face shall have a minimum bearing of 4 inches. The maximum span for shoring STRUCTO-FORM Formboard shall be (See chart).

3. Polyethylene or similar protection shall be used to cover shoring members in contact with STRUCTO-FORM Formboard.

4. Edges of STRUCTO-FORM Formboard shall be wrapped with thin membrane material such as polyethylene at each beam form or opening through the STRUCTO-FORM Formboard and also when the edges are exposed at partitions or external walls. The protective covering shall be stapled to the top face of the formboard and lapped down around the edge. Material exposed to the finished area below may be removed by a neat knife cut.

5. STRUCTO-FORM Formboard joints shall be driven up tight with the use of a driving block to prevent concrete seepage at joints.

6. Anchorage clips for 2", 2½" and 3" STRUCTO-FORM Formboard shall be placed at all end joints and a minimum of 24" on center along edges.

7. Clip for 1" and 1½" STRUCTO-FORM Formboard shall be placed along the long side 6" from either joint with maximum spacing of 24" between clips. These clips shall be driven flush into the in-place pieces of STRUCTO-FORM Formboard. Impale succeeding pieces on the outstanding leg.

8. STRUCTO-FORM Formboard clips shall be as supplied by The Flintkote Company.

9. Care shall be exercised during concrete pouring to see that clips are raised sufficiently to bond in the concrete.

10. No special joint treatment shall be necessary when 2", 2½" and 3" STRUCTO-FORM Formboard is tongue and grooved all four sides. All joints should be tight.

11. Field painting over the exposed surface of the STRUCTO-FORM Formboard should be as specified under Painting section of the architect's specifications.

12. See Precautions & Limitations which follow, and form a part of this specification.