

American Flange & Manufacturing Co. Inc.

30 Rockefeller Plaza, New York 20, N. Y.

Plaza 7-2200

Ferro-Therm

Reg. U. S. Pat. Off.

STEEL INSULATION

FULLY PROTECTED BY U. S. AND FOREIGN PATENTS
ISSUED AND PENDING



Ferro-Therm installed in a cold storage room

Ferro-Therm Steel Insulation, made from rigid steel sheets with a special alloy coating, reflects 90 per cent to 95 per cent of all radiant heat. This high reflectivity, combined with extremely low heat storage capacity, provides maximum insulating efficiency in a minimum overall thickness.

Saves Pay Space and Weight

In cold storage construction, the number of sheets of Ferro-Therm depends on the temperature to be maintained and the U value required. The k value of Ferro-Therm, based on tests, is listed in the Data Book of the *American Society of Refrigerating Engineers* as 0.226 Btu per (hr) (sq ft) (°F temperature difference). Laboratory tests and thousands of applications have demonstrated that a wall of Ferro-Therm will provide insulating efficiency equivalent to a wall of mass insulation approximately twice as thick.

Assures Rapid Pull Down of Temperature

The low heat storage capacity of Ferro-Therm is extremely important in achieving rapid pull down of temperature, and in saving refrigeration costs for the initial and each subsequent cooling of space. Specifically, the heat storage capacity of a single sheet of No. 38 gauge is 0.029 Btu per (hr) (sq ft) (°F temperature difference). This is approximately 1/16 of the heat storage capacity of 1 sq ft of 1 in. thickness corkboard.

Permanent, Fire-Proof Insulation

Ferro-Therm construction eliminates trapping of moisture condensate, with subsequent deterioration of the construction. As it is all-metal, Ferro-Therm cannot be penetrated by rodents, vermin or termites, and is absolutely non-combustible. The value of Ferro-Therm for fire protection is apparent.

125° Below Zero Maintained in Altitude Test Chambers

Ferro-Therm has proved its superiority in buildings, cold storage rooms, refrigerated cabinets, locker rooms, dry ice containers, refrigerated railway car construction, ovens, high-temperature storage tanks—in fact, practically every type of application where high insulating efficiency with economies in space and weight are a requisite. The most notable demonstration of Ferro-Therm performance has been its selection for the insulation of altitude chambers for the testing of Army and Navy aviation equipment and personnel. In these chambers, temperatures as low as -125°F were maintained, with a temperature drop of +70°F to -70°F in 10 to 12 min.

Infra Insulation, Inc.

10 Murray Street, New York 7, N. Y.

Telephone: COrtlandt 7-3833

THERMAL FACTORS OF INFRA INSULATION AND DRY ROCKWOOL EQUIVALENTS

	Type 6	Type 4 Jr. in ONE-INCH Space
Down-Heat	C.044 R 22.72 = 7½" Rockwool	C.097 R 10.30 = 3½" Rockwool
Up-Heat	C.080 R 12.5 = 4" Rockwool	C.194 R 5.15 = 1½" Rockwool
Wall-Heat	C.073 R 13.69 = 4½" Rockwool	C.150 R 6.66 = 2½" Rockwool

Infra Insulation, Type 6, is a tough 3-aluminum-sheet insulation, with 6 heat-ray-reflective surfaces, plus two outer reflective spaces, and four rows of inner, alternating, reverse triangular air spaces. (Total, 6 reflective spaces.) It is easily and quickly installed between wood joists, furring strips, and between steel trusses, metal beams, and girders. The normal installation rate between wood joists is 2,000 sq ft a day. The 1½ cu ft carton contains 500 sq ft, weighs 40 lbs. Standard width, for 12 in., 16 in. and 24 in. centers; standard Type 4, for 12 in., 16 in., 24 in. centers.

Heat flow through wall space, which is air, is 5 per cent to 7 per cent by Conduction; 15 per cent to 28 per cent by Convection; and by Radiation, 65 per cent to 80 per cent.

ABSORPTION and RADIATION:—Each of Infra's 6 aluminum surfaces **THROWS BACK** 97 per cent of the heat rays which strike it. As emissive surfaces, they emit **ONLY** 3 per cent of heat actually absorbed by conduction, convection and radiation. Practically all building materials, including ordinary insulations, absorb and emit 90 per cent of heat rays, against Infra's 3 per cent.

CONDUCTION:—One sq ft of Type 6 Infra weighs only 1½ oz., has only 1½ cu in. mass. The ratio is 1 of Infra mass to 431 of low conductive air. Ordinary insulation, when dry, has a ratio of 1 of mass to 23 of air.

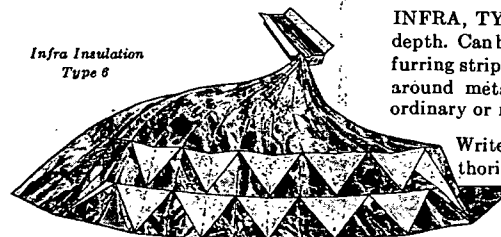
CONVECTION and VAPOR:—Each of the 3 tough aluminum sheets of Infra has **ZERO** permeability to all gases, including heated air, cold air, and water vapor.

NON-CONDENSATION-FORMING:—The 3 aluminum sheets together with **TWO** inner accordion separators, which permanently prevent metal to metal contact, form **FOUR** inner rows of alternating, reverse, triangular, reflective air pockets. The construction, and the lack of weight for heat exchange, make Infra Insulation absolutely non-condensation forming. Neither can it absorb nor store moisture.

Infra Insulation uses 99.5 per cent pure .0008 in. and .0015 in. aluminum, made in accordance with special Infra emissivity requirements. It has 15 lbs and 28 lbs bursting strength (Mullen test), 500 per cent to 1700 per cent greater than ordinary foils. The tearing strength is 20 grams and 64 grams (Elmendorf test). The special fiber separators are permanently flame-proof, mold-proof, and vermin-proof.

FIRE STOP:—Since Infra emits practically no heat rays, and since aluminum's melting point is 1250 F, it is an efficient fire-stop.

SANITARY:—Infra is sanitary, inhospitable to vermin, and **DOES NOT RETAIN** odors. Mechanics like to work with Infra. It is **CLEAN**, free of **DUST** or lint, with permanent freedom from floating particles.



INFRA, TYPE 4 JR. is half (½) inch in depth. Can be used in 1 in. spaces, between furring strips; in brick or masonry walls; around metal ducts; and under floors, ordinary or radiant heated.

Write for new 44-page authoritative manual, "Simplified Physics of Vapor and Thermal Insulation."