American Flange & Manufacturing Co. Inc.

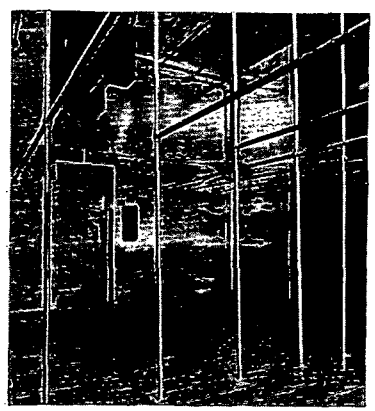
30 Rockefeller Plaza, New York 20, N. Y.
Plaza 7-2200

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.

Ingersoll Products Division Borg-Warner Corporation

321 S. Plymouth Court, Chicago 4, Ill.

Koolshade* sunscreen is a bronze miniature venetian blind with fixed horizontal bars set at an angle which will keep the greatest possible amount of solar heat load outside of windows.

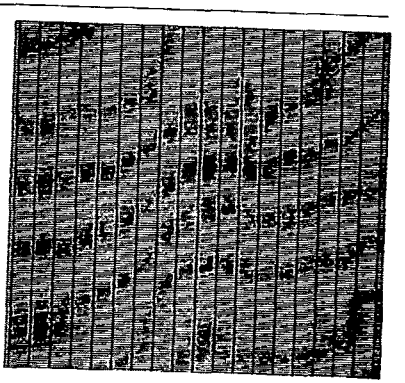
By reflecting, absorbing, and radiating most of the sun's heat rays outside the window, Koolshade keeps rooms up to 15° cooler and has been shown to account for as much as 75% of the cooling necessary in air conditioning installations. 100 sq ft of Koolshade is equal to 1 ton of refrigeration and costs ⅓ to ½ as much.

Koolshade provides insect protection equal to ordinary insect screen.

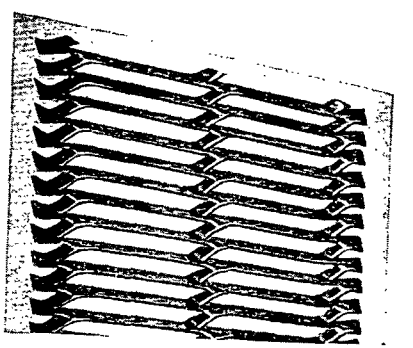
Koolshade is framed and applied to windows like ordinary insect screens. Ingersoll distributors can apply Koolshade in patented Koolshade aluminum frames, in Koolshade Quik-on frames which have only top and bottom frame rails held apart in tension by installation hardware or in wood or metal frames.

Ingersoll's Sungard* economy sunscreen stamped from aluminum sheet, is intended for industrial applications and performs the same heat load reducing function as Koolshade at lower cost. Sungard is not insect proof.

Sungard is framed and applied by Ingersoll Distributors like Koolshade.



Ingersoll Koolshade



Ingersoll Sungard

An Example† of cooling load reduction based on conditions prevailing at peak solar load at 40° latitude:

We have 16 windows on East side of building—each window 4 ft x 6 ft for a total of 384 sq ft of window area. Use 10 a.m. Peak Load:

	Btu's
Solar load transmitted through bare windows 116 Btu x 384 sq ft	44,544
Solar load transmitted through KOOLSHADE 11.5 Btu x 384 sq ft	4,416
Amount of Solar Heat stopped by KOOLSHADE	40,128
Expressed in tons of refrigeration (12,000 Btu's—1 Ton)	
Heat stoppage equals	Tons 3.3444

Follow same procedure for 15 West Windows 4 ft x 6 ft—total square footage 360 sq ft—and using 3 p.m. Peak Load:

	Btu's
Solar Load through Bare Windows	61,200
Solar Load through KOOLSHADE	7,920
Reduction	53,280
	in Tons 4.440

South windows consist of 7—4 ft x 6 ft and 2—3 ft x 6 ft for total square footage of 204 sq ft—Figuring on 12:00 noon Peak Load:

	Btu's
Solar Load through Bare Windows	15,096
Solar Load through KOOLSHADE	1,224
Reduction	13,872
	in Tons 1.156
Total tons of refrigeration saved	8.9404

Write to Ingersoll Products Division, Borg-Warner Corporation, Dept. V for Technical Information.

† Example based on test data from ASHVE GUIDE, 1940.

* Koolshade and Sungard are trademarks (Reg. U.S. Pat. Off.). They are the property of the Ingersoll Steel Division, Borg-Warner Corp.