

Infra Insulation, Inc.

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THERMAL VALUES FOR PARALLEL REFLECTIVE AIR SPACES

(In Btu's per sq. ft., per hour, per degree F.)
Where Dividing Media are ALUMINUM with .03 emissivity, and PAPER.

	LOCATION AND POSITION OF ALUMINUM	DIRECTION OF HEAT FLOW	C FACTOR	NON-METALLIC INSULATION EQUIVALENTS	R (=1/C)	U† FACTOR
	HORIZONTAL (ceiling)	UP (winter)	.067 = 4 3/4 inches		14.81	.06
	VERTICAL (wall)	LATERAL	.042 = 7 1/2 inches		23.84	.04
	HORIZONTAL (ceiling)	DOWN (summer)	.032 = 10 inches		30.80	.03
	HORIZONTAL (floor)	DOWN (winter)	.032 = 10 inches		30.80	.03
	HORIZONTAL (ceiling)	UP (winter)	.081 = 4 inches		12.29	.07
	VERTICAL (wall)	LATERAL	.051 = 6 1/2 inches		19.56	.04
	HORIZONTAL (ceiling)	DOWN (summer)	.034 = 9 3/4 inches		29.40	.03
	HORIZONTAL (floor)	DOWN (winter)	.034 = 9 3/4 inches		29.40	.03
	HORIZONTAL (ceiling)	UP (winter)	.105 = 3 1/2 inches		9.53	.08
	VERTICAL (wall)	LATERAL	.068 = 4 3/4 inches		14.74	.06
	HORIZONTAL (ceiling)	DOWN (summer)	.042 = 7 1/2 inches		24.01	.04
	HORIZONTAL (floor)	DOWN (winter)	.042 = 7 1/2 inches		24.01	.04
	HORIZONTAL (ceiling)	UP (winter)	.141 = 2 1/2 inches		7.10	.10
	VERTICAL (wall)	LATERAL	.099 = 3 1/2 inches		10.15	.07
	HORIZONTAL (ceiling)	DOWN (summer)	.049 = 6 3/4 inches		20.43	.04
	HORIZONTAL (floor)	DOWN (winter)	.049 = 6 3/4 inches		20.43	.04

* Calculated on basis of limiting thermal values cited in Fed. Specs. LLL-f-321b; HH-I-585; HH-I-521c; HH-I-551a. R factors determined by method of Nat. Bur. Standards in HHFA Research Paper 32.
† Ceiling & Roof; Unfloored Attic; Walls; Floors.

FOR CEILINGS, WALLS, FLOORS, CRAWL SPACES, COLD STORAGE

Easily and quickly installed between wood joists, furring strips; steel trusses, studs, purlins; metal beams and girders; scientific Infra Multiple Aluminum Insulation gives the entire area between, up to the very edges, full, uniform-depth protection against heat flow and vapor flow. Type 4 costs 4¢ to 5¢ sq ft. Normal installation rate between wood joists is 2,000 sq ft a day per man. Made for 12 in., 16 in., 20 in., 24 in., centers, up to 60 in. and wider.

Of all heat flow through building space, which is air, about 7 percent is by Conduction; 15 to 45 by Convection; and by Radiation, 65 to 93 percent.

RADIATION:—Each of Infra's aluminum surfaces has a low absorptivity and emissivity of only 3 percent; and a high reflectivity, 97 percent, for radiation. The surfaces of most building materials have an absorptivity and emissivity of about 90 percent with only about 10 percent reflectivity.

CONDUCTION:—Infra's deep air spaces have low density, therefore conduction is slight. Type 4 weighs only 1 1/4 oz per sq ft, a ratio of 228 parts air to 1 part mass.

CONVECTION; VAPOR:—Each layer of aluminum is tough, continuous, up to 750 ft long, with almost ZERO permeability to warm air, cold air, and water vapor. Each aluminum layer and each reflective space, retards CONVECTION; insulates against timber rot, peeling paint, wet plaster, crumbling masonry, rust of iron and steel.

NON-CONDENSATION-FORMING:—The scientific construction of multiple layers of aluminum and edge-to-edge reflective spaces, minimizes condensation formation on or within this insulation.

Infra Insulation uses extra thick and extra tough, 99.4 percent pure aluminum foils, made to special 3 percent emissivity specifications. Even tougher, able to take considerable abuse, are Infra's 2-and 3-ply, laminated aluminum sheets.

FIRE:—Infra has often prevented the spread of fire because its aluminum surfaces have very low emissivity (3 percent) and a high melting point (1220 F).

SANITARY:—Infra is CLEAN; inhospitable to insects; DOES NOT RETAIN odors; is permanently free from DUST, lint, or floating particles.

For a free copy of "Heat Flow by RADIATION in Buildings, Simplified Physics," a 48-page manual by Alexander Schwartz, write to Infra Insulation Inc., Dept. G.



Reflectal Corporation

A Subsidiary of Borg-Warner Corp.

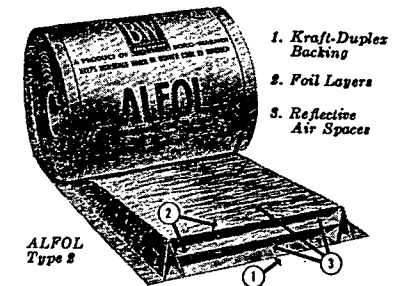
310 So. Michigan Ave., Chicago 4



ALFOL MULTIPLE LAYER REFLECTIVE INSULATION

Introduced in 1929, ALFOL was one of the first reflective insulation blankets. Today, after nearly three decades of continuous development, ALFOL still is in the lead. Its patented blanket design insures high thermal efficiency, positive condensation protection and rapid, low cost application. Ideal for all types of residential, commercial and industrial use. ALFOL is also favored in air conditioned structures, where the superiority of reflective insulations provides substantial cooling economies.

What ALFOL is: Insulation consists of multiple aluminum foil sheets that automatically space themselves on application to form two, three or four reflective air spaces. The number of these spaces varies with ALFOL Type, but all types have a liner sheet of rugged, vapor-proof paper that provides continuous moisture protection and positive application support.



How ALFOL works: Radiant heat, as you know, normally accounts for 55 to 80 percent of all heat loss through walls, roof or floor. Of all radiant heat, ALFOL foil sheets instantly, continuously reflect 95 percent (or emit but 5 percent). And the captive air spaces between these foil surfaces curb heat loss through convection and conduction to check all forms of thermal loss.

Practical advantages of ALFOL: Thermal efficiency is the big factor, but there are other reasons for ALFOL popularity. Its heavy liner provides sag- and rip-resisting application and a continuous vapor barrier. Its light weight (1/2 lb/sq ft) cuts rafter load. And ALFOL is as clean, odorless, durable as aluminum itself. Priced low . . . with compact design offering added savings in handling and application.

ALFOL is quick and easy to apply: You simply cut to length and staple across the faces of studs, joists or rafters.

An ALFOL Type for every purpose:

Type 1—2 reflective air spaces. 12 in., 16 in., 24 in. widths.

Type 1A—2 reflective air spaces, for furred-out masonry. 16 in. widths only.

Type 2—3 reflective air spaces, our top seller! 12 in., 16 in., 20 in. widths.

Type 3—3 reflective air spaces with foil base layer. 12 in., 16 in., 24 in. widths.

Type 4—4 reflective air spaces for top efficiency. 16 in., 20 in., 24 in. widths.

All ALFOL Types immediately available in handy 500 or 250 sq ft rolls.

Write Dept. ASH for free data book.

Other REFLECTAL insulation products

ALFOL ASBESTOS: for central gas and oil heating equipment, water heaters, ranges, radiant heating seal and for all high temperature insulating requirements.

ALFOL JACKETING: for refrigerator cars, trucks and other low temperature work.