

TECHNICAL INFORMATION ON BUILDING MATERIALS
FOR USE IN THE DESIGN OF LOW-COST HOUSING

TIBM-13

THE NATIONAL BUREAU OF STANDARDS
UNITED STATES DEPARTMENT OF COMMERCE
WASHINGTON, D. C.

May 18, 1936.

THERMAL INSULATION

Insulating Values for Frame Wall Construction--
Stucco with Various Types of Interior Finishes

This is a brief presentation of calculated thermal insulating values for frame wall construction--stucco with various types of interior finishes, based on tests conducted by the National Bureau of Standards and presented in detail in former Letter Circular No. 227, "Thermal Insulation", (April 19, 1927);¹ and Bureau of Standards Research Paper No. 291, "Heat Transfer Through Building Walls", (August 6, 1930),² by M. S. Van Dusen and J. L. Finck.

¹ Out of print.

² Out of print and not available by purchase but may be consulted in Government depository libraries.

Exterior Wall Construction	Type of Sheathing	Commercial Insulating Materials Placed Between 2" x 4" Studding (1 5/8" x 3 5/8" Dressed)	" "	I n t e r i o r 3/4" Plaster : 3/4" Plaster: 1/2" Plaster Applied on and Metal Lath : and Wood or 1/2" Plaster: Lath Board or Wall Board ² alone	F i n i s h Rigid Insulation Boards (If plaster is omitted, deduct 0.22) Thickness of Board 1/2" : 3/4" : 1"
		Type : Thick- ness : Inches :		I.V. ¹ : I.V. ¹ : I.V. ¹ :	
		Unfilled Air Space : 3 5/8 "		3.6 : 4.8 : 5.5 :	6.3
		Flexible Insulation : 1/2 "		5.4 : 6.6 : 7.4 :	8.1
		Placed against one side, with one air space : 3/4 "		6.4 : 7.6 : 8.4 :	9.1
		: 1 "		7.3 : 8.5 : 9.3 :	10.0
		: 2 "		11.0 : 12.2 : 13.0 :	13.7
3/4" Stucco and Metal Lath	3/4" Wood Sheathing	Rigid Insulation Board : 1/2 "		5.8 : 7.0 : 7.8 :	8.5
		Centered, with 2 air spaces of equal thick- ness : 3/4 "		6.6 : 7.8 : 8.6 :	9.3
		: 1 "		7.3 : 8.5 : 9.3 :	10.0
		Flexibile Insulation : 1/2 "		6.1 : 7.3 : 8.1 :	8.9
		Centered, with 2 air spaces of equal thick- ness : 3/4 "		7.1 : 8.3 : 9.1 :	9.8
		: 1 "		8.0 : 9.2 : 10.0 :	10.8
		: 2 "		11.7 : 12.9 : 13.7 :	14.4
(If Wood Lath is used, add 0.3)	Building Paper 5, 5	"Fill" Insulation : 3 5/8 "		15.0 : 16.2 : 16.9 :	17.7
		Flexibile Insulation : 3 5/8 "		15.9 : 17.1 : 17.8 :	18.6

2. If 1/2" plaster is applied to plaster board or wall board, add 0.22.

If 1/2", 3/4", or 1" rigid insulation board is used with wood sheathing, add 1.52, 2.27, or 3.03

If 1/2", 3/4", or 1" flexible insulation is used with wood sheathing, add 1.85, 2.78, or 3.70 respectively.

