

LDCN:REB
10.5:3

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
Washington 25, D. C.
April 1, 1951

Letter
Circular
LC 999
(Supersedes
LC 960)

BUILDING MATERIALS AND STRUCTURES REPORTS:

Listed Numerically and by Subject

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GENERAL INFORMATION

The Building Materials and Structures Reports listed in this letter circular contain results of laboratory tests conducted at the National Bureau of Standards on structural and other properties of building materials, structural elements, and mechanical equipment for use in house construction, and are obtainable from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. at prices quoted. Those which are out of print are indicated by an asterisk. Prices shown are for delivery to addresses in the United States and its possessions and in certain foreign countries which extend the franking privilege. For other countries, one-third the cost of the publication should be added to cover postage.

To receive reports immediately upon release, a deposit of \$5.00 may be placed with the Superintendent of Documents against which charges will be made until the deposit is exhausted. A discount of 25 percent is allowed on orders for 100 or more copies. Upon request, notices of the issuance of new reports will be sent free of charge.

Circular 46C, a complete list of the Bureau's publications, is also sold by the Superintendent of Documents for 75 cents. Announcement of all new Bureau publications is made each month in the Technical News Bulletin which is obtainable from the Superintendent of Documents by subscription for \$1.00 a year in the United States, Canada, Cuba, Mexico, Newfoundland, and Republic of Panama; other countries at \$1.35.

NUMERICAL LIST OF BMS REPORTS

<u>Title</u>	<u>BMS No.</u>	<u>Price</u>
Research on Building Materials and Structures for Use in Low-Cost Housing	1	(*)
Methods of Determining the Structural Properties of Low-Cost House Constructions	2	10¢
Suitability of Fiber Insulating Lath as a Plaster Base	3	15¢
Accelerated Aging of Fiber Building Boards	4	10¢
Structural Properties of Six Masonry Wall Constructions	5	15¢
Survey of Roofing Materials in the Southeastern States	6	15¢
Water Permeability of Masonry Walls	7	(**)
Methods of Investigation of Surface Treatment for Corrosion Protection of Steel	8	15¢
Structural Properties of the Insulated Steel Construction Co.'s "Frameless-Steel" Constructions for Walls, Partitions, Floors, and Roofs	9	10¢
Structural Properties of One of the "Keystone Beam Steel Floor" Constructions Sponsored by the H. H. Robertson Co.	10	10¢
Structural Properties of the Curren Fabrihome Corporation's "Fabrihome" Constructions for Walls and Partitions	11	10¢
Structural Properties of "Steelox" Constructions for Walls, Partitions, Floors, and Roofs Sponsored by Steel Buildings, Inc.	12	15¢
Properties of Some Fiber Building Boards of Current Manufacture	13	10¢
Indentation and Recovery of Low-Cost Floor Coverings	14	10¢
Structural Properties of "Wheeling Long-Span Steel Floor" Construction Sponsored by the Wheeling Corrugating Co.	15	10¢
Structural Properties of a "Tilecrete" Floor Construction Sponsored by Tilecrete Floors, Inc.	16	15¢
Sound Insulation of Wall and Floor Constructions	17	20
Sound Insulation of Wall and Floor Constructions (Supplement 1)	17	5¢
Sound Insulation of Wall and Floor Constructions (Supplement 2)	17	10¢ 15¢
Structural Properties of "Pre-Fab" Constructions for Walls, Partitions, and Floors Sponsored by the Harnishfeger Corporation	18	10¢
Preparation and Revision of Building Codes	19	(***)
Structural Properties of "Twachtman" Constructions for Walls and Floors Sponsored by Connecticut Pre-Cast Buildings Corp.	20	10¢
Structural Properties of a Concrete-Block Cavity-Wall Construction Sponsored by the National Concrete Masonry Association	21	10¢
Structural Properties of "Dun-Ti-Stone" Wall Construction Sponsored by the W. E. Dunn Manufacturing Co.	22	10¢
Structural Properties of a Brick Cavity-Wall Construction Sponsored by the Brick Manufacturers Association of New York, Inc.	23	10¢
Structural Properties of a Reinforced-Brick Wall Construction and a Brick-Tile Cavity-Wall Construction Sponsored by the Structural Clay Products Institute	24	15¢
Structural Properties of Conventional Wood-Frame Constructions for Walls, Partitions, Floors, and Roofs	25	20¢

*Out of print

**Superseded by BMS 116

<u>Title</u>	<u>BMS No.</u>	<u>Price</u>
Structural Properties of "Nelson Pre-Cast Concrete Foundation" Wall Construction Sponsored by the Nelson Cement Stone Co., Inc.	26	10¢
Structural Properties of "Bender Steel Home" Wall Construction Sponsored by The Bender Body Co.	27	10¢
Backflow Prevention in Over-Rim Water Supplies	28	15¢
Survey of Roofing Materials in the Northeastern States	29	20¢
Structural Properties of a Wood-Frame Wall Construction Sponsored by the Douglas Fir Plywood Association	30	15¢
Structural Properties of "Insulite" Wall and "Insulite" Partition Constructions Sponsored by the Insulite Co.	31	25¢
Structural Properties of Two Brick-Concrete-Block Wall Constructions and a Concrete-Block Wall Construction Sponsored by the National Concrete Masonry Association	32	15¢
Plastic Calking Materials	33	15¢
Performance Test of Floor Coverings for Use in Low-Cost Housing: Part 1	34	15¢
Stability of Sheathing Papers as Determined by Accelerated Aging	35	(*)
Structural Properties of Wood-Frame Wall, Partition, Floor, and Roof Constructions with "Red Stripe" Lath Sponsored by the Weston Paper and Manufacturing Co.	36	10¢
Structural Properties of "Palisade Homes" Constructions for Walls, Partitions, and Floors, Sponsored by Palisade Homes	37	(*)
Structural Properties of Two "Dunstone" Wall Constructions Sponsored by the W. E. Dunn Manufacturing Co.	38	10¢
Structural Properties of a Wall Construction of "Pfeifer Units" Sponsored by the Wisconsin Units Co.	39	10¢
Structural Properties of a Wall Construction of "Knap Concrete Wall Units" Sponsored by Knap America, Inc.	40	15¢
Effect of Heating and Cooling on the Permeability of Masonry Walls	41	(*)
Structural Properties of Wood-Frame Wall and Partition Constructions with "Celotex" Insulating Boards Sponsored by the Celotex Corporation	42	15¢
Performance Test of Floor Coverings for Use in Low-Cost Housing: Part 2	43	15¢
Surface Treatment of Steel Prior to Painting	44	10¢
Air Infiltration through Windows	45	15¢
Structural Properties of "Sect-Bilt" Prefabricated Sheet-Steel Constructions for Walls, Floors, and Roofs Sponsored by The Globe-Wernicke Co.	46	(*)
Structural Properties of Prefabricated Wood-Frame Constructions for Walls, Partitions, and Floors Sponsored by American Houses, Inc.	47	20¢
Structural Properties of "Precision-Built" Frame Wall and Partition Constructions Sponsored by the Homasote Co.	48	15¢
Metallic Roofing for Low-Cost House Construction	49	20¢
Stability of Fiber Building Boards as Determined by Accelerated Aging	50	10¢

*Out of print

<u>Title</u>	<u>BMS No.</u>	<u>Price</u>
Structural Properties of "Tilecrete Type A" Floor Construction Sponsored by the Tilecrete Corporation	51	10¢
Effect of Ceiling Insulation on Summer Comfort	52	15¢
Structural Properties of a Masonry Wall Construction of "Manlock Dry Wall Brick" Sponsored by the Manlock Engineering Co.	53	10¢
Effect of Soot on the Rating of an Oil-Fired Heating Boiler	54	10¢
Effects of Wetting and Drying on the Permeability of Masonry Walls.	55	10¢
A Survey of Humidities in Residences	56	10¢
Roofing in the United States--Results of a Questionnaire	57	(*)
Strength of Soft-Soldered Joints in Copper Tubing	58	10¢
Properties of Adhesives for Floor Coverings	59	15¢
Strength, Absorption, and Resistance to Laboratory Freezing and Thawing of Building Bricks Produced in the United States	60	30¢
Structural Properties of Two Nonreinforced Monolithic Concrete Wall Constructions	61	10¢
Structural Properties of a Precast Joist Concrete Floor Con- struction Sponsored by the Portland Cement Association	62	10¢
Moisture Condensation in Building Walls	63	15¢
Solar Heating of Various Surfaces	64	10¢
Methods of Estimating Loads in Plumbing Systems	65	15¢
Plumbing Manual	66	35¢
Structural Properties of "Mu-Steel" Prefabricated Sheet-Steel Constructions for Walls, Partitions, Floors, and Roofs Sponsored by Herman A. Mugler	67	15¢
Performance Test of Floor Coverings for Use in Low-Cost Housing: Part 3	68	20¢
Stability of Fiber Sheathing Boards as Determined by Accelerated Aging	69	10¢
Asphalt-Prepared Roll Roofings and Shingles	70	20¢
Fire Tests of Wood- and Metal-Framed Partitions	71	20¢
Structural Properties of "Precision-Built, Jr." Prefabricated Wood-Frame Wall Construction Sponsored by the Homasote Co.	72	10¢
Indentation Characteristics of Floor Coverings	73	10¢
Structural and Heat-Transfer Properties of "U.S.S. Panelbilt" Prefabricated Sheet-Steel Constructions for Walls, Partitions, and Roofs Sponsored by the Tennessee Coal, Iron, and Railroad Co.	74	20¢
Survey of Roofing Materials in the North Central States	75	15¢
Effect of Outdoor Exposure on the Water Permeability of Masonry Walls	76	15¢
Properties and Performance of Fiber Tile Boards	77	10¢
Structural, Heat-Transfer, and Water-Permeability Properties of Five Earth-Wall Constructions	78	25¢
Water-Distributing Systems for Buildings	79	20¢
Performance Tests of Floor Coverings for Use in Low-Cost Housing: Part 4	80	15¢
Field Inspectors' Check List for Building Constructions (cloth cover, 5 x 7 1/2 inches)	81	30¢
Water Permeability of Walls Built of Masonry Units	82	25¢

<u>Title</u>	<u>BMS No.</u>	<u>Price</u>
Strength of Sleeve Joints in Copper Tubing Made with Various Lead-Base Solders	83	15¢
Survey of Roofing Materials in the South Central States	84	15¢
Dimensional Changes of Floor Coverings with Changes in Relative Humidity and Temperature	85	10¢
Structural, Heat-Transfer, and Water-Permeability Properties of "Speedbrik" Wall Construction Sponsored by the General Shale Products Corporation	86	15¢
A Method for Developing Specifications for Building Construction	87	15¢ 20¢
Recommended Building Code Requirements for New Dwelling Construction with Special Reference to War Housing	88	(*)
Structural Properties of "Precision-Built, Jr." (Second Construction) Prefabricated Wood-Frame Wall Construction Sponsored by the Homasote Co.	89	15¢
Structural Properties of "PHC" Prefabricated Wood-Frame Constructions for Walls, Floors, and Roofs Sponsored by the PHC Housing Corporation	90	15¢
A Glossary of Housing Terms	91	15¢
Fire-Resistance Classifications of Building Construction	92	30¢
Accumulation of Moisture in Walls of Frame Construction During Winter Exposure	93	10¢
Water Permeability and Weathering Resistance of Stucco-Faced, Gunite-Faced, and "Knap Concrete Unit" Walls	94	15¢
Tests of Cement-Water Paints and Other Waterproofings for Unit-Masonry Walls	95	25¢
Properties of a Porous Concrete of Cement and Uniform-Sized Gravel	96	10¢
Experimental Dry-Wall Construction with Fiber Insulating Board	97	10¢
Physical Properties of Terrazzo Aggregates	98	15¢
Structural and Heat-Transfer Properties of "Multiple Box-Girder Plywood Panels" for Walls, Floors, and Roofs	99	15¢
Relative Slipperiness of Floor and Deck Surfaces	100	10¢
Strength and Resistance to Corrosion of Ties for Cavity Walls	101	10¢
Painting Steel	102	10¢
Measurements of Heat Losses from Slab Floors	103	15¢
Structural Properties of Prefabricated Plywood Lightweight Constructions for Walls, Partitions, Floors, and Roofs Sponsored by the Douglas Fir Plywood Association	104	30¢
Paint Manual	105	\$1.25
Laboratory Observations of Condensation in Wall Specimens	106	15¢
Building Code Requirements for New Dwelling Construction	107	(*)
Temperature Distribution in a Test Bungalow with Various Heating Devices	108	10¢
Strength of Houses: The Application of Engineering Principles to Structural Design	109	\$1.50
Paints for Exterior Masonry Walls	110	15¢
Performance of a Coal-Fired Boiler Converted to Oil	111	15¢
Properties of Some Lightweight-Aggregate Concretes with and without an Air-Entraining Admixture	112	10¢
Fire Resistance of Structural Clay Tile Partitions	113	15¢

*Out of print

<u>Title</u>	<u>BMS No.</u>	<u>Price</u>
Temperatures in a Test Bungalow with Some Radiant and Jacketed Space Heaters	114	25¢
A Study of a Baseboard Convector Heating System in a Test Bungalow.	115	15¢
Preparation and Revision of Building Codes	116	15¢
Fire Resistance of Walls of Lightweight-Aggregate Concrete		
Masonry Units	117	20¢
Stack Venting of Plumbing Fixtures	118	15¢
Wet Venting of Plumbing Fixtures	119	20¢
Fire Resistance of Walls of Gravel-Aggregate Concrete		
Masonry Units	120	15¢
Investigation of Failures of White-Coat Plasters	121	25¢
Physical Properties of Some Samples of Asbestos-Cement Siding . . .	122	
Fire Tests of Wood-Framed Walls and Partitions With Asbestos- Cement Facings	123	
Fire Tests of Steel Columns Protected With Siliceous Aggregate Concrete	124	

SUBJECT LIST OF BMS REPORTS

STRUCTURAL PROPERTIES

	<u>BMS No.</u>	<u>Price</u>
<u>General</u>		
Structural properties of house constructions, methods of determining	2	10¢
Strength of houses: The application of engineering principles	109	\$1.50
<u>Brick Constructions</u>		
<u>Cavity walls</u>		
Brick	Brick Mfrs. Assn. of New York, Inc. 23	10¢
Brick-tile	Structural Clay Products Inst. 24	15¢
Ties for, corrosion of	101	10¢
<u>Solid walls</u>		
Masonry:		
brick, structural clay tile	5	15¢
"Munlock Dry Wall Brick"	Munlock Engineering Co. 53	10¢
Reinforced-brick	Structural Clay Products Inst. 24	15¢
"Speedbrik"	General Shale Products Corporation 86	15¢
<u>Concrete Constructions</u>		
<u>Cavity walls</u>		
Concrete-block	National Concrete Masonry Assn. 21	10¢
"Dunstone"	W. E. Dunn Mfg. Co. 38	10¢
"Dun-Ti-Stone"	W. E. Dunn Mfg. Co. 22	10¢
"Knap Concrete Wall Units"	Knap America Inc. 40	15¢
"Twachtman" (walls and floors)	Connecticut Pre-Cast Bldgs. Corp. 20	10¢
<u>Monolithic walls</u>		
Two nonreinforced	61	10¢
<u>Solid walls</u>		
Concrete-block	National Concrete Masonry Assn. 32	15¢
"Nelson Pre-Cast Concrete Foundation"	Nelson Cement Stone Co., Inc. 26	10¢
"Pfeifer Units"	Wisconsin Units Co. 39	10¢
<u>Porous concrete</u>		
Properties of	96	10¢
<u>Lightweight concretes</u>		
Properties of	112	10¢

STRUCTURAL PROPERTIES-(Continued)

Combination Masonry Constructions

BMS No. Price

Cavity walls

Brick facing, tile backing Structural Clay Products Inst. 24 15¢

Solid walls

Brick facing,
concrete-block backing National Concrete Masonry Assn. 32 15¢

Rammed-Earth Constructions

Monolithic walls

Rammed-earth)
"Terracrete") 78 25¢

Solid walls

Adobe block)
"Bitudobe" block)
"Terracrete" block) 78 25¢

Metal Constructions

Prefabricated walls

"Frameless-Steel"
(walls, partitions, floors, roofs) Insulated Steel Constr. Co. 9 10¢
"U.S.S. Panelbilt"
(walls, partitions, roofs) Tenn. Coal, Iron and R.R. Co. 74 20¢

Combination Metal and Other Materials

Prefabricated walls

"Bender Steel Home" Bender Body Co. 27 10¢
"Fabrihome" (walls and partitions) Curren Fabrihome Corp. 11 10¢
"Frameless-Steel"
(walls, partitions, floors, roofs) Insulated Steel Constr. Co. 9 10¢
"Mu-Steel"
(walls, partitions, floors, roofs) Herman A. Mugler 67 15¢
"Pre-Fab"
(walls, partitions, floors) Harnischfeger Corporation 18 10¢
"Scot-Bilt" (walls, floors, roofs) Globe-Wernicke Co. 46 (*)
"Steelox"
(walls, partitions, floors, roofs) Steel Buildings, Inc. 12 15¢

Wood-Frame Construction

Conventional

"Celotex" covered Celotex Corporation 42 15¢
Conventional
(walls, partitions, floors, roofs) Forest Products Laboratory 25 20¢
Plywood covered Douglas Fir Plywood Assn. 30 15¢
"Red Stripe" lath and plaster
(walls, partitions, floors, roofs) Weston Paper Co. 36 10¢

*Out of print

STRUCTURAL PROPERTIES--(Continued)

BMS No. Price

Wood-Frame Constructions--(Continued)

Prefabricated

Homasote covered "Precision-Built" (walls, partitions)	Homasote Co.	48	15¢
Homasote covered "Precision-Built, Jr."	Homasote Co.	72	10¢
Homasote covered "Precision-Built, Jr." (2nd construction)	Homasote Co.	89	15¢
"Insulite" sheathing and building board (walls and partitions)	The Insulite Co.	31	25¢
Multiple box girder plywood panel	Wittner	99	15¢
"PHC" (walls, floors, roofs)	PHC Housing Corporation	90	15¢
Plywood, lightweight (walls, partitions, floors, roofs)	Douglas Fir Plywood Assn.	104	30¢
Wood-frame (walls, partitions, floors)	American Houses, Inc.	47	20¢

Floor Constructions

Prefabricated

Precast joist concrete	Portland Cement Assn.	62	10¢
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Reinforced concrete

"Tilecrete": tile fillers	Tilecrete Floors, Inc.	16	10¢
"Tilecrete Type A": asbestos- cement fillers	Tilecrete Co.	51	10¢

Steel

"Keystone Beam Steel Floor"	H. H. Robertson Co.	10	10¢
"Wheeling Long-Span Steel Floor"	Wheeling Corrugating Co.	15	10¢

CODES AND SPECIFICATIONS

<u>Building codes</u> , preparation and revision of	116	15¢
<u>Specifications</u> , building, method for developing	87	15¢ 20¢

FIBER MATERIALS

<u>Building boards</u> , accelerated aging of properties of current products	4	10¢
stability of	13	10¢
	50	10¢
<u>Fiber insulation board</u> , dry-wall construction	97	10¢
<u>Fiber tile boards</u> , properties and performance	77	10¢
<u>Insulating lath</u> , suitability of, as plaster base	3	15¢
<u>Sheathing boards</u> , stability of	69	10¢

FIRE RESISTANCE

<u>Fire-Resistance</u> , classifications of building constructions	92	30¢
partitions, structural clay tile	113	15¢
walls, lightweight-aggregate concrete units	117	20¢
walls, gravel-aggregate concrete units	120	15¢

FIRE RESISTANCE-(Continued)

	<u>BMS No.</u>	<u>Price</u>
<u>Fire-Tests</u> , partitions, wood- and metal-framed	71	20¢
wood-framed walls & partitions, asbestos cement facings	123	
steel columns protected with siliceous aggregate concrete	124	

FLOOR COVERINGS

<u>Adhesives</u> for, properties	59	15¢
<u>Dimensional changes</u> of, humidity and temperature	85	10¢
<u>Floor and deck surfaces</u> , relative slipperiness of	100	10¢
<u>Indentation characteristics</u>	73	10¢
and recovery	14	10¢
<u>Performance tests</u> , Part 1	34	15¢
Part 2	43	15¢
Part 3	68	20¢
Part 4	80	15¢

HEATING AND VENTILATING

<u>Accumulation of moisture</u> in frame walls	93	10¢
<u>Air infiltration</u> through windows	45	15¢
<u>Condensation of moisture</u> in building walls	63	15¢
<u>Condensation in wall specimens</u> , laboratory observations of	106	15¢
<u>Effect of soot</u> on rating of oil-fired heating boiler	54	10¢
<u>Heat losses</u> from slab floors	103	15¢
<u>Humidities</u> in residences	56	10¢
<u>Performance of boiler</u> , coal-fired converted to oil	111	15¢
<u>Solar heating</u> of various surfaces (effect of painting)	64	10¢
<u>Study of baseboard convactor heating system</u> in Test Bungalow	115	15¢
<u>Temperature distribution</u> with various heating devices	108	10¢
<u>Temperatures</u> in a Test Bungalow with radiant and jacketed space heaters	114	25¢

INSULATION: Thermal and Acoustical

<u>Effect of ceiling insulation</u> upon summer comfort	52	15¢
<u>Sound insulation</u> of wall and floor constructions	17	
and Supplements 1 & 2		35¢/40

PAINTING

<u>Paints</u> : cement-water and waterproofing for unit-masonry walls	95	25¢
for exterior masonry walls	110	15¢
<u>Paint Manual</u> : with particular reference to Federal specifications	105	\$1.25
<u>Steel</u> , painting	102	10¢
surface treatment for corrosion protection	8	15¢
prior to painting	44	10¢

PERMEABILITY

	BMS No.	Price
<u>Building bricks, effect of freezing and thawing</u>	60	30¢
<u>Masonry walls, outdoor exposure</u>	76	15¢
water permeability	82	25¢
wetting and drying	55	10¢
<u>Stucco-faced, Gunitite-faced, and "Knap Concrete-Unit", water permeability and weathering resistance</u>	94	15¢

PLASTER

<u>Plaster failures, white-coat</u>	121	20¢
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PLUMBING

<u>Backflow prevention in over-rim water supplies</u>	28	15¢
<u>Lead-base solders, sleeve joints in copper tubing made with</u>	83	15¢
<u>Loads in plumbing systems, methods of estimating</u>	65	15¢
<u>Plumbing Manual</u>	66	35¢
<u>Soft-soldered joints in copper tubing, strength of</u>	58	10¢
<u>Stack venting of fixtures</u>	118	15¢
<u>Water-distributing systems for buildings</u>	79	20¢
<u>Wet Venting of fixtures</u>	119	20¢

ROOFING AND SIDING

<u>Asphalt-prepared, roll roofing, and shingles</u>	70	20¢
<u>Metallic, for low-cost house construction</u>	49	20¢
<u>Survey: North Central States</u>	75	15¢
Northeastern States	29	20¢
Southeastern States	6	15¢
South Central States	84	15¢
<u>Siding, asbestos-cement, physical properties</u>	122	

MISCELLANEOUS

<u>Calking materials, plastic</u>	33	15¢
<u>Check list for building construction, field inspectors'</u>	81	30¢
<u>Glossary, housing terms</u>	91	15¢
<u>Terrazzo aggregates, physical properties of</u>	98	15¢
<u>Ties for cavity walls, corrosion of</u>	101	10¢

