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## Roofing Research—A Bibliography

James N. Robinson  
Clara L. Nichols

Part of  
The National Program  
for  
Building Thermal Envelope Systems  
and Insulating Materials

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CONSERVATION AND SOLAR ENERGY  
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BUILDINGS DIVISION

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ROOFING RESEARCH — A BIBLIOGRAPHY

James N. Robinson

Clara L. Nichols

Energy Division

Part of  
The National Program  
for  
Building Thermal Envelope Systems and Insulating Materials

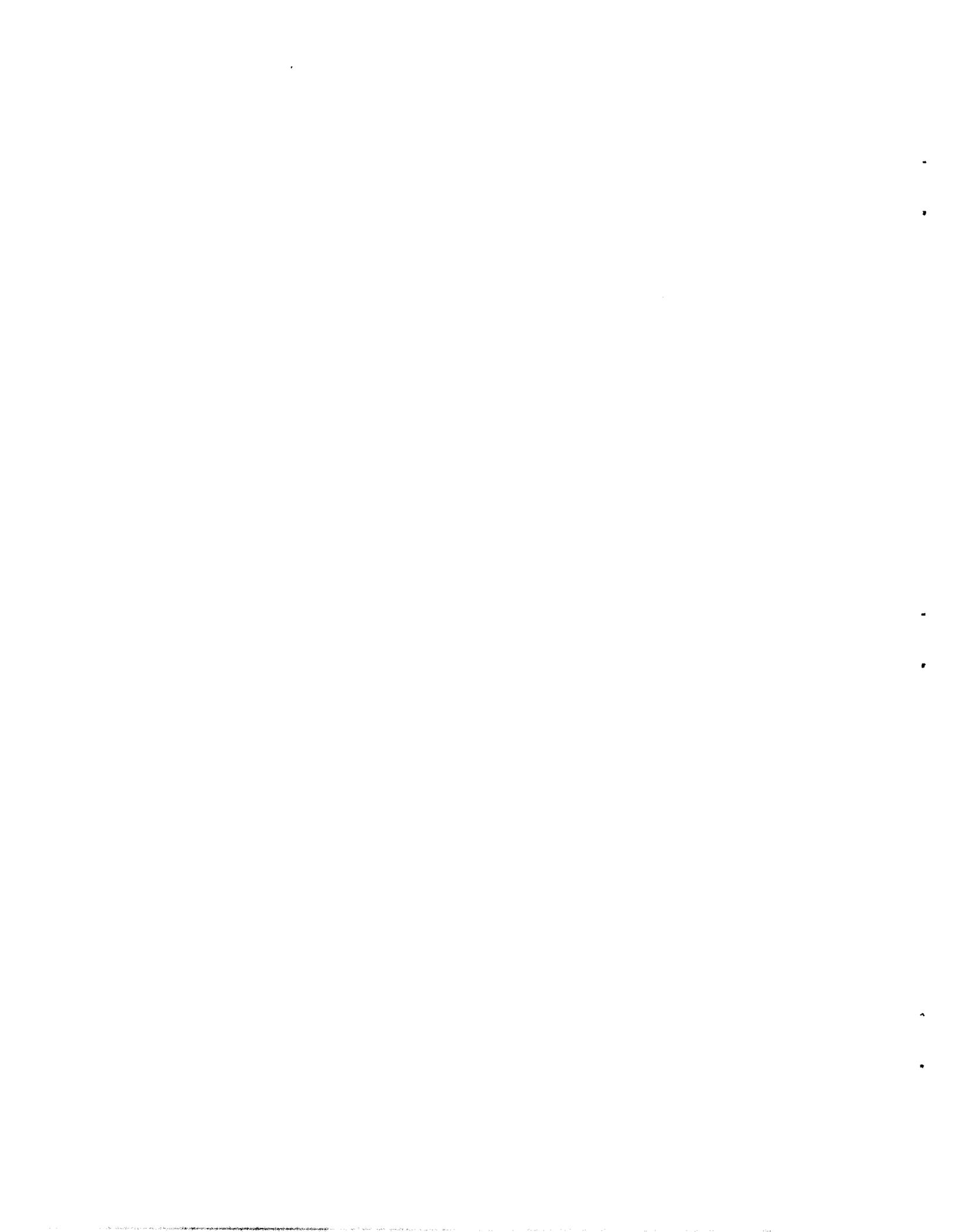
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Buildings Division

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## FOREWORD

This is one of a series of reports to be published describing research, development, and demonstration activities in support of the National Program for Building Thermal Envelope Systems and Insulating Materials. The National Program involves several federal agencies and many other organizations in the public and private sectors who are addressing the national objective of decreasing energy wastes in the heating and cooling of buildings. Results described in this report are part of the National Program through delegation of management responsibilities for the DOE lead role to the Oak Ridge National Laboratory.

Ted S. Lundy  
Program Manager  
Building Thermal Envelope Systems  
and Insulating Materials  
Oak Ridge National Laboratory

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Office of Buildings and Community Systems  
Department of Energy



OTHER REPORTS IN THIS SERIES

1. DOE/CS-0059: The National Program Plan for Building Thermal Envelope Systems and Insulating Materials (January 1979).
2. LBL-8822: A New Measurement Strategy for In-Situ Testing of Wall Thermal Performance (March 1979).
3. LBL-8925: Thermal Performance of Buildings and Building Envelope Systems: An Annotated Bibliography (March 1979).
4. ORNL/Sub-7556/I: Assessment of the Corrosiveness of Cellulosic Insulating Materials (June 1979).
5. ORNL/Sub-7504/3: Recessed Light Fixture Test Facility (July 1979).
6. ORNL/Sub-7559/1: Problems Associated with the Use of Urea-Formaldehyde Foam for Residential Insulation (September 1979).
7. ORNL/Sub-7551/1: Interim Progress Report on an Investigation of Energy Transport in Porous Insulator Systems (October 1979).
8. ORNL/TM-6494: A Technique for Measuring the Apparent Conductivity of Flat Insulations (October 1979).
9. LBL-9821: Measurement of In-Situ Dynamic Thermal Performance of Building Envelopes Using Heat Flow Meter Arrays (December 1979).
10. ORNL/Sub-79/13660/1: Minnesota Retrofit Insulation In-Situ Test Program Extension and Review (February 1980).
11. ORNL/TM-7266: An Experimental Study of Thermal Resistance Values (R-Values) of Low-Density Mineral-Fiber Building Insulation Batts Commercially Available in 1977 (April 1980).
12. NBS/BS Series 123: The Effect of Moisture on the Thermal Conductance of Roofing Systems (April 1980).
13. ORNL/Sub-78/97726/1: A Field Study of Moisture Damage in Walls Insulated Without a Vapor Barrier (May 1980).
14. ORNL/CON-46: An Appraisal of the M Factor and the Role of Building Thermal Mass in Energy Conservation (July 1980).
15. ORNL/Sub-7686/1: Smoldering Combustion Hazards of Thermal Insulation Materials (July 1980).
16. NBSIR 80-2097: Precision Measurements on Fibrous Glass Insulation (July 1980).

17. NBSIR 80-2085: Fire Performance of Loose-Fill Cellulosic Insulation in Residential Occupancies (August 1980).
18. ORNL/Sub-7556/II: Corrosion Testing of Urea-Formaldehyde Foam Insulating Materials (September 1980).

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## ABSTRACT

A listing, indexed by subject, primary author, and secondary authors, is presented of some 530 references in the literature related to roofing research — materials, construction, and in-service problems. Structural design of roofing systems is not covered.

## I. INTRODUCTION

The literature related to roofing research activities is highly fragmented. There is no one established journal in which roofing research is reported. Much of the work that is published is presented at conferences and symposia. Much of the work that is done is carried out in private laboratories, and the results are sequestered in files that are not accessible to the public.

Recognizing that this situation exists, an attempt has been made to identify as much of this literature as can be located, and to compile the citations into a single reference source. This bibliography is presented here.

It is recognized that this listing is far from complete. This shortcoming can be relieved by users who call attention to material that has not been referenced, and by those who are willing to make available previously nonpublic information. Help is sought in either of these directions, to the end that information relating to roofing research can truly become generally available.



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\*All notations to "Anon" in this index refer to the reports for which no author was given. These reports are grouped together following the listing by primary author. If there is a number following "Anon", this refers to the number of anonymous references in this subject area.

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\*All notations to "Anon" in this index refer to the reports for which no author was given. These reports are grouped together following the listing by primary author. If there is a number following "Anon", this refers to the number of anonymous references in this subject area.

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\*All notations to "Anon" in this index refer to the report for which no author was given. These reports are grouped together following the listing by primary author. If there is a number following "Anon", this refers to the number of anonymous references in this subject area.

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Hendriks

Temperature

Ballantyne and Spencer  
 Bjorklund et al  
 Busching  
 Busching et al.  
 Campbell et al.  
 Cash and Gumpertz  
 Cullen and Boone  
 Dempsey  
 Isaksen and Paulsen  
 Laaly  
 Latta and Garden  
 Lund  
 Plonski  
 Rissmiller  
 Rossiter and Mathey  
 Stephenson

Terraces

Garden

Tests

Couch  
 Draska and Wolf  
 Johnson et al  
 Kaga and Tase  
 Koike  
 Laaly and Sereda  
 Lahmon  
 Masters et al.  
 May  
 Melley  
 Paulsen  
 Pawliw and Spinks  
 Plonski  
 Swytynyk

Thermal Conductivity

Achtziger  
 Cammerer  
 Greenland and Smith  
 Hedlin et al.  
 Jespersen  
 Joy  
 Kaplar  
 Knab et al.  
 Lim  
 Miller  
 Mittasch  
 Mumaw  
 Stephenson  
 Tobiasson and Dudley  
 Tobiasson and Korhonen  
 Tobiasson and Ricard  
 Treado  
 Turrene  
 Tye  
 Anon\*

Thermal Efficiency

Aamot  
 Busching  
 Cash and Gumpertz  
 Dechow and Epstein

Thermal Efficiency cont'd

Garden  
 Griffin  
 Gumpertz  
 Jespersen  
 Levy  
 Lewis  
 Louden  
 Lund  
 Martin, J.  
 Miller  
 Mittasch  
 Powell  
 Powell and Robinson  
 Stephenson  
 Thorsen  
 Tye

Thermal Insulation

Agarwal  
 Baldwin  
 Bonafont  
 Bourne et al.  
 Brotherson  
 Busching et al.  
 Cash  
 Cash and Gumpertz  
 Chaize  
 Cullen and Appleton  
 Cullen and Rossiter  
 Dechow and Epstein  
 Fricklas  
 Gandy  
 Garden  
 Griffin  
 Hassal  
 Hedenstad  
 Hedlin  
 Hutcheon  
 Isaksen and Juul  
 Isaksen et al.  
 Jespersen  
 Joy  
 Kaplar

\*All notations to "Anon" in this index refer to the report for which no author was given. These reports are grouped together following the listing by primary author. If there is a number following "Anon", this refers to the number of anonymous references in this subject area.

Thermal Insulation cont'd

Knight  
 LaCosse  
 Lund and Granum  
 Marsh and Thomas  
 Miller  
 Mumaw  
 Musgrave  
 Probert and Thirst  
 Richards and Mirra  
 Rick  
 Rossiter and Mathey  
 Rossiter et al.  
 Schwartz and Cash  
 Shirtliffe  
 Thorsen  
 Tobiasson and Korhonen  
 Anon\*

Thermal Shock

Cullen and Boone  
 Lee et al.  
 Pommersheim and Mathey

Thermography

Beers  
 Bjorklund et al.  
 Eklund and Baeu  
 Jenkins et al.  
 Korhonen et al.  
 Korhonen and Tobiasson  
 Link, L.  
 Link, R.  
 Tobiasson and Korhonen  
 Tobiasson et al.  
 Van den Berg  
 Anon\*

Two-Ply Systems

Andernach

Urea-Formaldehyde

Rossiter et al.

Vapor Barriers/Retarders

Condren  
 Cornish and Hendry  
 Hutcheon  
 Marsh and Thomas  
 Sandberg

Venting

Baker and Hedlin  
 Ensrud and Juul  
 Hedlin and Cole  
 Wolfert  
 Anon (2)\*

Viscosity

Labout and van Oort  
 Rossiter and Mathey

Water Vapor Transmission

Joy and Wilson  
 Levy  
 Lund  
 Samuelson  
 Sandberg  
 Sereda and Hutcheon  
 Shuman  
 Thorsen  
 Trenthowen and Ricard  
 van der Kooi

Waterproofing

Aoyama  
 Beijers  
 Constantine  
 Edwards  
 Gumpertz  
 Hamada et al.  
 Jackson  
 Jackson et al.  
 Koike and Tanaka  
 MacDonald  
 Marijs and Bonafont  
 Martin, K.

\*All notations to "Anon" in this index refer to the report for which no author was given. These reports are grouped together following the listing by primary author. If there is a number following "Anon", this refers to the number of anonymous references in this subject area.

Waterproofing cont'd

Oshima  
 Owen  
 Schreiber  
 Spieker  
 Totsuka  
 Yamamoto  
 Zakim  
 Anon\*

Weathering

Cullen and Appleton  
 David and Bastian  
 Greenfield  
 Hamada et al.  
 Jones, P.  
 Jones and Gibbons  
 Koike and Tanaka  
 MacNaughton  
 Moavenzadeh and Stander

Wind

Benjamin and Bond  
 Blickensderfer  
 Cullen  
 Dalgliesh and Schriever  
 Donegan and Butterfield  
 Eaton  
 Hazelwood  
 Kind  
 Kind and Wardlaw  
 Kramer  
 Minor  
 Swytynyk  
 Anon (3)\*

Wood Roofs

Baker  
 Beech and Newman  
 Burden  
 Dinwoodie  
 Duff

Wood Roofs cont'd

Ensrud and Juul  
 Hansen  
 Hide  
 Hutcheon and Jenkins  
 Mayo  
 Rance  
 Santer  
 Stamm  
 Steer  
 Tammes and Vos  
 Tamura et al.

\*All notations to "Anon" in this index refer to the report for which no author was given. These reports are grouped together following the listing by primary author. If there is a number following "Anon", this refers to the number of anonymous references in this subject area.

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