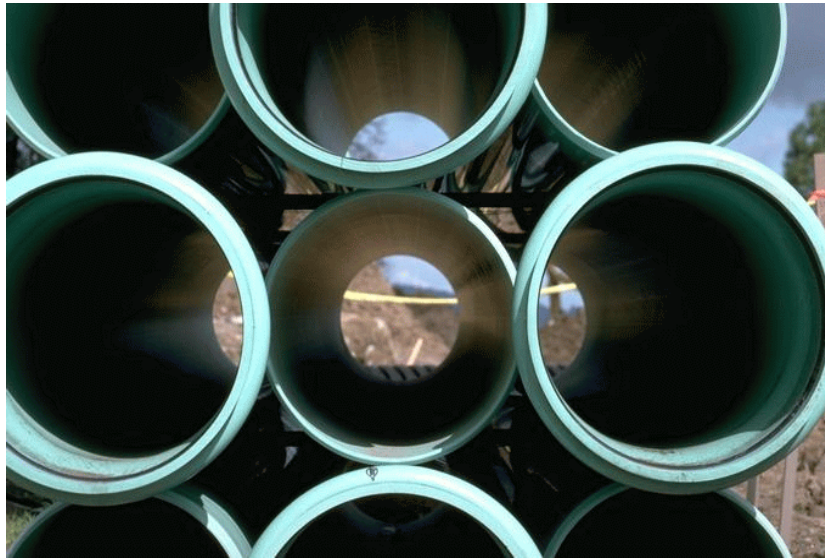


Part 2

Technical Suitability of Products Program



*Part 2 of a Study of the HUD
Minimum Property Standards for One- and Two- Family Dwellings
and Technical Suitability of Products Programs*

Prepared for the
**U.S. Department of Housing and Urban Development
Office of Policy Development and Research**

by the
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The National Institute of Building Sciences appreciates the opportunity to study these long-standing HUD programs and hopes the findings and recommendations herein will be helpful in addressing the needs the programs have traditionally served.

Disclaimer

The study's findings are solely those of the National Institute of Building Sciences and do not reflect the views of the U.S. Department of Housing and Urban Development, the study's participants, or its reviewers. The Institute has made every effort to verify the accuracy of the study's content, but no guarantee of the accuracy or completeness of the information is either offered or implied.

TABLE OF CONTENTS

1. Introduction	1
2. Background of the TSP Program	2
3. Engineering Bulletins Program	5
3.1 Engineering Bulletins Program Overview	5
3.2 Engineering Bulletins Program Findings	6
4. Materials Release Program	9
4.1 Materials Release Program Overview	9
4.2 Materials Release Program Findings	10
5. Use of Materials Bulletins Program	12
5.1 Use of Materials Bulletins Program Overview	12
5.2 Use of Materials Bulletins Program Findings	13
6. Combined Findings	15
7. Conclusions	18
8. Recommendations	19
9. Recommendations Considered but Rejected	20
Appendix A, Engineering Bulletins Program, Manufacturer Interview Summaries and Overviews, by Product Group	21
Appendix B, Materials Release Program, Manufacturer Interview Summaries, by Product Group	27
Appendix C, Use of Materials Bulletins Program, Administrator Interview Summaries	33
Appendix D, Use of Materials Bulletin Program, UM Descriptions and Comments	37
Appendix E, Study Methodology	42
Appendix F, Bibliography/Related HUD Documents	43
Appendix G, Acronyms	44
Appendix H, Sample Structural Engineering Bulletin (SEB 1117 Rev.1)	45
Appendix I, Sample Materials Release (MR 1210b)	52
Appendix J, Sample Use of Materials Bulletin (UM 73a)	59

1. Introduction

This is a study of the Technical Suitability of Products (TSP) Program. Mandated by the Housing and Urban Development Act of 1965, the program provides a means of acceptance for nonstandard materials, components, and systems used in HUD-insured properties. The TSP Program has three constituent product acceptance programs: Engineering Bulletins, Materials Releases, and Use of Materials Bulletins.

Information for the study was gathered by reviewing the statutory, regulatory, and administrative documents and procedures governing the TSP program and by interviewing present and retired TSP staff from HUD's Washington, D.C., headquarters, personnel from HUD's four regional Home Ownership Centers, and over 100 representatives of the manufacturers and organizations participating in the Engineering Bulletins, Materials Releases, and Use of Materials Bulletins programs. The study took approximately eighteen months and was concluded in the spring of 2003.

A related study, of the one- and two-family dwellings portion of the *Minimum Property Standards* (MPS), was conducted simultaneously. The MPS is a well known and long standing building regulatory program used in the approval of HUD-insured mortgage loans. It has its roots in the National Housing Act of 1934, the law that created HUD's predecessor—the Federal Housing Administration—and the nation's first government-backed mortgage insurance program

2. Background of the TSP Program

Within a year of its creation by the National Housing Act of 1934, the Federal Housing Administration (FHA) began issuing technical publications on home construction as a means of reducing risk in its mortgage insurance programs. FHA's first publication, *Property Standards*, five pages long, appeared in 1935 and focused on neighborhood planning and site access. *Minimum Construction Standards*, issued two years later, added 16 pages of construction requirements. The two publications were combined and expanded in 1942 to form the *Minimum Property Requirements* (MPR). In 1958 the MPR, now a greatly expanded publication, was renamed the *Minimum Property Standards* (MPS).

FHA commenced issuing "Technical Circulars" in 1937 to provide additional information about specific construction products and methods. Immediately after World War II, it also began issuing "Engineering Bulletins" and "Use of Materials Bulletins." *Engineering Bulletin No. 1* of October 1946, for example, was titled "Mortarless Concrete Block Masonry;" *Use of Materials Bulletin No. UM 2* of March 1948 was titled "Wood for Finish Floors."

FHA issued new Technical Circulars, Engineering Bulletins, and Use of Materials Bulletins as construction products and methods evolved, revising or withdrawing those that became outdated. The 1958 edition of the MPS listed four Technical Circulars (Nos. 7, 8, 11, and 12), four Engineering Bulletins (Nos. 1, SE-83, SE-104, and SE-195), and five Use of Materials Bulletins (UM 2, 17, 20a, 24b, and 25).

In 1965, Congress passed the Housing and Community Development Act, creating the U.S. Department of Housing and Urban Development (HUD) and incorporating the FHA into it. Section 521 of the Act mandated that HUD develop a program for the acceptance of new and innovative materials, components, and systems used in FHA-insured properties:

Section 521 (12 USC Section 1735e). Acceptance of materials or products used in structures. The Secretary shall adopt a uniform procedure for the acceptance of materials and products to be used in structures approved for mortgages or loans insured under this chapter. Under such procedure any material or product which the Secretary finds is technically suitable for the use proposed shall be accepted. Acceptance of a material or product as technically suitable shall not be deemed to restrict the discretion of the Secretary to determine that a structure, with respect to which a mortgage is executed, is economically sound or an acceptable risk.

Responding to Section 521, FHA developed the Technical Suitability of Products Program, which it launched in 1967. The program used the existing Engineering Bulletins and Use of Materials Bulletins as a starting point and created two additional types of product acceptances, for a total of four constituent product acceptance programs:

- Engineering Bulletins, of two types: Structural Engineering Bulletins (SEBs) and Mechanical Engineering Bulletins (MEBs)—for acceptance of housing systems and subsystems.

- Materials Releases (MRs)—for acceptance of nonstandard proprietary building materials, products, and systems.
- Use of Materials Bulletins (UMs)—standards developed by HUD for acceptance of a product or group of products for which no suitable industry standard exists. A UM may serve as an interim standard until a national standard is developed, or it may be used to initiate a third-party acceptance program.
- State Letters of Acceptance (SLAs)—for acceptance of factory-produced housing in specific geographical jurisdictions. This component of the TSP Program was terminated in 1994.

To develop and administer the new TSP Program—along with another new and much larger program, Operation Breakthrough, which came along a few years later—FHA expanded its technical staff in Washington, D.C., to include about 40 architects and engineers. The headquarters staff was supplemented by design and construction personnel at each of the FHA’s 81 state field offices.

Initiated in 1969, Operation Breakthrough had the ambitious goal of substantially increasing housing output and simultaneously lowering housing costs by rationalizing and industrializing the nation’s housing industry. The TSP Program was important to Operation Breakthrough because it provided a way to rapidly introduce new technology and products into the housing market and to obtain widespread state and local code approval of factory-built modular housing systems.¹

For a variety of reasons—primarily the cyclical nature of the economy, which discouraged the aggregation of stable markets needed by the capital-intensive industrialized housing producers—Operation Breakthrough did not succeed and was terminated in the mid-1970s. Meanwhile, in 1971, the nation’s three model code organizations jointly published the first edition of the *CABO One and Two Family Dwelling Code*, which began displacing the MPS as the country’s de facto housing standard. By the late 1970s, the National Association of Home Builders was proposing to replace the MPS with the CABO code. In 1983, Congress passed Public Law 98-181, requiring HUD to accept model and local building codes as the source of technical requirements for single-family home construction. This virtually eliminated the need for the one- and two-family portion of the MPS; a year later it was reduced to a small MPS appendix. Multifamily and care-type housing requirements were retained and became the primary MPS focus.

Concurrently, and perhaps spurred by the TSP Program, the building industry continued to improve its own product acceptance practices. Voluntary product standards and quality control procedures became more widespread, and the product evaluation programs of the model code organizations became more widely accepted. This, combined with the failure of Operation

¹ Mobile homes, now referred to as manufactured housing, were, and still are, regulated by a separate HUD program based on the Manufactured Housing Construction Safety and Standards Act of 1974.

Breakthrough, the creation of the *CABO One and Two Family Dwelling Code*, and the virtual elimination of the single-family MPS requirements in 1984, all served to reduce the importance, vitality, and size of the TSP Program. When members of the HUD's design and construction staff in Washington retired or moved on, they were not replaced.

In 1994, HUD created four regional Home Ownership Centers (HOCs), and, in the process, eliminated the design and construction staffs at its 81 state field offices. The State Letters of Acceptance program, which relied on the technical expertise of the field offices, was subsequently dropped. By the late 1990s, only a handful of employees knowledgeable about the MPS and the TSP Program remained, a few in the HOCs and several at HUD headquarters in Washington, D.C.

Currently, the HOCs report that none of their staff has substantial experience with the MPS and TPS programs, and the last three HUD professionals who worked full time on the two programs in Washington have retired, the last in January 2002. The MPS one- and two-family program is now virtually inactive (see the related study of the one- and two-family MPS) and the TPS Program is managed on a part-time basis by two engineers in HUD's Office of Manufactured Housing Programs.

To evaluate the status of the TSP Program, the manufacturers and administrators associated with its constituent Engineering Bulletins, Materials Releases, and Use of Materials Bulletins programs were interviewed by telephone. A description of each program, with interview findings, follows.

3. Engineering Bulletins Program

MANUFACTURERS WITH SEBs (49)

Strikeout – SEB expired prior to April 2002 (16)

Modular Homes (21)

Stratford Homes, SEB 904
Advanced Systems Homes, SEB 518
Unibilt Industries, SEB 533
Deluxe Homes of PA, SEB 416, 1111
All American Homes Inc, SEB 785
Cardinal Homes, SEB 864
Haven Homes Inc, SEB 874
Grafton Homes, SEB 900
New England Homes, SEB 789
Oakwood Homes Corp, SEB 728
~~Benchmark Homes, SEB 681~~
Randal Homes Corp, SEB 1078
Taylor Homes, SEB 1032
North American Housing Corp, SEB 1110
~~Chelsea Modular Homes, SEB 1112~~
Al American Homes of Kansas, SEB 785
~~Epoch Corp, SEB 1069~~
Terrace Homes, SEB 969
Modern Builders Supply, SEB 912 and 1059
Westchester Modular Homes, SEB 1107
The Future Home Technology, SEB 1108

Structural Panels (9)

IES 3-D Pane Works Inc, SEB 1120
Premier Industries, SEB 1128
~~Enercept Inc, SEB 1067~~
~~Thermasteel Corp, SEB 1072~~
NASCOR Inc, SEB 1129
AFM Corp, SEB 1104 ■

Korwall Industries, SEB 1101 ■
Superior Walls, SEB 117
~~Foam Products Corp, SEB 1079~~

Engineered Wood I-Joists (4)

Trus Joist/Williamette, SEB 689, 1127 (also MR 925, 1265, 1303, 1307)
Louisiana-Pacific Corp, SEB 1091
Jager Building Systems, SEB 1130 (also MR 1236)
Truswal Systems Corp, SEB 916

Log Homes (6)

~~Hearthstone Inc, SEB 1103~~
~~Hiawatha Log Homes, SEB 1116~~
~~Real Log Homes, SEB 1071~~
Appalachian Log Structures SEB 1090
Rocky Mountain Log Homes, SEB 1074
International Homes of Cedar, SEB 1062

MANUFACTURERS WITH MEBs (1)

Advanced Drainage Systems Inc, MEB 29

UNABLE TO CONTACT OR OUT OF BUSINESS (9)

~~Contempri Homes, SEB 899~~
American Homestar Corp, SEB 484
Nanticoke Homes, SEB 958, 1119
Fibercrete, SEB 1106
~~Style Craft Homes, SEB 1099~~
~~Royal Wall Systems, SEB 1122~~
1001 Inc, SEB 1124
Enercon Products Co, SEB 1125
Eagle Plastic Systems, SEB 1126

■ Also has ICC-ES (NES) evaluation report

Engineering Bulletins Program Overview

Engineering Bulletins are issued for HUD acceptance of a manufacturer's modular housing system or its structural or mechanical subsystem. There are two types:

- Structural Engineering Bulletins (SEBs)
- Mechanical Engineering Bulletins (MEBs)

According to Chapter 2, Engineering Bulletins, of HUD Handbook 4950.1, manufacturers applying for an SEB or MEB must provide detailed information about their organization, plant

facilities, quality control programs, methods of transportation, field installation procedures, marketing and distribution methods, engineering calculations and assumptions, manufacturing and erection drawings, and architectural details. These submissions are to be followed by an initial factory inspection by a third-party HUD inspector and a completed inspection report, HUD 92501. After SEB or MEB approval, the manufacturing facility is to be inspected yearly by a third-party HUD inspector. The manufacturer must produce, identify, and guarantee the system or subsystem according to the terms of the SEB or MEB. The HUD fee for a new SEB or MEB is \$4000, and the three-year renewal fee is \$800. A sample SEB is provided in Appendix H.

For modular homes, the alternative to an SEB for HUD mortgage insurance purposes is labeling by a “Category III” state. Category III states are those states determined by HUD to have procedures for governing the manufacture of modular homes in accordance with HUD requirements. Approximately every three years, a HUD representative (currently a third-party contractor) visits each Category III state, audits its paperwork, examines its codes, and visits at least one state-approved modular home manufacturer. (“Category I” and “Category II” states are terms associated with the State Letters of Acceptance (SLA) program, which was discontinued in 1994.)

<p>CATEGORY III STATES (31) Alabama, Arizona, California, Colorado, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Virginia, Washington, Wisconsin.</p>	<p>NON-CATEGORY III STATES (19) Alaska, Arkansas, Connecticut, Delaware, Hawaii, Kansas, Louisiana, Maine, Massachusetts, Mississippi, Missouri, North Dakota, Ohio, Oklahoma, South Dakota, Utah, Vermont, West Virginia, Wyoming.</p> <p>Category III states have reciprocal approval agreements with HUD for modular housing, and SEBs are not required for HUD mortgage insurance in these states.</p>
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Engineering Bulletins Program Findings

The following findings are based on manufacturer interviews. *Summaries of the interviews and overviews, by product group, are provided in Appendix A.*

1. HUD lists 49 manufacturers with a combined total of 53 SEBs. Only 40 of the 49 manufacturers could be located. They were interviewed by telephone. Twelve of the 40 have expired SEBS, so the total number of probable manufacturers with *active* SEBs is 28.

2. There are about 18 modular home manufacturers with active SEBs, out of approximately 200 such manufacturers nationwide,² for a current industry participation rate of about 9 percent. Modular home manufacturers report few SEB inquiries, since SEBs are not required in the 31 Category III states that have reciprocal approval agreements with HUD. Furthermore, the majority of modular homes are in the mid-price range, and their buyers usually seek conventional mortgages.

3. There are six structural panel manufacturers with active SEBs, out of about 800 panel manufacturers nationwide,² for a current industry participation rate of less than 1 percent. SEB holders rely primarily on model code evaluation reports and receive few SEB inquiries. Several said they'd like to see the model code evaluation reports and SEBs merged, since they are seen as similar.

4. There are four engineered wood I-joist manufacturers with SEBs, out of about two dozen such manufacturers nationwide,³ for an industry participation rate of 15 to 20 percent. Similar to the structural panel manufacturers, they rely on model code evaluation reports and receive few SEB inquiries.

5. There are six log home manufacturers with SEBs, out of about 200 log home manufacturers nationwide.² All their SEBs are expired, so the current industry participation rate is zero. Since log homes require conventional plan approvals, there is no advantage to having either an SEB or a model code evaluation report other than for marketing purposes or to help persuade the occasional recalcitrant code inspector.

6. Although some participants liked the SEB program, primarily for marketing purposes, none voiced a pressing need for it. Almost all said the program had little effect on their current product sales and that its cancellation would not harm them.

7. Participants that renew their SEBs usually do so for marketing purposes or "just in case" there is an SEB request. Most consider the \$800 three-year renewal fee a trivial marketing expense.

8. At one time, the SEB program may have been used to speed the introduction of new technology (as was Congress's intent for the TSP Program), but it is infrequently used this way now.

9. Many SEB program participants said they have experienced delays and frustration in dealing with HUD, although some said things have gone well. One said it would not apply for an SEB for a new product because of the time and expense involved.

² Industry totals are from the August 2002 issue of *Automated Builder*, pp. 14 and 15.

³ According to the APA/The Engineered Wood Association, July 2002.

10. Just one manufacturer has an MEB. It was interviewed by telephone. The manufacturer receives few MEB inquiries and views the MEB renewal fee as a marketing expense. No other manufacturers participate in the MEB program.

11. HUD's list of SEB and MEB program participants contains numerous name, address, and telephone number errors. It took a great deal of time to locate many of the participants via telephone directory services, Internet searches, and inter-industry contacts. As noted, nine SEB program participants could not be located at all.

4. Materials Release Program

HUD MATERIALS RELEASES (98)

* *Manufacturers interviewed for this study* (34)

Underline – MR expired prior to 2002 (32)

Strikeout – Companies with no current MRs (21)

■ *Also has ICC-ES (NES) evaluation report*

* Alside Div of Assoc Materials Inc, MR 657

* American Brick Co, MR 1076

American Building and Cement Products, MR 1258

Arch Wood Protection Inc, MR 1261 ■

* Armstrong World Ind, MR 1103, 1271, 1305, 1308

* B-Dry System, MR 1199

* Bitec Inc, MR 1229

~~Bois + Value, MR 1297~~

* Boise Cascade Corp, MR 1241, 1242 ■

~~Bow Industries, MR 1293~~

* Citadel Architectural Products Inc, MR 411

* Collins and Aikman, MR 1289

Congoleum Corp, MR 931 964 1267

* CONTEC Mexicana, MR 1300, 1301

Custom Building Products, MR 758 ■

Danosa Caribbean Inc, MR 1094

Duro-Last Roofing, MR 1223 ■

* Eldorado Stone Corp, MR 910

* Firestone Building Products, MR 1260

* Flex Membrane Int, MR 1037

* Formica Corp, MR 1298

~~GAF Corp, MR 1216~~

Gary Steel Products Corp. MR 737

* Georgia-Pacific Corp, MR 1274 ■

~~GS Roofing Products . MR 1225~~

Hacker Industries, MR 1255

* Highland Products. MR 1074

Hoover Treated Wood Products, MR 1264 ■

~~Homasote Co, MR 930, 1150~~

~~Image Industries, MR 1285~~

~~Jager Industries, MR 1236~~ (also SEB 1130)

* James Hardie Building Pr d, MR 1222, 1263, 1268 ■

* Louisiana-Pacific Corp, MR 1210, 1214

* Ludlow Coated Products, MR 286, 840, 942, 1026,

1131, 1183 ■

* Marglen Ind, MR 1302

McCausey Lumber Co, MR 1138

* Mohawk Industries, MR 1292, 1295

* Maxxon Corp, MR 951,1286

* National Gypsum Co, MR 1299 ■

~~NewMech Companies, MR 971~~

~~Niagra Fiberboard, MR 1201~~

~~North American Roofing, MR 1217~~

* Omega Products Inc, MR 1114

~~Ortcrete Corp, MR 1288~~

* Pacific Woodtech Corp, MR 1310

~~Panel Brick Manuf, MR 1204~~

* Performance Roof Systems, MR 1270

~~Pelko System Intl, MR 1083~~ ■

Perstop Flooring, MR 1266

Prowall Building Products, MR 1291

~~Queen Carpet Ind, MR 1290~~

~~Real Brick Products, MR 1244~~

* Rehau Inc, MR 1296

* SARNAFIL Inc, MR 1077

~~Shakertown 1992 Inc, MR 978~~

* ~~Shaw Industries, MR 1277, 1283, 1287~~

~~Shuller Int. MR 1189~~

Siplast Inc, MR 1088 ■

Smurfit Newsprint Corp, MR 697

* Specialty Products Co, MR 956

Stevens Roofing Systems, MR 1120

~~Stone Products Corp, MR 691~~

Tri-Ply Inc, MR 1175

* Trus Joist MacMillan, MR 925, 1265, 1303 (also SEB 689) ■

Ultracote Products, MR 1254 ■

U.S. Intec Inc, MR 1085

U. S. Plastic Lumber, MR 1306

* Vanguard Piping Systems, MR 1276

Western Stucco Products, MR 1057

~~Wheeling Service and Supply Co, MR 973~~

* Willamette Ind, MR 1307 (also SEB 1127) ■

* Wilsonart Intl, MR 1284, 1304

* Wirsbo Inc, MR 1269

Worldhome Industries, MR 1294

~~W.R. Bonsal Co, MR 907, 1275~~ ■

* W.R. Grace and Co, MR 628 1056 ■

YTONG Florida, MR 1062, 1090 ■

Materials Release Program Overview

Materials Releases are issued for HUD acceptance of nonstandard proprietary building materials, products, and systems that are determined to be technically suitable for use in HUD programs.

According to Chapter 3, Materials Releases, of HUD Handbook 4950.1, manufacturers applying

for an MR must attest that they have a quality control program, that they use a third-party certification program, if one is required, and that they provide complete design and engineering data, copies of laboratory and test reports and acceptances, and descriptions of the product's proposed use, use limitations, and estimated service life. The manufacturer must produce, label, and certify the product according to the terms of the MR. The HUD processing fee for a new MR is \$4000, and the three-year renewal fee is \$800. A sample MR is provided in Appendix I.

Although Chapter 3 makes no mention of product warranty requirements, all of the MRs include them. HUD usually sets the warranty period to match either the period already provided for the product by the manufacturer or the period set by prevailing industry standards, so for most products the MR warranty is redundant.

Materials Release Program Findings

The following findings are based on manufacturer interviews. *Summaries of the interviews are provided in Appendix B.*

1. HUD lists 78 manufacturers with a combined total of 98 MRs. Twenty-one manufacturers, however, have non-current, outdated MRs. Of the 57 manufacturers with at least one current MR, 34 (60 percent) were interviewed by telephone. One manufacturer with three expired MRs was also interviewed. Thirty-two MRs expired prior to 2002 and others have expired since, although some are in the process of being renewed. The total number of building products with active MRs is probably about 60. This represents a tiny fraction of the thousands of building products sold in the United States.
2. The MR interviews indicate that probably no more than a dozen or so MR holders believe the MR program has value. Few reported receiving inquiries about their MRs. Most said the program had little or no effect on their current product sales and that the program's cancellation would not harm them.
3. An exception is carpet manufacturers. They said that the lack of industry standards makes the MR program vital to helping maintain minimum carpet quality and gaining acceptance of new carpet technologies. The SEB interviews with carpet manufacturers produced similar findings.
4. Most manufacturers with MRs have additional certifications for their products, such as those provided by ICC-ES⁴ and by various states, cities, and industry groups. They tend to see the MR certification as redundant and ask why HUD cannot accept the model code evaluation reports as others do.
5. By most manufacturers' own admissions, the reason for keeping an MR is to obtain HUD

⁴ The International Code Council's Evaluation Services Inc., or ICC-ES, evaluates building products for code compliance. Builders and code inspectors rely upon these evaluations to ensure product compliance in the field. Prior to February 2003, ICC-ES was the National Evaluation Service, or NES.

work or to market the HUD imprimatur, not to speed the introduction of new technology. The three-year renewal cost of only \$800 is a trivial cost for most companies.

6. Regarding MR warranty provisions, one manufacturer said they were not needed because industry competition drives product quality up without government intervention, but a number of others said the MR warranty provisions should be kept to ensure product quality, and, further, that if the program were to be discontinued, some sort of interim program should be established to keep the warranty provisions alive. It is hard to tell, though, if some manufacturers favor the MR warranties because they perceive that the warranties are helpful in gaining market share.

7. Many manufacturers said they have experienced delays and frustration in dealing with HUD, although some said things have gone well. Several said they have decided not to update their MRs because of the trouble of doing so. Other manufacturers may have dropped out of the program for this reason.

8. HUD's list of manufacturers with MRs contains numerous name, address, and telephone number errors. It took a great deal of time to locate many of them via telephone directory services, Internet searches, and inter-industry contacts.

5. Use of Materials Bulletins Program

UM BULLETINS WITH ADMINISTRATORS (17) (active/inactive administrators)	UM BULLETINS WITH NO ADMINISTRATORS (11)
<ul style="list-style-type: none">+ UM 38j, Lumber Grading, 1998 (0/1) ■+ UM 40d, Wood Structural Panels, 1990 (3/3) ■+ UM 44c, Carpet, 1993 (3/0) ■UM 48, Treated Lumber and Plywood, 1970 (0/3) ■UM 52b, Wood Flush Doors, 1975 (0/4) ■+ UM 60a, Construction Adhesives, 1998 (2/2) ■+ UM 70b, Particleboard Int. Stair Treads, 1998 (1/0)+ UM 71b, EPS Sheathing, 1993, (1/1) ■+ UM 72b, Carpet Cushion, 1993 (3/0) ■+ UM 73a, Plastic Bathroom Fixtures, 1984 (3/2) ■UM 76, CPVC and PB Water Piping, 1978 (1/0)+ UM 82b, Sealed Insulating Glass, 1993 (1/3) ■+ UM 84a, Room Heaters and Stoves, 1983 (0/2) ■+ UM 89a, Ext. Insulated Steel Doors, 1993 (1/2) ■+ UM 100, Solar Hot Water Systems, 1993 (0/1)+ UM 101, EIFS, 1995, (0/1) ■+ UM 111, Windows and Doors, 1998 (5/2) ■	<ul style="list-style-type: none">UM 17c, Concrete Roofing Tile, 1974UM 25d, Fasteners, 1973 *UM 58a, Acrylic Plastic Glazing, 1975UM 62a, Factory Appl. Lam. Roofing Systems, 1972UM 65, Cellular Concrete Floor Fill, 1973UM 67, Polycarbonate Plastic Glazing, 1975UM 74, Urea-Based Foam Insulation, 1977UM 77a, Cast Iron Sanitary Pipe, 1980UM 78, PE, ABS, PVC, and PB Water Piping, 1978UM 79a, ABS, PVC DWV Piping, 1982UM 80, Cellulosic Insulation, 1979 <p>+ <i>Published in the Code of Federal Regulations under 24 CFR 200.936 -955</i></p> <p><i>Strikeout – No activity for this UM</i></p> <p><i>* The only UM referenced in HUD manufactured housing standards (but it has no administrator)</i></p> <p>■ <i>Category has one or more ICC-ES evaluation reports</i></p>

Use of Materials Bulletins Program Overview

Use of Materials Bulletins are issued by HUD as standards for a product or group of products for which no suitable industry standards exists. They can serve as an interim standard until a national standard is developed, or they can be used to develop a third-party acceptance program.

According to Chapter 4, Use of Materials Bulletins, of HUD Handbook 4950.1, a UM may be initiated when 1) there are three or more MRs for generally similar products, 2) there is no acceptable national standard, or 3) a request is received from a qualified sponsor such as trade association, technical society, or other organization of national scope. HUD checks to see if a parallel standard is being developed; if not, it prepares a draft UM and publishes it in the Federal Register. Then it prepares a final UM, which is also published in the Federal Register.

The UM program includes a system of third-party program administrators (“administrators”)—typically private testing laboratories—who authorize manufacturers, through written license agreements, to use the administrator’s mark or label on the manufacturer’s products in accordance with the terms of the UM. Administrators are selected by HUD through procedures specified in 24CFR 200.935 and are audited periodically by a third-party HUD contractor (currently HBT). Samples of manufacturers’ products are regularly tested by the administrators, and manufacturers are charged a fee based on the number of products that are marked or labeled. UMs may include warranty requirements, and some do. The HUD fee for developing a new UM

is \$3000; there are no renewal fees. A sample UM is provided in Appendix J.

UM ADMINISTRATORS (28; 15 active)	ITS, Norcross GA office, UM 44c, 72b
<i>* Denies involvement in UM program (2)</i>	Keystone Certification Inc., UM 111
<i>** Has asked HUD to be relieved as administrator (2)</i>	MEA, UM 44c, 72b
<i>Strikeout – Not currently active as administrator (13)</i>	National Accreditation and Management Institute
Akron Rubber Development Lab, UM 60a	NAHB Research Corp., UM 73a
American Lumber Standards Committee *	National Sanitation Foundation, UM 76 (?)
APA/The Engineered Wood Association, UM 40d	Pittsburg Testing Laboratory/PSI, UM 40d
Applied Research Laboratories	PFS Inc., UM 40d, 60a
Architectural Testing Inc	RADCO Inc., UM 71b
Associated Laboratories, UM 44d, 72b, 82b, 111	SGS U.S. Testing, UM 73a
Composite Panel Association, UM 70b	Solar Rating and Certification Corp.
CSA Inc.	Southern Pine Inspection Bureau *
Hardwood Plywood and Veneer Association. **	Southwest Research Institute
ITS, Madison WI office, UM 52b, 89a, 111	Timber Products Inspection and Testing Services
IFS, Cortland NY office	UL
	Universal Laboratory Inc., UM 73a
	Window and Door Manufacturers Association **

Use of Materials Bulletins Program Findings

The following findings are based on interviews with the UM administrators. *Interview summaries are provided in Appendix C. UM descriptions and comments are provided in Appendix D.*

1. HUD lists 28 UM administrators. All 28 were interviewed by telephone. At most, 15 are active, but the number may be even lower since UM certifications are a small part of the construction industry's certification, testing and standards-making activities, and many administrators are uncertain about what constitutes proper UM certification. Some who claimed to be certifying under the UM program clearly were not.
2. HUD also lists 28 Use of Materials Bulletins (UMs). Only 12 UMs are actually being used. Of the remainder, the administrators of five are inactive and 11 have no administrators at all.
3. Two organizations listed as administrators by HUD deny involvement with the UM program.. At least two more question the program's value and have sent letters to HUD asking to be delisted, saying the program is outdated and unnecessary. (See the UM interview summaries in Appendix C)
4. The HUD third-party inspections of the administrators in 2000 and early 2001 revealed many lax practices, such as no inspector training, poor record keeping, lack of written procedures, and uncalibrated instruments. Some these problems may have since been remedied.

5. Almost all of the standards referenced in the UMs are outdated, but some administrators use the current versions of these standards, which may be significantly different. This is expedient but technically improper. Fifteen UMs have not been updated since 1979; HUD staff updated them in 1998, with industry's help, but they were never published in the Federal Register.
6. Few administrators thought the UM program is worthwhile and most said that nothing would be lost if the program were eliminated, since most building products are covered by code-requirements or voluntary evaluation reports, certifications, or standards that are similar to, and often more rigorous than, UM certifications.
7. The one exception is carpet products. The three administrators for UM 44d (carpeting) and UM 72b (carpet cushion) claim that these two UMs constitute the only means of controlling the quality of low-to-medium-grade carpeting and underlayment, since there are no comparable industry standards. The MR interviews with carpet manufacturers reiterate this claim.
8. One administrator described the UM program as good for the export business, since products with a U.S. government agency's name on them are deemed more desirable in foreign countries than those with only industry certifications (some SEB and MR holders mentioned this, too). Another said that the presence of the UM program helped prevent industry dominance in the standards and certification process.
9. Few, if any, of the UMs cover new or innovative products.
10. Many administrators said their communications with HUD were poor to nonexistent. Several worked hard in the late 1990s to help HUD staff update their UMs, then watched HUD fail to publish the results while continuing to enforce the old, outdated versions.
11. HUD's list of UM administrators contains numerous name, address, and telephone number errors. It took a great deal of time to locate some of the administrators via telephone directory services, Internet searches, and inter-industry contacts.

6. Combined Findings

The following are the combined findings for the Engineering Bulletin, Materials Release, and Use of Materials Bulletin programs:

1. The TSP Program's presence in the U.S. construction industry, never large, has waned considerably. Of the thousands of product manufacturers nationwide, a small fraction participate:

- Only 28 manufacturers have active SEBs:
 - 18 are modular home producers, out of approximately 200 nationwide—an industry participation rate of about 9 percent.
 - 6 are structural panel producers, out of approximately 800 nationwide—an industry participation rate of less than 1 percent.
 - 4 are engineered wood I-joist producers, out of about two dozen nationwide—an industry participation rate of 15 to 20 percent.
- 6 log home producers, out of approximately 200 nationwide, have *expired* SEBs and do not plan to renew—an industry participation rate of zero.
- Only 1 manufacturer has an MEB.
- 57 manufacturers have a total of 60 active MRs.
- Only 12 UMs are in use, maintained by 15 administrators.

2. There is little industry interest in the TSP Program, and the program has marginal support among its participants. If there was once a need for the TSP Program, it is not evident now. There are virtually no new participants, and the current ones are renewing sporadically, many seemingly unaware or unconcerned that their acceptances have expired or are about to. Some favor the particular TSP program they're involved in but few voice a real need for it. Almost all said the program had little or no effect on their business and that its cancellation would not harm them.

3. Carpet manufacturers are an exception. Several major carpet companies feel that the UM and MR programs are necessary because there are no other national standards or certification programs for carpet products (ICC-ES, for instance, does not evaluate carpet products because they are not regulated by building codes). If the UM and MR programs are discontinued, the carpet industry claims that it, and consumers, will be negatively affected.

4. Manufacturers participate in the TSP Program mostly for reasons unintended by the program. Manufacturers that renew their TSP acceptances want to ensure their products will not be rejected by HUD for mortgage insurance purposes, even though requests for TSP acceptances range from infrequent to nonexistent. Some want all the acceptances they can get, whether requested or not, particularly if their competitors have them. (HUD does not allow TSP acceptances to be used in advertising, and they are not, directly—but the HUD name is clearly marked on product labels and is often used by suppliers as a U.S. government imprimatur.) The \$800 three-year renewal fee for MRs and SEBs is a trivial marketing cost for most companies.

5. The TSP acceptances are largely redundant. Most manufacturers with SEB, MR, or UM acceptances maintain other, more useful certifications, chief among them the product evaluation reports produced by ICC-ES.⁵ These reports are widely accepted by code officials and builders across the country and carry great credibility. UM, MR and SEB acceptances, by contrast, are generally accepted only by HUD. Manufacturers and trade groups cannot understand why HUD doesn't use what everyone else in the construction industry does. Most are aware that HUD acceptances use the same submission materials and are processed by the same personnel (under contract to HUD) as the product evaluation reports.

6. The TSP Program's warranty provisions are largely redundant. One of the frequent justifications for the TSP Program is its warranty provisions. Although some of the SEBs and all of the MRs require warranties, they tend to be the same as those provided by the manufacturers or as established by prevailing industry standards. In fact, HUD staff purposefully (and, arguably, correctly) matches TSP warranty requirements to the manufacturers' warranties (HUD has no standards for setting warranty length). But this means that the TSP warranties do not add value or increase durability.

7. The TSP Program does not meet its legislative intent. The TSP Program once may have been effective in meeting Congress's intent of speeding the introduction of new technology and reducing entry barriers for new products, but almost all of the products it presently certifies are *neither new nor innovative* (exceptions are several carpeting products and possibly one or two others). Most are industry staples like plywood, roofing, and plumbing fixtures, whose manufacturers simply want to guard against rejection by HUD. In this sense, the TSP Program is a negative force—it carries with it the threat of withholding loan approvals for products that the rest of the mortgage industry routinely accepts.

8. The TSP Program has a low priority at HUD and is underfunded and understaffed. The program's most experienced personnel have retired and have not been replaced. The entire program is currently run by two engineers from the Office of Manufactured Housing Programs, assigned to work on it only part-time. They are assisted by a contractor that audits the SEB, MEB, and MR participants and the UM administrators. The lack of adequate HUD staff and funding is apparent in many ways, among them:

- Many program participants cite delays and frustration in obtaining TSP renewals and communicating with HUD (although some claim they have no problems in this regard). Several said they have not renewed or updated their acceptances because of the time and inconvenience involved. The SEB, MR, and UM manufacturer interviews suggest that former participants may have dropped out for this reason.
- The on-site reviews of the SEB administrators by NCSBCS in 2000 and early 2001 revealed many lax practices, such as no inspector training, poor record keeping, lack of written procedures, and uncalibrated instruments. Some of the problems may have been remedied, but these findings are an indication of how much the program has been

⁵ Until recently NES; see footnote 4.

neglected.

- Almost all the technical standards referenced in the UMs are outdated, with many going back to the 1970s. TSP personnel, with industry help, updated 15 UMs in 1998, but HUD never finalized them through publication in the Federal Register. The current versions of the standards they reference, which often have significantly different requirements, are often used instead of those listed in the UMs—an expedient but improper way of addressing the updating problem, one that encourages corner cutting or outright disregard for following HUD requirements.
- HUD's list of TSP Program participants contains numerous name, address, and telephone number errors. During the course of this study, it took a great deal of time to locate many participants via telephone directory services, Internet searches, and inter-industry contacts. Some participants could not be located at all. It is hard to imagine how a program can be effectively managed with such incomplete information.

9. TSP approval is no longer necessary for building products used in HUD-insured one- and two-family housing. In October 2001, when HUD released Mortgage Letter 2001-27 stating that a building permit and certificate of occupancy were sufficient evidence of code compliance for HUD pre-approval of high-ratio loans, HUD ended, by default, the need for TSP certification of building products used in HUD-insured one- and two-family housing.

But field checking for TSP-approved products in HUD-insured housing virtually ceased when the design and construction staffs were eliminated from the HUD state field offices in 1994. Since then, HUD has relied on self certification through the Builders Certification form (HUD-92541). Building products are said to be field checked for TSP certification only when a problem arises. If HUD mortgage insurance applications have been denied (for any type of housing, single or multifamily) on the basis of products lacking TSP certification, there is no record of it. (The existence of TSP-approved products in multifamily housing is most likely not verified, either, but the scope of this study does not cover the multifamily portion of the MPS.)

Most manufacturers participating in the TSP Program are unaware of these circumstances. This probably accounts for why they get few requests for TSP acceptances. In this sense, manufacturers are being deceived.

10. An attempt by HUD three years ago to broaden the product certification program to a voluntary, industry-collaborative venture was unsuccessful because of a lack of industry interest. Most participants in that effort felt the concept would not be viable unless fully funded by the public sector and even then might not be of general interest to industry.

7. Conclusions

The once-vigorous TSP Program has been overtaken by progress within the building products industry, which has developed suitable standards and warranty provisions for most of its products, and by ICC-ES,⁶ which issues product evaluation reports that are much preferred to TSP acceptances within the housing industry.

Industry participation in the TSP Program has dropped significantly over the years; it is now minimal and largely unenthusiastic. The program is underfunded and understaffed. Its product acceptances are outdated (some seriously so) and mostly redundant to ICC-ES product evaluation reports. Its warranty provisions are arbitrary and duplicative of existing product warranties. The few renewing industry participants do so mainly for marketing purposes or to protect their products from possible (but, unbeknownst to them, unlikely) rejection by HUD.

The outdated TSP Program should be ended, but only after consulting with participating manufacturers and establishing an adequate transition period. A few carpet manufacturers, and perhaps one or two other producers, may require HUD's help in developing substitute standards or approval mechanisms. If so, continuance of a small portion of the program for a period of time may be justified.

Elimination of the TSP Program will have no effect on HUD-insured one- and two-family housing, since checking for TSP acceptances is no longer performed or required. Nor will HUD-insured multifamily housing be affected, as long as ICC-ES product evaluation reports and other appropriate certifications are allowed by HUD in lieu of TSP acceptances.

⁶ ICC-ES is the International Code Council's Evaluation Services Inc. Prior to February 2003, ICC-ES was the National Evaluation Service, or NES. See footnote 4.

8. Recommendations

1. Dismantle the TSP Program, taking into account industry needs. The dismantling process should begin with a letter of notice to all TSP participants explaining that the program is to be terminated within a certain length of time (perhaps 12 months) and asking for comments from those who feel they will be negatively affected by this action. Responses will probably be received from the carpet industry and perhaps from a few others. HUD should work with the respondents to help resolve the problems they face. If some problems cannot be readily resolved, HUD should continue the relevant portion of the TSP Program for a reasonable period of time.
2. Eliminate all references to the TSP Program from HUD documents and procedures. This includes citations and references in the Code of Federal Regulations, the MPS program, HUD handbooks, guidebooks, notices, mortgagee letters, forms, websites, and consumer publications.
3. Examine the TSP Program's Section 521 authorizing legislation (at 12 USC 1735e). The legislation should be examined by HUD's General Counsel to determine if it needs to be repealed. If so, HUD should work with Congress to take the necessary steps to do so.

9. Recommendations Considered but Rejected

1. Do nothing. This would continue the program as it currently is—used with little enthusiasm by a small fraction of the construction industry, ignored in the HUD one- and two-family mortgage insurance approval process, and duplicative of the more widely accepted ICC-ES evaluation reports.

2. Subcontract the program to the ICC-ES⁷ or a similar entity. This is being done now and simply produces redundant reports. The ICC-ES product evaluation reports are valued by manufacturers and builders, TSP reports are not. The argument against using ICC-ES reports in lieu of TSP acceptances has been that the TSP acceptances provide product warranties (whereas the ICC-ES evaluation reports do not), but, as described above, most TSP warranties are similar to those the manufacturers already provide. Unless the TSP Program's acceptances provide added value, there is little reason to continue issuing them.

3. Add value to the TSP acceptances. As described above, an attempt by HUD to broaden the product certification program into a voluntary, industry-collaborative venture was tried but failed to attract industry interest.

⁷ See footnote 6.

Appendix A
ENGINEERING BULLETIN PROGRAM:
Manufacturer Interview Summaries and Overviews, by Product Group

The SEB and MEB interviews were conducted by telephone in August and September 2002.

NES, ICBO, SBCCI, and BOCA are acronyms for organizations that until February 2003 evaluated building products for code compliance. The International Code Council's Evaluation Services Inc. (ICC-ES) now performs this task. Builders and code inspectors rely upon these evaluations to ensure product compliance in the field.

Bolded and italicized state abbreviations denote non-Category III states

Modular Homes

Overview:

1. Nineteen of the 21 modular home manufacturers with SEBs were interviewed by telephone; two did not return calls. This is the largest category of SEB holders, constituting over half. The SEBs of at least three of the 21 manufacturers have expired, although some may be in the process of being renewed.

2. According to the August 2002 edition of *Automated Builder* magazine (page 14), there are approximately 200 modular home manufacturers in the United States. About 18 have active SEBs, so the current industry participation rate is around 9 percent.

3. Most modular home manufacturers receive few requests for SEBs, but those who renew them do so "just in case" or because "it's good for marketing." The renewal cost of \$800 every three years is considered a small marketing expense. Nonetheless, manufacturers wonder why HUD can't accept the model code evaluation reports, like everyone else.

5. Modular homes shipped to the 31 Category III states don't require an SEB for mortgage insurance, nor do homes that have a 10-year HOW or other builder's warranty.

6. Modular homes cost about the same as site-built homes (the primary advantage of modulars is speed and quality control), so government-insured financing usually is not sought for these products; rather, owners seek less expensive conventional financing.

7. Nothing would happen if the SEB program were eliminated as long as HUD accepts what conventional insurers accept—a state label or, in the states that don't provide them or accept other states' labels, approval by the local building official.

Manufacturer 1

Makes custom designed modular homes, mostly for WI, ID, IA. Have had an SEB since 1974. Also has 7 state certifications. The SEB was critical at startup and useful in the 1980s but now no one asks for it. Renewed their SEB in January 2002 after some discussion; doesn't know if they'll renew again in 2005.

Manufacturer 2

Produces manufactured, one-story SF homes, double wide. The company is 26 years old and has built 2500 homes. Does few HUD projects, one every 2-3 years. Has SBCCI and NES reports. Sell in KS and **MO**. Will renew SEB in 5/03 and thinks renewal cost of \$800 is worth it.

Manufacturer 3

Ships about 500 modular units per year. Sent in \$800 check sometime after 10/02, when they requested a renewal, but has had no answer from HUD since then. Three or four years ago, they received many SEB requests for FHA and FHmA, but only 5 or so since then. Had thought about not renewing in 2002 but "a couple of builders used SEBs." Sell in **OH, MI, WV, KY, IN**. Ohio has unannounced inspection program. Indiana sends over an inspector. Michigan uses Tom Arnold. Kentucky inspects only the first model built. West Virginia has no program, but most of their municipalities accept an Ohio label.

Manufacturer 4

Has SEBs for both single family and townhouse modular structures. Maintains the SEBs and 13 state certifications (labels); gets very few questions from builders and users about the SEBs, so not sure how important they are. Just had a HUD audit. Each state makes the manufacturer hire a third party inspector that visits the plant each week and certifies each unit produced, affixes a label to the inside of the unit, and provide backup paperwork. States audit manufacturers

once or twice a year, depending on state. NJ and RI use BOCA code as basis for certification, others use SBCCI. “HUD requirements are much less rigorous than the states.”

Manufacturer 5

Has SEB for their modular home product but “don’t know what good it does. It’s just more paperwork. Why can’t HUD just accept third party certifications, like the states do, which are much more rigorous and strict?” Get 3 or 4 inquiries a year about SEB out of about 800 new homes. Indiana plant has certifications from IN and 3 neighboring states. Has 6 other plants, all with certifications from their neighboring states.

Manufacturer 6

Produces about 200 modular homes a year. A third party inspector covers certifications for all the states they sell in: SC, NC, VA, **WV**. Cannot remember an inquiry about their SEB. Only gets SEB because they’re “afraid not to get it because someone may ask for it.” If they receive no more SEB requests, they may not renew in 2004.

Manufacturer 7

Sells 600-800 modular homes per year; make “customized modulars—the ones no one else will do. Almost every home is different. Savings are largely in terms of time, not cost.” Is asked about SEB “a couple of times a year.” Automatically renew and recently sent in the renewal fee. Ships to 14 states, **ME** to FL. A third party inspector visits their plant 2 or 3 times a week. Had HUD audit “a few years ago.” Founded in 1970. “Do a good business.”

Manufacturer 8

Sells about 100 units per year, in MD, VA, **WV**, and PA. Tom Arnold is the third-party inspector for out-of-state units. WV doesn’t have program; some localities visit the plant, others accept a third party label. In 12 years, they’ve had no requests for the SEB from FHmA or FHA and only two from VA. Keeps SEB because they “never know” when a HUD project may be built. Mike Hoffman from HUD used to do quarterly inspections until 3-4 years ago, and NCSBCS visited them more recently. Wishes HUD and VA would accept third-party label.

Manufacturer 9

Builds 250-300 units per year and cover **ME, VT**, NH, **CT, MA**, and RI, but mostly first 3. All but VT have labeling program; VT approves on local basis, through an office in Burlington. Has had a SEB since prior to 1987 and gets 15-20 requests per year, especially from FHmA and VA for rural housing in Maine, Vermont, and New Hampshire. SEB requirements are about same as those of the states, with same submittals. Manufacturer fills out part of HUD form 92500, builder/seller fills out the rest. Faxed copy of their building permit letter for VT, ME, and NH (the letter is for the building permit; the state label is for the certificate of occupancy). HUD has not been by for an audit for “a long time,” and did not visit after last the renewal.

Manufacturer 10

Makes both modular and manufactured homes. Wrote HUD in June with a revision request but has not heard back (made revision request because NCSBCS recently inspected one of their plants and found a discrepancy between the plans and the actual construction). Emailed all their plants asking if they received SEB requests; the response was that they don’t, but the sales people want the SEB because it helps market the product. Has plants as follows: PA,2; IN,2; MN,1; **KS**,1; NC,1. Third party inspector is NTA, used to be Tom Arnold.

Manufacturer 11

An “industrialized unit manufacturer” as defined by State of Ohio (modular manufacturer). Ships 50-60 units per year, “stick-built in a factory.” SEB expired in Feb 2000 and decided not to renew it because HUD told them that the plans were so old (their SEB dated from the 1960s or 70s) and had changed so much that they’d have to get new a SEB. In additions, they build higher-cost (over \$125 K) homes that usually obtain conventional financing. Lack of an SEB has not affected sales—no one asks for one. Ohio has its own inspection and approval process for mods and uses state inspectors. Third party inspectors are used for out-of-state units. Has had an SEB for many years and renewals often took up to 1-1/2 years.

Manufacturer 12

Ships about 100 units per year, almost all within Ohio. Have “made many calls to Washington” about the last SEB renewal. Has not had any requests for SEB in 2 years and has had no HUD inspection.

Manufacturer 13

Makes custom-built, high-end modular homes. Shipped 32 last year. No requests for SEB for several years, since they moved into custom home design. Sell in **MO**, **CO**, **KS**, **AK**. NTA is their third party inspector.

Manufacturer 14

Makes modular housing units; company is 30 years old. Doesn't know of any requests for their SEB, but they keep it because they like to have as many approvals and state labels as possible. Ship to 12 states on eastern seaboard, have labeling arrangements with all of them. Third party inspector is PSF.

Manufacturer 15

Ships 250-350 units per year, from PA north and Ohio east. Has had SEB since late 80s or so. Gets some SEB requests for FHmA when economy is down, but not FHA. PFS is third party inspector. Says Ohio is now accepting third-party inspections.

Manufacturer 16

Ships 500-600 units per year from **KS** and **CO** plants. About 80 percent are single family, the balance multifamily and commercial/office. Has done a number of post offices around country. Very seldom have had SEB requests in last 5 years, and then only for FHmA; interest rates are so low that people are using conventional financing and avoiding the red tape and extra cost of FHA, VA, and FHMA loans. Offers 5- and 10-year warranties as part of the house cost; others offer it as extra cost. Has never heard that 10-year warranty can be a substitute for an SEB.

Manufacturer 17

Ships 170-180 houses (500 modules) per year, middle to high end in cost. Agreements with **MA**, **NH**, **ME**, **CT**, **RI**. Allowed **NY** to lapse because they don't have sales volume to make fees worthwhile. Has had SEB since soon after the company was founded in 1983. Gets a few requests for SEBs from FHA, FHmA, and VA. Has had no HUD inspection for many years.

Manufacturer 18

Shipped 240 units last year, mostly in **WI**, also **IL**, **IA**, **MN**, **MI**. PFS is their third party inspector. Sent their renewal in on Nov 2, 2001, but has heard nothing since then. Has had no requests for their SEB but renew anyway because renewal is less costly than a new issuance. Does "very, very little in **FHA** market,

but you never know." NCSBCS just did a random plant audit at their plant, asking if **WI** monitoring system was working.

Manufacturer 19

A family business that used to build 200-300 units per year, but health problems nearly forced their closing and now they ship 20-30 units per year. Gets SEB requests "once in a while" but likes to say they have a government approval. A third-party HUD inspector came by about 2 years ago.

Manufacturer 20

(Did not return calls)

Manufacturer 21

(Did not return calls)

Structural Panels

Overview:

1. Eight of the nine structural panel manufacturers with SEBs were interviewed by telephone; one did not return calls. Three of the nine SEBs have expired. There are about 800 panel manufacturers nationwide (*Automated Builder*, August 2002, p. 14), so current industry participation in the SEB program is less than 1 percent.
2. Most panel manufacturers get few requests for their SEBs, but those that renew them do so for marketing purposes or "just in case," similar to the modular home manufacturers.
3. Several manufacturers said they'd like to see the SEB program merged with the model code evaluation reports because SEBs require the same paperwork and are processed by model code personnel anyway.
4. It doesn't appear that the SEBs for structural panels help with code approvals; building inspectors want model code evaluation reports.

Manufacturer 22

Makes welded wire polystyrene sandwich panels that are assembled on-site and covered with concrete on both sides. Used mainly in Caribbean and Latin America, some overseas. Make very few residential units in the U.S. Founded in 1992 and have had SEB since that time. Gets no SEB requests but it's a good marketing tool. Also has **ICBO** and **NES** reports.

Manufacturer 23

Has made individual foam core sandwich panels since

late 1980s. Has plants in Washington and Arizona. Got SEB because they had occasional requests for it, plus a competitor had it so they did it at request of their marketing staff. Had initial HUD factory inspections plus perhaps one later one. Also has NES and ICBO evaluations; get most requests for ICBO. UL and PFS are their third party inspectors.

Manufacturer 24

Makes foam core panels for pre-engineered building systems. Ships about 300 units per year to 38 states, mostly ND, *SD*, MN, IA. Sell just the shell; local builders use the ICBO evaluation report as well as site-specific plans and structural calculations to obtain code approval. Gets no requests for SEBs but many for ICBO. Has had SEB since sometime in 1980s and were unaware SEB had expired (in 9/25/2000). Doesn't know if they'll renew; will talk to other managers.

Manufacturer 25

Makes light gage metal framing with EPS infill for prefab houses. Ships about 100 houses per year, mostly in U.S. and mostly on East Coast. Gets very few, if any, SEB requests, although distributors may get some. Had difficulty remembering what SEBs were and was surprised to know theirs was due for renewal on 2/17/02. Received no notification from HUD. Sees SEB only as a marketing tool. All labeling and information requests are for model code evaluation reports. RADCO is their third party inspector; it visits quarterly to check their records and QC procedures. It's been "a long time" since HUD performed an audit.

Manufacturer 26

Has two new SEBs, one for a wood and foam core wall system and one for an engineered wood I-joist. The SEBs were obtained in January and April of 2002. They sought them because of several SEB requests from builders and insurers. Also has evaluation reports from the model codes, Canadian Construction Materials Center (CCMC is part of National Research Council of Canada), LA, NYC, and states of Wisconsin and New York. A HUD inspector came to the plant early in 2002 for the initial inspection.

Manufacturer 27

Has had an SEB for their foam core sandwich panels for many years. Gets few SEB requests, but users may get SEB information directly from their 20 plants. Also has NES and ICBO evaluations as well as Wisconsin and Texas approvals for this product. Gets a "regular

audit" from a third party auditor for HUD. Thought about certifying another of their foam core products with UM 71b, but only NAHB RC and RADCO are listed inspectors for that UM. Presently use UL for the NES and ICBO evaluation reports and don't want to pay to have a second inspection firm to inspect all 20 plants. Likes having the SEB because it has the name of a government agency on it and people like that. The \$800 SEB renewal cost every three years is insignificant. "I want every piece of paper I can get."

Manufacturer 28

Has had SEB for 15 years and likes it because FHA and VA ask for it. Was audited by HBT (NCSBCS) on October 13, 2000. Used to confer with Sam Hakopian at HUD. Also has NES and ICBO evaluation reports. Web site provides interesting history of this sandwich panel maker (panels up to 8 x 24 ft).

Manufacturer 29

Makes precast foundation walls with EPS board. Company is 16 years old and has built 40,000 foundations to date. Has BOCA evaluation report and WI and NY approvals. An SBCCI evaluation report is pending and they plan to apply for NES evaluation report. Has had SEB since about 1995; now on the third revision. Got SEB when they discovered a niche demand—1 and 2 family HUD-insured housing; HUD builders want to see it. Likes the SEB program.

Manufacturer 30

(Did not return calls)

Engineered Wood I-Joists

Overview:

1. All four manufacturers of engineered wood I-joists with SEBs were interviewed by telephone. All SEBs are current.
2. There are about two dozen manufacturers of engineered wood I-joists (according to APA), so only 15 to 20 percent of such manufacturers have obtained SEBs.
3. The issues are similar to those of the structural panel makers, as noted above.

Manufacturer 31

This combined wood products company has 4 MRs and 2 SEBs. The SEBs are for engineered wood I-joists. Thinks SEBs and MRs have value; their cost is not an issue. Also has ICBO and NCS reports, plus L.A., Dade County, and NYC approvals. “It would be better if HUD accepted the NES reports.”

Manufacturer 32

Engineered wood I-joists. Has had SEB since 1980s and has had no trouble with prompt renewals. Thinks SEBs are redundant; FHA and VA should accept NES evaluation reports. Gets no requests for SEBs, but perhaps sales people do. Their Texas sales office said they'd had a few requests for “HUD approval” a few years ago, but no requests now. Has NES, Canada, NYC, Dade Co, and other approvals.

Manufacturer 33

Primary product is an engineered wood I-beam. Previously had an MR for this product, but it expired in 2000 and it was replaced by the SEB. Says they've had no SEB requests since their U.S. office opened in 2000. Main office handles SEB and other approvals and has them for LA, NYC, model codes.

Manufacturer 34

Has had SEB since late 1970s, with latest renewed in 2/22/01. Also has SBCCI and ICBO evaluation reports. Don't know when, if ever, HUD last made audit, but product is manufactured by others at various locations. Has had few SEB requests, the last one about 9 months ago. Doesn't mind paying \$800 renewal fee “just in case” it's needed, but SEB elimination probably would not affect them.

Log Homes

Overview:

1. All six log home manufacturers with SEBs were interviewed by telephone. All of their SEBs have expired and it's unlikely many will be renewed.
2. There are about 200 log home manufacturers nationwide (*Automated Builder*, August 2002, p. 14), so participation in the SEB program is close to zero.
3. Log homes are assembled on site, like stick-built homes, so the SEB means nothing in terms of code approval, which depends on conventional plan submissions, sometimes with engineering calculations stamped by a registered engineer in that state. An NES report usually doesn't mean anything, either, for the

same reason.

4. Log homes are expensive products and rarely, if ever, do owners seek HUD mortgage insurance, so the SEB is not needed.

5. The only possible reason for log home manufacturers to hold an SEB is for marketing purposes, although one manufacturer said the SEB program wasn't even good for that.

Manufacturer 35

SEB expired 2/02 and they decided to let it lapse because they “got zero requests for it in 12 years.” They don't even think it has sales value. Their average house, with land and construction, costs \$300–400 K. Had no HUD audits in 12 years. Company acts as subcontractor and provides just the structure; M/E/P is by others. They do have SBCCI evaluation report that “may give building inspectors some comfort.” But the report is for a ‘standard’ home and they often modify the home to meet greater snow loads, etc, so good building inspectors also will ask for structural calculations and an engineer's stamp. They have no other evaluation reports or labels since this the home is site-built.

Manufacturer 36

Makes milled log housing systems and ships 75 to 100 units per year to MI, WI, MN, CO, NC, WV, VA, and others. Pretty much a custom product. Unaware of SEB program or the fact that company had an SEB (SEB was due for renewal in May 2002). Do not have any model code evaluation reports, either, and are unaware of them. Like other log home manufacturers, they ship the components and a builder assembles them and takes care of code issues. Sometimes they have to have an engineer from the state in question stamp the engineering calculations.

Manufacturer 37

Let their SEB lapse on 2/2001 because no one asked for it, “it wasn't useful.” Has no model code evaluation reports for same reason. Neither is needed since each house is site-built and has plans and engineering calculations, which satisfies building inspector.

Manufacturer 38

Took 18 months to get renewal—started in late 2000, got renewal in May 2002. Small, family-owned company. Ships 150 precut log sets per year. It has been a “long time” since a HUD inspection, maybe

one in the last 10 years. Has no model code evaluations. Kept SEB just because they advertised that they had it; "once in a while someone asks about it" but the logs are assembled on-site and they have plans and engineering drawings for the building inspector, so NES reports and SEBs are unnecessary. Unaware their SEB had expired.

Manufacturer 38

SEB expired in May 2000 but didn't they know it until we called. They like SEB for marketing reasons, but get few inquiries about it. Has had no HUD inspection for "a long time." Has an ICBO report. Like other site-built log homes, local building inspector looks at plans and engineering calculations, which are sufficient.

Manufacturer 39

Makes custom timber home packages of laminated, interlocking pieces. Ships 20-60 units a year all over the world. High end product. No requests for SEBs. Didn't know their SEB had expired. Has had SEB since early 1980s. May renew but won't know until it's discussed with CEO.

Drainage Systems

Overview:

1. The single manufacturer with an MEB was interviewed by telephone. It gets few requests for the MEB and sees it mainly as a marketing tool.

Manufacturer 41

Makes polyethylene corrugated plastic drain pipes from 3 to 60 inches in diameter. MEB is for a leaching bed piping system, which they've made since 1985. Between 1975 and 1985, they had an MR for a predecessor product. Gets very few requests for MEB, mostly from East Coast. Never has had a HUD audit. Submitted letter for "renewal without revision" along with a check for \$800 on January 22, 2002, but has heard nothing since. Sees \$800 renewal as routine marketing expense. Polled their factory people, who said that they received few MEB inquiries.

SEB Holders Not Contacted

Manufacturer 42

(no telephone or Internet listing)

Manufacturer 43

(no telephone or Internet listing)

Manufacturer 44

(went out of business in early 2002)

Manufacturer 45

(no telephone or Internet listing)

Manufacturer 46

(no telephone or Internet listing)

Manufacturer 47

(no telephone or Internet listing)

Manufacturer 48

(no telephone or Internet listing)

Manufacturer 49

(no telephone or Internet listing)

Manufacturer 50

(no telephone or Internet listing)

Appendix B
MATERIALS RELEASE PROGRAM:
Manufacturer Interview Summaries, by Product Group

The MR interviews were conducted by telephone in August and September 2002.

NES, ICBO, SBCCI, and BOCA are acronyms for organizations that until recently evaluated building products for code compliance. The International Code Council's Evaluation Services (ICC-ES) now performs this task. Builders and code inspectors rely upon these evaluations to ensure product compliance in the field.

Exterior Walls and Wall Coverings

Manufacturer 51

Produces vinyl siding, but steel siding was a major product for company in the 1970s and 1980s. At the time, the TSP program was important because there were no national standards for steel siding. The MR certification allowed their siding to become recognized as a credible building product. Now steel siding is a tiny part of the market and company has shifted to vinyl siding. Although loss of the program would not affect them, they felt it still plays a role for producers whose products don't have national standards.

Manufacturer 52

Single-family homes are not part of the company's user base because of special techniques and design considerations required of builders and contractors. MR certification is an asset for promoting the product for multifamily use because it provides extra credibility. Company is in the final stages of getting an ICBO certification.

Manufacturer 53

Received MR certification about 35 years ago. Aware of only one inquiry about certification. Because product is not used structurally, there has been no value to counter the cost and trouble of its MR certification. Supports consolidation of NES and MR programs.

Manufacturer 54

Product has a 30-year warranty when installed according to specifications. Not commonly used in low-income housing. Has had MR at least 10 years. The MR is not requested but company wanted an additional certification. They can't say how much business, if any, originates from the MR and there would be no apparent impact if the program stopped. Nonetheless, they will

continue to renew. The product has evaluation reports from NES and ICBO.

Manufacturer 55

Company got MR 12 years ago to qualify for HUD housing projects. Also has ICBO fire test report. Product already has warranty, but they think the MR warranty requirement is a good thing because it enforces a minimum level of quality for materials used in low-income housing. If anything, they think there should be more frequent inspections of producers to verify quality.

Manufacturer 56

"Our competition referenced its MR acceptance in its product literature, so our marketing department asked that we match the claim [although there were no requests for MRs or SEBs from builders, lenders, or insurers]. Marketing insisted that we be able to say 'yes,' too. We do get frequent queries regarding our NES evaluation reports, but none regarding the MRs and SEBs. The HUD documents are not as clear as the NES reports in intent. The '20-year removal and replacement' provision was imposed by HUD years ago. We were instructed to add the warranty in order to receive acceptance. We have asked, more than once, for the source, reference, or standard employed to set the warranty period, but none has been offered. As far as we can tell, the warranty is arbitrary. We were once given warning that the warranty would need to be extended to 30 years to match the full-length of a typical mortgage, but there was no follow-up and it remains as before. Product certification is an effective way for us to get our product capabilities to building code decision-makers. The NES evaluation report is effective in this, but the MR certification is not perceived the same way."

Manufacturer 57

Product has MR as well as evaluation reports from SBCCI, ICBO and BOCA, and one is being obtained from NES. Product comes with a warranty independent of that required by HUD. The MR plays an insignificant role in company's business and there would be little impact if the program were discontinued.

Manufacturer 58

Have not received request MR in past two years, at least. Company relies on model code evaluation reports and has sought and received such certifications since the early 1980s. Competitors are also known to rely on model code reports. We do not know if any of our competitors has obtained HUD acceptances. “The renewals of the MR have not been too hard, but our first attempts were inefficient in that we were not sure whom to contact at HUD. Communication has continued to be somewhat difficult. The renewal procedure typically takes a couple months: we send in the request, receive back a draft report, and then resubmit for final acceptance. The biggest confusion was sending the technical submissions and payments to different offices, and insuring that both processes were coordinated.”

Carpet

Manufacturer 59

Company’s products are used for commercial and institutional buildings. Obtained an MR a few years ago because they were told their product line, which had a non-standard thickness, should meet HUD requirements. The cost of certification, including testing and fees, was a major expense. The company isn’t well informed about the MR program but thinks it helps to be certified, even though the product is rarely used in the housing sector, because it is a plus to show potential clients an MR certificate. At the same time, if the program was discontinued it wouldn't affect them. Have wondered about the possibility of having their commercial grade products HUD-certified for the residential market; if it opened up access to the housing market, it would be extremely useful.

Manufacturer 60

Product has had an MR since 1998. Company says durability/warranty is not a problem but commented on the expense of testing and the time it took to get the certificate. Product also has NES evaluation report. Company’s product manager has been in the industry a long time and believes HUD standards have been vitally important for an industry that has not developed standards on its own. Only HUD provides minimum standards for low-grade carpeting. He thinks the MR program is a necessity—it protects homeowners and pushes producers to higher standards of quality.

Manufacturer 61

Company is one of the top producers of carpet and flooring. Their MRs gave their products the credibility to compete in the market and allowed them to be specified for HUD housing. This has brought them a

significant amount of business. It also provides an opportunity for manufacturers to provide valuable, proven, and affordable products. But there have been problems recently because of changes in HUD personnel, the lack of consistent technical reps at HUD, and poor communication concerning upcoming renewals. The time required for HUD to update standards was incredibly long and product changes and improvements of any sort are subject to excessive red tape. If the MR program were discontinued without a suitable replacement, many products would be knocked out of the HUD market. But HUD must improve its service, responsiveness, and ability to quickly certify product enhancements.

Manufacturer 62

Company’s three MRs are for basic carpet materials (fibers), not building products. Believes the MRs and UMs are the only avenues carpet manufacturers have for maintaining minimum carpet standards and for introducing new carpet technology. Company unaware its three MRs had expired, even though it had talked to HUD the week before the interview.

Flooring

Manufacturer 63

Company maintains its three MRs. Don’t know what impact the program has on sales, but wonders why a separate certification for HUD is still necessary. If the warranty is important and if industry standards already require good warranties, there’s no need for the MR program.

Manufacturer 64

Employees involved in the MR program are no longer with company. There is no knowledge of how or why the product was certified. There is no evidence that MR certification has played any role in sales.

Manufacturer 65

Has two MRs but there are few requests for them. Also have ADA and FHA certifications. When its flooring products were first developed, there were no industry or building code standards. HUD offered an avenue for credibility but its guidelines were ambiguous and producers had to figure out their own standards for durability. NALFA, a four-year-old flooring industry association, has since developed standards and tests for resistance to fading, abrasion, impact, and heat. Working with HUD went well and the HUD contact was helpful. The only problem, besides the amorphous

guidelines, was lining up a third party evaluation because at the time there was only one qualified tester for their products. That delayed certification by about ten months. The impact of the program on the sales of their products is hard to measure. One product is a more expensive one that usually doesn't go into HUD housing; the other is aimed at the lower cost market. However, sales have been affected by the strong dollar that has made European imports of similar quality affordable. Sees a definite value to HUD certification because of the durability requirements but, now that industry standards have been developed, company thinks HUD should accept those instead. If HUD stops the program, there would be no direct impact on sales, but HUD should have a transition period or alternative program that combines durability requirements with accepted industry standards.

Flooring Underlayment

Manufacturer 66

Company's products are used in multi-family homes, condos, hotels, and apartments. They provide for floor leveling and radiant floor systems. One product has had an MR for about 24 years; also have evaluation reports from ICBO, NES, BOCA, New York, Los Angeles, San Francisco, Rhode Island, and Dade County. Other product has a recent MR, as well as reports from ICBO, BOCA, SBCCI, New York, and LA. Currently, HUD work accounts for a small fraction of company's business, but it maintains the MR to qualify for projects if they come up. The HUD warranty requirement is important because it increases the inherent value of the products and also requires correct installation by contractors. Company is critical of HUD's bureaucratic slowness and the overall non-user- friendliness of the program. Product changes, from the name of the product to any fundamental improvements of it, are so difficult to process that company holds back its newer products from the MR program. Although company wouldn't be affected if the program stopped, the program helps keep producers and their products accountable.

Manufacturer 67

Company recently obtained an MR to add to new product's credibility. Product also has reports from ICBO and NES, with others in progress. The company already includes warranties as part of the way it does business. The MR certification process took over a year and they aren't sure if it has been completed. Found the process slow and bureaucratic. It is too early to tell whether the MR will be an important sales factor.

Manufacturer 68

"The HUD MRs put us ahead of our competition. We seek any and all certifications because they provide recognition in the marketplace, especially for our underlayment businesses, which are highly competitive. We manufacture premium products, particularly in comparison to our competition, and want all building professionals to be fully aware of them. We have had HUD acceptances since at least 1991 for one product, since 1989 for another. We did not sense any particular emphasis on durability in the MR process. Our standard product warranty is five years, but we can extend it under special circumstances. Without checking, we expect that our MR warranty is 5 years."

Engineered Lumber

Manufacturer 69

"We obtained the MR so that our products could be used in HUD projects. There was no external request. We simply wanted to maximize the markets for our products. The requirements across certifications are similar, on average. There are no special requirements for the MR. We simply make copies of materials sent to the model codes and submit them to HUD. We seek to work directly with the same NES technician as often as possible. This office is responsible for maintaining the currency of all our certifications. As long as our model code evaluation reports are current, code officials seem satisfied, though they may ask an occasional technical question. There was no specific reference to durability in our HUD certification process. Our standard consumer warranty is for the 'life of the structure.' The model code approvals go through a rigorous process. The MR certifications are grouped with less critical second-tier municipality/county approvals. In all there is a certain level of duplication of effort. Ideally, the process would be 'if you have an NES report, you are okay.' Our recommendation would be to consolidate the administrative end of the process. In a nutshell, accept national reports as sufficient for HUD requirements."

Manufacturer 69

Company has had MR since 1994. Because the product competes with other established products, the MR provides additional credibility, although only HUD actually requires it. Warranties are not a problem, since company already has them for its products. On the other hand, durability was not an issue for the wood products industry early on, so HUD's warranty requirement was a good thing. HUD's evaluation team was not as rigorous as it should have been, and it couldn't properly evaluate products that were technically complex or needed

complex testing. The company's experience with HUD's certification and renewal process was that it was overly bureaucratic. It also had to work with different people each time, further slowing things down and making for a lack of continuity. If HUD hadn't arranged for NES to manage its certifications, the company would have recommended it. The product also has an ICBO evaluation report. Product evaluations should be consolidated in a way that multiple certifications aren't needed. The loss of the MR program wouldn't seriously affect company as long as there is an alternative program, such as the NES, that is recognized by HUD and other building authorities.

Manufacturer 70

The MR has been a benefit in the past, but currently has not had a significant impact. The product has evaluation reports from NES, ICBO, Los Angeles, New York City, and Wisconsin. The MR renewals went smoothly, although they also took a lot of time. The requirement of a MR is redundant, particularly if the product has other evaluation reports already and the evaluation is administered by NES. If the program was discontinued, the product would not be affected. Company suggests switching over to NES.

Manufacturer 71

Company recently obtained MR to qualify for federally-financed projects. It's too soon to judge its impact. The product also has evaluation reports from ICBO, BOCA, and SBCCI. Obtaining the MR was tedious and bureaucratic. The warranty was not a problem because the product already had one. Company thinks the program is valuable for products that are outside the regular building codes, but when products are covered by model code evaluations, HUD should accept them. Outside the warranty, they see no particular strengths to the program. He also didn't think the MR added much in the way of credibility if a product already was accepted by the model codes. He'd prefer a consolidation of evaluations. If HUD discontinued the program, company would not be affected. To improve the program, HUD should accept other evaluation reports but add a warranty requirement.

Manufacturer 72

"We initiated our application without any outside request. The firm has always supported product evaluation by independent certification organizations such as the model codes. In terms of content, the MR and SEB certifications are very similar to the model code evaluation reports. We use essentially the same submissions for all. Internally, no one has ever asked a question about the HUD acceptances and we have never had a question about it from outside the firm. The HUD and model code certifications increase the confidence of building code officials and builders. Consumers have no interest in them. The primary advantage to our industry is they set a minimum bar for new entrants. All of the current product certifications are highly redundant—MRs, model codes, NYC, State of Wisconsin, Dade County, LA—they all require (and receive) essentially the same information. We would encourage centralization and consolidation. HUD starkly emphasizes the redundancy of certifications by using the NES as its contract evaluation service—the same staff end up reviewing the same information for separate approvals."

Manufacturer 73

"We have known for a number of years about the TSP program acceptance letters but had not seen any real need to obtain them. One of our competitors had a Materials Release for their product and used the fact to discourage use of our product. We wanted to make sure we had one, too. We just filled out the forms that were sent without reference to the underlying requirements. The process was frustrating. We have had (and maintained the currency of) an NES evaluation report for our products for over 10 years. HUD contracts with the same organization, NES, that is responsible for issuance of the NES report. Our approach was to, reluctantly, manually photocopy 10 years of NES submissions and send the entire collection of copies back to NES, again, for their 'rubber-stamp' acceptance. Altogether, we spent \$500 on photocopy costs, \$4,000 for the MR fee, and a great deal of time for a report that we have not as yet received in published form, except for a single fax of the original acceptance letter. The NES actually requires action on our part in satisfying test and other requirements; HUD does not. The only additional HUD requirement, beyond the NES data mentioned above, which does not address service-life, was the imposition of 20-year warranty language in the MR acceptance application. No testing was required, just the assertion of the warranty. We were never asked to produce any information related to service-life durability. Product manufacturers are constantly adapting their products to

market requirements, with the change cycle typically only 3 to 6 months long; bureaucratic acceptances are always behind.”

Plumbing/Piping

Manufacturer 74

The product has had an MR since about 1998. The piping materials are guaranteed for 25 years and the fittings for 5 years, although they are expected to last between 50 and 100 years. The product also has evaluation reports or certifications from the National Sanitation Foundation, Canadian Standards Association, International Association of Plumbing and Mechanical Officials, and ICBO. Few customers ask about the MR. They are satisfied by the other evaluation reports. However, the product is popular in modular and manufactured housing. It is also an important product to qualify for other HUD housing because it is a high quality alternative to more expensive plumbing materials. The company’s experience in certifying its product with HUD was painless, except for some confusion about where to submit documents. The interaction with HUD personnel was good and recertification was simple. Discontinuing the program would not affect the company much, since few specific requests for its MR are received.

Manufacturer 75

This product gets to the marketplace through plumbers rather than roofers, although it is roofers who install it. When contractors work on HUD housing, they sometimes call to check for the MR but otherwise the company isn't aware of any direct impact or value of the program.

Manufacturer 76

This product line is used for domestic water and hydronic and radiant heating systems. It got an MR in 1996 to qualify its products for HUD construction and for the additional marketing value. It also has reports from ICBO, BOCA, SBCCI. The warranty is an important feature of the program. A HUD auditor showed up for the MR renewal, but the company suggests more frequent evaluation of manufacturers and more specific production guidelines. It thinks the program has loopholes and that MR listings should be audited, reviewed, and verified against disciplinary lists of other organizations.

Manufacturer 77

The MR was extremely important when the product was first developed. At the time, polybutylene was the accepted plastic pipe technology. The company’s products are currently certified by a number of industry groups including IAPMO, CSA, NSF, and ASTM. The HUD program has been very beneficial; they five or six calls a year for certification information. They assume there are other builders who already have the certificates on file and are specifying their products. The MR was obtained in 1996. The process went smoothly. A recent renewal with product improvements/modifications went less smoothly. Paperwork was lost and personnel changes slowed things down. The MR was important because there were, initially, no standards for the new product. Currently there are numerous industry organizations that have developed standards. The program is still important, but it shouldn't duplicate other efforts. It could merge the HUD durability/warranty protection of qualified products with accepted industry standards.

Roofing

Manufacturer 78

The product line has had an MR since the late 1980's to qualify for HUD housing projects. The initial certification and subsequent renewals were smooth and the company received good support from HUD. Projects that specifically require the MR are not a major part of sales. If HUD stopped the program there wouldn't be a serious impact. There have been few inquiries about the MR. The product is also certified by UL, FM, and Metro-Dade. An SBCCI evaluation was not renewed, but the company may be forced to get an NES evaluation report. The company commented on the cumulative expense of the certifications and supported a combined MR/NES certification.

Manufacturer 79

The company’s products carry a warranty that usually exceeds MR requirements. It is hard to judge how much business comes from projects that require the MR, but it has helped customers specify their products. The company is not familiar enough with the program to comment on its strengths or weaknesses, but it feels that it is good for the government to identify sound, reliable products with strong specifications. But, if the MR program is discontinued, the company wouldn't feel it. Its products also have evaluation reports from Dade County, BOCA and FM. Because the company is so big, multiple certifications are not a problem.

Manufacturer 80

The product is approved by SBCCI, FM, Dade, and UL. The MR has been important only when their product is specified for a HUD project. Over time, this has become a small part of their business and the MR has had very little impact since other evaluation reports hold greater credibility. The HUD requirement for durability was not a problem but standards for roofing materials are high, and good warranties are already a feature of the company's products. MR certification and renewals went smoothly. The company's estimate of HUD-oriented business is 2% or less and the impact on the company would be negligible if the program were discontinued.

Manufacturer 81

No one at the company knew anything about the MR Certification. They think it was done years ago at the request of customers who wanted to use the products for HUD projects.

Manufacturer 82

Don't know a thing about the MR. Someone probably did get it years ago and somehow it has been automatically renewed. The product is an older one that has been superceded by newer, better versions.

Concrete

Manufacturer 83

The company obtained two MRs in 1997 because of a request from a contractor in Puerto Rico. Minor mistakes were made in the second MR by HUD and it is supposedly being revised, but they haven't heard back. A HUD contractor recently inspected their plant and did an excellent job. Their products also have evaluation reports by ICBO and NES.

Waterproofing

Manufacturer 84

The company received an MR in 1989 and it was an important validation of their product. An improved product has evaluation reports from BOCA and Architectural Testing, but the company was unable to get a revised MR because of "bureaucratic problems at HUD."

Appendix C
USE OF MATERIALS BULLETINS PROGRAM:
Administrator Interview Summaries

The UM interviews were conducted by telephone in August and September 2002.

Strikeouts indicate inactive UMs for the administrator under discussion.

Akron Rubber Development Lab (UM 60a)

Currently has one customer to certify for UM 60. Years ago it had to send test data to HUD, but at some point HUD quit asking for it. (NCSBCS site visit report dated 6/29/00, which found: no records of materials submitted, no training of inspectors, no inspection records, no written procedures)

American Lumber Standards Committee (UM 38j, 48)

ALSC certifies lumber manufacturers and approves their grademarks. UMs 38 and 48 list the ALSC-certified grademarks that HUD deems acceptable for use in FHA-insured housing. ALSC has no contact with HUD. (But NCSBCS has a site visit report dated 4/16/01)

APA/The Engineered Wood Association (40d)

APA checks for UM 40 conformance at 112 mills (35 companies). UM 40 includes a unique “performance standard” because “HUD goes its own way and won’t use what others use.” UM 40 was created to replace dozens of MRs for plywood products that were difficult to deal with. APA considers UM 40 a “necessary evil” that the manufacturers have to go along with to meet FHA financing requirements. Updates are “very frustrating;” APA did a lot of work in 1998 to update UM 40 but the updated version was never published by HUD. Certification involves testing 10 panels every 3 months for each mill; the panels are pulled from the mills by APA inspectors and sent to APA for testing. The industry wouldn’t miss UM 40 if it were withdrawn; it would use the product standards and tests that everyone else uses. Regarding SEBs in general, there are many wood I-joist manufacturers—well over a dozen—but only a few have SEBs (four, according to our SEB interviews) and wood I-joists probably go into FHA-insured homes whether or not they have an SEB. (NCSBCS site visit report dated 9/28/00)

Applied Research Laboratories (UM-52b)

Does not currently certify any manufacturers for UM 52. (NCSBCS site visit report dated 8/25/00)

Architectural Testing Inc (UM 82b, 111),

Does not currently certify manufacturers under UM 82 or UM 111. Recently had visit by NCSBCS, which prompted ATI to send letter to HUD saying that although they’re not currently doing UM 82 and 111 certifications, they’d like to keep HUD administrator status. (NCSBCS site visit reports dated 6/5/00 and 8/9/02)

Associated Laboratories Inc. (ALI) (UM 44d, 72b, 82b, 111)

ALI certifies 1 manufacturer for UM 44 (carpet) and 12 for UM 72 (carpet cushion). These two UMs are important because the carpet industry has no other standard. ALI certifies 180 manufacturers for sealed insulating glass, but only a few ask for UM 82 coverage since the rest of the industry accepts the ASTM standard E744 certification (E744 forms the basis for UM 82). Similarly, ALI certifies 310 window and door manufacturers, but only a few request UM 111 coverage because the rest of the industry uses the AAMA/NWWDA standard 101/I.S.2 certification (101/I.S.2 forms the basis for UM 111). AAMA certification is much more rigorous than UM 111. (Found no record by NCSBCS of site visit)

Composite Panel Assoc. (UM 70b), 8/27/02,

CPA certifies one or two mills for UM 70 (particleboard stair treads); there is very little demand for UM 70 certification. Other mills make particleboard stair treads but don’t seek UM 70 certification (CPA is the only HUD Administrator for UM 70). CPA also certifies particleboard underlayment and manufactured home decks, but not for HUD. (NCSBCS site visit report dated 6/20/00)

CSA Inc., Toronto, Ontario, (UM-73a)

CSA certifies many (“about 300”) manufacturers of plastic bathroom fixtures for Canadian and American use under the ANSI Z124 standards; HUD accepts the CSA label, although the label does not mention UM 73. CSA is therefore not considered an active UM 73 administrator. (NCSBCS site visit report dated

8/2/00)

Hardwood Plywood and Veneer Assoc (UM 40d, 52b)

HPVA does not currently certify manufacturers under either UM 40 or UM 52, and it asked that it be removed as an administrator for UM 52 during the NCSBCS audits of 5/12/00 and 8/07/02. It is now questioning why it should remain an administrator for UM 40. When HPVA does certify manufacturers, it uses different standards. (NCSBCS site visit report dated 5/12/00)

Intertek Testing Services (ITS), Madison, WI, office (UM 52b, 89a, 111)

The number of manufacturers ITS certifies for each of the three UMs is as follows: UM 52: 0; UM 89: 3; UM 111: 2. ITS used to test under UM 52 but no longer does so. The window manufacturers use the industry organizations, such as AAMA and WDMA, for UM 111. “There is a big overlap between the HUD UMs and other standards, and the UMs are only called for in regard to HUD housing.” (NCSBCS site visit reports dated 6/30/00, 7/6/00, 7/19/00, and 8/1/00 for the applicable ITS offices)

Intertek Testing Services (ITS), Cortland, NY, office (UM 82b, 84a)

This ITS office doesn't test for either UM 82 (sealed insulating glass) or UM 84 (solid fuel room heaters and stoves) in their Cortland, NY, office; suggested calling the Madison, WI office. Madison office said it does tests for sealed insulating glass and solid fuel heaters and stoves, but not under the HUD program.

Intertek Testing Services (ITS), Norcross, GA, office (UM 44c, 72b)

This ITS office certifies 7 plants of 7 manufacturers for UM 44 (carpet) and 36 plants of 7 manufacturers for UM 72 (carpet cushion). It confirms what others say: there is no industry standard for carpet and carpet cushion so everyone relies on the HUD UMs.

Keystone Certification Inc. (UM 111)

Keystone applied to be administrator for UM 111 in February 2002, “because Keystone is new and the UMs have been around a long time” and because they wanted to be able to say “yes” if asked if they could certify to UM 111, even though there is currently little or no demand for such certification (the model codes require the AAMA/NWWDA 101/I.S.2 certification program for aluminum, vinyl, and wood

exterior windows and doors). Keystone found the HUD application process difficult because “so much information was out of date and no one at HUD seemed to know what information was needed.” It suggests that HUD use the ANSI certification program because “it is meaningful and thorough, conforms to ISO 9000, and has annual on-site reviews.” (NCSBCS site visit report dated 3/10/02)

MEA (UM 44c, 72b)

MEA certifies 11 manufacturers for UM 44 (carpet), among them the “big three:” Shaw, Mohawk, and Baulieu of America. It also certifies 7 manufacturers for UM 72 (carpet cushion). MEA only does carpet-related certifications, along with ITS's Georgia office and ALI. MEA feels that UM 44e is the “heart of the carpet program” and vitally necessary for the middle-to low-grade carpet sector, since it is the only standard for this class of carpet. Otherwise, it would be “mass confusion out there.” Shaw alone “has 600 carpet styles certified” under UM 44. UM 44 needs upgrading; MEA and the carpet industry worked with Les Breden on this in 1998 but HUD didn't publish the updated version. Shaw and others also have MRs for some of their nonstandard products that aren't covered by UM 44. (Note: Much of this echos what the carpet companies said in the MR interviews; see also the ITS Georgia office MR interview) (NCSBCS site visit report dated 5/9/00)

National Accreditation and Management Institute (UM 82b, 89a, 111 ?)

NAMI reported, by email, that NAMI certifies 86 companies under UM 111 (windows), 22 companies under UM 82a (sealed insulating glass), and 25 companies under UM 89 (insulated steel doors). It said the NAMI label includes the UM number for those products produced under the HUD UMs. But NAMI's company certification numbers are questionable because we were never able to talk directly to staff and we were barely able to locate the organization (it recently moved from West Virginia and has no website). What NAMI is probably doing is certifying door and window installers for these companies (several window manufacturer websites claim NAMI installation certifications, and NAMI's name lends itself to this interpretation). Nancy Kokesh from the Madison, Wisconsin, office of ITS and a person who is familiar with the steel door industry, says she's never heard of NAMI. Jeff Wherry of Wherry Associates (440 899 0010), who manages the Steel Door Institute and the Insulated Steel Door Institute is not aware of NAMI, either. (NCSBCS site visit report dated 6/9/00)

NAHB Research Corporation (UM ~~60, 71, 73a, 111~~)

The NAHB RC label is accepted by HUD for UM 73, plastic bathroom fixtures. NAHB RC is also HUD Administrator for UM 60, 71, and 111, but does not test for these UMs at present. It receives income from selling labels to manufacturers or licensing manufactures to do their own labeling. According to the list on the NAHB RC website on 8/27, NAHB RC certifies 35 manufacturers of cast polymer plumbing fixtures, 30 manufacturers of fiberglass reinforced plastic plumbing fixtures, and 17 manufacturers of solid surface plumbing fixtures. This involves visiting the bathtub and toilet manufacturers every 6 months to obtain test samples and visiting lavatory manufacturers every 12 months. NAHB RC tests to ANSI Z124.1 – 124.4 standards. What would happen if UM 73 went away? “Nothing.; things would go on the same” because the rest of the industry conforms to the model code reports, which use the same ANSI-based tests. (NCSBCS site visit report dated 6/2/00)

National Sanitation Foundation (UM ~~76~~ ?)

NSF claims to certify manufacturers for UM 76 (water supply piping) as well as for “78 and 79a” but these latter two UMs don’t currently have administrators and NSF did not seem familiar with UM 76. It referred to the NSF website, where NSF certified products and services are listed. Under the “Plumbing System Components” section, hundreds of products and manufacturers are listed but there is no mention of UM 76 or its requirements, although many of the same ASTM standards are referenced. (NCSBCS site visit report dated 11/16/00)

Pittsburg Testing Laboratory (Professional Service Industries) (UM 40d)

PSI certifies 5 mills for UM 40. PSI thinks the HUD certification is good because it provides a U.S. government imprimatur; this is particularly true for overseas work, since in most countries the government tests and certifies products, and the UM adds to the clients’ comfort zone. (NCSBCS site visit report dated 9/28/00)

[Note: Pittsburg Testing Lab is unlisted but was eventually found under PSI]

PFS Inc. (UM 40d, 60a, ~~111~~)

PFS currently certifies for UM 40 and UM 60, but not UM 111. Covered manufacturers are listed on their website under “Downloadable PDFs,” then “Product Listing,” then Section 15 for UM 40, Structural Use

Panels (2 mills) and Section 15 for UM 60, Construction Adhesives (13 manufacturers). PFS’s internal count is 3 mills for UM 40 and 11 manufacturers for UM 60. The issue of HUD labeling was discussed at the September IAC (Industry Advisory Council of the Structural Wood Manufacturers) meeting, since the usefulness of the HUD label was being questioned—no one seems to be using it for HUD one- and two-family housing. The IAC decided to make no recommendation on the matter, since the HUD label is still viewed as a marketing opportunity. (NCSBCS site visit report dated 9/6/00)

RADCO Inc (UM ~~40d, 60a, 71b, 73a, 101~~)

RADCO does no certification under UM 40, 60, and 73. It certifies one manufacturer (Owens-Corning) of EPS sheathing under UM 71 and previously certified one EFIS manufacturer (Texas EFIS) under UM 101, but that certification is not currently active. RADCO once certified about 10 manufacturers of EPS sheathing under UM 71. (NCSBCS site visit report dated 11/29/00)

SGS U.S. Testing (UM 73a)

SGS says they certify 18 manufacturers of plastic bathroom fixtures under UM 73. (NCSBCS site visit report dated 11/20/00)

Solar Rating and Certification Corp (UM ~~100~~)

SRCC says they certify 14 manufacturers of solar hot water heating systems under the SRCC label, but none under UM 100. They talked to Vince Tang on 6/25/02 about rewriting the UM to make it “more realistic;” the UM has a full 5-year warranty provision that includes whole-system parts and labor, something no one in the industry offers. They haven’t heard of anyone using, wanting, or even asking about UM 100. There are less than two dozen solar manufacturers in the United States at this time. SRCC is only administrator for this UM. (NCSBCS site visit report dated 10/17/00)

Southern Pine Inspection Bureau (UM 48)

SPIB is the rule-writing organization for southern pine lumber. Like ALSC, it certifies lumber manufacturers and approves their grademarks. UM 48 lists the grademarks that HUD deems acceptable for use in FHA-insured housing. SPIB says it has no contact with HUD, but NCSBCS has a recent site visit report. (NCSBCS site visit report dated 8/21/00)

Southwest Research Institute (UM 89a)

SWRI does not currently certify anyone under UM 89a, but it has kept its HUD administrator status. NCSBCS visited them a year or so ago to check their procedures. *(NCSBCS site visit report dated 9/14/00)*

that it be dropped as administrator for UM 52 and pointing out that the reference standard it contained had been out of print for 3 years. The 101/I.S. 2 standard is used by the model codes and throughout the industry. *(NCSBCS site visit report dated 3/9/01)*

Timber Products Inspection and Testing Services (UM ~~40d~~, 48)

Regarding UM 48 on treated lumber, TPITS says they haven't certified anyone "for years" and says UM 48 is substantially out of date in terms of the standard referenced, the chemicals used, and other problems. See ALSC interview, above. Regarding UM 40 on wood structural panels, "years ago" TPITS certified Coastal Lumber but no one since then. Everyone else uses the Department of Commerce PS-1 and PS-2 standards for structural and nonstructural plywood. *(NCSBCS site visit report dated 9/26/00)*

[Note: The 503 254 0204 number given by HUD for TPI was for an apartment building in Portland, Oregon. The phone company had no listing for TPI in Portland for this company and TPI had no web listing in Google. Another administrator provided the full name of the company and its current location in Georgia.]

UL (UM ~~84a~~)

UL doesn't currently certify any manufacturers under UM 84 (solid fuel stoves and heaters). NCSBCS site visit notes say that UL currently performed no certifications under UM 84 but wished to keep its status as HUD administrator. *(NCSBCS site visit report dated 11/21/00)*

Universal Laboratory Inc. (UM 73a)

ULI certifies "about 30" manufacturers for UM 73 (plastic bathroom fixtures). It likes the UM 73 program and thinks it helps the industry. If the HUD standard is dropped, "manufacturers could be at the mercy of organizations that could dominate the testing process to the detriment of the industry." Also believes government's presence in this area helps keep things fair. *(NCSBCS site visit report dated 9/23/00)*

Window and Door Manufacturers Association (WDMA), (UM ~~52b~~, ~~111~~)

WDMA certifies one wood flush door manufacturer under WDMA TM-6 but none under UM 52; it certifies about 15 manufacturers of windows under ANSI/AAMA 101/I.S.2-97 but none under UM 111. WDMA wrote a letter to HUD dated 9/21/01 asking

Appendix D USE OF MATERIALS BULLETINS PROGRAM: UM Descriptions and Comments

The following descriptions are based on telephone interviews of the UM administrators conducted in August and September 2002.

The acronyms in this section, such as DOC, APA, IAPMO, NSF and ANSI, represent nationally recognized standards and trade organizations.

UM 17c, Concrete Roofing Tile, 1974 (no administrator)

UM 25d, Fasteners, 1973 (no administrator)

UM 38j, Lumber Grade Marking, 1998 (1 inactive administrator)

UM 38 requires a grade mark “from a certified grading agency recognized by the American Lumber Standards Committee.” But ALSC claims to have no contact with HUD, even though it’s listed as the sole UM 38 administrator.

Comment: UM 38 requires nothing more than a certified lumber grade mark, which is based on current industry standards such as DOC PS-20 and identical to that required by the model codes. UM 38's one administrator of record, the American Lumber Standards Committee, says it is not associated with HUD.

UM 40d, Plywood and Other Wood-Based Structural Use Panels, 1990 (3 active administrators, 3 inactive)

UM 40 certification requires a label from an approved UM 40 administrator, including a statement of conformance to UM 40; conformance to Department of Commerce (DOC) standard PS-3; the testing of 10 panels every three months from each mill in accordance with APA Standard PRP 108; and an inspection of each mill every three months. The three active administrators for UM 40 are APA/The Engineered Wood Association, Pittsburg Testing Laboratory, and PFS. According to APA, “HUD goes its own way and won’t use what others use; UM 40 was created to replace dozens of MRs for plywood products, which were a real pain.” APA considers UM 40 a “necessary evil” the manufacturers have to go along with to meet FHA financing requirements. “Updates are very frustrating; APA did a lot of work in 1998 to update UM 40 but the updated version was never published by HUD.” “The

industry wouldn’t miss UM 40 if it were withdrawn; it would keep using the product standards and tests that everyone uses it now.” Regarding the HUD SEBs, APA notes that there are dozens of wood I-joint manufacturers but only a few have SEBs [four, according to the SEB interviews] and APA assumes that wood I-joists are going into FHA-insured homes whether or not they have an SEB. The **Pittsburg Testing Laboratory** interviewee liked the HUD certification “because it has the name of a U.S. government agency.” This is thought to be particularly true for overseas work, since in most countries the government tests and certifies products, so this adds to the foreign clients’ comfort zone.” The **Hardwood Plywood and Veneer Association**, an inactive UM 40 administrator, is currently questioning why it should stay involved with UM 40; it previously asked to be dropped as an administrator of UM 52.

Comment: UM 40 appears to duplicate the DOC PS-1 and PS-2 grade marking and certification system used by the rest of the industry and required by the model codes. Three of the six UM 40 administrators are inactive. APA, the largest player in the wood structural panel industry, wants to know why HUD needs its own certification process. PFS believes that the UM 40 grade mark is ignored by HUD during the mortgage insurance process. HPVA will probably ask to be dropped as an administrator. The one positive comment about UM 40 was from the Pittsburg Testing Laboratory, which believes the stamp of a U.S. government agency on a product helps in the export market.

UM 44d, Carpet, 1993 (3 active administrators)

UM 44 requires carpets to be stamped with a mark from an approved administrator, including a statement of conformance to UM 44; conformance to the technical requirements of UM 44; the testing of three samples of each carpet type every six months; and a twice-yearly quality review of each manufacturer’s quality assurance procedures. The three active administrators for UM 44 are Associated Laboratories, Intertek Testing Services, and MEA. **Associated Labs** believes the UMs are important because the carpet industry has no other standard. **Intertek** says that there is no industry standard for carpet and carpet cushion and that everyone relies on the HUD UMs. **MEA** thinks UM 44 is the “heart of the carpet program” and “vitally necessary for the middle-to-low-grade carpet sector,

since it is the only standard for this class of carpet; otherwise, it would be mass confusion out there.” Shaw alone has 600 carpet styles certified under UM 44. “UM 44 needs upgrading.” MEA and the carpet industry worked with Les Breden on this in 1998 but HUD didn’t publish the updated version. Shaw and others also have MRs for some of their nonstandard products that aren’t covered by UM 44.

Comment: The carpet industry needs and wants UM 44 because there is no comparable industry certification program. UM 44 and its counterpart, UM 72 for carpet cushion, are the only UM bulletins that appear to be necessary to industry and consumers because they provide minimum carpet and underlayment quality standards that do not exist elsewhere.

UM 48, Treated Lumber and Plywood, 1970 (3 inactive administrators)

UM 48 is a lumber grade marking program, with HUD accepting grade marks certified by the American Lumber Standards Grading Committee (see the commentary under UM 38). Acceptance is based on “Quality Control Procedure 101” of 1970 [only a 1970 supplement to UM 48 is available on the HUD website; the base UM is not, so it is unclear what the complete technical basis is for UM 48]. None of the three administrators listed for UM 48 (American Lumber Standards Committee, Timber Products Inspection and Testing Services, and Southern Pine Inspection Bureau) claim to be involved in administering UM 48. **ALSC** says it certifies lumber manufacturers and approves their grademarks and does not work with HUD. **TPI** says it “hasn’t certified anyone for years” and that UM 48 is “way out of date in terms of the standards referenced, the chemicals used, and related problems.” **SPIB** is the rule-writing organization for southern pine lumber and, like ALSC, says it does not work with HUD.

Comment: No manufacturers request certification under UM 44 and it isn’t used in the industry. Its three administrators claim they are not involved with the UM program. The model codes require treatment in accordance with American Wood-Preservers Association standards and grade marks in accordance with the American Lumber Standards Treated Wood Program.

UM 52b, Wood Flush Doors, 1975 (no active administrator, 4 inactive)

UM 52 certification requires a label from an approved UM 52 administrator; conformance with National Woodwork Manufacturers Association (now the Window and Door Manufacturers Association, or

WDMA) standard I.S.1 [this standard no longer exists]; a certification program that complies with ANSI Z34-1; and the testing of samples at least once every six months. **ITS** says it formerly tested for UM 52 using AAMA/AWDA 101/I.S.2, but that it no longer does so. **WDMA** certifies one wood flush door manufacturer under WDMA Test Method 6 but none under UM 52. WDMA wrote a letter to HUD in September 2001 asking that WDMA be dropped as administrator for UM 52 and pointed out that the reference standard it contained had been out of print for 3 years. Another inactive administrator, the **Hardwood Plywood and Veneer Association**, has asked that it be removed as an administrator for TM 52 in 2000.

Comment: No manufacturers request certification under UM 52, and all four UM 52 administrators are inactive. Two of them, the Window and Door Manufacturers Association (WDMA) and the Hardwood Plywood and Veneer Association, have asked to be removed as administrators for UM 52. WDMA wrote to HUD in 2001 saying that the standard referenced in UM 52 had been out of print for three years.

UM 58a, Acrylic Plastic Glazing, 1975 (no administrator)

UM 60a, Construction Adhesives, 1998 (2 active administrators, 2 inactive)

UM 60 certification requires a label from an approved UM 60 administrator, including a statement of conformance to UM 60; conformance to the requirements of ASTM D3498; the testing of a sample of each product every six months; and twice-yearly reviews of quality acceptance procedures. The two active administrators for UM 60 are Akron Rubber Development Lab and PFS. **Akron Rubber Development Lab** certifies one manufacturer under UM 60. They say that they used to send data to HUD but at some point HUD quit asking for it. **PFS** certifies 11 manufacturers for UM 60 but questions the usefulness of the program since HUD doesn’t seem to be checking for UM certification; see UM 40.

Comment: Only two of four administrators for UM 60 are active. One certifies a single manufacturer. The other, PFS, certifies 11 manufacturers but doesn’t think HUD checks for UM usage during the mortgage insurance process.

UM 62a, Factory-Applied Laminate Roofing Systems, 1972 (no administrator)

UM 65, Cellular Concrete Floor Fill, 1973 (no administrator)

UM 67, Polycarbonate Plastic Glazing, 1975 (no administrator)

UM 70b, Particleboard Interior Stair Treads, 1998 (1 active administrator)

UM 70 certification requires a label from an approved UM 70 administrator, including a statement of conformance to UM 70; conformance to the requirements of ANSI A 208.1; the testing of stair tread samples every three months; and a twice-yearly review of quality assurance procedures. UM 70 has one inactive administrator, CSA. CSA certifies “one or two” mills. “There is very little demand for UM 70 certification; other mills make particleboard stair treads but don’t seek UM 70 certification.”

Comment: UM 70 has one active administrator, CSA, which certifies only one or two mills. The rest of the particleboard stair tread manufacturers don’t seek certification.

UM 71b, EPS Sheathing, 1993 (1 active administrator, 1 inactive)

UM 71 certification requires a label from an approved UM 71 administrator [a page is missing from UM 71 on the HUD website, so the balance of the requirements are unknown, but they probably include a statement of conformance with UM 71; conformance with the requirements of one or more ASTM standards; the testing of samples from the manufacturer every six months; and twice-yearly visits to the manufacturer for a quality assurance review. Only one administrator, RADCO, is active. It certifies EPS sheathing under UM 71 for Owens-Corning; it once certified “about 10” EPS sheathing manufacturers.

Comment: UM 71 has one active administrator, RADCO, which only certifies one manufacturer. No other manufacturers appear to be interested in UM 71 certification.

UM 72b, Carpet Cushion, 1993 (3 active administrators)

UM 72 certification requires a label on the carpet cushion from an approved UM 72 administrator, including a statement of conformance with UM 72; conformance with the standards included in UM 72; the testing of a sample of each carpet line every six months; and a twice yearly quality assurance review. The three active administrators for UM 72 are the same as those for UM 44: Associated Laboratories, Intertek Testing Services, and MEA. As noted under UM 44, **Associated Labs** believes the UMs are important

because the carpet industry has no other standard. **Intertek** says that there is no industry standard for carpet and carpet cushion so everyone relies on the HUD UMs. **MEA**, too, believes the UM 72 is necessary.

Comment: Like UM 44 for carpeting, the carpet industry needs and wants UM 72 for carpet cushion because there is no comparable industry certification program. UMs 44 and 72 are the only UM bulletin that appear to be necessary to industry and consumers because they provide minimum carpet and underlayment quality standards that do not exist elsewhere.

UM 73a, Plastic Bathroom Fixtures, 1984 (3 active administrators, 2 inactive)

UM 73 certification requires a label from an approved UM 73 administrator, including a statement of conformance to UM 72; conformance to the requirements of the ANSI Z124.1 standards; the testing of plastic bathtub and water closet samples every 6 months and plastic lavatories every 12 months; and a review of each manufacturer’s quality assurance procedures at each 6- or 12-month plant visit. The three active administrators are CSA, NAHB Research Center, SGS U.S. Testing, and Universal Laboratory Inc. **NAHB-RC** certifies about 35 manufacturers of cast polymer plumbing fixtures, 30 manufacturers of fiberglass reinforced plastic plumbing fixtures, and 17 manufacturers of solid surface plumbing fixtures. They test to ANSI Z124.1-124.4 standards and follow UM 73 sampling procedures. What would happen if UM 73 went away? “Nothing—things would go on the same” because the rest of the industry conforms to the model code reports, which use the same ANSI-based tests and certification process. **SGS** tests 18 manufacturers under UM 73. **ULI** says it certifies “about 30” manufacturers for UM 73. ULI likes the program and thinks that if the HUD standard is dropped, manufacturers “will be at the mercy of IAPMO and others that could dominate the testing process.” It also feels that government’s presence in this area helps keep things fair. **CSA**, a Canadian organization, certifies “about 300” manufacturers of plastic bathroom fixtures under the ANSI Z124.1 standards but says UM 73 is not mentioned on their label, so it has been categorized as an inactive administrator for UM 73.

Comment: The administrator that certifies the largest number of manufacturers under UM 73 is the NAHB Research Center, which feels that nothing would change if UM 73 were discontinued, since the industry already conforms to the standards referenced in UM 73. Another administrator, ULI, thinks that the government’s involvement helps promote fairness in the

testing process.

UM 74, Urea-Based Foam Insulation, 1977 (no administrator)

UM 76, CPVC and PB Water Piping, 1978 (1 active administrator)

UM 76 certification requires conformance to very specific requirements for CPVC and PB pipe, tubing, and fitting materials, based on nine ASTM standards and five PPI standards; conformance to specific installation requirements; and the label of a “nationally recognized testing laboratory” on all piping materials. UM 76 names the National Sanitation Foundation Testing Laboratory as such a laboratory. NSF is in fact the one active administrator for UM 76. NSF follows the protocol in NSF/ANSI 14, which HUD deemed (in 1978, when UM was published) to meet the requirements of UM 76. An examination of NSF/ANSI 14 shows that its requirements are far more rigorous and up-to-date than UM 76.

Comment: UM 76 is redundant and inferior to NSF/ANSI 14, the standard used by the rest of the industry. The staff at NSF seemed barely aware of UM 76 and had to be shown its contents on the HUD website. Because UM 76 was last issued in 1978, it is unlikely that its requirements still conform to Standard 14. Withdrawal of UM 76 would appear to have no effect on the quality and durability of CPVC and PB water piping.

UM 77a, Cast Iron Sanitary Pipe, 1980 (no administrator)

UM 78, PE, ABS, PVC, and PB Water Piping, 1978 (no administrator)

UM 79a, ABS, PVC DWV Piping, 1982 (no administrator)

UM 80, Cellulosic Insulation, 1979 (no administrator)

UM 82b, Sealed Insulating Glass, 1993 (1 active administrator, 3 inactive)

UM 82 certification requires a label by an approved UM 82 administrator, including a statement of conformance to UM 82; compliance with the requirements of ASTM E 774; the testing of manufacturers’ samples once a year; and twice-yearly reviews of manufacturers’ quality assurance procedures. The one confirmed active administrator for UM 82 is Associated Laboratories Inc. **ALI** certifies 80

manufacturers under ASTM E744 “but only a few ask for UM 82 certification, since the industry uses the E744 process.” **The National Accreditation and Management Institute** claims to certify 22 companies under UM 82, but its numbers are questionable and probably represent the total number of sealed insulating glass companies for which they do installation certifications, not UM 82 product certifications.

Comment: UM 82 appears to duplicate the ASTM E 744 certification process, which is used by the rest of the industry. Withdrawal of UM 82 therefore would appear to have no effect on durability or quality of sealed insulating glass products.

UM 84a, Solid Fuel Room Heaters and Stoves, 1983 (no active administrators, 2 inactive)

UM 84 certification requires a label by an approved UM 84 administrator, including a statement of conformance to UM 84; conformance to the requirements of ANSI/UL 737 (for fireplace stoves) and ANSI/UL 1482 (for solid fuel room heaters); the testing of a sample from each manufacturer every four years; and a twice-yearly visit to each manufacturer for a quality assurance review. Both **UL** and **ITS** are listed as administrators for UM 84 but do not currently certify manufacturers under UM 84.

Comment: No one is certifying manufacturers under UM 84. There appears to be no demand for it because industry accepts other certifications for solid fuel room heaters and stoves based on the same, but much more current, UL standards.

UM 89a, Exterior Insulated Steel Doors, 1993 (1 active administrator, 2 inactive)

UM 89 certification requires a label by an approved UM 89 administrator, including a statement of conformance with UM 84; conformance with two ASTM and seven ISDI standards; the testing of a sample from each manufacturer every four years; and a twice-yearly visit to each manufacturer for a quality assurance review. The one confirmed active administrators for UM 89 is **ITS**. **ITS** certifies three manufacturers under UM 89. The **National Accreditation and Management Institute** claims to certify 22 companies under UM 89, but this number is highly questionable and probably refers to the number of steel door manufacturers for which they do installation certifications, not UM 89 product certifications.

Comment: UM 89 has two administrators, and only one, ITS, has provided a credible manufactured count. ITS certifies three insulated steel door manufacturers

under UM 84. There appears to be little demand for UM 89 certification because the industry uses voluntary Steel Door Institute (SDI) and insulated Steel Door Institute (ISDI) certifications.

UM 100, Solar Hot Water Systems, 1993 (no active administrators, 1 inactive)

UM 100 certification requires a label from an approved UM 100 administrator, including a statement of conformance to UM 100; conformance to Solar Rating and Certification Council Standard OG-300-93; the testing of a sample from each manufacturer every four years; and twice-yearly visits to each manufacturer for a quality assurance review. In addition, manufacturers must provide a 5-year full warranty on the solar collector, including parts and labor. The Solar Rating and Certification Council is the only administrator for UM 100. SRCC certifies 14 manufacturers of solar hot water heating systems under the SRCC label, but none under UM 100. SRCC says it talked to HUD in June 2002 about rewriting the UM to “make it more realistic.” One problem is the 5-year full warranty provision; no one in the industry offers this kind of warranty. SRCC hasn’t heard of anyone using or wanting, or even asking about, UM 100. There are” less than two dozen” solar hot water manufacturers.

Comment: No manufacturers desire certification under UM 100 and it isn’t used or requested. The rest of the industry uses the Solar Rating and Certification Council’s certification system.

UM 101, EFIS, 1995 (no active administrators, 1 inactive)

UM 101 certification requires a label from an approved UM 101 administrator, including a statement of conformance to UM 101; conformance to the standards and installation requirements specified in the UM; the testing of a sample from each manufacturer every four years, and twice-yearly visits to the manufacturer for a quality assurance review. It also requires a 20-year warranty. RADCO is the only approved administrator for UM 101. It previously certified one EFIS manufacturer (Texas EFIS) but that certification is not currently active.

Comment: No manufacturers desire certification under UM 101 and it isn’t used or requested.

UM 111, Windows and Doors, 1998 (2 active administrators, 5 inactive)

UM 111 certification requires a label from an approved UM 111 administrator, including a statement of conformance to UM 111; conformance to

AAMA/WDMA 101/I.S.2; the testing of a sample from each manufacturer every four years; and twice-yearly visits to the manufacturer for a quality assurance review. The two confirmed active administrators for UM 111 are Associated Laboratories Inc and ITS. ITS certifies many manufacturers under 101/I.S.2 but only two under UM 111. It notes that “there is a big overlap between the HUD UMs and other standards, and the UMs are only called for in regard to HUD housing.” Similarly, ALI certifies 310 window and door manufacturers but only a few under UM 111 “because the rest of the industry certifies under 101/I.S.2. and AAMA certification is much more rigorous than UM 111.” The **National Accreditation and Management Institute** claims to certify 86 manufacturers under UM 111 but it’s numbers are questionable and probably refer to the number of companies for which they do installation certifications, not UM 111 product certifications. One of the inactive administrators of UM 111 is **WDMA**, which certifies about 15 manufacturers of windows under 101/IS 2-97 but none under UM 111. It says that 101/I.S.2 is used by the model codes and throughout the industry, not UM 111.

Comment: The industry standard for the certification of windows and doors is AAMA/WDMA 101/I.S.2. It is the standard used by the model codes. UM 111 appears to be little used and redundant to AAMA/WDMA 101/I.S.2.

Appendix E

STUDY METHODOLOGY

This study of the TSP Program and its companion study of the MPS consisted of completing the following tasks:

Task 1. Assess MPS program statutes, regulations, documents, processes, and procedures

- Assess relevant HUD laws and regulations. Review HUD statutes and regulations that regulate the construction of single family homes. Review the Code of Federal Regulations and cite relevant rules pertaining to single-family construction. Identify all major components of the program required by statutes and regulations.
- Assess HUD documents. Identify and review all program manuals, handbooks, forms, and related documents within the total MPS system for new single-family (1 to 4 units) construction. Identify all related HUD documents that are still active and relevant. Identify all programs elements and components, both fully operations and dormant, that comprise the overall MPS system.
- Review processes, programs, and administration. Undertake a comprehensive review of the procedures, processes, and administration, including staffing, of the MPS standards and the total systems in place for its administration and enforcement including the TSP and the Category III state program for factory-built housing. Interview present and retired MPS and related HUD staff as well as outside user and interest groups, as appropriate.

Task 2. Ongoing briefings and discussions with HUD staff.

Provide a series of briefings to HUD staff as the work progresses on our assessment of the current MPS system, including the identification of any under performing program components, program gaps, and failures. Undertake the assessment within the context of current usage by FHA for new construction; the availability of competing programs; and the changing needs in the housing industry. Include a discussion of elements of the total system with continued or potential importance to the housing industry or to public policy independent of the need to insure single-family mortgages for new construction. Include recommendations for reform, including replacement of program elements or recommendations for legislative change. Recommendations for alternative processes or procedures will provide comparable levels of quality or durability achieved under the present program.

For the TSP study, interviews were conducted with the manufacturers and HUD administrators listed in the Engineering Bulletin, Materials Release, and Use of Materials Bulletins sections of this report, plus the following individuals and organizations:

- HUD Headquarters: Mark Holman (now retired) and retirees Les Breden, Bob Fuller, and Sam Hakopian
- Atlanta HOC: Debra Robinson
- Denver HOC: Jane Hall, Jerry Keeton, and Ron Collins
- Philadelphia HOC: Gerry Glavey
- Santa Ana HOC: Karen Birdsong and A. Fulton

Interviews regarding the unsuccessful effort to establish an industry-collaborative Building Innovation Center included the following organizations and individuals.:

- David Conover and Siavash Farvardin, International Code Council
- Kathleen Almand, formerly with CERF
- Rob Blancette, USG Chicago Research Lab
- Tom Frost, BOCA
- Jim Gross, NIST (retired)
- Peter Kissinger, CERF
- Glenn Winslow, SBCCI
- Joel Zingesser, formerly with NIST

Appendix F BIBLIOGRAPHY/RELATED HUD DOCUMENTS

The TSP Program is set forth in HUD Handbook 4950.1, Rev. 3, *Technical Suitability of Products Program Procedures*, dated August 11, 1997.

Related TSP Program publications are:

HUD Handbook 4910.1, *Minimum Property Standards for Housing*, dated July 29, 1994

HUD Handbook 4145.1, *HUD Architectural Processing and Inspections for Home Mortgage Insurance*, dated February 4, 1992.

HUD Handbook 4930.3, *Permanent Foundations Guide for Manufactured Housing*, dated September 1996.

HUD Handbook 4940.2, *Minimum Design Standards for Community Sewage Systems*, dated October 1992.

These publications are available online at www.hudclips.org

Related Engineering Bulletins, Materials Releases, and Use of Materials Bulletins are available online at www.hudclips.org (although not all are available online).

Form HUD-92005, "Description of Materials," is used for Engineering Bulletin acceptances. Form HUD-92051, "Compliance Inspection Report," is used for auditing participating manufacturers in the Engineering Bulletin and Materials Release programs. Form HUD-92051-M, "Modular and Panelized Factory Inspection Report," is used for the initial and annual inspections of participating modular and panelized product manufacturers. These forms are available online at www.hudclips.org

Appendix G ACRONYMS

ANSI. American National Standards Institute. The official U.S. standards organization.

ASTM. A major standards-writing organization that publishes thousands of technical standards, including over 600 construction standards.

BOCA. Building Officials and Code Administrators International, one of the three model code organizations that recently merged to create the ICC.

CABO. Council of American Building Officials, formerly publisher the *Model Energy Code* and the *One and Two Family Dwelling Code*. Both codes are now part of the *International Residential Code* and CABO has become a part of the ICC.

CFR. U.S. Code of Federal Regulations.

FHA. Federal Housing Administration, formed in 1934 by the National Housing Act and merged into HUD in 1965.

HOC. Home Ownership Corporation, the name of the four regional HUD offices located in Denver, Santa Ana, Atlanta, and Philadelphia.

HUD. U.S. Department of Housing and Urban Development, a cabinet-level federal agency created in 1965.

ICBO. International Council of Building Officials, one of the three model code organizations that recently merged to create the ICC.

ICC. International Code Council, recently created by the county's three model code organizations: BOCA, ICBO, and SBCCI. It publishes the International Codes, including the *International Residential Code*.

ICC-ES. The International Code Council's Evaluation Services, Inc. ICC-ES evaluates building products for code compliance. Builders and code inspectors rely upon these evaluations to ensure product compliance in the field. In February 2003, ICC-ES assumed the work of the National Evaluation Service (NES).

MEB. Mechanical Engineering Bulletin, an element of the TSP Program.

MPR. Minimum Property Requirements, an earlier version of the MPS.

MPS. Minimum Property Standards. Housing standards published by HUD since 1958.

MR. Materials Release, an element of the TSP Program.

NAHB. National Association of Home Builders.

NCSBCS. National Conference of States on Building Codes and Standards, a former third-party inspector for HUD under the TSP Program.

NES. National Evaluation Service. Until February 2003, NES evaluated building products for code compliance. See ICC-ES.

NFPA. National Fire Protection Association, a major standards-writing organization. It produces the National Electrical Code, the Life Safety Code, and NFPA 5000, among many others.

NIBS. National Institute of Building Sciences, a nonprofit, nongovernmental organization authorized by Congress to serve as an authoritative source on issues of building science and technology.

SBCCI. Southern Building Code Congress International, one of the three model code organizations that recently merged to create the ICC.

SEB. Structural Engineering Bulletin, an element of the TSP Program.

SLA. State Letters of Acceptance, a discontinued element of the TSP Program.

TSP. Technical Suitability of Products Program, the subject of this study.

UM. Use of Materials Bulletin, an element of the TSP Program.

USC. United States Code, a compilation of all federal laws.

Appendix H
SAMPLE STRUCTURAL ENGINEERING BULLETIN (SEB 1117 Rev 1)
http://www.hudclips.org/sub_nonhud/cgi/pdfforms/SEBL/1117r3.pdf

(pages 45, 46, 47,48, 49, 50, 51)

Appendix I
SAMPLE MATERIALS RELEASE BULLETIN (MR 1210b)
http://www.hudclips.org/sub_nonhud/cgi/pdfforms/MATR/mr1210b.pdf

(pages 52, 53, 54, 55, 56, 57, 58)

Appendix J
SAMPLE USE OF MATERIALS BULLETIN (UM 73a)
http://www.hudclips.org/sub_nonhud/cgi/pdfforms/UMBS/um73a.pdf

(pages 59, 60, 61, 62)