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Durability and Related Tests for Selected Elements and Materials Used in the Exterior Envelope of Buildings

Larry W. Masters
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Gerald A. Sleater
Arthur Hockman

Institute for Applied Technology
National Bureau of Standards
Washington, D. C. 20234

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Final Report

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Division of Energy, Building Technology and Standards
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LIST OF TABLES

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ABSTRACT

This report contains a compendium of state-of-the-art methods to aid in the durability testing of selected elements and materials used in the exterior envelope of buildings. The purposes of the report are to identify currently available property measurement tests and aging tests that can be used for durability testing and to identify the degradation factors included in each aging test. The report will form the basis for selecting specific elements and materials for inclusion in subsequent comprehensive durability studies. These additional studies are needed because existing short-term methods are seldom fully adequate for predicting long-term performance.

The sources of the methods include the American Society for Testing and Materials (ASTM), the American National Standards Institute (ANSI), building industry trade associations, Federal Specifications and Federal Standards. Indications are made for each test method to show if the methods described include a property measurement test, an aging test or both. If the method contains an aging test, the degradation factors included in the test are listed.

Key words: Aging test; building elements and materials; degradation factors; durability; property measurement test; standard test methods.

1. INTRODUCTION

1.1 Purpose of Study

The term, durability, refers to the length of time a building element or material performs its intended functions above the minimum acceptable levels. Estimates of durability are needed, particularly for new or untried building elements and materials, to aid in the proper choice for specific building applications.

Ideally, information on the effects of various degradation factors on the long-term performance of building elements and materials would be based upon long-term service tests of the actual system or material under many types of climatic conditions. However, such tests would delay the use of new elements and materials to such an extent as to be impractical.

As an alternative, short-term tests to aid predictions of long-term performance, have been developed for many building elements and materials. These tests include procedures to accelerate the degradation (aging) processes, procedures to increase the sensitivity (precision) of property measurement and procedures that combine accelerated aging and increased property measurement sensitivity. Unfortunately, existing short-term tests are seldom fully adequate for predicting long-term performance. In particular, this is because the degradation mechanisms are complex and seldom well understood so that it is difficult to design the most meaningful tests. Also, the degradation factors affecting durability are numerous and difficult to quantify. Thus, existing short-term tests seldom include all the factors involved in actual use, and the factors that are included may not be related quantitatively to exposure in-service. Because of the shortcomings of existing tests, there is great need for improvement in the technology of durability testing of building elements and materials.

The purposes of this report are to present a list of durability and related test methods for selected elements and materials used in the exterior envelope of buildings and to assess currently available aging tests in terms of the degradation factors included in the tests. Subsequently, the test methods will be critically evaluated to help identify specific elements or materials for which tests are needed.

1.2 Scope

As a first step in selecting the elements and materials to be included in the study, a list of building subsystems, components and elements was prepared. A housing system was first divided into five subsystems:

1. Exterior Envelope
2. Interior Space Dividers
3. Electrical Subsystem
4. Plumbing Subsystem
5. Heating/Cooling Subsystem.

It was then decided to select one subsystem for study so as to keep this stage of the project to a reasonable size. The Exterior Envelope Subsystem was selected for this study because of the extent of field problems in terms of frequency and cost that have occurred in components and elements in this subsystem. The subsystem was then divided into the components and elements of which it is comprised. Table 1 illustrates the division of the Exterior Envelope Subsystem into components and elements.

The elements marked with asterisks in Table 1 were selected for inclusion in the study because they are believed to present a greater magnitude of field problems than other elements in the list.

The sources of test methods include the American Society for Testing and Materials (ASTM), the American National Standards Institute (ANSI), building industry trade associations, Federal Specifications and Federal Standards.

Each test method included in the report is categorized to indicate if it includes a property measurement test, an aging test, or both. If the method is an aging test, the degradation factors are identified.

2. COMPILATION AND ANALYSIS OF TEST METHODS

2.1 Preparation of a List of Materials

After defining the building elements to be included in the study, a list of materials that could be used to form each element was prepared. This list was then organized into a format analogous to that of the Construction Specifications Institute (CSI) "Master Index of Government Guide Specifications for Construction" (1)[1/]. Table 2 contains a list of materials included in the study according to the CSI format. The DIVISION numbers and headings used in this report are identical to those of the CSI Index. For example, DIVISION 3 refers to Concrete, and DIVISION 5 to Metals, etc. in both documents. The categories within each DIVISION listed in Table 2 are not included in the CSI index but are included in this report to simplify the finding of specific test methods.

2.2 Procedure for Identifying Test Methods

The initial step in identifying test methods for the materials (or elements) listed in Table 2 was to search the Index of U.S. Voluntary Engineering Standards (2). This index contains references to more than 400 standards-setting organizations, including ASTM and ANSI. The indexes of ASTM (3) and ANSI (4) were then searched as was the Index of Federal Specifications and Standards (5). The ASTM Parts referred to for test methods were the latest available and were dated either 1974 or 1975.

2.3 Procedure for Assessing Test Methods

After identifying test methods for each material (or element) listed in Table 2, each method was reviewed and assessed in terms of content. The first step in assessing a method was to determine if it included a property measurement test, an aging test, or both. Both property measurement tests and aging tests are needed for durability testing since durability testing consists of measuring the amount and rate of change of a property as a result of the aging.

A property measurement test provides for the measurement of one or more properties of a material or element. Examples are the measurement of color of paints, flexural strength of concrete, water and air leakage of window units, peel strength of sealants and adhesives, transparency of window glass or plastic and hardness of metals.

An aging test provides for a means of exposing specimens to factors that may cause their degradation. An aging test may be long-term, such as weathering test at an outdoor exposure test site, or short-term such as an accelerated laboratory test. Examples of aging tests are exposure of organic materials to simulated or natural sunlight, exposure of metals to corrosive environments, exposure of adhesive bonds or sandwich panels to sustained or fatigue loading, exposure of concrete to freeze-thaw cycles, exposure of flooring to abrasives and exposure of asphalt to heat.

The final step in assessing the test methods was to identify the factors included in the aging tests to induce degradation. Degradation factors considered included 1) weathering factors, 2) biological factors, 3) stress factors and 4) incompatibility factors. Table 3 lists these factors. The factors are described further in Section 4.2.

1/ Numbers in parenthesis refer to references included in the list of References at the end of this report.

One additional degradation factor not included in the Table 3 list can be termed a "use" factor. Use factors reflect the design of the system in which the element or material is used and includes installation and maintenace procedures and abuse by the user. Use factors were not included in the study because they are not typically included in standard test methods.

3. DATA PRESENTATION

The Appendix to this report is composed of tables listing the test method data that were compiled during the study. It is organized according to the outline of Table 2.

3.1 Format of Appendix Tables

The top left corner of each sheet in the Appendix contains descriptive information about the material or element for which test methods are being presented. This information is identical to that outlined in Table 2.

Each table is divided into six columns. The first column is labeled "Source" and identifies the publisher of the test method. Abbreviations are used to designate the test method publishers. An alphabetical list of the abbreviations used and the names and addresses of each organization are included in Table 4. The column labeled "Number", includes the number identification of the test method as assigned by the source. For ASTM test methods, the number of the (Part) (Volume) from which the method was taken is indicated in parenthesis next to the method number. If a test methods is available from more than one source, the alternative source(s) and the test method number(s) are listed in parenthesis directly below the initial source and method number of the initial source. ANSI standards, for example, are often identical to those of other standards-setting groups.

The third column contains the title of the test method and, in parenthesis, the last date of issuance or revision of trade association methods, Federal Specifications and Federal Standards. The fourth and fifth columns are used to indicate if the method is a property measurement test or an aging test. An "X" in these columns indicates that such a test is included either directly or by reference. Information sources which contains neither a property measurement test nor an aging test are shown by blank spaces in these columns. Such sources are included because they often provide useful information such as quality control and installation and handling procedures for building materials.

The last column includes a listing of degradation factors that are included in the aging test of the method. These factors are indicated by number or by brief explanatory remarks. The identification number of each degradation factor is included in Table 3.

3.2 Organization of Appendix Tables

The Appendix tables are first organized according to the outline of Table 2. The categories under each DIVISION in Table 2 represent natural boundaries resulting from the types of methods available for each.

The sources and the test methods are listed in alphabetical and numerical order under each category in the following order:

1. ASTM methods (alternative sources of each method, such as ANSI, are listed in parenthesis below the ASTM designation).

2. ANSI methods, which are not listed as being alternatives to ASTM or building industry trade association methods.

3. Trade association methods (alternative sources of the methods, such as ANSI, are listed in parenthesis below the building industry trade association designation).

4. Federal Specifications.

5. Federal Standards.

Since many of the ASTM and building industry trade association methods are subsequently accepted as ANSI standards, ANSI standards are listed primarily as alternative sources.

The first category in each DIVISION, except DIVISIONS 5, 9 and 13, includes "General Tests" for the material or element in the DIVISION title. For example, the first category of DIVISION 3: CONCRETE IS "A. General Tests for Concrete". The first category of DIVISION 7: THERMAL and MOISTURE PROTECTION includes general tests for thermal and moisture protection. (It also includes general tests for weathering of non-metallic materials). The methods listed in the "General Tests" category of a particular DIVISION are not listed in other categories of that DIVISION or in the "General Tests" category of other DIVISIONS. Although thermal and moisture protection information may be important for specific materials in other DIVISIONS, such as metal roofing, tests for this property are included in the "General Tests" of DIVISION 7 only.

The scope of many of the test methods in subsequent categories is such that the methods apply to more than one category. For example, in DIVISION 7, Category B (Tests for Roofing Materials), ASTM Method D 529 applies to "Built-Up" roofing as well as "Bituminous Materials", "Asphalt Roll Roofing and Sheets" and "Bituminous/Felt Combination". It also applies to "Asphalt Siding" in DIVISION 7, Category C (Tests for Wall Materials). Therefore, D 529 is listed in each of these categories. Thus, if methods are directly applicable to more than one category, except the "General Tests" category, they are listed more than once.

Methods in categories other than "General Tests", whose scope is such they may apply to multiple categories are listed in the category in which they most directly apply and are referred to other categories by footnotes. For example, in DIVISION 6.2: PLASTICS, one category is "Tests for Transparent and Translucent Plastics". Some of these tests may be applicable for testing "Window Glazing" included in DIVISION 8: DOORS and WINDOWS, Category C (Tests for Windows). Thus, a cross reference is included to refer the reader to both categories.

4. USE OF THE APPENDIX TABLES

4.1 Finding Test Methods

The first step in finding test methods for specific materials or elements is to refer to the table of contents at the beginning of the Appendix or to Table 2 which contains an outline of the DIVISIONS and categories included in the Appendix.

The major headings of the following DIVISIONS refer to specific materials or elements:

DIVISION 3: CONCRETE

DIVISION 4: MASONRY

DIVISION 5: METALS

DIVISION 6.1: WOOD

DIVISION 6.2: PLASTICS

DIVISION 8: DOORS AND WINDOWS.

The major headings of two other DIVISIONS refer to the function of materials or elements rather than to specific materials. These are:

DIVISION 7: THERMAL AND MOISTURE PROTECTION

DIVISION 9: FINISHES.

DIVISION 13: SPECIAL CONSTRUCTION is a unique listing in regard to other DIVISIONS. This DIVISION is used in this report to include tests for sandwich constructions and for adhesives.

The second step in finding test methods is to locate the DIVISION which most closely fits the material or element of interest. Then, the search can be narrowed to the "General Tests" category or other more specific categories that describe the type of application for which the material or element is used. Cross referencing is included in tables, except for the "General Tests" categories to aid referral from one category to another.

4.2 Interpreting the Data for Test Methods

As mentioned previously, each test method listed in the Appendix tables has been assessed for type of test (property measurement test or aging test) and for the degradation factors included in the aging test. Definitions and examples of property measurement tests and aging tests were presented in Section 2.3 of this report. A brief description of these tests will be provided in this section as well as a brief description of the degradation factors listed in Table 3.

A check in the "Aging Test" column of the tables indicates that a test for exposing the material or element to one or more degradation factors is either described or referenced in the method. An aging test is intended for use with a property measurement test in determining the change of one or more properties of a material or element as a result of exposure to degradation factors. To actually measure the properties before and after aging, a property measurement test is needed. Durability tests, then are comprised of both property measurement tests and aging tests. A check in the "Property Measurement Test" column indicates that a test for measuring one or more properties of the material or element is either included or referenced in the method.

Degradation factors 1 through 8 which are listed in Table 3, are termed Weathering Factors. The numbers 1, 2, and 3 appearing in the last column of the Appendix tables indicate the aging test contains a combination of exposure to solar radiation, temperature and water. Such a designation often refers to a test consisting of exposure simulated solar radiation, elevated temperature as a result of the arc, and periodic water spray. Factor 2 includes elevated, depressed or cyclic temperature exposure while factor 3, Water, includes solid, liquid, and vapor forms of water. Degradation factor number 4, Freeze-Thaw, is often used for porous materials and includes wetting. The only tests found for the effect of Normal Air Constituents, factor 5, were oxygen exposure tests such as the oxygen bomb for rubber and rubber products. Factor 6, Air Contaminants, includes tests for factors such as salt spray, ozone, sulphur compounds and nitrogen oxides. Natural Exposure, factor 8, refers to tests in which materials or elements are exposed to natural weathering, usually at exposure test sites. The other Weathering Factors included in this factor depend upon the location of the exposure site and the time of the year specimens are exposed.

Factors 9 and 10 are termed Biological Factors and include tests for degradation by fungi and bacteria.

Stress factors include sustained stress and periodic stress. Aging tests for sustained stress include applied sustained loads such as those in creep tests. Periodic stress, number 12, includes any applied stress that occurs periodically. For example, fatigue testing of adhesive bonds can be an aging test to determine the effect of periodic stress. Abrasive wear on flooring materials, abrasion from wind blown sand and impact from hail are other examples of this factor. Tests that are designed to exposure materials or elements to these types of stresses are labeled aging tests.

Factors 13 and 14 reflect chemical and physical incompatibility factors. An example of chemical incompatibility is accelerated corrosion caused by contact between two dissimilar metals, while an example of physical incompatibility is stress caused by a rigid connection between two adjoining materials whose thermal expansion coefficients are different. These factors are important because in practice, materials and elements are joined together with other materials and elements to form a system. Adjoining materials and elements must be chemically and physically compatible for the final product to be durable. The Appendix tables indicate the existence of a test for these factors only in cases where the method specifies such a test. The reader should note that some methods inherently include a type of incompatibility test because of the test specimen design. For example, one widely used specimen for joint sealant tests includes both sealant and substrate. Exposure tests performed on such a specimen may provide information regarding the compatibility of the sealant and the substrate even though the test description does not mention this factor.

5. CONCLUSIONS

Hundreds of test methods have been identified in this report as being available as standards to aid durability predictions of elements and materials used in the exterior envelope of building systems. The large number of available methods may lead to the erroneous conclusion that existing methods are adequate to fulfill the need for durability testing. Actually, very few existing short-term test methods are fully adequate for reliably predicting long-term performance. Because of the shortcomings of existing tests, there is great need for improvement in the technology of durability testing of building elements and materials.

The first step in fulfilling this need is to critically evaluate the test methods identified in this report to estimate their usefulness for durability testing. Such an evaluation would first consist of identifying the degradation factors that are of primary importance for each element or material, depending upon their use, and determining if methods are available for evaluating the effect of these factors. If methods are not available to test for all factors of importance, obvious needs will be identified. Methods that are available for factors of importance should then be judged, if possible, in terms of whether or not they yield results that can be related to long-term performance.

Based on such an analysis of the existing methods, elements and materials for which durability tests are most urgently needed could be identified. This information would then form the basis for commencing laboratory based studies to improve the existing technology.

6. REFERENCES

1. "Master Index of Government Guide Specifications for Construction", 2nd Edition, 1973, published by the District of Columbia Metropolitan Chapter of The Constructions Specifications Institute, Inc., 1777 Church Street, N.W. Washington, D.C.

2. Slattery, William J. Editor, "An Index of U.S. Voluntary Engineering Standards", NBS Special Publication 329 (March 1971), Supplement 1 (December 1972), Supplement 2 (May 1975), National Bureau of Standards, Washington, D.C. 20234.

3. "1974 Annual Book of ASTM Standards, Part 47", Index to ASTM Standards, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

4. "1975 Catalog", American National Standards Institute, 1430 Broadway, New York, New York 10018, April 1975.

5. "Index of Federal Specifications and Standards", January 1, 1975, General Services Administration, available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Table 1. List of Components and Elements Comprising the Exterior Envelope Subsystem

COMPONENT	ELEMENT
ROOF	* Exterior Coating (Optional)
	* Roofing Membrane
	* Decking
	Structural Member
	Insulation
	Vapor Barrier
	Interior Substrate
	* Interior Coating or Covering
	* Connectors
	* Sealants and Flashing
WALL	* Exterior Coating
	* Exterior Siding
	* Sheathing
	Structural Member
	Insulation
	Vapor Barrier
	Interior Substrate
	* Interior Coating or Covering
	* Connectors
	* Sealants and Flashing
DOORS AND WINDOWS	* Exterior Coating
	* Base Material
	* Frame
	* Interior Coating
	* Hardware
	* Connectors
	* Sealants and Flashing
FOUNDATION	Footing
	Mat
	Pile
	Tie Beam
FLOOR	Structural Member
	Sub Floor
	* Finish Flooring
	* Floor Coating (Interior)
	* Connectors
	* Sealants and Flashing

* Designates elements included in this study.

Table 2. Selected Building Materials According to the Government Guide Specifications for Construction. (CSI Master Index).

I. DIVISION 3: CONCRETE

- A. General Tests for Concrete
- B. General Tests for Cement and Aggregates

II. DIVISION 4: MASONRY

- A. General Tests for Masonry Units
- B. Tests for Masonry for Roofing
- C. Tests for Masonry for Walls
  1. Brick
  2. Natural Building Stone
  3. Clay Tile
  4. Mortar and Grout

III. DIVISION 5: METALS

- A. General Tests for Metals
- B. Tests for Metal Roofing
- C. Tests for Metal Siding

IV. DIVISION 6.1: WOOD

- A. General Tests for Wood
- B. Tests for Wood Roofing Shingles
- C. Tests for Wood Siding

V. DIVISION 6.2: PLASTICS

- A. General Tests for Plastics
- B. Tests for Specific Types of Plastics
  1. Acrylics
  2. Phenolics
  3. Polycarbonates
  4. Polyolefins
  5. Poly (Vinyl Chloride) (PVC)
  6. Reinforced
  7. Cellular
- C. Tests for Transparent or Translucent Plastics
- D. Tests for Plastic Siding

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION

- A. General Tests for Measuring Thermal and Moisture Protection and General Tests for Weathering of Non-Metallic Materials
- B. Tests for Roofing Materials
  1. Built-Up
     a. Bituminous Materials
     b. Asphalt Roll Roofing and Sheets
     c. Bitumen/Felt Combination
     d. Mineral Aggregates
  2. Asphalt Shingles
  3. Porcelain
  4. Slate
  5. Asbestos Cement
  6. Elastomers

C. Tests for Wall Materials
    1. Asphalt Siding
    2. Asbestos Cement Siding
    3. Exterior Gypsum Wallboard
    4. Fiber Siding
D. Tests for Sealing Materials
    1. Joint Sealants and Caulks
    2. Flashing

VII DIVISION 8: DOORS AND WINDOWS

A. General Tests for Doors and Windows
B. Tests for Doors
    1. Wood Doors
    2. Metal Doors
C. Tests for Windows
    1. Wood Windows
    2. Metal Windows
    3. Window Glazing
D. Tests for Door/Window Hardware

VIII. DIVISION 9: FINISHING

A. Tests for Paints and Coatings
    1. General Tests for Paints and Coatings
    2. Tests for Exterior Paints and Coatings
        a. Wood Substrate
        b. Metal Substrate
        c. Masonry or Concrete Substrate
        d. Miscellaneous or Non-Specific Substrate
    3. Tests for Interior Paints and Coatings
        a. Wood Substrate
        b. Metal Substrate
        c. Masonry or Concrete Substrate
        d. Gypsum Board or Plaster Substrate
        e. Miscellaneous or Non-Specific Substrate
    4. Tests for Exterior or Interior Paints and Coatings
        a. Wood Substrate
        b. Metal Substrate
        c. Masonry or Concrete Substrate
        d. Gypsum Bord or Plaster Substrate
        e. Miscellaneous or Non-Specific Substrate
B. Tests for Interior Wall Coverings (other than Paints and Coatings)
C. Tests for Interior Ceiling Coverings (other than Paints and Coatings)
D. Tests for Interior Flooring and Floor Coverings (other than Paints and Coatings)
    1. Resilient Flooring
    2. Carpet
    3. Seamless Flooring
    4. Ceramic Flooring
    5. Clay Tile
    6. Wood Flooring
    7. Stone Flooring

XI. DIVISION 13: SPECIAL CONSTRUCTION

A. Tests for Sandwich Constructions
B. Tests for Adhesives

Table 3. Degradation Factors Included in the Assessment of Aging Tests

Degradation* Factor Number	Degradation Factor
	Weathering Factors
1	Solar Radiation
2	Temperature (elevated, depressed or cycled)
3	Water (solid, liquid and vapor)
4	Freeze-Thaw
5	Normal Air Constituents
6	Air Contaminants
7	Wind
8	Natural Exposure
	Biological Factors
9	Fungi
10	Bacteria
	Stress Factors
11	Sustained
12	Periodic
	Incompatibility Factors
13	Chemical
14	Physical

* The Degradation Factor Number is used in the Appendix Tables to indicate which factors are included in the aging test.

Table 4. Abbreviations and Names and Addresses of Publishers of Test Methods and Specifications

Abbreviation	Names and Addresses
AA	The Aluminum Association 750 Third Avenue New York, New York 10017
AAMA	Architectural Aluminum Manufacturers Association 410 N. Michigan Avenue, Suite 960 Chicago, Illinois 60611
AAR	Association of American Railroads 1920 L Street, N.W. Washington, D.C. 20006
AASHO	American Association of State Highway Officials 341 National Press Building Washington, D.C. 20004
ACI	American Concrete Institute Box 4754, Redford Station 22400 West Seven Mile Road Detroit, Michigan 48219
ACMA	Acoustical Materials Association 335 East 45th Street New York, New York 10017
AHA	American Hardboard Association 20 North Wacker Drive Chicago, Illinois 60606
AI	Asphalt Institute Asphalt Institute Building College Park, Maryland 20740
AIMA	Acoustical & Insulating Materials Association 205 West Touhy Avenue Park Ridge, Illinois 60068
AITC	American Institute of Timber Construction 333 West Hampden Avenue Englewood, Colorado 80110
ANSI	American National Standards Institute 1430 Broadway New York, New York 10018
APA	American Plywood Association 1119 A Street Tacoma, Washington 98401
AREA	American Railway Engineering Association 59 East Van Buren Street Chicago, Illinois 60605

Abbreviations	Names and Addresses
ASC	Adhesive and Sealant Council 1410 Higgins Road Park Ridge, Illinois 60068
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, Pennsylvania 19103
AWPA	American Wood-Preservers Association 1625 Eye Street, N.W. Washington, D.C. 20006
AWPI	American Wood Preservers Institute 1605 Old Meadow Road McLean, Virginia 22101
BHMA	Builders Hardware Manufacturers Association 60 East 42nd Street New York, New York 10017
CISCA	Ceilings and Interior Systems Contractors Association 1201 Waukegan Road Glenview, Illinois 60025
CRA	California Redwood Association 617 Montgomery Street San Francisco, California 94111
CSI	Construction Specifications Institute 1150 17th Street, N.W. Washington, D.C. 20036
Fed. Spec. Fed. Std.	Index of Federal Specifications and Standards. (January 1, 1975) U. S. Government Printing Office Washington, D.C. 20402
FGMA	Flat Glass Marketing Association 1325 Topeka Avenue Topeka, Kansas 66612
FHDA	Fir and Hemlock Door Association Yeon Building Portland, Oregon 97204
FTI	Facing Tile Institute 111 East Wacker Drive Chicago, Illinois 60601
GA	Gypsum Association 201 North Wells Street Room 2510 Chicago, Illinois 60606
GTA	Glass Tempering Association 2217 Tribune Tower Chicago, Illinois 60611

Abbreviations	Names and Addresses
HPMA	Hardwood Plywood Manufacturers Association P.O. Box 6246 Arlington, Virginia 22206
ICBO	International Conference of Building Officials 5360 South Workman Mill Road Whittier, California 90601
IES	Illuminating Engineering Society 345 West 47th Street New York, New York 10017
ILIA	Indiana Limestone Institute of America Stone City National Bank Building Suite 400 Bedford, Indiana 47421
MBMA	Metal Building Manufacturers Association 2130 Keith Building Cleveland, Ohio 44115
NAAMM	National Association of Architectural Metal Manufacturers Suite 500 1010 West Lake Street Oak Park, Illinois 60301
NACE	National Association of Corrosion Engineers 2400 West Loop South Houston, Texas 77027
NBHA	National Builders Hardware Association 1815 N. Fort Myer Drive Rosslyn, Virginia 22209
NCMA	National Concrete Masonry Association Rosslyn Station P.O. Box 9185 Arlington, Virginia 22209
NFORP	National Forest Products Association 1619 Massachusetts Avenue, N.W. Washington, D.C. 20036
NLA	National Lime Association 4000 Brandywine Street, N.W. Washington, D.C. 20016
NOFMA	National Oak Flooring Manufacturers Association, Inc. 814 Sterick Building Memphis, Tennessee 38103

Abbreviations	Names and Addresses
NRCA	National Roofing Contractors Association 1515 North Harlem Avenue Oak Park, Illinois 60302
NWMA	National Woodwork Manufacturers Association 400 W. Madison Street Chicago, Illinois 60606
PEI	Porcelain Enamel Institue, Inc. 1900 L Street, N.W. Washington, D.C. 20036
PSTC	Pressure Sensitive Tape Council 1201 Waukegan Road Glenview, Illinois 60025
RCSHS	Red Cedar Shingle & Handsplit Shake Bureau 5510 White Building Seattle, Washington 98101
SAE	Society of Automotive Engineers, Inc. Two Pennsylvania Plaza New York, New York 10001
SCRMA	Screen Manufacturers Association 110 North Wacker Drive Chicago, Illinois 60606
SDI	Steel Door Institute 2130 Keith Building Cleveland, Ohio 44115
SFPA	Southern Forest Products Association P.O. Box 52468 New Orleans, Louisiana 70150
SIGMA	Sealed Insulating Glass Manufacturers Association 202 South Cook Street Barrington, Illinois 60010
SMACN	Sheet Metal and Air Conditioning Contractors National Association, Inc. 1611 North Kent Street Arlington, Virginia 22209
SPI	Society of the Plastics Industry, Inc. 250 Park Avenue New York, New York 10017
SSPC	Steel Structures Painting Council 4400 Fifth Avenue Pittsburgh, Pennsylvania 15213
SWI	Steel Window Institute 2130 Keith Building Cleveland, Ohio 44115

Abbreviations	Names and Addresses
TAPPI	Technical Association of the Pulp and Paper Industry One Dunwoody Park Atlanta, Georgia 30341
TCA	Tile Council of America, Inc. P.O. Box 326 Princeton, New Jersey 08540
UL	Underwriters' Laboratories, Inc. 207 East Ohio Street Chicago, Illinois 60611
USC	U. S. Department of Commerce Office of Engineering Standards Service National Bureau of Standards Washington, D.C. 20234
WRC	Western Red Cedar Lumber Association Yeon Building Portland, Oregon 97204
WSFI	Wood and Synthetic Flooring Institute of America 1201 Wankegan Road Glenview, Illinois 60025
WWMM	Western Wood Mouldings and Millwork Producers 2041 S. West 58th Avenue Portland, Oregon 97204
WWPA	Western Wood Products Association 1500 Yeon Building Portland, Oregon 97204

APPENDIX:

TABLES OF DURABILITY

and

RELATED TEST METHODS

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I. DIVISION 3: CONCRETE

A. General Tests for Concrete

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	C31 (14) (A37.17)	Std. Method of Making and Curing Concrete Test Specimens in the Field			
ASTM (ANSI)	C39 (14) (A37.18)	Test for Compressive Strength of Cylindrical Concrete Specimens	X		
ASTM (ANSI)	C42 (14) (A37.20)	Std. Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete	X		
ASTM (ANSI)	C78 (14) (A32.22)	Test for Flexural Strength of Concrete	X		
ASTM (ANSI)	C94 (14) (A37.69)	Spec. for Ready-Mixed Concrete	X		
ASTM (ANSI)	C116 (14) (A37.24)	Test for Compressive Strength of Concrete	X		
ASTM (ANSI)	C138 (14) (A37.27)	Test for Unit Weight, Yield and Air Content (Gravimetric) of Concrete	X		
ASTM (ANSI)	C143 (14) (A37.29)	Test for Slump of Portland Cement Concrete	X		
ASTM (ANSI)	C157 (13) (A37.78)	Test for Length Change of Hardened Cement Mortar and Concrete	X		
ASTM (ANSI)	C171 (14) (A37.79)	Spec. for Sheet Materials for Curing Concrete			
ASTM (ANSI)	C172 (14) (A37.30)	Sampling Fresh Concrete			
ASTM (ANSI)	C173 (14) (A37.80)	Test for Air Content of Freshly Mixed Concrete by the Volumetric Method	X		

1. DIVISION 3: CONCRETE
A. General Tests for Concrete

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	C192 (14) (A37.81)	Std. Method of Making and Curing Concrete Test Specimens in the Laboratory			
ASTM (ANSI)	C215 (14) (A37.82)	Test for Fundamental Transverse, Longitudinal and Torsional Frequencies of Concrete Specimens	X		
ASTM (ANSI)	C231 (14) (A37.70)	Test for Air Content of Freshly Mixed Concrete	X		
ASTM (ANSI)	C232 (14) (37.83)	Test for Bleeding of Concrete	X		
ASTM (ANSI)	C309 (14) (A37.87)	Spec. for Liquid Membrane Forming Compounds for Curing Concrete			
ASTM	C317 (13)	Spec. for Gypsum Concrete	X		
ASTM (ANSI)	C387 (14) (A37.125)	Spec. for Packaged, Dry, Combined Materials for Mortar and Concrete	X		
ASTM (ANSI)	C418 (14) (A37.123)	Test for Abrasion Resistance of Concrete	X		
ASTM	C427 (16)	Test for Moisture Condition of Hardened Concrete by the Relative Humidity Method	X		
ASTM	C457 (14)	Rec. Practice for Microscopic Determination of Air Void Content and Parameters of the Air-Void System in Hardened Concrete	X		
ASTM (ANSI)	C469 (14) (A37.94)	Test for Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression	X		

I. DIVISION 3: CONCRETE

A. General Tests for Concrete

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C472 (13)	Physical Testing of Gypsum Plaster and Gypsum Concrete	X		
ASTM (ANSI)	C490 (14) (A1.33)	Spec. for Apparatus for Use in Measurement of Length Change of Hardened Cement Paste, Mortar and Concrete			
ASTM	C495 (14)	Test for Compressive Strength of Lightweight Insulating Concrete	X		
ASTM (ANSI)	C512 (14) (A37.120)	Test for Creep of Concrete in Compression	X	X	11
ASTM	C513 (14)	Method for Securing, Preparing, and Testing Specimens from Hardened Lightweight Insulating Concrete for Compressive Strength	X		
ASTM	C567 (14)	Test for Unit Weight of Structural Lightweight Concrete	X		
ASTM	C597 (14)	Test for Pulse Velocity Through Concrete	X		
ASTM	C642 (14)	Tent. Test for Specific Gravity, Absorption and Voids in Hardened Concrete	X		
ASTM	C666 (14)	Test for Resistance of Concrete to Rapid Freezing and Thawing	X	X	4
ASTM	C671 (14)	Tent. Test for Critical Dilation of Concrete Specimens Subjected to Freezing	X	X	4
ASTM	C672 (14)	Tent. Test for Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals	X	X	4 (and deicing agents)

I. DIVISION 3: CONCRETE
A. General Tests for Concrete

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C779 (14)	Test for Abrasion Resistance of Horizontal Concrete Surfaces	X		
ASTM (ANSI)	E329 (14) (Z267.1)	Rec. Practice for Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials, Used in Construction			
ANSI	A59.1	Spec. for Reinforced Gypsum Concrete (1968)	X		
ACI (ANSI)	211.1 (A167.1)	Rec. Practice for Selecting Proportions for Normal and Heavyweight Concretes (1974)			
ACI	211.2	Rec. Practice for Selecting Proportions for Structural Lightweight Concrete (1969)			
ACI	211.3	Rec. Practice for Selecting Proportions for No-Slump Concrete (1975)			
ACI (ANSI)	214 (A146.1)	Rec. Practice for Evaluation of Compression Test Results of Field Concrete (1965)			
ACI (ANSI)	301 (A138.1)	Spec. for Structural Concrete for Buildings (1972)	X	X	4
ACI	304	Rec. Practice for Measuring, Mixing, Transporting and Placing Concrete (1973)			
ACI (ANSI)	318 (A89.1)	Building Code Requirements for Reinforced Concrete (1971)	X	X	4
ACI (ANSI)	512 (A140.1)	Rec. Practices for Manufactured Reinforced Concrete Floor and Roof Units (1967)			

I. DIVISION 3: CONCRETE

A. General Tests for Concrete

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Environmental Factors in Aging Test
			Property Measurement	Aging	
CSI	305	Specifying: Plastic Concrete (June 1967)			
CSI	03351	Specifying: Exposed Aggregate Concrete (February 1973)			
CSI	03410	Specifying: Precast Concrete Panels (March 1973)			
CSI	03521	Specifying: Perlite Insulating Concrete Roof Decks (January 1973)			

I. DIVISION 3: CONCRETE
B. General Tests for Cement and Aggregates

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	C10 (13) (A1.18)	Spec. for Natural Cement	X		
ASTM (ANSI)	C33 (14) (A37.124)	Spec. for Concrete Aggregates	X		
ASTM (ANSI)	C114 (13) (A1.5)	Chemical Analysis of Hydraulic Cement	X		
ASTM	C144 (14)	Spec. for Aggregates for Masonry Mortar	X		
ASTM	C150 (13)	Spec. for Portland Cement	X		
ASTM (ANSI)	C151 (13) (A1.8)	Test for Autoclave Expansion of Portland Cement	X	X	2
ASTM (ANSI)	C187 (13) (A1.11)	Test for Normal Consistency of Hydraulic Cement	X		
ASTM (ANSI)	C188 (13) (A1.12)	Test for Specific Gravity of Hydraulic Cements	X		
ASTM (ANSI)	C190 (13) (A1.15)	Test for Time of Setting of Hydraulic Cements by Vicat Needle	X		
ASTM (ANSI)	C207 (13) (K67.13)	Spec. for Hydrated Lime for Masonry Purposes	X		
ASTM (ANSI)	C227 (14) (A37.30)	Test for Potential Alkali Reactivity of Cement-Aggregate Combinations (Mortar Bar Method)	X		
ASTM (ANSI)	C233 (14) (A37.131)	Testing Air Entraining Admixtures for Concrete	X		
ASTM (ANSI)	C243 (13) (A1.34)	Test for Bleeding of Cement Pastes and Mortars	X		
ASTM (ANSI)	C260 (13) (A37.132)	Spec. for Air-Entraining Admixtures for Concrete	X		

I. DIVISION 3: CONCRETE
B. General Tests for Cement and Aggregates

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	C266 (13) (A1.17)	Test for Time of Setting of Hydraulic Cement by Gillmore Needle	X		
ASTM (ANSI)	C330 (14) (A37.88)	Spec. for Lightweight Aggregates for Structural Concrete	X	X	4
ASTM (ANSI)	C331 (16) (A37.89)	Spec. for Lightweight Aggregates for Concrete Masonry Units	X		
ASTM (ANSI)	C342 (14) (A37.91)	Test for Potential Volume Change of Cement Aggregate Combinations	X		
ASTM (ANSI)	C359 (13) (A1.31)	Test for False Set of Portland Cement (Mortar Method)	X		
ASTM	C451 (13)	Test for False Set of Portland Cement (Paste Method)	X		
ASTM	C494 (14)	Specs. for Chemical Admixtures for Concrete	X	X	4
ASTM (ANSI)	C595 (13) (A1.38)	Specs. for Blended Hydraulic Cements	X		
ASTM (ANSI)	C618 (14) (A37.122)	Spec. for Fly Ash and Raw or Calcined Natural Pozzolans for Use in Portland Cement Concrete	X		
ASTM	C641 (14)	Test for Staining Materials in Lightweight Concrete Aggregates	X		
NLA	NLA-6	Spec. for Lime in Concrete	X		
Fed.Spec	SS-C-181e	Cement, Masonry (Oct. 18, 1965)	X		
Fed.Spec	SS-C-185a	Cement, Natural (Oct. 18, 1965)	X	X	2,3
Fed.Spec	SS-C-188	Cement, Plastic, Fatty Acid Pitch Base (Feb. 1, 1956)	X	X	2
Fed.Spec	SS-C-192g	Cement, Portland (Oct. 10, 1971)	X		

DIVISION 3: CONCRETE
B. General Tests for Cement and Aggregates

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
Fed. Std.	158a	Cements, Hydraulic; Sampling, Inspection and Testing (Apr. 21, 1971)	X	X	2,3,4
		2401.1 Air Entrainment	X		
		2101.1 Air Permeability	X		
		2211.1 Autoclave Expansion		X	2,3
		2301.1 Compressive Strength	X		
		2311 Compressive Strength	X		
		4101.1 Dynamic Mod. of Elasticity	X		
		2511.1 Early Stiffening (Mortar)	X		
		2501.1 Early Stiffening (Paste)	X		
		2701.1 Flexural Strength	X		
		2401.1 Flow, Air Entrainment Mortars	X		
		2301.1 Flow, Compressive Strength Mortars	X		
		2001.1 Laboratory Condition	X	X	2,3
		4201 Freeze Thawing		X	4
		2221.1 Setting Time, Vicat	X		
		2231 Setting Time, Gillmore	X		
		2801 Sulfate Resistance		X	3 (and sulfate)

II. DIVISION 4: MASONRY

A. General Tests for Masonry Units

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	C90.(16) (A79.1)	Spec. for Hollow Load-Bearing Concrete Masonry Units	X		
ASTM (ANSI)	C129 (16) (A80.1)	Spec. for Non-Load Bearing Concrete Masonry Units	X		
ASTM (ANSI)	C140 (16) (A84.1)	Sampling and Testing Concrete Masonry Units	X		
ASTM (ANSI)	C145 (16) (A81.1)	Spec. for Solid Load-Bearing Concrete Masonry Units	X		
ASTM (ANSI)	C331 (16) (A37.89)	Spec. for Lightweight Aggregates for Concrete Masonry Units	X		
ASTM	C744 (16)	Spec. For Prefaced Concrete and Calcium Silicate Masonry Units	X		
ASTM	E149 (18)	Test for Bond Strength of Mortar to Masonry Units	X		
ASTM	E447 (18)	Test for Compressive Strength of Masonry Assemblages	X		
ASTM	E514 (18)	Test for Water Permeance of Masonry	X		
ASTM	E518 (18)	Test for Flexural Bond Strength of Masonry	X		
ASTM	E519 (18)	Test for Diagonal Tension (Shear) in Masonry Assemblages	X		
ANSI	A41.1	Building Code Requirements for Masonry			
CSI	04220	Specifying: Concrete Unit Masonry (October 1971)			
NCMA	--	Guide Spec. for Concrete Masonry (1969)	X		
Fed.Spec.	SS-C-621b	Concrete Masonry Units, Hollow (and Solid, Prefaced and Unglazed) (June 18, 1970)	X		

II. DIVISION 4: MASONRY

B. Tests for Masonry for Roofing*

TEST METHOD IDENTIFICATION AND DESCRIPTION

*See tests for clay tile under DIVISION 4: MASONRY, C. Tests for Masonry Walls, page A-13

Source	Number	Title	Type of Test		
			Property Measurement	Aging	Degradation Factors in Aging Test

II. DIVISION 4: MASONRY

C. Tests for Masonry for Walls

1. Brick

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	C55.(16) (A75.1)	Spec. for Concrete Building Brick	X		
ASTM (ANSI)	C62 (16) (A98.1)	Spec. for Building Brick (Solid Masonry Units Made from Clay or Shale)	X	X	4
ASTM (ANSI)	C67 (16) (A82.1)	Sampling and Testing Brick and Structural Clay Tile	X	X	4
ASTM (ANSI)	C73 (16) (A78.1)	Spec. for Calcium Silicate Face Brick (Sand-Lime Brick)	X		
ASTM (ANSI)	C126 (16) (A101.1)	Spec. for Ceramic Glazed Structural Clay Facing Tile, Facing Brick and Solid Masonry Units	X	X	2,3
ASTM (ANSI)	C216 (16) (A99.1)	Spec. for Facing Brick (Solid Masonry Units Made from Clay or Shale)	X	X	4
ASTM	C652 (16)	Spec. for Hollow Brick (Hollow Masonry Units Made from Clay or Shale)	X	X	4
AASHO	M-114	Spec. for Building Brick (Solid Masonry Units Made from Clay or Shale) (1970)	X	X	4
Fed.Spec	SS-B-656b	Brick, Building, Common (Clay or Shale) (Feb. 18, 1966)	X	X	4
Fed.Spec	SS-B-663b	Brick, Building, Concrete (June 9, 1965)	X		
Fed.Spec	SS-B-668b	Brick, Facing, Clay or Shale (May 20, 1974)	X	X	4
Fed.Spec	SS-B-681b	Brick, Building, Sand-Lime (Dec. 22, 1965)	X	X	4

I. DIVISION 4: MASONRY

C. Tests for Masonry for Walls

2. Natural Building Stone

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	C97 (19)	Test for Absorption and Bulk Specific Gravity of Natural Building Stone	X		
ASTM	C99 (19)	Test for Modulus of Rupture of Natural Building Stone	X		
ASTM	C170 (19)	Test for Compressive Strength of Natural Building Stone	X		
ASTM	C503 (19)	Spec. for Exterior Marble	X		
ASTM	C568 (19)	Spec. for Dimension Limestone	X		
ASTM (ANSI)	C615 (19) (A91.1)	Spec. for Structural Granite	X		
ASTM (ANSI)	C616 (19) (A192.1)	Spec. for Building Sandstone	X		
ASTM (ANSI)	C629 (19) (A193.1)	Spec. for Structural Slate	X	X	6

II. DIVISION 4: MASONRY

C. Tests for Masonry for Walls

3. Clay Tile

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	C34 (16) (A74.1)	Spec. for Structural Clay Load Bearing Tile	X	X	4
ASTM (ANSI)	C56 (16) (A76.1)	Spec. for Structural Clay Non-Load Bearing Tile	X		
ASTM (ANSI)	C67 (16) (A82.1)	Sampling and Testing Brick and Structural Clay Tile	X	X	4
ASTM (ANSI)	C126 (16) (A101.1)	Spec. for Ceramic Glazed Structural Clay Facing Tile, Facing Brick and Solid Masonry Units	X	X	2,3
ASTM	C212 (16)	Spec. for Structural Clay Facing Tile	X		
ASTM	C530 (16)	Spec. for Structural Clay Non-Load Bearing Screen Tile	X		
ASTM (ANSI)	C648 (17) (A173.1)	Test for Breaking Strength of Ceramic Tile	X		
FTI	--	Glazed, Natural Finish Structural Facing Tile	X	X	2,3
ICBO	UBCS 24-8	Structural Clay Load Bearing Wall Tile and Standard Methods of Sampling and Testing Structural Clay Tile (1973)	X	X	4
ICBO	UBCS 24-9	Structural Clay Non-Load Bearing Tile (1973)	X		

II. DIVISION 4: MASONRY

C. Tests for Masonry for Walls

4. Mortar and Grout

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	C91 (13) (A1.3)	Spec. for Masonry Cement	X		
ASTM (ANSI)	C109 (13) (A1.4)	Test for Compressive Strength of Hydraulic Cement Mortars	X		
ASTM	C144 (14)	Spec. for Aggregates for Masonry Mortar	X		
ASTM (ANSI)	C157 (13) (A37.78)	Test for Length Change of Hardened Cement Mortar and Concrete	X		
ASTM (ANSI)	C185 (13) (A1.9)	Test for Air Content of Hydraulic Cement Mortar	X		
ASTM (ANSI)	C243 (13) (A1.34)	Test for Bleeding of Cement Pastes and Mortars	X		
ASTM (ANSI)	C265 (13) (A1.29)	Test for Calcium Sulfate in Hydrated Portland Cement Mortar	X		
ASTM	C267 (16)	Test for Chemical Resistance of Mortars	X	X	6
ASTM	C270 (16)	Spec. for Mortar for Unit Masonry	X		
ASTM	C348 (13)	Test for Flexural Strength of Hydraulic Cement Mortars	X		
ASTM (ANSI)	C349 (13) (A1.30)	Test for Compressive Strength of Hydralic Cement Mortars	X		
ASTM (ANSI)	C387 (14) (A37.125)	Spec. for Packaged, Dry, Combined Materials for Mortar and Cement			
ASTM	C404 (14)	Spec. for Aggregates for Masonry Grouts	X		
ASTM (ANSI)	C452 (13) (A1.32)	Test for Potential Expansion of Portland Cement Mortar Exposed to Sulfate	X	X	3 (and sulfate)

II. DIVISION 4: MASONRY
C. Tests for Masonry for Walls
4. Mortar and Grout

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C476 (16)	Spec. for Mortar and Grout for Reinforced Masonry	X		
ASTM (ANSI)	C490 (14) (A1.33)	Spec. for Apparatus for Use in Measurement of Length Change of Hardened Cement Paste, Mortar and Concrete			
ASTM (ANSI)	C531 (16) (A1.35)	Test for Shrinkage and Coefficient of Thermal Expansion of Chemical Resistant Mortars	X		
ASTM (ANSI)	C580 (16) (A1.37)	Test for Flexural Strength and Modulus of Elasticity of Chemical Resistant Mortars, Grouts and Monolithic Surfaces	X		
ASTM	C596 (13)	Measuring the Drying Shrinkage of Mortar Containing Portland Cement	X		
ASTM	C780 (16)	Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry	X		
ASTM	E149 (18)	Test for Bond Strength of Mortars to Masonry Units	X		
NCMA	--	Guide Spec. for Concrete Masonry (1969)	X		
NLA	NLA-5	Spec. for Mortars for Use in Unit Masonry	X		
Fed.Spec.	SS-C-181e	Cement, Masonry (Oct. 18, 1965)	X		

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI) (Fed.Std)	B117 (10) (Z118.1) (151b)	Method of Salt Spray (Fog) Testing		X	3,6
ASTM (ANSI)	B287 (10) (Z118.2)	Method of Acetic Acid-Salt Spray (Fog) Testing		X	3,6
ASTM (ANSI)	B368 (9) (Z118.3)	Test for Copper Accelerated Acetic Acid-Salt Spray (Fog) Testing (Cass Test)		X	3,6
ASTM	B370 (6)	Spec. for Copper Sheet and Strip for Building Construction	X		
ASTM (ANSI)	B489 (9) (G53.49)	Rec. Practice for Bend Test for Ductility of Plated Metals	X		
ASTM	B506 (6)	Spec. for Copper Clad Stainless Steel Sheet and Strip for Building Construction	X		
ASTM (ANSI)	C313 (17) (Z167.5)	Test for Adherence of Porcelain Enamel and Ceramic Coatings to Sheet Metal	X		
ASTM	D2247 (27)	Testing Coated Metal Specimens at 100 Percent Relative Humidity	X	X	2,3
ASTM	D2933 (27)	Testing Coated Steel Specimens Dynamically for Resistance to Corrosion	X	X	2,3,4,6
ASTM (ANSI) (Fed.Std)	E8 (10) (Z168.13) (151b)	Methods of Tension Testing of Metallic Materials	X		
ASTM (ANSI)	E9 (10) (Z115.16)	Methods of Compression Testing of Metallic Materials at Room Temperature	X		
ASTM (ANSI) (Fed.Std)	E10 (10) (Z115.5) (151b)	Test for Brunell Hardness of Metallic Materials	X		

III. DIVISION 5: METALS
A. General Tests for Metals

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI) (Fed.Std)	E18 (10) (Z115.6) (151b)	Test for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials	X		
ASTM (Fed.Std)	E23 (10) (151b)	Methods for Notched Bar Impact Testing of Metallic Materials	X		
ASTM (ANSI) (Fed.Std)	E92 (10) (Z115.7) (151b)	Test for Vickers Hardness of Metallic Materials	X		
ASTM (ANSI)	E103 (7) (Z115.8)	Method of Rapid Indentation Hardness Testing of Metallic Materials	X		
ASTM (ANSI)	E110 (10) (Z115.9)	Test for Indentation Hardness of Metallic Materials by Portable Hardness Testers	X		
ASTM (ANSI)	E139 (10) (Z178.2)	Rec. Practice for Conducting Creep, Creep Rupture and Stress Rupture Tests of Metallic Materials	X	X	2,11
ASTM (ANSI)	E150 (10) (Z178.3)	Rec. Practice for Conducting Creep and Creep Rupture Tension Tests of Metallic Materials Under Conditions of Rapid Heating and Short Times	X	X	2,11
ASTM	E329 (14)	Rec. Practice for Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials Used in Construction			
ASTM (ANSI)	E399 (10) (Z260.2)	Test for Plane-Strain Fracture Toughness of Metallic Materials	X	X	11
ASTM	E448 (10)	Rec. Practice for Scleroscope Hardness Testing of Metallic Materials	X		

III. DIVISION 5: METALS
A. General Tests for Metals

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	E466 (10)	Rec. Practice for Constant Amplitude Axial Fatigue Tests of Metallic Materials	X		
ASTM	G31 (10)	Rec. Practice for Laboratory Immersion Corrosion Testing of Metals	X	X	3,6
ASTM	G33 (10)	Rec. Practice for Recording Data from Atmospheric Corrosion Tests of Metallic Coated Steel Specimens			
AWPA	M-14-72	Std. Method of Conducting Controlled Velocity Laboratory Corrosion Tests (1972)	X	X	2,3,6
ICBO	UBCS 28-1	Standard for Aluminum Structures (1973)	X		
ICBO	UBCS 32-4	Sheet Metals (1973)	X		
ICBO	UBCS 32-6	Corrosion Resistant Metals (1973)	X		
NACE	TM-01-69	Test Method for Laboratory Corrosion Testing of Metals for the Process Industries	X	X	2,3
NACE	TM-02-70	Test Method for Conducting Controlled Velocity Laboratory Corrosion Tests (1970)	X	X	2,3,6
SMACN	--	Architectural Sheet Metal Manual, 2nd Edition (May 1968)			
SMACN	--	Architectural Sheet Metal Specs., 3rd Printing (1973)			
Fed.Std.	151b	Metals: Test Methods (Oct. 7, 1971)	X	X	3,6
		111.2 Chemical Analysis	X		
		112.2 Spectrochemical Analysis	X		
		514.1 Coating on Terne Plate	X		
		520.1 Coating Thickness	X		
		812.1 Sea Water Spray Test (Also ASTM E8, E23, E290, E10, E18, E92, E90, A219, and B117)		X	3,6

II. DIVISION 5: METALS
B. Tests for Metal Roofing

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	A361 (3) (G8.21)	Spec. for Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process for Roofing	X		
ASTM (ANSI)	A525 (3) (G8.25)	Spec. for Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process (General Requirements)	X		
ASTM	D2092 (27)	Rec. Practice for Preparing Zinc Coated Steel Surfaces for Painting			
AA	28 (7.21-7.31)	"Roofing and Siding" and "Painted Steel" in Aluminum Standards and Data (1972-73)	X	X	1,2,3,6
CSI	07610	Specifying: Sheet Metal Roofing (Oct. 1971)			
Fed.Spec	QQ-S-775d	Steel Sheets, Carbon, Zinc Coated (Oct. 9, 1967)	X		
Fed.Spec	QQ-T-201d	Terneplate, for Roofing and Roofing Products (Aug. 22, 1969)	X		

II. DIVISION 5: METALS
C. Tests for Metal Siding

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	A361 (3) (G8.21)	Spec. for Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process for Roofing	X		
ASTM (ANSI)	A525 (3) (G8.25)	Spec. for Steel Sheet, Zinc Coated (Galvanized) by the Hot-Dip Process (General Requirements)	X		
ASTM	D2092 (27)	Rec. Practice for Preparing Zinc Coated Steel Surfaces for Painting			
AA	28 (7.21-7.31)	"Roofing and Siding" and "Painted Steel" in Aluminum Standards and Data (1972-73)	X	X	1,2,3,6
AAMA	1402.1	Spec. for Aluminum Siding (Feb. 1970)	X	X	1,2,3,6
ASA	62-5-16	Methods of Test for Aluminum Residential Siding (1962)	X		
NAAMM	TM-01-68T	Metal Curtain Walls (1968)	X		
NAAMM	--	Metal Curtain Wall Spec. Manual (Feb. 1968)	X		
Fed.Spec.	QQ-S-775d	Steel Sheets, Carbon, Zinc Coated (Oct. 9, 1967)	X		

IV. DIVISION 6.1: WOOD *
A. General Tests for Wood

TEST METHOD IDENTIFICATION AND DESCRIPTION

*See also DIVISION 9: FINISHES, D.6 Wood Flooring, page A-114

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D52 (23) (09.1)	Spec. for Wood	X		
ASTM (ANSI)	D143 (22) (04.1)	Testing Small Clear Specimens of Timber	X		
ASTM (ANSI)	D198 (22) (04.2)	Static Tests of Timbers in Structural Sizes	X		
ASTM (ANSI)	D245 (22) (04.3)	Methods for Establishing Structural Grades and Related Allowable Properites for Visually Graded Lumber	X		
ASTM (ANSI)	D805 (22) (07.1)	Testing Veneer, Plywood and Other Glued Veneer Constructions	X		
ASTM (ANSI)	D1037 (22) (08.1)	Methods of Evaluating the Properties of Wood Base Fiber and Particle Panel Materials	X		
ASTM (ANSI)	D1324 (22) (012.1)	Spec. for Modified Wood	X		
ASTM	D1877 (22)	Test for Permeance of Adhesive Bonded Joints in Plywood Under Mold Conditions	X	X	9
ASTM	D2016 (22)	Test for Moisture Content of Wood	X		
ASTM	D2017 (22)	Accelerated Laboratory Test of Natural Decay Resistance of Wood	X	X	9
ASTM	D2555 (22)	Method for Establishing Clear Wood Strength Values	X		
ASTM	D2718 (22)	Testing Plywood in Rolling Shear	X		
ASTM	D2719 (22)	Testing Plywood in Shear Through the Thickness.	X		

DIVISION 6.1: WOOD
A. General Tests for Wood

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	D2915-(22)	Evaluating Allowable Properties for Grades of Structural Lumber	X		
ASTM	D3043 (22)	Testing Plywood in Flexure	X		
ASTM	D3044 (22)	Test for Shear Modulus of Plywood	X		
AHA	I.S. 1-70	Std. for Hardboard (1970)	X	X	1,2,3,12
AITC	117-71	Specs. for Structural Glued Laminated Timber of Douglas Fir, Western Larch, Southern Pine and California Redwood (1971)	X		
AITC	119-71	Specs. for Hardwood Glued Laminated Timber (1971)	X		
APA	--	Mold Testing Procedure and Mold Resistant Approval Requirements (April 1964)	X	X	9
APA	--	Bacteria Test Procedure (Aug. 1968)	X	X	10
CRA	--	Redwood Data Book (1971)			
NFORP	--	Design of Wood Structures for Permeance, Wood Construction Data Booklet #6 (1961)			
SFPA	Tech. Bull. #1	Southern Pine Grade User Guide			
USC (ANSI)	NBS-PS 1-74 (A199.1)	Construction and Industrial Plywood (1974)	X	X	2,3,9
USC	NBS-PS 51-71	Hardboard and Decorative Plywood (1972)	X	X	2,3
USC (ANSI)	NBS-PS 56 (A190.1)	Structural Glued Laminated Timber (1973)	X	X	2,3
WRC	--	Specs. for Western Red Cedar Clear Lumber and Siding Products (1960)	X		

IV. DIVISION 6.1: WOOD
A. General Tests for Wood

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
WWPA	--	Western Wood Products Design Information			
WWPA	--	Western Woods Use Book (1973)			

IV. DIVISION 6.1: WOOD
B. Tests for Wood Roofing Shingles

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
RCSHS	--	Certigrade Handbook of Red Cedar Shingles (1964)			

IV. DIVISION 6.1: WOOD
C. Tests for Wood Siding

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
HPMA	CB-SG-73	Design Guide for Wood Composition Board Wall Panels (1973)			
RCSHS	--	Certigrade Handbook of Red Cedar Shingles (1964)			
USC (ANSI)	NBS-PS 60 (A135.6)	Hardboard Siding (1973)	X	X	1,2,3

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D256 (35) (C59.11)	Test for Impact Resistance of Plastics and Electrical Insulating Materials	X		
ASTM (ANSI)	D543 (35) (K65.105)	Test for Resistance of Plastics to Chemical Reagents	X	X	6
ASTM (ANSI) (Fed.Std)	D570 (35) (K65.16) (406,101B)	Test for Water Absorption of Plastics	X		
ASTM (ANSI) (Fed.Std)	D621 (35) (K65.4) (406)	Test for Deformation of Plastics Under Load	X		
ASTM (ANSI) (Fed.Std)	D638 (35) (K65.60) (406,101B)	Test for Tensile Properties of Plastics	X		
ASTM (ANSI) (Fed.Std)	D648 (35) (K65.222) (406)	Test for Deflection Temperature of Plastics Under Flexural Load	X		
ASTM	D671 (35)	Tests for Flexural Fatigue of Plastics by Constant Amplitude of Force	X		
ASTM (Fed.Std)	D673 (35) (406)	Test for Mar Resistance of Plastics	X		
ASTM (ANSI) (Fed.Std)	D695 (35) (K65.1) (406,101B)	Test for Compressive Properties of Rigid Plastics	X		
ASTM (ANSI) (Fed.Std)	D696 (35) (K65.118) (406)	Test for Coefficient of Linear Thermal Expansion of Plastics	X		
ASTM (ANSI)	D732 (35) (K65.52)	Test for Shear Strength of Plastics	X		

V. DIVISION 6.2: PLASTICS
A. General Tests for Plastics

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (Fed.Std)	D746 (35) (406)	Test for Brittleness Temperature of Plastics and Elastomers by Impact	X		
ASTM (ANSI)	D747 (35) (K65.13)	Test for Stiffness of Plastics by Means of a Cantilever Beam	X		
ASTM (ANSI) (Fed.Std)	D756 (35) (K65.104) (406)	Test for Resistance of Plastics to Accelerated Service Conditions		X	2,3
ASTM (ANSI) (Fed.Std)	D785 (35) (K65.3) (406,101B)	Test for Rockwell Hardness of Plastics and Electrical Insulating Materials	X		
ASTM (ANSI) (Fed.Std)	D790 (35) (K65.75) (406,101B)	Test for Flexural Properties of Plastics	X		
ASTM (ANSI)	D794 (35) (K65.103)	Rec. Practice for Determining Permanent Effect of Heat on Plastics	X	X	2
ASTM (ANSI)	D864 (35) (K65.116)	Test for Coefficient of Cubical Thermal Expansion of Plastics	X		
ASTM (ANSI)	D882 (35) (K65.76)	Tests for Tensile Properties of Thin Plastic Sheeting	X		
ASTM (ANSI)	D952 (35) (K65.74)	Test for Bond Strength of Plastics and Electrical Insulating Materials	X		
ASTM (ANSI) (Fed.Std)	D953 (35) (K65.73) (406)	Test for Bearing Strength of Plastics	X		
ASTM (ANSI)	D1004 (35) (K65.71)	Test for Tear Resistance of Plastic Film and Sheeting	X		

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D1042 (35) (K65.101)	Measuring Changes in Linear Dimensions of Plastics	X		
ASTM (ANSI)	D1043 (35) (K65.2)	Test for Stiffness Properties of Plastics as a Function of Temperature by Means of a Torsion Test	X		
ASTM (ANSI)	D1045 (35) (K65.91)	Sampling and Testing Plasticizers Used in Plastics	X		
ASTM (ANSI) (Fed.Std)	D1181 (35) (K65.102) (406)	Test for Warpage of Sheet Plastics	X		
ASTM (ANSI)	D1203 (35) (K65.214)	Tests for Loss of Plasticizer from Plastics (Activated Carbon Methods)	X	X	2
ASTM (ANSI)	D1204 (35) (K65.99)	Measuring Changes in Linear Dimensions of Non-Rigid Thermoplastic Sheeting or Film	X		
ASTM	D1238 (35)	Measuring Flow Rates of Thermoplastics by Extrusion Plastometer	X		
ASTM (ANSI)	D1239 (35) (K65.100)	Test for Resistance of Plastic Films to Extraction by Chemicals	X		
ASTM (ANSI)	D1242 (35) (K65.70)	Test for Resistance to Abrasion of Plastic Materials	X		
ASTM (ANSI)	D1299 (35) (K65.98)	Test for Shrinkage of Molded and Lamianted Thermosetting Plastics at Elevated Temperature	X	X	2
ASTM (ANSI)	D1434 (35) (K65.90)	Test for Gas Transmission Rate of Plastic Film and Sheeting	X		

V. DIVISION 6.2: PLASTICS
A. General Tests for Plastics

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D1435 (35) (K65.97)	Rec. Practice for Outdoor Weathering of Plastics		X	8
ASTM (ANSI)	D1499 (35) (K65.29)	Rec. Practice for Operating Light and Water Exposure Apparatus (Carbon-Arc Type) for Exposure of Plastics		X	1,2,3
ASTM (Fed. Std)	D1501 (35) (406)	Rec. Practice for Exposure of Plastics to Fluorescent Sun-lamp		X	1,2,3
ASTM (ANSI)	D1505 (35) (K65.88)	Test for Density of Plastics by the Density-Gradient Technique	X		
ASTM	D1525 (35)	Test for Vicat Softening Point of Plastics	X		
ASTM (ANSI)	D1602 (36) (K65.149)	Test for Bearing Load of Corrugated Plastic Panels	X		
ASTM (ANSI)	D1604 (36) (K65.18)	Measuring Flatness of Plastics Sheet or Tubing	X		
ASTM (ANSI)	D1637 (35) (K65.115)	Test for Tensile Heat Distortion Temperature of Plastic Sheeting	X		
ASTM (ANSI)	D1708 (35) (K65.69)	Test for Tensile Properties of Plastics by Use of Microtensile Specimens	X		
ASTM (ANSI)	D1712 (35) (K65.33)	Test for Resistance of Plastics to Sulfide Staining	X	X	6
ASTM (ANSI)	D1790 (35) (K65.112)	Test for Brittleness Temperature of Plastic Film by Impact	X		
ASTM (ANSI)	D1822 (35) (K65.68)	Test for Tensile Impact Energy to Break Plastics and Electrical Insulating Materials	X		

V. DIVISION 6.2: PLASTICS
A. General Tests for Plastics

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	D1870 (35)	Test for Elevated Temperature Aging Using a Tubular Oven		X	2
ASTM (ANSI)	D1894 (35) (K65.14)	Test for Coefficient of Friction of Plastic Film	X		
ASTM (ANSI)	D1922 (35) (K65.66)	Test for Propagation Tear Resistance of Plastic Film and Thin Sheeting	X		
ASTM (ANSI)	D1925 (35) (K65.106)	Test for Yellowness Index of Plastics	X		
ASTM (ANSI)	D1938 (35) (K65.65)	Test for Resistance to Tear Propagation in Plastic Film and Thin Sheeting by a Single Tear Method	X		
ASTM (ANSI)	D2236 (35) (K65.221)	Tests for Dynamic Mechanical Properties of Plastics by Means of a Torsional Pendulum	X		
ASTM (ANSI)	D2240 (35) (K65.63)	Test for Indentation Hardness of Rubber and Plastics by Means of a Durometer	X		
ASTM (ANSI)	D2288 (36) (K65.196)	Test for Weight Loss of Plasticizers on Heating	X	X	2
ASTM (ANSI)	D2289 (35) (K65.62)	Test for Tensile Properties of Plastics at High Speeds	X		
ASTM (ANSI)	D2299 (35) (K65.94)	Rec. Practice for Determining Relative Stain Resistance of Plastics	X		
ASTM	D2457 (35)	Test for Specular Gloss of Plastic Films	X		

V. **DIVISION** 6.2: PLASTICS
A. General Tests for Plastics

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	D2565 (35)	Rec. Practice for Operating Xenon Arc Type (Water Cooled) Light and Water Exposure Apparatus for Exposure of Plastics		X	1,2,3
ASTM (ANSI)	D2583 (35) (K65.227)	Test for Indentation Hardness of Plastics by Means of a Barcol Impressor	X		
ASTM	D2648 (35)	Rec. Practice for Measuring Time to Failure by Rupture of Plastics Under Tension in Various Environments	X	X	11
ASTM	D2990 (35)	Test for Tensile Creep and Creep Rupture of Plastics	X	X	11
ASTM	D2991 (35)	Rec. Practice for Testing Stress Relaxation of Plastics	X	X	11
ASTM	D3028 (35)	Test for Kinetic Coefficients of Friction of Plastics	X		
ASTM	D3029 (35)	Test for Impact Resistance of Rigid Plastic Sheeting or Parts by Means of a Tup (Falling Weight)	X		
ASTM	D3045 (35)	Rec. Practice for Heat Aging of Plastics Without Load		X	2
ASTM	D3099 (36)	Test for Pneumatic Ball Impact Resistance of Plastic Film and Sheeting	X		
ASTM (ANSI)	F88 (21) (Z191.1)	Test for Seal Strength of Flexible Barrier Materials	X		
ASTM (ANSI)	F89 (21) (Z192.1)	Test for Modulus of a Flexible Barrier Material by Sonic Method	X		

V. DIVISION 6.2: PLASTICS
A. General Tests for Plastics

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	F372 (21)	Test for Water Vapor Transmission of Flexible Barrier Materials Using an Infrared Detection Technique	X		
ASTM	F392 (21)	Test for Flex Durability of Flexible Barrier Materials	X	X	12
ASTM	G21 (35)	Rec. Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi	X	X	9
ASTM	G22 (35)	Rec. Practice for Determining Resistance of Plastics to Bacteria	X	X	10
SPI	VDT12	Measuring Water Extraction of Plasticized Sheeting (Activated Carbon Technique)	X		
Fed.Spec	L-P-508f	Plastic Sheet, Laminated, Decorative and Nondecorative (Feb. 23, 1968)	X	X	1,2,3,12
Fed.Spec.	L-P-509a	Plastic Sheet, Rod and Tube, Laminated, Thermosetting (Oct. 17, 1967)	X	X	chemicals
Fed. Std.	406	Plastics: Methods of Testing (Oct. 5, 1961)			
		1091 Abrasion Wear	X		
		6022 Accelerated Weathering		X	1
		6023 Accelerated Weathering		X	1,2,3,4
		1111 Bonding Strength	X		
		6031 Colorfastness to Light		X	1
		1061 Flexural Fatigue Strength	X	X	11, 12
		1062 Flexural Fatigue Strength	X	X	11, 12
		6053 Crazing Resistance Under Stress	X	X	11
		1074 Falling Ball Impact	X		
		3051 Gloss	X		
		1083 Indentation Hardness	X		

V. DIVISION 6.2: PLASTICS
A. General Tests for Plastics

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
		1042 Bond Shear Strength of Structural Plastic Laminates	X		
		6052 Internal Stress in Plastic Sheets	X		
		1071 Izod Impact Strength (ASTM D256)	X		
		6091 Mildew Resistance		X	9
		5021 Porosity	X		
		7011 Resistance to Chemical Reagents (ASTM D543)	X	X	6
		6071 Salt Spray Test		X	6
Fed. Std.	101B	Preservation, Packaging and Packing Materials: Test Procedures (Oct. 8, 1971)			
		3004 Compatibility Test	X		
		2017 Flexing Procedure for Barrier Materials	X		
		2025 Impact Puncture Resistance of Films and Barriers	X		
		4037 Solubility Tests	X		
		4033 Visual Examination	X		

DIVISION 6.2: PLASTICS
B. Tests for Specific Types of Plastics
1. Acrylics
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	D702 (36) (K65.138)	Spec. for Cast Methacrylate Plastic Sheets, Rods, Tubes and Shapes	X		
ASTM (ANSI)	D1547 (36) (K65.136)	Spec. for Extruded Acrylic Plastic Sheet	X	X	2
SAE	AMS 3608	Plastic Sheet, Methyl Methacrylate (Govt. Purpose) (1958)	X	X	2,3
SAE	AMS 3609	Plastic Sheet, Methyl Methacrylate (Heat Resistant) (1950)	X	X	2,3
Fed.Spec.	L-P-380C	Plastic Molding Material, Methacrylate (Aug. 24, 1973)	X	X	3,9,11
Fed.Spec.	L-P-391C	Plastic Sheets, Rods, and Tubing, Rigid Cast, Methacrylate (Multiapplication) (May 25, 1972)	X	X	2,11

V. DIVISION 6.2: PLASTICS
B. Tests for Specific Types of Plastics
2. Phenolics
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
Fed.Spec	L-P-511	Plastic Sheet, Laminated, Thermosetting, Cotton Fabric Base, Phenolic Resin, Post Forming (Oct. 30, 1967)	X		

DIVISION 6.2: PLASTICS
B. Tests for Specific Types of Plastics
3. Polycarbonates

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D2473 (36) (K65.192)	Spec. for Polycarbonate Plastic Molding, Extrusion and Casting Materials	X		

V. **DIVISION** 6.2: PLASTICS
B. Tests for Specific Types of Plastics
4. Polyolefins
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradative Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D1430 (36) (K65.212)	Spec. for Polychlorotrifluro-ethylene (PCTFE) Plastics	X		
ASTM (ANSI)	D1463 (36) (K64.4)	Spec. for Biaxially Oriented Styrene Plastics Sheet	X	X	2
ASTM (ANSI)	D1603 (35) (K65.89)	Test for Carbon Black in Ethylene Plastics	X		
ASTM (ANSI)	D1693 (36) (K65.226)	Test for Environmental Stress Cracking of Ethylene Plastics	X	X	2
ASTM	D1709 (36)	Test for Impact Resistance of Polyethylene Film by the Free-Falling Dart Method	X		
ASTM (ANSI)	D1788 (36) (K65.205)	Spec. for Rigid Acrylonitrile Butadiene Styrene (ABS) Plastics	X		
ASTM	D1939 (36)	Rec. Practice for Determining Residual Stresses in Extruded or Molded ABS Parts by Immersion in Glacial Acetic Acid	X		
ASTM	D2103 (36)	Spec. for Polyethylene Film and Sheeting	X		
ASTM (ANSI)	D2141 (36) (K65.132)	Test for Adhesion Ration of Polyethylene Film	X		
ASTM (ANSI)	D2445 (36) (K65.224)	Test for Thermal Oxidative Stability of Propylene Plastics	X	X	2,5 (O_2)
ASTM (ANSI)	D2530 (36) (K65.219)	Spec. for Non-Oriented Pro-pylene Plastic Film	X		
ASTM (ANSI)	D2552 (36) (K65.220)	Test for Environmental Stress Rupture of Type III Polyethylene Under Constant Tensile Load	X	X	2,11
ASTM (ANSI)	D2578 (36) (K65.129)	Test for Wetting Tension of Polyethylene and Polypropylene Film	X		
ASTM	D2581 (36)	Spec. for Polybutylene Plastics	X		

DIVISION 6.2: PLASTICS
B. Tests for Specific Types of Plastics
4. Polyolefins
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	D2647 (36)	Spec. for Crosslinkable Ethylene Plastics	X	X	2
ASTM (ANSI)	D2673 (36) (K65.128)	Spec. for Oriented Polyproplene Film	X		
ASTM	D2923 (36)	Measurement of Rigidity of Polyolefin Film and Sheeting	X		
ASTM	D2951 (36)	Test for Thermal Stress Crack Resistance of Types III and IV Polyethylene Plastics	X	X	2
ASTM	D2952 (36)	Spec. for Ethylene Plastics	X		
ASTM	D3012 (36)	Test for Thermal Oxidative Stability of Propylene Plastics, Using a Biaxial Rotator	X	X	2,5 (O_2)
ASTM	D3293 (36)	Spec. for TFE-Fluorocarbon Resin Sheet	X	X	2
SAE	AMS 3646	Polytrifluorochloroethylene, Sheet Molded, Unplasticized	X		
SAE	AMS 3667	Polytetrafluoroethylene Sheet, Molded, General All Purpose	X		
USC	NBS PS-17-69	Polyethylene Sheeting (1970)	X		
USC	NBS PS-31-70	Polystyrene Plastic Sheet (1971)	X		
Fed.Spec.	L-P-1183A	Plastic Molding Material, Acrylonitrile Butadiene Styrene (ABS), Rigid (July 23, 1971)	X	X	2

V. **DIVISION** 6.2: PLASTICS
B. Tests for Specific Types of Plastics
5. Poly (Vinyl Chloride) (PVC)
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D793 (36) (K65.215)	Test for Short Time Stability at Elevated Temperatures of Plastics Containing Chlorine	X	X	2
ASTM (ANSI)	D1303 (35) (K65.9)	Test for Total Chlorine in Vinyl Chloride Polymers and Copolymers	X		
ASTM (ANSI)	D1593 (36) (K65.135)	Spec. for Nonrigid Vinyl Chloride Plastic Sheeting	X		
ASTM (ANSI)	D1755 (36) (K65.207)	Spec. for Polyvinyl Chloride Resins	X		
ASTM (ANSI)	D1784 (36) (K65.206)	Spec. for Rigid Poly (Vinyl Chloride) Compounds and Chlorinated Poly (Vinyl Chloride) Compounds	X	X	2,6
ASTM (ANSI)	D1927 (36) (K65.134)	Spec. for Rigid Poly(Vinyl Chloride) Plastic Sheet	X		
ASTM (ANSI)	D2115 (36) (K65.202)	Rec. Practice for Oven Heat Stability of Poly (Vinyl Chloride) Compositions	X	X	2
ASTM (ANSI)	D2123 (36) (K65.131)	Spec. for Rigid Poly(Vinyl Chloride-Vinyl Acetate) Plastic Sheet	X		
ASTM (ANSI)	D2124 (35) (K65.86)	Analysis of Components in Poly (Vinyl Chloride) Compounds Using an Infrared Spectrophotometric Technique	X		
ASTM (ANSI)	D2151 (35) (K65.95)	Test for Staining of Poly (Vinyl) Chloride) Compositions by Rubber Compounding Ingredients	X		
ASTM (ANSI)	D2383 (36) (K65.194)	Rec. Practice for Testing Plasticizer Compatibility in Poly(Vinyl Chloride) (PVC) Compounds Under Humid Conditions	X	X	2,3,13

V. DIVISION 6.2: PLASTICS
B. Tests for Specific Types of Plastics
5. Poly (Vinyl Chloride) (PVC)
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	D2474 (36)	Spec. for Vinyl Chloride Copolymer Resins	X		
ASTM	D3030 (36)	Test for Volatile Matter (Including Water) of Vinyl Chloride Resins	X		
ASTM	D3291 (36)	Test for Compatibility of Plasticizers in Vinyl Chloride Plastics Under Compression	X		
USC	201-55	Rigid PVC Sheets (1955)	X		

V. DIVISION 6.2: PLASTICS
B. Tests for Specific Types of Plastics
6. Reinforced
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D1494 (36) (K65.151)	Test for Diffuse Light Transmission Factor of Reinforced Plastic Panels	X		
ASTM (ANSI)	D1502 (36) (K65.150)	Test for Transverse Load of Corrugated Reinforced Plastic Panels	X		
ASTM	D2150 (36)	Spec. for Woven Roving Glass Fabric for Polyester Glass Laminates	X		
ASTM (ANSI)	D2343 (36) (K65.146)	Test for Tensile Properties of Glass Fiber Strands, Yarns and Rovings Used in Reinforced Plastics	X		
ASTM (ANSI)	D2344 (36) (K65.233)	Test for Apparent Horizontal Shear Strength of Reinforced Plastics by Short Beam Method			
ASTM (ANSI)	D2408 (36) (K65.145)	Spec. for Woven Glass Fabric, Cleaned and After Finished with Amino Silane Type Finishes, for Plastic Laminates	X		
ASTM (ANSI)	D2409 (36) (K65.143)	Spec. for Woven Glass Fabric, Cleaned and After-Finished with Vinyl Silane Type Finishes, for Plastic Laminates	X		
ASTM (ANSI)	D2410 (36) (K65.144)	Spec. for Woven Glass Fabric, Cleaned and After Finished with Chrome Complexes, for Plastic Laminates	X		
ASTM (ANSI)	D2563 (36) (K65.141)	Rec. Practice for Classifying Visual Defects in Glass Reinforced Laminates and Parts made Therefrom	X		
ASTM	D2733 (36)	Test for Interlaminar Shear Strength of Structural Reinforced Plastics at Elevated Temperatures	X		

V. DIVISION 6.2: PLASTICS
B. Tests for Specific Types of Plastics
6. Reinforced
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	D2734 (36)	Test for Void Content of Reinforced Plastics	X		
ASTM	D3039 (36)	Test for Tensile Properties of Oriented Fiber Composites	X		
ASTM	D3098 (36)	Spec. for Woven Glass Fabrics, Cleaned, and After-Finished with Epoxy-Functional Silane Type Finishes for Plastic Laminates	X		
ASTM	D3171 (36)	Test for Fiber Content of Reinforced Resin Composites	X		
Fed.Spec	L-P-1196	Plastic Sheet, Flexible, Reinforced (May 20, 1969)	X		

V. **DIVISION** 6.2: PLASTICS
B. Tests for Specific Types of Plastics
7. Cellular
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D1621 (36) (K65.31)	Test for Compressive Properties of Rigid Cellular Plastics	X		
ASTM (ANSI)	D1622 (36) (K65.19)	Test for Apparent Density of Rigid Cellular Plastics	X		
ASTM (ANSI)	D1623 (36) (K65.32)	Test for Tensile Properties of Rigid Cellular Plastics	X		
ASTM (ANSI)	D1638 (36) (K65.126)	Testing Urethane Foam Isocyanate Raw Materials	X		
ASTM (ANSI)	D2126 (36) (K65.124)	Test for Response of Rigid Cellular Plastics to Thermal and Humid Aging	X	X	2,3
ASTM	D2237 (36)	Test for Rate of Rise (Volume Increase) Properties of Urethane Foaming Systems	X		
ASTM (ANSI)	D2326 (36) (K65.123)	Test for Thermal Conductivity of Cellular Plastics by Means of a Probe			
ASTM	D2341 (36)	Spec. for Rigid Urethane Foam	X	X	2,3
ASTM (ANSI)	D2842 (36) (K65.122)	Test for Water Absorption of Rigid Cellular Plastics	X		
ASTM (ANSI)	D2849 (36) (K65.121)	Testing Urethane Foam Polyol Raw Materials	X		
ASTM (ANSI)	D2856 (36) (K65.152)	Measuring the Open Cell Content of Rigid Cellular Plastics by the Air Pycnometer	X		

V. DIVISION 6.2: PLASTICS

C. Tests for Transparent or Translucent Plastics *

TEST METHOD IDENTIFICATION AND DESCRIPTION

*See also Division 8: DOORS AND WINDOWS, C.3 Window Glazing, page A-77.

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D542 (35) (K65.7)	Test for Index of Refraction of Transparent Organic Plastics	X		
ASTM (ANSI) (Fed.Std)	D637 (35) (K65.109) (406)	Test for Surface Irregularities of Flat Transparent Plastic Sheets	X		
ASTM (ANSI)	D881 (35) (K65.108)	Test for Deviation of Line of Sight through Transparent Plastics	X		
ASTM (ANSI) (Fed.Std)	D1003 (35) (K65.5) (406)	Test for Haze and Luminous Transmittance of Transparent Plastics	X		
ASTM (ANSI) (Fed.Std)	D1044 (35) (K65.72) (406)	Test for Resistance of Transparent Plastics to Surface Abrasion	X		
ASTM (ANSI)	D1746 (35) (K65.107)	Test for Transparency of Plastic Sheeting	X		
ASTM (ANSI)	E424 (46) (Z138.7)	Test for Solar Energy Transmittance and Reflectance (Terrestrial) of Sheet Materials	X		
Fed. Spec.	L-P-505C	Plastic Panels, Corrugated, Translucent, Glazing (Feb. 5, 1974)	X	X	2,11

V. DIVISION 6.2: PLASTICS
D. Tests for Plastic Siding

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
USC	NBS PS 55	Rigid Poly (Vinyl Chloride) (PVC) Plastic Wall Siding (1972)	X	X	8

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION

A. General Tests for Measuring Thermal and Moisture Protection and General Tests for Weathering of Non-Metallic Materials

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	C355 (18) (Z98.18)	Test for Water Vapor Transmission of Thick Materials	X		
ASTM	E96 (18)	Test for Water Vapor Transmission of Materials in Sheet Form	X		
ASTM	E165 (11)	Methods for Liquid Penetrant Inspection	X		
ASTM	E241 (18)	Rec. Practice for Increasing the Durability of Building Constructions Against Water Damage			
ASTM	E398 (41)	Rec. Practice for Dynamic Measurement of Water Vapor Transfer	X		
ASTM (ANSI)	E432 (11) (Z166.26)	Rec. Guide for the Selection of a Leak Testing Method	X		
ASTM	G7 (41)	Rec. Practice for Atmospheric Environmental Exposure Testing of Non-Metallic Materials		X	8
ASTM	G23 (35)	Rec. Practice for Operating Light and Water Exposure Apparatus (Carbon Arc Type) for Exposure of Nonmetallic Materials		X	1,2,3
ASTM	G24 (41)	Rec. Practice for Conducting Natural Light Exposures Under Glass		X	8
ASTM	G25 (41)	Rec. Practice for Operating Enclosed Carbon Arc Type Apparatus for Light Exposure of Non-metallic Materials		X	1
ASTM	G26 (41)	Rec. Practice for Operating Light and Water Exposure Apparatus (Water Cooled Xenon Arc Type) for Exposure of Non-metallic Materials		X	1,2,3

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION

A. General Tests for Measuring Thermal and Moisture Protection and General Tests for Weathering of Non-Metallic Materials

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	G27 (41)	Rec. Practice for Operating Xenon Arc Type Apparatus for Light Exposures of Non-Metallic Materials		X	1
MBMA	--	Test for Weather Tightness (Roofing)	X		
MBMA	--	Test for Ice Damming (Roofing)	X		
NAAMM	FC-1-69	Field Check for Water Leakage of Metal Curtain Walls (1969)	X		
SAE	J426b	Liquid Penetrant Test Methods (1974)	X		
TAPPI	T 448	Water Vapor Transmission Rate of Sheet Materials at Normal Termperature (1971)	X		
TAPPI	T464	Gravimetric Determination of Water Vapor Transmission Rate of Sheet Materials at High Temperature and Humidity	X		

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
1. Built-Up
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	D529 (15) (A109.42	Rec. Practice for Accelerated Weathering of Bituminous Materials	X	X	1,2,3
ASTM	D2523 (15)	Rec. Practice for Load Strain Properties of Roof Membranes	X		
ASTM	D2829 (15)	Rec. Practice for Sampling and Analysis of Built-Up Roofs	X		
CSI	07510	Specifying: Built-Up Bituminous Roofing (Feb. 1971)	X	X	2,3
ICBO	UBCS 32-1	Materials for Use in the Construction of Built-Up Roof Coverings (1973)	X	X	2
NRCA	--	A Manual of Roofing Practice (1970)			
UL	55A	Std. for Safety, Materials for Built-Up Roof Coverings (May 1973)	X	X	2
UL (ANSI)	997 (A195.1)	Std. for Safety for Wind Resistance of Prepared Roof Covering Materials (1973)	X	X	7
NBS Publ.	BSS 55	Preliminary Performance Criteria for Bituminous Membrane Roofing (R. G. Mathey and W. C. Cullen, November 1974)	X		

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
1. Built-Up
a. Bituminous Materials
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	D4 (15) (A037.3)	Test for Bitumen	X		
ASTM (ANSI)	D5 (15) (A037.1)	Test for Penetration of Bitminous Materials	X		
ASTM (ANSI)	D6 (15) (A37.32)	Test for Loss on Heating of Oil and Asphaltic Compounds	X	X	2
ASTM (ANSI)	D36 (15) (A37.10)	Test for Softening Point of Asphalts and Tar Pitches (Ring and Ball Apparatus)	X		
ASTM (ANSI)	D70 (15) (A37.71)	Test for Specific Gravity of Semi-Solid Bituminous Materials	X		
ASTM (ANSI)	D113 (15) (A37.11)	Test for Ductility of Bituminous Materials	X		
ASTM (ANSI)	D147 (15) (A109.32)	Testing Bituminous Mastics, Grouts and Like Mixtures	X		
ASTM (ANSI)	D255 (15) (A109.11)	Test for Steam Distillation of Bituminous Protective Coatings	X		
ASTM (ANSI)	D312 (15) (A109.24)	Spec. for Asphalt for Use in Constructing Built-Up Roof Coverings	X	X	2
ASTM (ANSI)	D449 (15) (A109.16)	Spec. for Asphalt for Dampproofing and Waterproofing	X		
ASTM (ANSI)	D450 (15) (A109.6)	Spec. for Coal Tar Pitch for Roofing, Dampproofing and Waterproofing	X		
ASTM (ANSI)	D491 (15) (A109.17)	Spec. for Asphalt Mastic for Use in Waterproofing (Asphalt Cement, Mineral Filler, Mineral Aggregate)	X	X	2
ASTM (ANSI)	D529 (15) (A109.42)	Rec. Practice for Accelerated Weathering of Bituminous Materials	X	X	1,2,3

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION

B. Tests for Roofing Materials

1. Built-Up

a. Bituminous Materials

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D1227 (15) (A109.28)	Spec. for Asphalt Base Emulsions for Use as Protective Coatings for Built-Up Roofs	X	X	2,3
ASTM (ANSI)	D1370 (15) (A109.35)	Test for Contact Compatibility Between Asphaltic Materials (Oliensis Test)		X	2,13
ASTM (ANSI)	D1669 (15) (A109.40)	Method for Preparation of Test Panels for Accelerated and Outdoor Weathering of Bituminous Coatings			
ASTM (ANSI)	D1670 (15) (A109.41)	Test for Failure End Point in Accelerated and Outdoor Weathering of Bitminous Materials	X		
ASTM (ANSI)	D1754 (15) (A037.14)	Test for Effect of Heat and Air on Asphaltic Materials		X	2
ASTM	D2170 (15)	Test for Kinematic Viscosity of Asphalts (Bituminous)	X		
ASTM	D2171 (15)	Test for Absolute Viscosity of Asphalts	X		
ASTM	D2822 (15)	Spec. for Asphalt Roof Cement	X	X	2,3
ASTM	D2823 (15)	Spec. for Asphalt Roof Coatings	X	X	2,3
ASTM	D2824 (15)	Spec. for Asphalt Based, Aluminum Roof Coatings	X		
ASTM	D2939 (15)	Testing Bituminous-Base Emulsions for Use as Protective Coatings	X	X	2,3
ASTM (ANSI)	E329 (14) (Z267.1)	Rec. Practice for Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials Used in Construction			
AI	MS-4	The Asphalt Handbook Sixth Printing (1970)			
ICBO	UBCS 32-2	Roofing Asphalt (1973)	X	X	2

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
1. Built-Up
a. Bituminous Materials

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
Fed.Spec	SS-A-666D	Asphalt Petroleum (July 24, 1968)	X	X	2
Fed.Spec	SS-A-694D	Asphalt Roof Coating (March 9, 1973)	X	X	2

VI. DIVISON 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
1. Built-Up
b. Asphalt Roll Roofing and Sheets

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D224 (15) (A109.19)	Spec. for Asphalt Roll Roofing Surfaced with Powdered Talc or Mica	X	X	2
ASTM (ANSI)	D228 (15) (A109.30)	Testing Asphalt Roll Roofing, Cap Sheets, and Shingles	X	X	2
ASTM (ANSI)	D249 (15) (A109.21)	Spec. for Asphalt Roll Roofing Surfaced with Mineral Granules	X	X	2
ASTM (ANSI)	D371 (15) (A109.22)	Spec. for Wide-Selvage Asphalt Roll Roofing Surfaced with Mineral Granules	X	X	2
ASTM (ANSI)	D529 (15) (A109.42)	Rec. Practice for Accelerated Weathering of Bituminous Materials	X	X	1,2,3
ASTM	D2626 (15)	Spec. for Asphalt Base Sheet for Use in Construction of Built-Up Roofs	X	X	2
ICBO	UBCS 32-3	Composition Roofing (1973)	X	X	2
UL	55B	Std. for Safety, Class C Asphalt Organic Felt Sheet Roofing and Shingles (Oct. 1974)	X	X	2

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
1. Built-Up
c. Bitumen/Felt Combination

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D146 (15) (A109.10)	Sampling and Testing Felted and Woven Fabrics Saturated with Bituminous Substances for Use in Waterproofing and Roofing	X	X	2
ASTM	D173 (15)	Spec. for Woven Cotton Fabrics Saturated with Bituminous Substances for Use in Waterproofing	X		
ASTM (ANSI)	D226 (15) (A109.2)	Spec. for Asphalt Saturated Roofing for Use in Waterproofing and Constructing Built-Up Roofs	X	X	2
ASTM (ANSI)	D227 (15) (A109.3)	Spec. for Coal Tar Saturated Roofing Felt for Use in Waterproofing and in Constructing Built-Up Roofs	X		
ASTM (ANSI)	D250 (15) (A109.4)	Spec. for Asphalt Saturated Asbestos Felts for Use in Waterproofing and in Constructing Built-Up Roofs	X		
ASTM (ANSI)	D529 (15) (A109.42)	Rec. Practice for Accelerated Weathering of Bituminous Materials	X	X	1,2,3
ASTM (ANSI)	D1327 (15) (A109.25)	Spec. for Woven Burlap Fabrics Saturated with Bituminous Substances for Use in Waterproofing	X	X	3,9
ASTM (ANSI)	D1668 (15) (A109.26)	Spec. for Woven Glass Fabrics Treated for Use in Waterproofing and Roofing	X		
ASTM	D2178 (15)	Spec. for Asphalt Impregnated Glass Fiber Mat (Felt)	X		
ASTM	D3158 (15)	Tent. Spec. for Coated Asphalt Felt for Use in Construction of Built-Up Roofs	X	X	2

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
1. Built-Up
c. Bitumen/Felt Combination

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
Fed.Spec	HH-R-590A	Roofing Felt (Jan. 8, 1969)	X	X	2
Fed.Spec	HH-R-595B	Roofing Felt, Coal Tar and Asphalt Saturated Organic Felts, Rolls (Sept. 2, 1970)	X	X	2
Fed.Spec	SS-R-501D	Roofing Felt, Asphalt Prepared Smooth Surfaced (Apr. 23, 1971)	X	X	2
Fed.Spec	SS-R-620B	Roofing Felt, Glass Fiber, Asphalt Coated (for Flashing and Roofing (May 11, 1970)	X	X	2
Fed.Spec	SS-R-630D	Roofing Felt (Roll, Asphalt Prepared, Mineral Surfaced) (Nov. 12, 1971)	X	X	2
Fed.Spec	SS-R-1781	Roof Coating, Asphalt Base Emulsion (Oct. 23, 1972)	X	X	2,3
Fed.Spec	SS-R-1785	Roofing Felt: Laminated, Asphaltic Membrane, Wire Mesh Reinforced (Oct. 5, 1972)	X	X	2

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
1. Built-Up
d. Mineral Aggregates

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	D451(15) (A109.8)	Test for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing and Shingles	X		
ASTM (ANSI)	D452 (15) (A109.9)	Test for Sieve Analysis of Non-Granular Mineral Surfacing for Asphalt Roofing and Shingles	X		
ASTM	D1139 (15)	Spec. for Crushed Stone, Crushed Slag and Gravel for Single or Multiple Bituminous Surface Treatments	X		
ASTM (ANSI)	D1863 (15) (A109.27)	Spec. for Mineral Aggregate for Use on Built-Up Roofs	X		
ASTM (ANSI)	D1864 (15) (A109.37)	Test for Moisture in Mineral Aggregate for Use on Built-Up Roofs	X		
ASTM (ANSI)	D1865 (15) (A109.38)	Test for Hardness of Mineral Aggregate for Use on Built-Up Roofs	X		
ASTM (ANSI)	D1866 (15) (A109.39)	Test for Translucency of Mineral Aggregates for Use on Built-Up Roofs	X		
ICBO	UBCS 32-5	Roofing Aggregates (1973)	X		

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
2. Asphalt Shingles

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D225 (15) (A109.20)	Spec. for Asphalt Shingles with Mineral Granules	X	X	2
ASTM (ANSI)	D228 (15) (A109.30)	Testing Asphalt Roll Roofing, Cap Sheets and Shingles	X	X	2
ASTM (ANSI)	D529 (15) (A109.42)	Rec. Practice for Accelerated Weathering of Bituminous Materials	X	X	1,2,3
ASTM	D3018 (15)	Spec. for Class A Asphalt Shingles Surfaced with Mineral Granules	X	X	2
ASTM	D3161 (15)	Tent. Test for Wind Resistance of Asphalt Shingles	X	X	7
UL	55B	Std. for Safety, Class C Asphalt Organic Felt Sheet Roofing and Shingles (Oct. 1974)	X	X	2
Fed.Spec.	SS-S-294a	Shingles, Asphalt (Mineral Surfaced, Uniform Thickness, Class A Fire Rating) (Feb. 13, 1968)	X	X	7
Fed.Spec.	SS-S-295a	Shingles, Asphalt (Mineral Surfaced, Uniform Thickness, Class B Fire Rating) (Dec. 7, 1966)	X	X	7
Fed.Spec.	SS-S-298b	Shingles, Organic Fiber, Asphalt (Thick Butt) (Nov. 26, 1962)	X	X	2,7
Fed.Spec.	SS-S-300b	Shingles, Organic Fiber, Asphalt (Uniform Thickness) (Nov. 26, 1962)	X	X	2,7
Fed.Spec.	SS-S-001534	Shingles, Asphalt (Mineral Surfaced, Classes A, B, and C Fire Rating) (Dec. 2, 1968)	X		

VI. **DIVISION** 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
3. Porcelain*

TEST METHOD IDENTIFICATION AND DESCRIPTION

*Porcelain products used as exterior wall materials could also be tested by these methods

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	C313 (17) (Z167.5)	Test for Adherence of Porcelain Enamel and Ceramic Coatings to Sheet Metal	X		
ASTM (ANSI)	C314 (17) (Z167.9)	Test for Flatness of Porcelain Enamelled Panels	X		
ASTM (ANSI)	C448 (17) (Z167.3)	Test for Abrasion Resistance of Porcelain Enamels	X		
ASTM (ANSI)	C633 (17) (Z167.22)	Test for Adhesion or Cohesive Strength of Flame-Sprayed Coatings	X		
ASTM	C703 (17)	Test for Spalling Resistance of Porcelain Enamelled Aluminum	X		
ASTM	C743 (17)	Test for Continuity of Porcelain Enamel Coatings	X		
ASTM	D3170 (27)	Test for Chip Resistance of Coatings	X		
PEI	AL-1	Index of Test Methods for Porcelain Enamel as Applied to Aluminum (June 1968)	X		
PEI	ALS-105	Rec. Spec. for Architectural Porcelain Enamel on Aluminum for Exterior Use (1969)	X		
PEI	S-100	Spec. for Architectural Porcelain Enamel on Steel for Exterior Use (1965)	X		
PEI	T-2	Test for Resistance of Porcelain Enamels to Abrasion (1955)	X		
PEI	T-17	Test for Adherence of Porcelain Enamel to Sheet Metal (July 1953)	X		

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
4. Slate

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C120 (19)	Flexure Testing of Slate	X		
ASTM	C121 (19)	Test for Water Absorption of Slate	X		
ASTM	C217 (19)	Test for Weather Resistance of Natural Slate	X	X	8
ASTM (ANSI) (ICBO)	C406 (19) (A109.43) (UBCS 32-10)	Spec. for Roofing Slate	X	X	8

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
5. Asbestos Cement

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	C220 (16) (A124.1)	Spec. for Flat Asbestos-Cement Sheets	X		
ASTM (ANSI)	C221 (16) (A125.1)	Spec. for Corrugated Asbestos Cement Sheets	X		
ASTM (ANSI)	C222 (16) (A126.1)	Spec. for Asbestos-Cement Roofing Shingles	X		
ASTM (ANSI)	C459 (16) (A129.1)	Sampling and Testing Asbestos Cement Flat Sheets, Roofing and Siding Shingles, and Clapboards	X		
Fed.Spec.	SS-B-755A	Building Board, Asbestos-Cement, Flat and Corrugated (May 21, 1968)	X		
Fed.Spec.	SS-S-291D	Shingles, Asbestos-Cement, Roofing (July 22, 1968)	X		

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
B. Tests for Roofing Materials
6. Elastomers
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	D3105 (15)	Index of Methods of Testing Elastomeric and Plastomeric Roofing and Waterproofing Materials	X	X	1,2,3,6,11,12 (Compendium of all tests)

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION

C. Tests for Wall Materials*

1. Asphalt Siding

TEST METHOD IDENTIFICATION AND DESCRIPTION

*Tests for porcelain products are included under DIVISION 7: THERMAL AND MOISTURE PROTECTION, B. Tests for Roofing Materials, page A-57.

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	D529 (15) A109.42)	Rec. Practice for Accelerated Weathering of Bituminous Materials	X	X	1,2,3
ASTM (ANSI)	D699 (15) (A109.23)	Spec. for Asphalt Siding Surfaced with Mineral Granules	X	X	2
ASTM (ANSI)	D1226 (15) (A109.18)	Spec. for Asphalt Insulating Siding Surfaced with Mineral Granules	X	X	2
ASTM (ANSI)	D1228 (15) (A109.34)	Testing Asphalt Insulating Siding Surfaced with Mineral Granules	X	X	2

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
C. Tests for Wall Materials
2. Asbestos-Cement Siding

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	C220 (16) (A124.1)	Spec. for Flat Asbestos-Cement Sheets	X		
ASTM (ANSI)	C221 (16) (A125.1)	Spec. for Corrugated Asbestos-Cement Sheets	X		
ASTM (ANSI)	C223 (16) (A127.1)	Spec. for Asbestos-Cement Siding	X		
ASTM (ANSI)	C459 (16) (A129.1)	Sampling and Testing Asbestos-Cement Flat Sheets, Roofing and Siding Shingles and Clapboards	X		
ASTM	C551 (16)	Spec. for Asbestos-Cement Fiberboard Insulating Panels	X		
ASTM	C659 (16)	Spec. for Asbestos-Cement Plastic Foam Core Insulating Panels	X		
Fed.Spec.	SS-B-755A	Building Board, Asbestos-Cement; Flat and Corrugated (May 21, 1968)	X		
Fed.Spec.	SS-S-346C	Siding (Shingles, Clapboards, and Sheets), Asbestos-Cement (Oct. 7, 1968)	X		

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
C. Tests for Wall Materials
3. Exterior Gypsum Wallboard
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	C79 (13) (A68.1)	Spec. for Gypsum Board Sheathing	X	X	3
GA	--	Special Recommendations for Application of Gypsum Wallboard on Exterior Locations (Wood Frame Construction)			
GA	--	Special Recommendation for Application of Gypsum Wallboard on Exterior Locations (Metal Frame Construction)			

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
C. Tests for Wall Materials
4. Fiber Siding

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	C209 (18) (Z98.11)	Testing Insulation Board (Cellulosic Fiber), Structural and Decorative	X	X	2,3
ASTM	C725 (16)	Spec. for Semi-Dense Mineral Fiber Siding	X	X	2,3,4
ASTM	D1037 (22)	Evaluating the Properties of Wood-Base Fiber and Particle Panel Materials	X	X	2,3,4
ASTM	D2277 (22)	Spec. for Fiberboard Nail Base Sheathing	X		
ICBO	UBCS 25-24	Fiberboard Nail Base Sheathing and Structural Insulating Board (1973)	X		

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
D. Tests for Sealing Materials
1. Joint Sealants and Caulks
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C509 (18)	Spec. for Cellular Elastomeric Preformed Gasket and Sealing Materials	X	X	2,3,6
ASTM	C542 (18)	Spec. for Lock-Strip Gaskets	X	X	2,3,6
ASTM	C564 (18)	Spec. for Rubber Gaskets for Cast Iron Pipe and Fittings	X	X	2,3,6
ASTM	C570 (18)	Spec. for Oil and Resin Base Caulking Compound for Building Construction	X	X	2
ASTM	C603 (18)	Test for Extrusion Rate and Application Life of Elastomeric Sealants	X		
ASTM	C639 (18)	Test for Rheological (Flow) Properties of Elastomeric Sealants	X		
ASTM	C661 (18)	Test for Indentation Hardness of Elastomeric Type Sealants by Means of a Durometer	X		
ASTM	C669 (18)	Spec. for Glazing Compounds for Back Bedding and Face Glazing for Metal Sash	X	X	1,2,3
ASTM	C681 (18)	Test for Volatility of Oil and Resin Based, Knife Grade, Channel Glazing Compounds	X		
ASTM	C711 (18)	Test for Low Temperature Flexibility and Tenacity of One Part, Elastomeric, Solvent Release Type Sealants	X	X	2
ASTM	C712 (18)	Test for Bubbling of One-Part Elastomeric Solvent-Release Type Sealants	X	X	2
ASTM	C713 (18)	Test for Slump of an Oil-Base Knife-Grade Channel Glazing Compound	X		

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
D. Tests for Sealing Materials
1. Joint Sealants and Caulks

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C718 (18)	Test for UV-Cold Box Exposure of One Part Elastomeric, Solvent Release Type Sealants	X	X	1,2
ASTM	C719 (18)	Test for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement	X	X	2,3,4,11,12
ASTM	C732 (18)	Test for Aging Effects of Artificial Weathering on Latex Sealing Compounds	X	X	1,2,3
ASTM	C733 (18)	Test for Volume Shrinkage of Latex Sealing Compounds	X		
ASTM	C734 (18)	Test for Low Temperature Flexibility of Latex Sealing Compounds After Artificial Weathering	X	X	1,2,3
ASTM	C736 (18)	Test for Extension; Recovery and Adhesion of Latex Sealing Compounds	X		
ASTM	C741 (18)	Test for Accelerated Aging of Wood Sash Face Glazing Compound	X	X	1,2,3
ASTM	C742 (18)	Test for Degree of Set for Wood Sash Glazing Compound	X	X	2
ASTM	C765 (18)	Test for Low Temperature Flexibility of Preformed Sealing Tapes	X	X	2
ASTM	C766 (18)	Test for Adhesion After Impact of Preformed Sealing Tapes	X	X	2
ASTM	C771 (18)	Test for Weight Loss After Heat Aging of Preformed Sealing Tapes	X	X	2
ASTM	C772 (18)	Test for Oil Migration on Plasticizer Bleed-Out of Preformed Sealing Tapes	X	X	2

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
D. Tests for Sealing Materials
1. Joint Sealants and Caulks

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C782 (18)	Test for Softness of Preformed Sealing Tapes	X		
ASTM	C792 (18)	Test for Effects of Heat Aging on Weight Loss, Cracking and Chalking of Elastomeric Sealants	X	X	2
ASTM	C793 (18)	Test for Effects of Accelerated Weathering on Elastomeric Joint Sealants	X	X	1,2
ASTM	C794 (18)	Test for Adhesion in Peel of Elastomeric Joint Sealants	X	X	3
ASTM	D395 (37)	Test for Compression Set of Vulcanized Rubber	X	X	2,11
ASTM	D412 (37)	Tension Testing of Vulcanized Rubber	X	X	2,11
ASTM	D573 (37)	Test for Accelerated Aging of Vulcanized Rubber by the Oven Method	X	X	2,11
ASTM	D624 (37)	Test for Tear Resistance of Vulcanized Rubber	X		
ASTM	D865 (37)	Test for Heat Aging of Vulcanized Rubber by the Test Tube Method		X	2
ASTM	D1149 (37)	Test for Accelerated Ozone Cracking of Vulcanized Rubber		X	2,6 (O_3)
ASTM	D2202 (18)	Test for Slump of Caulking Compounds and Sealants	X		
ASTM	D2203 (18)	Test for Staining of Caulking Compounds and Sealants	X		
ASTM	D2249 (18)	Test for Predicting the Effect of Weathering on Face Glazing and Bedding Compounds on Metal Sash	X	X	1,2,3

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
D. Tests for Sealing Materials
1. Joint Sealants and Caulks
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	D2376-(18)	Test for Slump of Face Glazing and Bedding Compounds on Metal Sash	X		
ASTM	D2450 (18)	Test for Bond of Oil and Resin Base Caulking Compounds	X		
ASTM	D2451 (18)	Test for Degree of Set for Glazing Compounds on Sash	X	X	2
ASTM	D2453 (18)	Test for Shrinkage and Tenacity of Oil and Resin Base Caulking Compound	X	X	2
ANSI	A116.1	Spec. for Two Component Elastomeric Sealing Compounds for the Building Trade	X	X	1,2,3
AAMA	802.2	Spec. for Ductile Back Bedding Compound for Use with Archi tectural Aluminum	X	X	1,2,3
AAMA	803.2	Spec. for Narrow Joint Seam Sealer for Use with Archi-tectural Aluminum	X	X	2,3
AAMA	804.1	Spec. for Ductile Back Bedding Tapes for Use with Architectural Aluminum	X	X	1,2,3
AAMA	805.2	Spec. for Bonding Type Back Bedding Compound for Use with Architectural Aluminum	X	X	1,2,3
AAMA	806.1	Spec. for Bonding Type Back Bedding Glazing Tapes for Use with Architectural Aluminum	X	X	1,2,3
AAMA	807.1	Spec. for Oil Extended Cured Rubber Back Bedding Glazing Tapes for Use with Architectural Aluminum	X	X	1,2,3
AAMA	808.1	Spec. for Exterior Perimeter Sealing Compound for Use with Architectural Aluminum	X	X	1,2,3

VI. **DIVISION 7: THERMAL AND MOISTURE PROTECTION**
D. Tests for Sealing Materials
1. Joint Sealants and Caulks

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
AAMA	809.2	Spec. for Non-Drying Sealants for Use with Architectural Aluminum	X	X	2,3
NAAMM	SS-1-68	Specs. for Sealants	X	X	1,2,3
Fed. Spec.	TT-C-00598C	Caulking Compound, Oil and Resin Base Type (For Building Construction) (Mar. 18, 1971)	X	X	2
Fed. Spec.	TT-G-410E	Glazing Compound: Sash (Metal) for Back Bedding and Face Glazing (Apr. 8, 1971)	X	X	1,2,3
Fed. Spec.	TT-S-00227E	Sealing Compound: Elastomeric Type, Multicomponent (For Caulking, Sealing and Glazing in Buildings and Other Structures) (Oct. 9, 1970)	X	X	1,2,3,11
Fed. Spec.	TT-S-00230C	Sealing, Compound: Elastomeric Type, Single Component (For Caulking, Sealing and Glazing in Buildings and Other Structures) (Oct. 9, 1970)	X	X	1,2,3,11
Fed. Spec.	TT-S-001543A	Sealing Compound: Silicone Rubber Base (For Caulking, Sealing and Glazing in Buildings and Other Structures (June 9, 1971)	X	X	1,2,3,11
Fed. Spec.	TT-S-001657	Sealing Compound: Single Component, Butyl Rubber Based, Solvent Release Type (For Buildings and Other Types of Construction (Oct. 8, 1970)	X	X	1,2,3

VI. DIVISION 7: THERMAL AND MOISTURE PROTECTION
D. Tests for Sealing Materials
2. Flashing

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ILIA	--	Engineering Data for Reglets, Flashing and Metal Work			
NRCA	--	Roofing Manual, Section VII, Construction Details, Parts A-Q			
U.S. Army	TM-5-617	Maintenance and Repair of Roofs, Chap. 12 on Flashings and Appurtenances			

VII DIVISION 8: DOORS AND WINDOWS

A. General Tests for Doors and Windows

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	E283 (18)	Test for Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors	X		
ASTM	E330 (18)	Test for Structural Performance of Exterior Windows, Curtain Walls and Doors Under the Influence of Wind Loads	X		
ASTM	E331 (18)	Test for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference	X		

VII DIVISION 8: DOORS AND WINDOWS

B. Tests for Doors

1. Wood Doors

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
AWI	--	Architectural Woodwork Quality Standard and Guide Specs.	X		
FHDA	--	Industry Std. for Douglas Fir, Western Hemlock, Sitka Spruce Doors and Blinds (1975)	X		
NWMA	I.S. 5-73	Std. for Ponderosa Pine Doors (1973)	X		
NWMA	I.S. 1-73	Std. for Hardwood Veneered and Plastic Faced Flush Doors (1973)	X	X	2,3
NWMA	I.S. 3-70	Std. for Wood Sliding Patio Doors (1970)	X		

VII DIVISION 8: DOORS AND WINDOWS
B. Tests for Doors
2. Metal Doors

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ANSI	A 131.1	Performance Test for Std. Steel Doors, Frames, Anchors, Hinge Reinforcings and Exit Device Reinforcings (1969).	X		
AAMA	--	Testing Procedures for Aluminum Windows and Sliding Glass Doors	X		
AAMA (ANSI)	402.8 (A134.2)	Specs. for Aluminum Sliding Glass Doors	X		
AAMA (ANSI)	1102.6 (A134.4)	Specs. for Aluminum Storm Doors (1972).	X		
AAMA	1303.3	Std. for Forced Entry Resistant Aluminum Sliding Glass Doors (1971).	X		
ICBO	UBCS 43-3	Std. for Tin Clad Fire Doors and Shutters (1973).	X		
NAAMM	CHM 1-74	Spec. for Custom Hollow Metal Doors and Frames (1974).	X		
SCRMA	SMS 2003	Spec. for Aluminum Sliding Screen Doors (1968).	X		
SDI	100	Rec. Spec. for Std. Steel Doors and Frames (1969).	X		
SDI	110	Std. for Steel Doors and Frames for Modular Masonry Building Construction (1972).	X		
SDI	111-B	Rec. Std. for Details for Dutch Doors (1972).			
SDI	111-E	Rec. Weatherstripping for Std. Steel Doors and Frames (1972).			

VII DIVISION 8: DOORS AND WINDOWS
B. Tests for Doors
2. Metal Doors

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
SDI	112	Rec. Std. Minimum Acceptance Values for Steel Doors and Frames (1972).	X		
SDI	113	Thermal Performance Test of Steel Doors (1972).	X		
SDI	114	Acoustical Performance Test of Steel Doors (1972).	X		
SDI	115	Test Procedure and Acceptance Criteria for Water Resistance of Steel Door and Frame Assemblies (1972).	X		
SDI	116	Test Procedure and Acceptance Criteria for Rate of Air Flow Through Closed Steel Door and Frame Assemblies (1972).	X		

VII DIVISION 8: DOORS AND WINDOWS
C. Tests for Windows
1 Wood Windows

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
AWI	--	Architectural Woodwork Quality Standard and Guide Specs.	X		
NWMA	I.S. 2-73	Std. for Wood Window Units (1973).	X		

VII DIVISION 8: DOORS AND WINDOWS
C. Tests for Windows
2. Metal Windows

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
AAMA	--	Testing Procedures for Aluminum Windows and Sliding Glass Doors	X		
AAMA (ANSI)	302.8 (A134.1)	Spec. for Aluminum Windows (1972)	X		
AAMA (ANSI)	1002.8 (A134.3)	Spec. for Aluminum Combination Vertically Sliding or Horizontally Opening Storm Windows for External Applications	X		
AAMA	1302.3	Std. for Forced Entry Resistant Aluminum Horizontal Sliding Windows (1971)	X		
NAAMM	SW 1-71	Specs. for Metal Windows (1971)	X		
SWI	--	Rec. Specs. for Steel Windows (1973)	X		

VII **DIVISION** 8. DOORS AND WINDOWS

C. Tests for Windows

3. Window Glazing*

TEST METHOD IDENTIFICATION AND DESCRIPTION

*See also DIVISION 6.2: PLASTICS, C. Transparent or Translucent Plastics, page A-44.

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	C158 (17)	Flexure Testing of Glass	X		
ASTM	C623 (17)	Test for Young's Modulus, Shear Modulus, and Poisson's Ratio for Glass and Glass Ceramics by Resonance	X		
ASTM	C657 (13)	Test for D-C Volume Resistivity of Glass	X		
ASTM (ANSI)	E424 (46) (Z138.7)	Test for Solar Energy Transmittance and Reflectance (Terrestrial) of Sheet Materials	X		
ASTM	F128 (17)	Analyzing Stress in Glass	X		
ANSI	Z97.1	Performance Specs. and Methods of Test for Safety Glazing Materials Used in Buildings	X	X	1
FGMA	--	Glazing Manual, Specs. for Flat Glass and Plastic Installations (1965)	X		
GTA	64-3-16	Spec. for Fully Tempered Safety Glass for General Construction Usage (Section 5 of Engineering Standard Manual, 1969)	X		
SIGMA	65-7-2	Spec. for Sealed Insulating Glass Units (June 1973)	X	X	1,2,3
UL	972	Burglary Resisting Glazing Material	X		
Fed.Spec.	DD-G-451C	Glass, Plate, Sheet, Figured (June 15, 1972)	X		

VII **DIVISION** 8: DOORS AND WINDOWS
C. Tests for Windows
3. Window Glazing*

TEST METHOD IDENTIFICATION AND DESCRIPTION

*See also DIVISION 6.2: PLASTICS, C. Transparent or Translucent Plastics, page A-44.

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
Fed. Std.	406	Plastics: Methods of Testing (Oct. 5, 1961)			
		Part 1072, Shockproofness	X		
		Part 1073, Shatterproofness	X		
		Part 1975, Shatterproofness (Gage Windows)	X	X	2,3,11,12
		Part 3031, Light Diffusion			

VII DIVISION 8: DOORS AND WINDOWS
D. Tests for Door/Window Hardware

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ANSI	A115	Spec. for Door and Frame Preparation for Hardware (1971)			
BHMA (ANSI)	101 (A156.1)	Std. for Bolts and Hinges for Doors (1970)	X		
BHMA (ANSI)	111 (A156.7)	Std. for Template Hinges (1972)	X		
BHMA (ANSI)	701 (A156.3)	Std. for Exit Devices (Doors) (1972)	X		
BHMA (ANSI)	1001 (156.6)	Std. for Architectural Door (Trim) (1972)	X		
NBHA	--	Basic Builders' Hardware, Finish Hardware (1969)			
NWMA	I.S. 3-70	Std. for Wood Sliding Patio Doors (1970)	X	X	6
SDI	107	Rec. Spec. for Builders' Hardware on Std. Steel Doors and Frames (1972)	X		
SDI	109	Hardware for Std. Steel Doors and Frames (1972)			
SDI	111-D	Rec. Std. for Steel Door, Frame and Hardware Schedule (1972)	X		

VIII DIVISION 9. FINISHES

A. Tests for Paints and Coatings

1. General Tests for Paints and Coatings

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	B567 (9)	Test for Measurement of Coating Thickness by the Beta Back-scatter Principle	X		
ASTM	C756 (7)	Test for Cleanability of Surface Finishes	X		
ASTM	D344 (27)	Test for Relative Dry Hiding Power of Paints	X		
ASTM	D522 (27)	Test for Elongation of Attached Organic Coatings with Conical Mandrel Apparatus	X		
ASTM (ANSI) (Fed.Std.)	D523 (27) (Z131.1) (141a)	Test for Specular Gloss	X		
ASTM	D658 (27)	Test for Abrasion Resistance of Coatings of Paint, Varnish, Lacquer and Related Products with the Air Blast Abrasion Tester	X		
ASTM	D822 (27)	Rec. Practice for Operating Light and Water Exposure Apparatus (Carbon-Arc Type) for Testing Paint, Varnish, Lacquer and Related Products		X	1,2,3
ASTM (Fed.Std)	D968 (27) (141a)	Test for Abrasion Resistance of Coatings of Paint, Varnish, Lacquer and Related Products by the Falling Sand Method	X		
ASTM (Fed.Std.)	D1005 (27) (141a)	Test for Measurement of Dry Film Thickness of Organic Coatings	X		
ASTM	D1471 (27)	Test for Two Parameter, 60-Deg. Specular Gloss	X		

VIII DIVISION 9. FINISHES

A. Tests for Paints and Coatings

1. General Tests for Paints and Coatings

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (Fed.Std.)	D1474 (27) (141a, 101B)	Test for Indentation Hardness or Organic Coatings	X		
ASTM	D1535 (27)	Method of Specifying Color by the Munsell System	X		
ASTM	D1543 (27)	Test for Color Permanence of White Architectural Enamels	X	X	6
ASTM (Fed.Std.)	D1653 (27) (141a)	Test for Moisture Vapor Permeability of Organic Coating Films	X		
ASTM (Fed.Std.)	D1729 (27) (141a)	Method for Visual Evaluation of Color Differences of Opaque Materials	X		
ASTM	D1735 (27)	Method for Water Fog Testing of Organic Coatings	X	X	2,3
ASTM	D1737 (27)	Test for Elongation of Attached Organic Coatings with Cylindrical Mandrel Apparatus	X		
ASTM (ANSI)	D2134 (27) (K65.198)	Test for Softening of Organic Coatings by Plastic Compositions	X	X	2,13
ASTM (Fed.Std.)	D2197 (27) (141a)	Test for Adhesion of Organic Coatings	X		
ASTM (Fed.Std.)	D2244 (27) (141a)	Method for Instrumental Evaluation of Color Differences of Opaque Materials	X		
ASTM	D2248 (27)	Rec. Practice for Detergent Resistance of Organic Coatings	X	X	3 (with detergent)
ASTM	D2370 (27)	Test for Elongation and Tensile Strength of Free Films of Paint, Varnish, Lacquer and Related Products with a Tensile Testing Apparatus	X		

VIII DIVISION 9. FINISHES
A. Tests for Paints and Coatings
1. General Tests for Paints and Coatings

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	D2616 (27)	Method for Evaluating Change in Color with a Gray Scale	X		
ASTM	D2620 (27)	Test for Light Stability of Clear Coatings	X	X	1(8)
ASTM	D2794 (27)	Test for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)	X	X	12
ASTM	D2805 (27)	Test for Hiding Power of Paints	X		
ASTM	D3134 (27)	Rec. Practice for Selecting and Defining Color and Gloss Tolerances of Opaque Materials and for Evaluating Conformance	X		
ASTM	D3170 (27)	Test for Chip Resistance of Coatings	X	X	2,12
ASTM	D3258 (27)	Test for Porosity of Paint Films	X		
ASTM	D3274 (27)	Tent. Method of Evaluating Degree of Surface Disfigurement of Paint Films by Fungal Growth or Soil and Dirt Accumulation	X	X	9
ASTM (ANSI) (Fed.Std.)	E97 (17) (Z192.1) (141a)	Test for 45-Deg., 0-Deg. Directional Reflectance of Opaque Specimens by Filter Photometry	X		
ASTM (ANSI)	E313 (27) (Z172.6)	Test for Indexes of Whiteness and Yellowness of Near-White, Opaque Materials	X		
ASTM	G27 (32)	Conducting Natural Light Exposures Under Glass	X	X	1(8)
IES	LM-18	Guide for Measurement of Photometric Brightness (Luminance) (1961)	X		

VIII DIVISION 9. FINISHES

A. Tests for Paints and Coatings

1. General Tests for Paints and Coatings

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
SAE	J400	Test for Chip Resistance of Surface Coatings (1968).	X	X	2,12
Fed.Std.	141a	Paint, Varnish, Lacquer, and Related Materials; Methods of Inspection, Sampling and Testing (Nov. 15, 1972)	X	x	1,2,3,4,6, 8,9,12 (Compendium)

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
1. Tests for Exterior Paints and Coatings
a. Wood Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	D1006 (27)	Rec. Practice for Conducting Exterior Exposure Tests of Paints on Wood		X	8
ASTM	D1211 (27)	Test for Temperature-Change Resistance of Clear Nitrocellulose Lacquer Films Applied to Wood	X	X	2
ASTM	D1641 (27)	Test for Exterior Durability of Varnishes	X	X	8
ASTM	D2366 (27)	Method for Accelerated Testing of Moisture Blister Resistance of Exterior House Paints on Wood	X	X	2,3
ASTM	D2921 (27)	Method for Qualitative Tests for the Presence of Water Repellents and Preservatives in Wood Products			
AAR	238-48 Part 246	Primer Paint for Wood Structures	X		
AAR	251-49, Part 264	Paint for Finishing Coats on Wood Structures	X	X	1,3,8
AAR	253-49, Part 266	Enamel Paint for Finishing Coats on Wood Structures	X	X	1,3,8
APA	--	Test Methods for Exterior Coatings and Overlays on DFPA Grade-Trademarked Plywood (1971)	X	X	1,2,3,4
CRA	2A1-1	Factory Coatings and Treatments for Exterior Use on Redwood			
Fed. Spec.	TT-P-25E	Primer Coating, Exterior (Undercoat for Wood, Ready-Mixed, White and Tints) (Mar. 14, 1973)	X		
Fed. Spec.	TT-P-31D	Paint, Oil: Iron Oxide, Ready Mixed, Red and Brown (July 6, 1973)	X	X	1,2,3,6,9

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
2. Tests for Exterior Paints and Coatings
a. Wood Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
Fed. Spec.	TT-P-52D	Paint, Oil, (Alkyd Oil), Wood Shaker and Rough Siding (Mar. 6, 1973)	X	X	3.9
Fed. Spec.	TT-P-0053E	Paint, Ready Mixed, Outside, Medium Yellow (Aug. 16, 1972)	X	X	1,3
Fed. Spec.	TT-P-0059D	Paint, Ready Mixed, International Orange (June 26, 1968)	X		
Fed. Spec.	TT-P-61E	Paint, Exterior, Black, Ready Mixed (Oct. 24, 1973)	X	X	1,2,3,9
Fed. Spec.	TT-P-71E	Paint, Exterior, Chrome Green, Ready Mixed (Oct. 25, 1973)	X	X	1,2,3,9
Fed. Spec.	TT-P-81E	Paint, Oil: Ready Mixed, Exterior, Medium Shades (Nov. 15, 1973)	X	X	1,2,3,9
Fed. Spec.	TT-P-103B	Paint (Titanium-Zinc and Oil, Exterior, Fume Resistant, Ready Mixed, White) (June 20, 1972)	X	X	6
Fed. Spec.	TT-P-001510	Paint, Latex, Exterior, for Wood Surfaces (Nov. 20, 1972)			
Fed. Spec.	TT-S-708A	Stain, Oil; Semi-Transparent, Wood, Exterior (Nov. 6, 1972)	X		

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
2. Tests for Exterior Paints and Coatings
b. Metal Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (SSPC)	D610 (27) --	Method of Evaluating Degree of Rusting on Painted Steel Surface	X		
ASTM (ANSI)	D1010 (27) (A149.1)	Testing Asphalt Emulsions for Use as Protective Coatings for Metal	X	X	2,3
ASTM	D1014 (27)	Method of Conducting Exterior Exposure Tests of Paints on Steel	X	X	8
ASTM	D1187(27)	Spec. for Asphalt Base Emulsions for Use as Protective Coatings for Metal	X	X	2,3
AAR	252-49 Part 265	Paint for Finishing Coats on Steel and Iron Structures	X	X	1,3,8
Fed. Spec.	TT-C-530A	Coating Compound, Rust Inhibitive, Fish Oil Base (Oct. 23, 1970)	X	X	1,2,3,6
Fed. Spec.	TT-E-490D	Enamel, Silicone, Alkyd Copolymers, Semigloss, Exterior (Sept.27, 1972)			
Fed. Spec.	TT-P-31D	Paint, Oil: Iron-Oxide, Ready Mixed, Red and Brown (July 6, 1973)	X	X	1,2,3,6,9
Fed.Spec.	TT-P-0053E	Paint, Ready Mixed, Outside, Medium Yellow (Aug. 16, 1972)	X	X	1,3
Fed.Spec.	TT-P-57B	Paint, Zinc Yellow-Iron Oxide Base, Ready Mixed (Feb. 26, 1974)	X	X	3
Fed.Spec.	TT-P-0059D	Paint, Ready Mixed, Intn. Orange (June 26, 1968)	X		
Fed.Spec.	TT-P-61E	Paint, Exterior, Black, Ready Mixed (Oct. 24, 1973)	X	X	1,2,3,9

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
2. Tests for Exterior Paints and Coatings
b. Metal Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
Fed. Spec.	TT-P-71E	Paint, Exterior, Chrome Green, Ready Mixed (Oct. 25, 1973)	X	X	1,2,3,9
Fed. Spec.	TT-P-81E	Paint, Oil; Ready Mixed, Exterior, Medium Shades, on a Lead-Zinc Base (Nov. 15, 1973)	X	X	1,2,3,9
Fed. Spec.	TT-P-90A	Paint, Oil; Gray Green, Ready Mixed, Roof (Feb. 26, 1974)	X		
Fed. Spec.	TT-P-103B	Paint, Titanium-Zinc and Oil, Exterior, Fume Resistant, Ready Mixed (June 20, 1965)	X	X	6
Fed. Spec.	TT-P-615D	Primer Coating: Basic Lead Silico Chromate, Ready Mixed (June 19, 1972)			
Fed. Spec.	TT-P-641F	Primer Coating; Zinc Dust, Zinc Oxide (For Galvanized Surfaces) (Nov. 24, 1971)	X	X	2,3
Fed. Spec.	TT -P-645	Primer, Paint, Zinc Chromate, Alkyd Type (Apr. 12, 1962)	X	X	2,13
Fed. Spec.	TT-P-664C	Primer Coating, Synthetic, Rust Inhibiting, Lacquer Resisting (Sept. 2, 1970)	X	X	2,3,8,13
Fed. Spec.	TT-P-1561A	Paint, Zinc-Aluminum Rust Inhibitive (For Rusty Galvanized and Other Metal Surfaces (May 31, 1974)			

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
2. Tests for Exterior Paints and Coatings
c. Masonry or Concrete Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI) (AASHO)	D 41 (15) (A109.1) (M116)	Spec. for Primer for Use with Asphalt in Dampproofing and Waterproofing	X		
ASTM (ANSI) (AASHO)	D43 (15) (A109.13) (M121)	Spec. for Creosote for Priming Coat with Coal-Tar Pitch in Dampproofing and Waterproofing			
AREA	Part 4, Chap. 29	Spec. for Waterproofing Coatings for Exposed Concrete Surfaces (1962)	X	X	3,4
Fed.Spec.	SS-S-001416A	Sealing Compound, Asphalt and Concrete Surfaces (July 22, 1971)	X	X	1,2,3
Fed.Spec.	TT-P-19C	Paint, Acrylic Emulsion, Exterior (Oct. 8, 1974)	X	X	1,2,3,4,9
Fed.Spec.	TT-P-24D	Paint, Oil, Concrete and Masonry Exterior Eggshell Finish, Ready Mixed (Dec. 5, 1972)	X	X	1,2,3
Fed.Spec.	TT-P-55B	Paint, Polyvinyl Acetate Emulsion, Exterior (Sept. 21, 1972)	X	X	1,2,3,9
Fed.Spec.	TT-P-95B	Paint, Rubber; For Swimming Pools and Other Concrete and Masonry Surfaces (Oct.23, 1974)	X	X	1,2,3
Fed.Spec.	TT-P-97D	Paint, Styrene-Butadiene Solvent Type, White (For Ext. Masonry) (Jan. 25, 1968)	X		
Fed.Spec.	TT-P-1181A	Paint, Styrene-Acrylate Solvent Types, Tints and Deep Tones (Jan. 24, 1972)	X	X	1,2,3

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
2. Tests for Exterior Paints and Coatings
d. Miscellaneous or Non-Specific Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	D29 (15)	Spec. for Bituminous Base Emulsions for Use as Protective Coatings	X		
ASTM (Fed.Std.)	D659 (27) (141a)	Method of Evaluating Degree of Resistance to Chalking of Exterior Paints	X		
ASTM (Fed.Std.)	D660 (27) (141a)	Method of Evaluating Degree of Checking of Exterior Paints	X		
ASTM (Fed.Std.)	D661 (27) (141a)	Method of Evaluating Degree of Resistance to Cracking of Exterior Paints	X		
ASTM (Fed.Std.)	D662 (27) (141a)	Method of Evaluating Degree of Erosion of Exterior Paints	X		
ASTM (Fed.Std.)	D714 (27) (141a)	Method of Evaluating Degree of Blistering of Paints	X		
ASTM (Fed.Std.)	D772 (27) (141a)	Method of Evaluating Degree of Flaking (Scaling) of Exterior Paints	X		
ASTM	D2824 (27)	Spec. for Asphalt-Based, Aluminum Roof Coatings	X	X	2
ASTM	D2932 (27)	Tent. Rec. Practice for Testing Exterior Solvent-Thinned House and Trim Paints	X	X	2,3,6,8
ASTM	D3129 (27)	Rec. Practices for Testing Exterior Latex House Paints	X	X	2,3,6,8,9
Fed.Spec.	SS-S-1416A	Sealing Compound, Asphalt and Concrete Surfaces (July 22, 1971)	X	X	1,2,3
Fed.Spec.	SS-W-110C	Water Repellent, Colorless, Silicone Resin Base (June 16, 1972)	X	X	1,2,3

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
Fed.Spec.	TT-C-00498A	Coating Compound, Bituminous Solvent Type (Dec. 3, 1971)	X	X	1,2,3,6
Fed.Spec.	TT-C-1079A	Coatings Compound, Bituminous, Solvent Type, Asbestos Filled, Aluminum Pigmented (Mar. 14, 1972)	X	X	2
Fed.Spec.	TT-E-516A	Enamel, Lusterless, Quick Drying Styrenated Alkyd Type (Jan. 7, 1969)	X	X	1,2,3,6,8
Fed.Spec.	TT-E-522A	Enamel, Phenolic, Outside (Jan. 28, 1974)	X	X	1,2,3,6
Fed.Spec.	TT-P-37C	Paint, Alkyd Resin, Exterior Trim, Deep Colors (Aug. 16, 1972)	X	X	1,2,3
Fed.Spec.	TT-P-96C	Paint, Latex Base, for Exterior Surfaces (Whites and Tints) (Mar. 12, 1974)			
Fed.Spec.	TT-P-102D	Paint, Oil Alkyd (Modified), Exterior, Fume Resistant, Ready Mixed, Whites and Tints (Mar. 26, 1973)	X	X	1,2,3,6
Fed.Spec.	TT-P-105A	Paint, Oil; Chalk Resistant, Lead Free, Exterior Ready Mixed, Whites and Tints (Mar. 8, 1972)	X	X	1,2,3
Fed.Spec.	TT-P-618C	Primer Coating, Styrene Butadiene-Zinc Chromate (Dec. 7, 1967)	X	X	3
Fed.Spec.	TT-P-620C	Primer Coating, Conditioner for Chalking Exterior Surfaces (Mar. 3, 1971)	x	x	3
Fed.Spec.	TT-V-51E	Varnish, Asphalt (May 3, 1967)	X	X	1,2,3

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
3. Tests for Interior Paints and Coatings
a. Wood Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
APA	---	Test Methods for Interior Panel Coatings and Overlays on DFPA Grade-Trademarked Plywood (1967)	X	X	1,2,3
Fed.Spec.	TT-C-542D	Coating, Polyurethane, Oil Free, Moisture Curing (Nov. 15, 1973)	X	X	3 (and resist to yellowness)

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
3. Tests for Interior Paints and Coatings
b. Metal Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
Fed.Spec.	TT-C-492C	Coating Compound, Paint Antisweat (May 31, 1974)	X		

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
3. Tests for Interior Paints and Coatings
c. Masonry or Concrete Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
Fed.Spec.	TT-C-550A	Coating System, Glaze, Interior, for Masonry Surfaces (Oct. 11, 1965)	X	X	2,3

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
3. Tests for Interior Paints and Coatings
d. Gypsum Board or Plaster Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
Fed.Spec.	TT-P-650B	Primer Coating. Latex Base, Interior, White (For Gypsum Wallboard) (Nov. 24, 1967)	X	X	4,9

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
3. Tests for Interior Paints and Coatings
e. Miscellaneous or Non-Specific Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	D1736 (27)	Test for Efflorescence of Interior Wall Paints	X	X	2,3
ASTM	D2486 (27)	Test for Scrub Resistance of Interior Latex Flat Wall Paints	X	X	12
AIMA	I.B. 7	Test Procedures of a Washability and Scrubbability of Finishes Applied to Tiles and Panels (1971)	X	X	12
Fed.Spec.	SS-W-40A	Wall Base: Rubber and Vinyl Plastic (June 7, 1974)	X	X	1,2,3 (also detergents)
Fed.Spec.	TT-C-535B	Coating, Epoxy, Two Component, for Interior Use on Metal, Wood, Wallboard, Painted Surfaces Concrete and Masonry (Aug. 2, 1974)	X	X	12 (abrasion)
Fed.Spec.	TT-C-545D	Coatings, Polyester-Epoxy (Two Component) High-build, Gloss and Semigloss, White and Tints (For Interior Use) (Feb. 1, 1974)	X	X	1,2,3
Fed.Spec.	TT-C-001224	Coating System, Epoxy, Glaze, for Interior Surfaces (Oct. 11, 1967)	X	X	2,3 (also detergents)
Fed.Spec.	TT-C-001225	Coating System, Inorganic, Glaze, for Interim Surfaces (Dec. 4, 1967)	X	X	2,3 (also detergents)
Fed.Spec.	TT-C-001226	Coating System, Polyester Glaze, for Interior Surfaces (Aug. 15, 1967)			
Fed.Spec.	TT-C-1659A	Coatings: Epoxy Emulsion, Two Component, Gloss and Semigloss (For Interior Use) (Mar. 19, 1974)	X	X	4,9

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
Fed.Spec.	TT-E-506J	Enamel, Alkyd, Gloss, Tints and White (for Interior Use) (Apr. 9, 1973)	X	X	3 (and hydrocarbon resistance
Fed.Spec.	TT-E-508B	Enamel, Interior Semigloss Tints and White (Nov. 27, 1972)	X		
Fed.Spec.	TT-E-1126B	Enamel, Low-Lustre, Thixotropic (Mar. 24, 1970)	X	X	2,3
Fed.Spec.	TT-P-29H	Paint, Latex Base, Interior, Flat, White and Tints (Mar. 26, 1974)	X	X	3,4,9,12 (scrubbability)
Fed.Spec.	TT-P-47E	Paint, Oil, Non-Penetrating, Flat, Ready Mixed Tints and White (For Interior Use) (Dec. 8, 1970)	X	X	2,8
Fed.Spec.	TT-P-0016C	Paint, Water, Powder (Mar. 3, 1969)	X		
Fed.Spec.	TT-P-652A	Primer, Coating, Shellac-Pigmented (White), Lusterless (Dec. 31, 1964)	X		
Fed.Spec.	TT-P-1511A	Paint, Latex-Base, Gloss and Semigloss, Tints and White (For Interior Use) (Nov. 6, 1972)			
Fed.Spec.	TT-P-1728A	Paint, Latex Base, Interior, Flat, Deep-Tone (Feb. 4, 1974)	X	X	3,9,12 (scrubbability) (also detergents
Fed.Spec.	TT-V-109B	Varnish, Spar, Alkyd Resin (Oct. 6, 1972)			
Fed.Spec.	TT-V-119D	Varnish, Spar, Phenolic Resin (July 6, 1973)	X	X	2,3 (also detergents)
Fed.Spec.	TT-V-121G	Varnish, Spar, Water Resisting (Mar. 15, 1968)			

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
4. Tests for Exterior or Interior Paints and Coatings
a. Wood Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	D2336 (27)	Rec. Practices for Specifying Properties of Paint from the Liquid State Through the Curing Stage for Factory Applied Coatings on Wood Products	X		
ASTM	D2691 (27)	Methods for Microscopial Measurement of Dry Film Thickness of Coatings on Wood Products	X		
ASTM	D2830 (27)	Test for Durability and Compatibility of Factory Primed Wood Products with Representative Finish Coats	X	X	8

VIII DIVISION 9: FINISHES
A. Tests for Panels and Coatings
4. Tests for Exterior or Interior Paints and Coatings
b. Metal Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	B499 (9) (G53.43)	Measurement of Coating Thickness by the Magnetic Method: Non Magnetic Coatings on Magnetic Basis Metals	X		
ASTM (ANSI)	B529 (9) (G53.27)	Measurement of Coating Thickness by the Eddy-Current Test Method: Non Conductive Coatings on Non-Magnetic Basis Metals	X		
ASTM (ANSI) (Fed.Std.) (SSPC)	D610 (27) (Z158.3) (141a) --	Method of Evaluating Degree of Rusting on Painted Steel Surfaces	X		
ASTM	D870 (27)	Method of Water Immersion Test of Organic Coatings on Steel	X	X	2,3
ASTM (Fed.Std.)	D1186 (27) (141a)	Method for Measurement of Dry Film Thickness of Non Magnetic Organic Coatings Applied to a Magnetic Base	X		
ASTM	D1400 (27)	Methods for Measurement of Dry Film Thickness of Nonmetallic Coatings of Paint, Varnish, Lacquer and Related Products Applied on a Non Magnetic Metal Base	X		
ASTM	D1654 (27)	Method of Evaluation of Paints or Coated Specimens Subjected to Corrosive Environments	X	X	
ASTM	D2246 (27)	Testing Finishes on Primed Metallic Substances for Resistance to Humidity-Thermal Cycle Cracking	X	X	2,3
ASTM (Fed.Std.)	D2247 (27) (141a)	Testing Coated Metal Specimens at 100 Percent Relative Humidity	X	X	2,3

VIII **DIVISION 9: FINISHES**

A. Tests for Panels and Coatings

4. Tests for Exterior or Interior Paints and Coatings

b. Metal Substrate

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	D2803 (27)	Test for Filiform Corrosion Resistance of Organic Coatings on Metal	X	X	2,6
ASTM	D2933 (27)	Testing Coated Steel Specimens Dynamically for Resistance to Corrosion	X	X	2,3,4,6
ASTM	D3260 (27)	Test for Resistance to Acid and Mortar of Factory Applied Clear Coatings on Extruded Aluminum Products		X	2,3 with mortar mix and HCl
ASTM	D3281 (27)	Test for Formability of Attached Organic Coatings with Impact-Wedge Bend Apparatus	X		
ASTM	E376 (27)	Rec. Practice for Measuring Coating Thickness by Magnetic Field or Eddy-Current (Electromagnetic) Test Methods	X		
Fed.Spec.	TT-E-1593B	Enamel, Silicone Alkyd Copolymer Gloss (for Exterior or Interior Use) (Nov. 13, 1974)	X	X	1,2,3,8 (also hydrocarbon resistance

VIII DIVISION 9: FINISHES
A. Tests for Panels and Coatings
4. Tests for Exterior or Interior Paints and Coatings
c. Masonry - Concrete Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
Fed.Spec.	TT-C-555B	Coating, Textured (for Interior or Exterior Masonry Surfaces) (Feb. 9, 1973)			
Fed.Spec.	TT-P-1411A	Paint; Copolymer-Resin, Cementitious (for Waterproofing Concrete and Masonry Walls) (Nov. 15, 1973)	X	X	3,12 (also scrubbability

VIII DIVISION 9: FINISHES

A. Tests for Paints and Coatings

4. Tests for Exterior or Interior Paints and Coatings

d. Gypsum Board or Plaster Substrate

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
4. Tests for Exterior or Interior Paints and Coatings
e.
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	D1395-(27)	Test for Abrasion Resistance of Clear Floor Coatings	X		
ASTM	D1546 (27)	Method for Performance Tests of Clear Floor Sealers	X		
ASTM	D1642 (27)	Test for Elasticity or Toughness of Varnishes	X		
ASTM	D1643 (27)	Test for Gas Checking and Draft Test of Varnish Films	X	X	2,6
ASTM	D1647 (27)	Test for Resistance to Water and Alkali of Dried Films of Varnishes		X	3,6
ASTM	D2198 (27)	Test for Stain Removal from Multicolor Lacquers	X		
ASTM	D2831 (27)	Test for Evaluating the Ability of a Latex Paint to Resist Efflorescence from the Substrate	X		
ASTM	D3002 (27)	Rec. Practice for Evaluation of Coatings for Plastics	X	X	1,2,3,8,12
Fed.Spec.	TT-C-540 B	Coating, Polyurethane, Clear, Linseed Oil Modified (April 17, 1972)			
Fed.Spec.	TT-C-1162A	Coating, Polyurethane, Alkyd Modified, Satin Finish (for Interior and Exterior Use) (May 3, 1968)			
Fed.Spec.	TT-E-489F	Enamel, Alkyd, Glass (for Exterior and Interior Surfaces (May 1, 1973)			

VIII DIVISION 9: FINISHES
A. Tests for Paints and Coatings
4. Tests for Exterior or Interior Paints and Coatings
e. Miscellaneous or Non-Specific Substrate
TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
Fed.Spec.	TT-E-1593B	Enamel, Silicone Alkyd Copolymer, Gloss (for Interior and Exterior Use) (Nov. 13, 1974)	X	X	1,2,3,8 (also hydrocarbon resistance)
Fed.Spec.	TT-P-0035	Paint, Cementitious, Powder, White and Colors (July 28, 1965)	X	X	1,2,3,12
Fed. Spec.	TT-P-38D	Paint, Aluminum, Ready Mixed (May 21, 1970)	X	X.	1,2,3,6

VIII DIVISION 9: FINISHES
B. Tests for Interior Wall Coverings (Other than Paints and Coatings)

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C484 (17)	Test for Thermal Shock Resistance of Glazed Ceramic Tile	X	X	2
ASTM	C485 (17)	Method for Measuring Warpage of Ceramic Tile	X		
ASTM	C499 (17)	Test for Facial Dimensions and Thickness of Flat Rectangular Ceramic Wall and Floor Tile	X		
ASTM	C501 (17)	Test for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser	X	X	12
ASTM	C502 (17)	Test for Wedging of Flat Rectangular Ceramic Wall and Floor Tile	X		
ASTM	C609 (17)	Measurment of Small Color Differences Between Ceramic Wall or Floor Tile	X		
ASTM (ANSI)	C648 (17) (A173.1)	Test for Breaking Strength of Ceramic Tile	X		
APA	--	Test Methods for Interior Panel Coatings and Overlays on DFPA Grade Trademarked Plywood (1967)	X	X	1,2,3
APA	--	Plywood Design Spec. (1966)			
HPMA	CB-SG-73	Design Guide for Wood Composition Board Wall Panels (1973)			
TCA (ANSI)	-- (A137.1)	Spec. for Ceramic Tile	X		
TCA (ANSI)	-- (A108.1)	Spec. for Glazed Ceramic Wall Tile Installed with Portland Cement Mortar	X		
TCA (ANSI)	-- (A108.2)	Spec. for Ceramic Mosaic Tile Installed with Portland Cement Mortar	X		

VIII DIVISION 9: FINISHES
B. Tests for Interior Wall Coverings (Other than Paints and Coatings)

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
TCA (ANSI)	-- (A108.4)	Spec. for Ceramic Tile Installed with Water-Resistant Organic Adhesives	X		
TCA (ANSI)	-- (A108.5)	Spec. for Ceramic Tile Installed with Dry Set Portland Cement Mortar	X		
TCA (ANSI)	-- (A108.6)	Spec. for Ceramic Tile Installed with Chemical Resistant, Water Cleanable Tile Setting Epoxy	X		
USC	CS 236	Mat- Formed Wood Particleboard (1966)			
USC	NBS PS 59-73	Prefinished Hardboard Paneling (1973)			
Fed.Spec.	CCC-W-408A	Wall Covering, Vinyl Coated (Aug. 22, 1973)	X	X	1,2
Fed. Spec.	LLL-B-810B	Building Board (Hardboard), Hard Pressed, Vegetable Fiber (Sept. 28, 1973)	X		
Fed.Spec.	LLL-B-1188	Building Board, Hard Pressed, Vegetable Fiber (Laminated (Apr. 24, 1967)			
Fed.Spec.	UU-P-31B	Paper: General Specifications and Methods of Testing (Mar. 3, 1949)	X	X	3

VIII **DIVISION** 9: FINISHES

C. Tests for Interior Ceiling Coverings (Other Than Paints and Coatings)

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C367 (18)	Tests for Strength Properties of Prefabricated Architectural Acoustical Materials	X	X	2,3
ASTM	C522 (18)	Test for Airflow Resistance of Acoustical Materials	X		
ASTM	C635 (18)	Spec. for Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings	X	X	2,3,6
ASTM	C636 (18)	Rec. Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels			
ACMA	--	Spec. for Acoustical Tile and Lay-In Panel Ceiling Suspension Systems (Oct. 1966)	X	X	2,3,6
CISCA	--	Rec. Std. for Seismic Restraint Direct Hung Suspended Ceiling Assemblies (Nov. 1972)			

VIII DIVISION 9: FINISHES

D: Tests for Interior Flooring and Floor Coverings (Other Than Paints and Coatings

1. Resilient Flooring

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Factors in Aging Test
ASTM	F137 (46)	Test for Flexibility of Resilient Flooring Materials with Cylindrical Mandrel Apparatus	X		
ASTM	F142 (46)	Test for Indentation of Resilient Floor Coverings	X		
ASTM	F150 (46)	Test for Electrical Resistance of Conductive Resilient Flooring	X		
ASTM	F373 (46)	Test for Embossed Depth of Resilient Floor Coverings	X		
ASTM	F386 (46)	Test for Thickness of Residual Flooring Materials Having Flat Surfaces	X		
ASTM	F387 (46)	Rec. Practice for Measuring Caliper of Resilient Floor Covering with Foam Layer	X		

VIII DIVISION 9: FINISHES

D: Tests for Interior Flooring and Floor Coverings (Other Than Paints and Coatings)

1. Resilient Flooring

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Type of Test: Degradation Factors in Aging Test
Fed.Spec.	L-F-00450A	Flooring, Vinyl Plastic (May 27, 1970)	X		
Fed.Spec.	L-F-475A	Floor Covering, Vinyl, Surface (Tile and Roll) with Backing (Feb. 9, 1971)	X		
Fed.Spec.	L-F-001641	Floor Covering, Translucent or Transparent, Vinyl Surface with Backing (Sept. 8, 1971)	X		
Fed.Spec.	LLL-F-1238A	Floor Covering, Linoleum (Sept. 17, 1970)	X		
Fed.Spec.	SS-F-001032	Floor Covering, Asphaltic Felt (Bituminous Type Surface) (Oct. 19, 1966)	X		
Fed.Spec.	SS-T-312A	Tile, Floor, Asphalt, Rubber, Vinyl, Vinyl-Asbestos (Aug. 24, 1972)	X		
Fed.Std.	501a	Floor Coverings, Resilient, Non Textile Sampling and Testing (June 15, 1966)	X	X	1,2,5 (O_2)

VIII **DIVISION** 9: FINISHES

D. Tests for Interior Flooring and Floor Coverings (Other Than Paints and Coatings)

2. Carpet

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	D418 (32) (L14.25)	Test for Woven and Tufted Pile Floor Coverings	X		
ASTM (ANSI)	D1116 (32) (L14.196)	Test for Resistance of Pile Floor Coverings to Attack by Black Carpet Beetle Larvae	X		
ASTM (ANSI)	D1335 (32) (L14.221)	Test for Tuft Bind of Pile Floor Coverings	X		
ASTM (ANSI)	D2401 (32) (L14.209	Test for Service Change of Appearance of Pile Floor Coverings	X	X	8
ASTM (ANSI)	D2646 (32) (L14.262)	Methods of Testing Backing Fabrics	X		
ASTM	D2859 (32)	Test for Flammability of Finished Textile Floor Covering Materials	X		
Fed. Spec.	DDD-C-0095A	Carpet and Rugs, Wool, Nylon, Acrylic, Modacrylic, Polyester, Polypropylene (Mar. 15, 1972)	X		
Fed. Spec.	DDD-C-001173	Carpet, Nonwoven, Polypropylene, Outdoor-Indoor Type (July 9, 1970)	X		
Fed. Spec.	DDD-C-001559	Carpet, Loop, Low Pile Height, High Density, Woven or Tuffed with Attached Cushioning (July 9, 1970)	X		
Fed. Spec.	DDD-C-001799	Carpet, Squares, Pile Surface, Tile Type, With or Without Attached Cushion (Dec. 20, 1972)	X		
Fed. Std.	191-A	Textile Test Methods (July 17, 1974)	X	X	1,2,3,5

VIII DIVISION 9: FINISHES

D. Tests for Interior Flooring and Floor Coverings (Other Than Paints and Coatings

. Seamless Flooring

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
Fed.Spec.	TT-C-1685A	Coating System, Decorative and Protective, Seamless (Apr. 18, 1974)			

VIII DIVISION 9: FINISHES

D. Tests for Interior Flooring and Floor Coverings (Other Than Paints and Coatings)

4. Ceramic Flooring

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C484 (17)	Test for Thermal Shock Resistance of Glazed Ceramic Tile	X	X	2
ASTM	C485 (17)	Method for Measuring Warpage of Ceramic Tile	X		
ASTM	C499 (17)	Test for Facial Dimensions and Thickness of Flat, Rectangular Ceramic Wall and Floor Tile	X		
ASTM	C501 (17)	Test for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser	X	X	12
ASTM	C502 (17)	Test for Wedging of Flat, Rectangular Ceramic Wall and Floor Tile	X		
ASTM	C609 (17)	Measurement of Small Color Differences Between Ceramic Wall or Floor Tile	X		
ASTM (ANSI)	C627 (17) (A175.1)	Method of Evaluating Ceramic Floor Tile Installation Systems	X	X	12
ASTM (ANSI)	C648 (17) (A173.1)	Test for Breaking Strength of Ceramic Tile	X		
ASTM (ANSI)	C650 (17) (A174.1)	Test for Resistance of Ceramic Tile to Chemical Substances	X	X	chemicals
TCA (ANSI)	-- (A137.1)	Spec. for Ceramic Tile	X		
TCA (ANSI)	-- A108.2)	Spec. for Ceramic Mosaic Tile Installed with Portland Cement Mortar	X		

VIII DIVISION 9: FINISHES

D. Tests for Interior Flooring and Floor Coverings (Other Than Paints and Coatings)

/. Ceramic Flooring

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
TCA (ANSI)	-- (A108.4)	Spec. for Ceramic Tile Installed with Water-Resistant Organic Adhesives	X		
TCA (ANSI)	-- (A108.5)	Spec. for Ceramic Tile Installed with Dry Set Portland Cement Mortar	X		
TCA (ANSI)	-- (A108.6)	Spec. for Ceramic Tile Installed with Chemical Resistant, Water Cleanable Tile Setting Epoxy	X		

VIII **DIVISION 9:** FINISHES

D. Tests for Interior Flooring and Floor Coverings (Other Than Paints and Coatings)

5. Clay Tile

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI)	C57[illegible].(16) (A77.1)	Spec. for Structural Clay Floor Tile	X		

VIII **DIVISION** 9: FINISHES

D. Tests for Interior Flooring and Floor Coverings (Other Than Paints and Coatings)

b. Wood Flooring*

TEST METHOD IDENTIFICATION AND DESCRIPTION

*See also DIVISION 6.1: WOOD, page A-21.

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	D2394 (22)	Methods for Simulated Service Testing of Wood and Wood Base Finish Flooring	X	X	11,12
HPMA	LF-71	Interim Std. for Laminated Hardwood Block Flooring (June 10, 1971)	X	X	2,3 (for adhesive)
NOFMA	--	Spec. Manual, Certified Oak Floors (1969)			
USC	NBS PS 27-70	Mosaic-Parquet Hardwood Slat Flooring	X		
WSFI	--	Spec. for Rubber Cushion-Sleeper Construction (1962)			
WSFI	--	Spec. for Splined Continuous Strip Mastic Set Maple Flooring (1962)			
WSFI	--	Spec. for Mastic Nailed Construction with Mastic Set Sub-Flooring and Nailed Finish Flooring (1962)			
WSFI	--	Spec. for Mosaic Wood Parquet Flooring Set in Adhesive			
WSFI	--	Spec. for Mastic Cushioned Construction (1962)			

VIII **DIVISION** 9: FINISHES

D. Tests for Interior Flooring and Floor Coverings (Other Than Paints and Coatings)

7. Stone Flooring

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C241 (19)	Test for Abrasion Resistance of Stone Subjected to Foot Traffic	X	X	12

IX DIVISION 13: SPECIAL CONSTRUCTION

A. Tests for Sandwich Constructions

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	C271 (25)	Test for Density of Core Materials for Structural Sandwich Constructions	X		
ASTM	C272 (25)	Test for Water Absorption of Core Materials for Structural Sandwich Constructions	X		
ASTM	C273 (25)	Shear Test in Flatwise Plane of Flat Sandwich Constructions or Sandwich Cores	X		
ASTM	C297 (25)	Tension Test of Flat Sandwich Constructions in Flatwise Plane	X		
ASTM	C363 (25)	Test for Delamination Strength of Honeycomb Type Core Material	X		
ASTM	C364 (25)	Test for Edgewise Compressive Strength of Flat Sandwich Constructions	X		
ASTM	C365 (25)	Test for Flatwise Compressive Strength of Sandwich Cores	X		
ASTM	C393 (25)	Flexure Test of Flat Sandwich Constructions	X		
ASTM	C394 (25)	Test for Shear Fatigue of Sandwich Core Materials	X	X	12
ASTM	C480 (25)	Test for Flexure Creep of Sandwich Constructions	X	X	11
ASTM	C481 (25)	Test for Laboratory Aging of Sandwich Constructions	X	X	2,3,4
ASTM (ANSI)	E72 (18) (A135.1)	Tests for Panels for Building Construction	X		

IX **DIVISION** 13: SPECIAL CONSTRUCTION
A. Tests for Sandwich Constructions

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
APA	SP-61	Fabrication of Plywood Sandwich Panels (1971)			
APA	SS-8	Plywood Stressed Skin Panels (1971)			
USC	NBS-PS 53-72	Glass Fiber Reinforced Polyester Structural Plastic Panels (1972)	X		

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM	B117 (10)	Test for Salt Spray (Fog) Testing		X	6
ASTM	C557 (13)	Spec. for Adhesives for Fastening Gypsum Wallboard to Wood Framing	X	X	2,3,4,13
ASTM (ANSI) (Fed.Std.)	D896 (22) (Z197.7) (175a)	Test for Resistance of Adhesive Bonds to Chemical Reagents	X		
ASTM (ANSI) (Fed.Std.)	D897 (22) (Z197.8) (175a)	Test for Tensile Properties of Adhesive Bonds	X		
ASTM (ANSI) (Fed.Std.)	D898 (22) (Z197.9) (175a)	Test for Applied Weight Per Unit Area of Dried Adhesive Solids	X		
ASTM (Fed.Std.)	D903 (22) (175a)	Test for Peel or Stripping Strength of Adhesive Bonds	X		
ASTM	D904 (22)	Rec. Practice for Determing the Effect of Artificial (Carbon Arc Type) and Natural Light on the Permanence of Adhesives	X	X	1,2
ASTM (ANSI) (Fed.Std.)	D905 (22) (Z197.11) (175a)	Test for Strength Properties of Adhesive Bonds in Shear by Compression Loading	X		
ASTM (ANSI) (Fed.Std.)	D906 (22) (Z197.12) (175a)	Test for Strength Properties of Adhesives in Plywood Type Construction in Shear by Tension Loading	X		
ASTM (ANSI) (Fed.Std.)	D950 (22) (Z197.14) (175a)	Test for Impact Strength of Adhesive Bonds	X		
ASTM (ANSI) (Fed.Std.)	D1002 (22) (Z197.15) (175a)	Test for Strength Properties of Adhesives in Shear by Tension Loading (Metal to Metal)	X		

IX DIVISION 13: SPECIAL CONSTRUCTION
B. Tests for Adhesives

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI) (Fed.Std.)	D1062 (22) (Z197.16) (175a)	Test for Cleavage Strength of Metal to Metal Adhesive Bonds	X		
ASTM (Fed.Std.)	D1084 (22) (175a)	Test for Viscosity of Adhesives	X		
ASTM (ANSI)	D1101 (22) (Z197.17)	Test for Integrity of Glue Joints in Structural Laminated Wood Products for Exterior Use	X	X	3
ASTM (ANSI)	D1144 (22) (Z197.1)	Rec. Practice for Determining Strength Development of Adhesive Bonds	X		
ASTM (ANSI) (Fed.Std.)	D1151 (22) (Z197.18) (175a)	Test for Effect of Moisture and Temperature on Adhesive Bonds	X	X	2,3
ASTM	D1174 (22)	Test for Effect of Bacterial Contamination on Permanence of Adhesive Preparations and Adhesive Bonds	X	X	10
ASTM (ANSI) (Fed.Std.)	D1183 (22) (Z197.19) (175a)	Test for Resistance of Adhesives to Cyclic Laboratory Aging Conditions	X	X	2,3,4
ASTM (ANSI) (Fed.Std.)	D1184 (22) (Z197.20) (175a)	Test for Flexural Strength of Adhesive Bonded Laminated Assemblies	X		
ASTM	D1286 (22)	Test for Effect of Mold Contamination on Permanence of Adhesive Preparations and Adhesive Bonds	X	X	9
ASTM	D1337 (22)	Test for Storage Life of Adhesive by Consistency and Bond Strength	X		
ASTM	D1338 (22)	Test for Working Life of Liquid or Paste Adhesives by Consistency and Bond Strength	X		

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	D1344-(22) (Z197.21)	Testing Cross-Lap Specimens for Tensile Properties of Adhesives	X		
ASTM	D1382 (22)	Test for Susceptibility of Dry Adhesive Films to Attack by Roaches	X		
ASTM	D1383 (22)	Test for Susceptibility of Dry Adhesive Films to Attack by Laboratory Rates	X		
ASTM (Fed.Std.)	D1488 (22) (175a)	Test for Amylaceous Matter in in Adhesives	X		
ASTM (Fed.Std.)	D1489 (22) (175a)	Test for Nonvolatile Content of Aqueous Adhesives	X		
ASTM	D1490 (22)	Test for Nonvolatile Content of Urea-Formaldehyde Resin Solutions	X		
ASTM (Fed.Std.)	D1579 (22) (175a)	Test for Filler Content of Phenol, Resorcinol and Melamine Adhesives	X		
ASTM	D1582 (22)	Test for Nonvolatile Content of Phenol, Resorcinol and Melamine Adhesives	X		
ASTM (Fed.Std.)	D1583 (22) (175a)	Test for Hydrogen Ion Concentration of Dry Adhesive Films	X		
ASTM	D1759 (22)	Conducting Shear Block Test for Quality Control of Glue Bonds in Scarf Joints	X		
ASTM	D1779 (22)	Spec. for Adhesive for Acoustical Materials	X	X	2,3,11
ASTM (ANSI) (Fed.Std.)	D1780 (22) (Z197.22) (175a)	Rec. Practice for Conducting Creep Tests of Metal to Metal Adhesives	X	X	2,11

IX. **DIVISION** 13: SPECIAL CONSTRUCTION
B. Tests for Adhesives

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
ASTM (ANSI) (Fed.Std.)	D1781 (22) (Z197.23) (175a)	Climbing Drum Peel Test for Adhesives	X		
ASTM (ANSI)	D1828 (22) (Z197.24)	Rec. Practice for Atmospheric Exposure of Adhesive Bonded Joints and Structures	X	X	8
ASTM (ANSI) (Fed.Std.)	D1875 (22) (Z198.1) (175a)	Test for Density of Adhesives in Fluid Form	X		
ASTM (ANSI) (Fed.Std.)	D1876 (22) (Z197.2) (175a)	Test for Peel Resistance of Adhesives (T-Peel)	X		
ASTM	D1877 (22)	Test for Permanence of Adhesive Bonded Joints in Plywood Under Mold Conditions	X	X	9
ASTM (ANSI)	D1916 (22) (Z199.1)	Test for Penetration of Adhesives	X		
ASTM (ANSI)	D2095 (22) (Z197.3)	Test for Tensile Strength of Adhesives by Means of Bar and Rod Specimens	X		
ASTM (ANSI)	D2182 (22) (Z197.4)	Test for Strength Properties of Metal to Metal Adhesives by Compression Loading (Disk Shear)	X		
ASTM (ANSI)	D2183 (22) (Z200.1)	Test for Flow Properties of Adhesives	X		
ASTM (ANSI)	D2293 (22) (Z206.1)	Test for Creep Properties of Adhesives in Shear by Compression Loading (Metal to Metal)	X	X	2,11
ASTM (ANSI)	D2294 (22) (Z207.1)	Test for Creep Properties of Adhesives in Shear by Tension Loading (Metal to Metal)	X	X	2,11

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM (ANSI)	D2295 (22) (Z197.5)	Test for Strength Properties of Adhesives in Shear by Tension Loading at Elevated Temperature (Metal to Metal)	X		
ASTM (ANSI)	D2339 (22) (Z197.26)	Test for Strength Properties of Adhesives in Two-Ply Wood Construction in Shear by Tension Loading	X		
ASTM (ANSI)	D2556 (22) (Z201.1)	Test for Apparent Viscosity of Adhesives Having Shear Rate Dependent Flow Properties	X		
ASTM (ANSI)	D2559 (22) (Z197.27)	Spec. for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet Use) Exposure Conditions	X	X	2,3,11
ASTM (ANSI)	D2918 (22) (Z197.30)	Rec. Practice for Determining Durability of Adhesive Joints Stressed in Peel	X	X	2,3,6,11
ASTM (ANSI)	D2919 (22) (Z197.31)	Rec. Practice for Determining Durability of Adhesive Joints Stressed in Shear by Tension Loading	X	X	2,3,6,11
ASTM	D3024 (22)	Spec. for Protein Base Adhesives for Structural Laminated Wood Products for Use Under Interior (Dry Use) Exposure Conditions	X	X	3
ASTM	D3110 (22)	Spec. for Adhesives Used in Non-Structural Glued Lumber Products	X	X	2,3
ASTM	D3163 (22)	Rec. Practice for Determining the Strength of Adhesively Bonded Rigid Plastic Lap-Shear Joints in Shear by Tension Loading	X		

IX. **DIVISION** 13: SPECIAL CONSTRUCTION
B. Tests for Adhesives

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test: Property Measurement	Type of Test: Aging	Degradation Factors in Aging Test
ASTM	D3164 (22)	Rec. Practice for Determining the Strength of Adhesively Bonded Plastic Lap-Shear Sandwich Joints in Shear by Tension Loading	X		
ASTM	D3165 (22)	Test for Strength Properties of Adhesives in Shear by Tension Loading of Laminated Assemblies			
ASTM	D3166 (22)	Test for Fatigue Properties of Adhesives in Shear by Tension Loading (Metal to Metal)	X	X	12
AAMA	801.1	Spec. for Adhesive Type Sealant for Joints of Applied or Integral Fin (Jan. 1964)	X	X	1,2,3
APA	AFG-01	Spec. for Adhesives for Field-Gluing Plywood to Wood Framing (May 1971)	X	X	2,3,5
ASC (ANSI)	AC-A-6203B (A136.1)	Std. for Organic Adhesives for Installation of Ceramic Tile	X	X	2,3,9
ICBO	UBCS 25-19	Adhesives	X	X	2,3,9
ICBO	UBCS 25-20	Test for Glue Joints in Laminated Wood Products	X	X	3
ICBO	UBCS 47-2	Adhesives for Fastening Gypsum Wallboard to Wood Framing	X	X	2,3,4
ILIA	ILIA-4	Spec. for High Strength Adhesive Bonded Units to Indiana Limestone (Aug. 1967)	X	X	4,11
PSTC	--	Test Method for Pressure Sensitive Tapes, 6th Edition (1970)	X	X	2,3
TCA (ANSI)	-- (A118.3)	Chemical Resistant, Water Cleanable Tile Setting and Grouting Epoxy	X	X	2,3

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
WWPM	--	Spec. for Adhesives Used in Non-Structural Glued Lumber Products (1970)	X	X	2,3
Fed.Spec.	MMM-A-110B	Adhesive, Asphalt, Cut-back Type (For Asphalt and Vinyl Asbestos Tile) (June 10, 1974)	X	X	2,3
Fed.Spec.	MMM-A-115A	Adhesive, Asphalt, Water Emulsion Type (For Asphalt and Vinyl Asbestos Tile) (Jan. 3, 1964)	X	X	2,3
Fed.Spec.	MMM-A-122B	Adhesive, Butadiene, Acrylonitrile Base, Medium Solids, General Purpose (May 6, 1974)	X	X	3
Fed.Spec.	MMM-A-125C	Adhesive, Casein Type, Water and Mold Resistant (Mar. 18, 1969)	X	X	3,9
Fed.Spec.	MMM-A-130a	Adhesive, Contact (June 15, 1964)	X	X	2,3,4
Fed.Spec.	MMM-A-137C	Adhesive, Linoleum (July 2,1965)	X		
Fed.Spec.	MMM-A-138a	Adhesive, Metal to Wood, Structural (Mar. 2, 1967)	X	X	3,6
Fed.Spec.	MMM-A-139A	Adhesive, Natural or Synthetic Natural Rubber (July 24, 1972)	X	X	2,3,11
Fed.Spec.	MMM-A-00150A	Adhesive for Acoustical Materials (Oct. 3, 1962)			
Fed.Spec.	MMM-A-181C	Adhesive, Phenol, Resorcinol, or Melamine Base (Nov. 15, 1973)	X	X	2,3
Fed.Spec.	MMM-A-187B	Adhesive, Epoxy Resin Base, Low and Intermediate Strength, General Purpose (Sept.11, 1974)	X		
Fed.Spec.	MMM-A-188B	Adhesive, Urea Resin Type (Nov. 8, 1960)	X		

IX. **DIVISION** 13: SPECIAL CONSTRUCTION
B. Tests for Adhesives

TEST METHOD IDENTIFICATION AND DESCRIPTION

Source	Number	Title	Type of Test		Degradation Factors in Aging Test
			Property Measurement	Aging	
Fed.Spec.	MMM-A-189A	Adhesive, Synthetic Rubber, Thermoplastic, General Purpose (Oct. 8, 1968)	X	X	2,13
Fed.Spec.	MMM-A-193C	Adhesive, Vinyl Acetate Resin Emulsion (Oct. 26, 1967)	X	X	4
Fed.Std.	175a	Adhesives: Methods of Testing (Sept. 27, 1967)	X	X	2,3,4,11

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16. ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)*

This report contains a compendium of state-of-the-art methods to aid in the durability testing of selected elements and materials used in the exterior envelope of buildings. The purposes of the report are to identify currently available property measurement tests and aging tests that can be used for durability testing and to identify the degradation factors included in each aging test. The report will form the basis for selecting specific elements and materials for inclusion in subsequent comprehensive durability studies. These additional studies are needed because existing short-term methods are seldom fully adequate for predicting long-term performance.

The sources of the methods include the American Society for Testing and Materials (ASTM), the American National Standards Institute (ANSI), building industry trade associations, Federal Specifications and Federal Standards. Indications are made for each test method to show if the methods described include a property measurement test, an aging test or both. If the method contains an aging test, the degradation factors included in the test are listed.

17. KEY WORDS *(six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)*

Aging test; building elements and materials; degradation factors; durability; property measurement test; standard test methods.

18. AVAILABILITY

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