# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A.</strong></td>
<td>INTRODUCTION AND METHODOLOGY</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>1. Methodology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Purpose</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Methodology and Time Line</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Terminology</td>
<td></td>
</tr>
<tr>
<td><strong>B.</strong></td>
<td>U.S. CONSTRUCTION ACTIVITY</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>1. U.S. Summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. U.S. Residential Starts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Non-residential Floor Area</td>
<td></td>
</tr>
<tr>
<td><strong>C.</strong></td>
<td>DOOR MARKET</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>1. Summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Market Size by Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Segmentation by Material</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Wood Doors by Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Historic and Projected Growth</td>
<td></td>
</tr>
<tr>
<td><strong>D.</strong></td>
<td>WINDOW MARKET</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>1. Summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Residential-Type Market Size by Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Residential-Type Window Segmented by Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Residential-Type Wood Windows in Conventional Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Residential-Type Vinyl Windows in Conventional Applications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Historic and Projected Growth</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. U.S. Non-residential Glass and Windows Market Size</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Non-residential Historic and Projected Growth</td>
<td></td>
</tr>
<tr>
<td><strong>E.</strong></td>
<td>PATIO DOOR MARKET</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>1. Summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Market Size by Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Segmentation of Wood Units</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Patio Door Forecasts</td>
<td></td>
</tr>
<tr>
<td><strong>F.</strong></td>
<td>SKYLIGHT MARKET</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>1. Summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Market Size by Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Commercial Skylights</td>
<td></td>
</tr>
</tbody>
</table>
APPENDICES:

A. Eleven U.S. Census Regions
B. U.S. Entry Market by Region
C. U.S. Conventional Residential Window Market by Region
D. Non-residential Vision Area Models
E. U.S. Patio Door Market by Region
F. U.S. Glass Usage by Region
LIST OF EXHIBITS

<table>
<thead>
<tr>
<th>Section</th>
<th>Number &amp; Type</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>A.1 Time Line</td>
<td>Program Time Line 2018</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Program Approval</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Draft Report</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Report Publication</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>B.1 Bar Graph</td>
<td>U.S. New Residential Construction Segmented by Type of Structure 2011-2020F</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Manufactured Homes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Multi-Family</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Single Family</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>B.2 Map</td>
<td>U.S. Conventional Housing Starts by Geographic Region 2017</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 11 Regions</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>B.3 Pie Chart</td>
<td>U.S. Residential Housing Starts by Region 2017</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• South</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• West</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Midwest</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Northeast</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>B.4 Pie Chart</td>
<td>U.S. Residential Housing Starts by Region 2019 Forecasted</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• South</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• West</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Midwest</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Northeast</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>B.5 Table</td>
<td>Retail, Wholesale Building Materials Trade Expenditures</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Retail Trade Expenditures</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Wholesale Trade Expenditures</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>B.6 Bar Chart</td>
<td>Trade Expenditures – Retail, Wholesale Building Materials</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Billions of Dollars 2010-2020F</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>B.7 Table</td>
<td>New U.S. Housing by Type of Structure Private and Public, Including Farm 2010 – 2020F</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Total Shelter</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Manufactured Housing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Total Conventional</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Single Family</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Multi-Family</td>
<td></td>
</tr>
</tbody>
</table>
B.8 Table  New U.S. Conventional Housing by Geographical Region Private and Public, Including Farm 2010 – 2020F
- Northeast
- Midwest
- South
- West

B.9 Table  U.S. Manufactured Housing Shipments to Dealers by Geographical Region Private and Public, Including Farm 2010 – 2020F
- Northeast
- Midwest
- South
- West

B.10 Bar Chart  Forecasted Non-residential Contract Awards by Floor Area Segmented by Major Building Category 2013 – 2020F
- Manufacturing/Warehouse
- Office/Hotel/Institutional
- Store/Mercantile

B.11 Map  New U.S. Non-residential Contract Awards by Geographical Region 2017
- 11 Regions

B.12 Pie Chart  Non-residential Contracts by Region 2017
- South
- West
- Midwest
- Northeast

B.13 Pie Chart  Non-residential Contracts by Region 2018 Forecasted
- South
- West
- Midwest
- Northeast

B.14 Table  Non-residential Contract Awards (Reported) by Selected Building Types and Regions 2013 – 2020F
- Manufacturing/Warehouse
- Office/Hotel/Institutional
- Store/Mercantile
- Total Non-residential
### C.1 Table
**Total Market for U.S. Doors by Application**
2017
- Residential Entry
- Non-residential Entry

### C.2 Table
**Total U.S. Market for Doors by Construction Type and Application**
2017
- New Construction
- Remodeling
- Replacement

### C.3 Pie Chart
**U.S. Residential Entry Doors by Material**
2017
- Steel
- Wood
- Fiberglass

### C.4 Pie Chart
**U.S. Residential Fiberglass Entry Doors by Finish**
2017
- Smooth
- Molded/Textured

### C.5 Table
**Non-residential Entry Doors by Material**
2017
- Steel
- Aluminum
- Wood
- Other

### C.6 Table
**Wood Doors by Application**
2017
- Residential Entry
- Non-residential Entry

### C.7 Table
**Sales of U.S. Doors by Material and Application 2011-2020F**
- Steel
- Wood
- Fiberglass
- Aluminum

---

### D.1 Table
**Total Market for Residential-Type Window Units by Application 2015 and 2017**
- Residential New Construction
- Residential Remodel
- Residential Replacement
- Manufactured Housing
- Non-residential New Construction
- Non-residential Remodel
- Non-residential Replacement
D.2 Table  Total U.S. Market for Residential-Type Window Units by Application and Framing Material 2015 and 2017
- Residential, Non-residential and Manufactured Housing Window Units
- Wood and Clad Wood
- Vinyl
- Aluminum
- Other

D.3 Bar Graph  Total U.S. Conventional Residential Window Demand Historic and Forecasted Window Usage by Framing Material 2011 – 2020F
- Wood and Clad Wood
- Aluminum
- Vinyl
- Other

D.4 Table  U.S. Conventional Residential Window Usage by Framing Material Segmented by Construction Type 2015 and 2017
- New, Remodel, and Replacement
- Wood and Clad Wood
- Vinyl
- Aluminum
- Other

D.5 Table  Conventional Residential Window Usage Segmented by Framing Material 2015 and 2017
- Wood
- Aluminum Clad Wood
- Vinyl Clad Wood
- Aluminum with Thermal Break
- Aluminum without Thermal Break
- Vinyl
- Other
D.6 Table
Conventional Residential Window Usage
Segmented by Configuration
2015 and 2017
- Wood, Vinyl, Aluminum, and Other
- Double Hung
- Single Hung
- Casement
- Gliding/Slider
- Awning
- Fixed
- Specialty

D.7 Pie Chart
Conventional Residential Window Volumes
Segmented by Customization
2015 and 2017
- Standard Stock Windows
- Customized Windows

D.8 Table
Conventional Residential Window Glass Usage
Segmented by Framing Material
2015 and 2017
- Single Lite, Two Lite Sealed IG, Other
- Wood
- Vinyl
- Aluminum
- Other

D.9 Pie Chart
Conventional Residential Windows – Insulating Glass
Segmented by Type of Spacer
2015 and 2017
- Rigid Warm Edge
- Non-Rigid Warm Edge
- Aluminum Spacer

D.10 Pie Chart
Conventional Residential Windows – Hurricane Resistant
Florida, All Other Regions
2015 and 2017
- Non-Hurricane
- Hurricane Impact Glazing
- Hurricane Non-Impact Glazing

D.11 Table
Conventional Residential Windows
Segmented by Glass Type
2015 and 2017
- Wood, Vinyl, Aluminum, and Other
- Clear
- Tinted/Reflective
- Low-E

D.12 Pie Chart
Conventional Residential Windows – Low-E
Segmented by Coating Type
2015 and 2017
- Sputtered
- Pyrolytic
D.13 Table
Conventional Residential Windows – Energy Ratings
Segmented by Rating Type
2015 and 2017
- Wood, Vinyl, Aluminum/Other
- NFRC Rating
- NFRC and ENERGY STAR Rating
- No Rating

D.14 Table
Conventional Residential Wood Window Units
Segmented by Configuration
2015 and 2017
- Double Hung
- Single Hung
- Casement
- Gliding/Slides
- Awning
- Fixed
- Specialty

D.15 Table
Conventional Residential Wood Window Units – Window
Sash and Frame Segmented by Wood Species Used
2015 and 2017
- Ponderosa Pine
- Southern Yellow Pine
- Radiata Pine
- White Pine
- Fir/Hemlock
- Other Softwoods
- Oak
- Other Hardwoods

D.16 Pie Chart
Conventional Residential Wood Window Units – Non-Clad
Segmented by Exterior Finish
2015 and 2017
- Primed/Prefinished
- Natural
- No Finish

D.17 Pie Chart
Conventional Residential Wood Window Units
Segmented by Type of Insulating Spacer
2015 and 2017
- Rigid Warm Edge Spacer
- Non-Rigid Warm Edge
- Aluminum Spacer

D.18 Pie Chart
Conventional Residential Wood Window Units
Segmented by Low-E Usage and Technology
2015 and 2017
- Sputtered
- Pyrolytic
D.19 Table
Conventional Residential Vinyl Window Units
Segmented by Configuration
2015 and 2017
- Double Hung
- Single Hung
- Casement
- Gliding/Slider
- Awning
- Fixed
- Specialty

D.20 Pie Chart
Conventional Residential Vinyl Window Units
Segmented by Type of Insulating Spacer
2015 and 2017
- Rigid Warm Edge Spacer
- Non-Rigid Warm Edge
- Aluminum Spacer

D.21 Pie Chart
Residential Vinyl Window Units
Segmented by Fabrication Method
2015 and 2017
- Fully Welded Frame
- Mechanically Fastened Frame
- Hybrid of Mechanically Fastened Frame and Fully Welded Frame

D.22 Pie Chart
Conventional Residential Vinyl Window Units
Segmented by Solid Extrusion Color
2015 and 2017
- White
- Tan
- Other

D.23 Table
Conventional Residential Windows Usage
2008-2018 Forecast
- New Construction, Remodel/Replacement and Total Construction
- Wood
- Aluminum
- Vinyl
- Fiberglass
- Other
D.24 Table

**New Non-residential Construction and Major Additions**

Segmented by Building Category

2015 and 2017

- Curtain Wall, Storefront, Site-Fabricated Windows and Shop-Fabricated Windows
- Office and Bank
- Stores, Other Mercantile
- Manufacturing/Warehouses
- Educational
- Hospital/Health Care (incl. Government)
- Public/Government
- Religious
- Amusement/Recreational
- Hotel/Motel/Dormitory
- Miscellaneous
- High-Rise Multi-Family

D.25 Table

**Total Non-residential Vision Area**

Segmented by Type of Construction

2015 and 2017

- New Building/Major Additions and Replacement
- Curtain Wall
- Storefront
- Site-Fabricated Windows
- Shop-Fabricated Windows

D.26 Table

**Framing Materials Used in Non-residential Construction**

2015 and 2017

- Curtain Wall, Storefront, Site-Fabricated Windows, and Shop-Fabricated Windows
- Aluminum with Thermal Break
- Aluminum without Thermal Break
- Wood
- Vinyl, Other

D.27 Table

**Non-residential Aluminum Framing**

Segmented by Finish Material

2015 and 2017

- Anodized Finish
- Standard Paint
- High-End Paint

D.28 Table

**Calculations – High-Rise Construction – New and Major Additions**

2015 and 2017

- Ratio High-Rise, High-Rise Vision Area, Total Vision Glass Area
- Office/Bank
- All Other

D.29 Table

**Total U.S. Non-residential Glass Usage**

Segmented by Glazing Configuration

2015 and 2017
- Single Lite and Non-Sealed
- Insulating glass Units

**D.30 Table**

Glass Usage – Non-residential Windows 2013 to 2017
- Clear
- Tint
- Reflective
- Low-E

**D.31 Pie Chart**

Usage of Low-E Segmented by Coating Technology 2015 and 2017
- Sputter and Suspended Film
- Pyrolytic

**D.32 Pie Chart**

Non Residential Glazing – Hurricane Resistant Florida, All Other Regions 2017
- Non-Hurricane
- Hurricane Impact Glazing
- Hurricane Non-Impact Glazing

**D.33 Picture**

U.S. Market for Commercial Windows Segmented by Window Type 2017
- Site-Fabricated
- Shop-Fabricated

**D.34 Pie Chart**

U.S. Market for Architectural Rated Shop-Fabricated Windows by Rating Segmented by Window Rating Type 2015 and 2017
- AW
- CW

**D.35 Table**

U.S. Architecturally-Rated Shop-Fabricated Windows Segmented by Window Configuration 2015 and 2017
- Fixed
- Projected / Awning
- Slider
- Hung
- Door
- Specialty/Other

**D.36 Pie Chart**

U.S. Shop-Fabricated Patio and Terrace Doors Segmented by Door Type 2017
- Hinged
- Sliding

**D.37 Table**

- New Construction
- Remodeling & Replacement
E.1 Table  Total U.S. Market for Residential Patio Doors Segmentated by Framing Material 2013 - 2017
- Wood
- Aluminum
- Vinyl
- Steel
- Fiberglass
- Other

E.2 Table  Total U.S. Market for Residential Patio Doors Segmentated by Construction Type and Framing Material 2015 and 2017
- New Construction, Remodel, and Replacement
- Wood
- Aluminum
- Vinyl
- Steel
- Fiberglass
- Other

E.3 & E.4. Pie Charts  Patio Doors by Framing Material 2015 and 2017
- Wood
- Aluminum
- Vinyl
- Steel
- Fiberglass
- Other

E.5 Table  Total U.S. Market for Residential Patio Doors Segmentated by Application and Framing Material 2015 and 2017
- Hinged and Sliding
- Wood
- Aluminum
- Vinyl
- Steel
- Fiberglass
- Others

E.6 Table  Total U.S. Sliding and Hinged Patio Doors Segmentated by Number of Panels 2015 and 2017
- One Panel, Two Panel and Three or More Panels
- Wood
- Aluminum
- Vinyl
- Steel
- Fiberglass
- Others
E.7 Table  Total U.S. Market for Residential Patio Doors  
Segmented by Low-E Usage and Technology  
2015 and 2017  
- Clear, Tinted, Reflective and Low-E  
- Wood  
- Aluminum  
- Vinyl  
- Steel  
- Fiberglass  
- Others

E.8 Table  Wood Patio Doors  
Segmented by Cladding and Type of Door  
2015 and 2017  
- Hinged and Sliding  
- Clad  
- Non-Clad

E.9 Pie Chart  Non-Clad Wood Patio Doors  
Segmented by Finish Type  
2017  
- Primed/Painted  
- Natural Finish  
- No Finish

E.10 Table  Wood Patio Door Lumber Type  
Segmented by Wood Species  
2017  
- Ponderosa Pine  
- Southern Yellow Pine  
- Radiata Pine  
- White Pine  
- Fir/Hemlock  
- Oak  
- Other Softwoods  
- Other Hardwoods

E.11 Table  Residential Patio Door Market  
2011 – 2020F  
- New Construction  
- Remodel and Replacement

F.1 Table  Residential-Type Skylights (Including Light Commercial)  
2011 – 2017  
- New Construction  
- Remodel/Replacement

F.2 Table  Skylights by Type and Application  
2017  
- Plastic Glazed Skylight and Glass Glazed Skylight  
- Residential  
- Light Commercial
F.3 Pie Chart

Total Market for Skylights by Type 2015 and 2017
- Glass Glazed Skylights
- Plastic Glazed Skylights

F.4 Pie Chart

Plastic Glazed Skylights by Type 2017
- Acrylic
- Polycarbonate

F.5 Pie Chart

Plastic Glazed Skylights by Type 2017
- Translucent/Diffusing
- Tinted/Colored
- Clear

F.6 Pie Chart

Glass Glazed Skylights by Type 2017
- Low-E
- Clear
- Tinted
- Reflective

F.7 Pie Chart

Residential-Type Skylights by Framing Material 2017
- Vinyl
- Aluminum
- Wood and Clad Wood
- Frameless/Other

F.8 Table

Residential-Type Skylights by Type and Application 2017
- Plastic Glazed Skylights and Glass Glazed Skylights
- Fixed
- Venting
- Venting – Motorized/Operable

F.9 Table

Forecast of Residential-Type Skylights 2016 – 2020F
- New
- Remodeling / Replacement

Appendix A

APDX-A.1 Map

Eleven U.S. Census Regions

APDX-A.2 Table

Four to Eleven Region Conversion and Abbreviation Definitions

Appendix B

Table

U.S. Entry Door Market Segmented by Application and Estimated Geographic Segmentation 2017
- Residential
- Non-residential
Appendix C  Table  U.S. Conventional Residential Window Market Segmented by Application and Estimated Geographic Segmentation 2017
  • New Construction
  • Remodeling and Replacement

Appendix D  APDX-D.1 Graphic  Conversion: Total Vision Glass Area
APDX-D.2 Graphic  Model: Total Vision Glass Area
APDX-D.3 Table  United States Non-residential New and Major Additions 2017 Contract Awards
  • Office and Bank
  • Stores, other Mercantile
  • Manufacturing/Warehouse
  • Educational
  • Hospital/Healthcare (including Government)
  • Public/Government
  • Religious
  • Amusement/Recreational
  • Hotel/Motel/Dormitory
  • Miscellaneous
  • High-Rise Multi-Family

APDX-D.4 Table  U.S. Non-residential Total Wall Area – New and Additions 2017
  • Floor Area and Wall-to-Floor Ratio
  • Office and Bank
  • Stores, other Mercantile
  • Manufacturing/Warehouse
  • Educational
  • Hospital/Healthcare (incl. Government)
  • Public/Government
  • Religious
  • Amusement/Recreational
  • Hotel/Motel/Dormitory
  • Miscellaneous
  • High Rise Multi Family

APDX-D.5 Table  U.S. Non-residential Vision and Opaque Wall Area – New and Additions Segmented by Building Category 2017
  • Total Wall Area and Vision Glass
  • Office and Bank
  • Stores, other Mercantile
  • Manufacturing/Warehouse
  • Educational
  • Hospital/Healthcare (incl. Government)
  • Public/Government
  • Religious
  • Amusement/Recreational
  • Hotel/Motel/Dormitory
• Miscellaneous
• High-Rise Multi-Family

Appendix E Table U.S. Patio Door Market
Segmented by Application and Estimated Geographic Segmentation
2017
• New Construction
• Remodeling and Replacement

Appendix F Table U.S. Glass Usage
Segmented by Glass Type and Estimated Geographic Segmentation
2017
• Clear
• Tinted
• Low-E

Copyright © 2018 AAMA
All rights reserved.
This report or any part thereof may not be reproduced in any form without the written permission of the publisher.
Introduction

Market estimates in the U.S. Industry Statistical Review and Forecast are driven not only by statistics published by the Census Bureau and other construction statistics organizations, but also from primary interviews with leading manufacturers of windows, doors and skylights, as well as component suppliers. All forecasts are based on projections of construction activity as of end March 2018 and appropriate usage factors and tabulations developed by Ducker Worldwide LLC, which is solely responsible for the data. Any questions on the Review or its contents should be directed to Ducker. Please note that totals may not always add due to rounding.

Ducker has been conducting residential and non-residential market studies continuously since 1982 for the American Architectural Manufacturers Association (AAMA).


Contents

Residential Construction Activity

- New residential housing 1
- New housing by type of structure 1
- Residential construction activity 2
- Retail & Wholesale Trade expenditures 3
- Manufactured housing shipments 4
- Existing home sales 4

Residential Product Statistics

- Prime windows 5-6
- Skylights 7
- Patio doors 8
- Entry door usage 9
- Door forecast 10

Non-residential Product Statistics

- Entry door usage 9
- Door forecast 10
- Insulating glass statistics 11

Non-residential Construction Activity

- Contract awards 12-13
- Regional construction 14
- Window usage 15-16

U.S. Map of Geographic Division 17
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>EXECUTIVE SUMMARY</td>
<td>4</td>
</tr>
<tr>
<td>II.</td>
<td>INTRODUCTION AND METHODOLOGY</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>A. Introduction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Study Objectives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Study Methodology</td>
<td></td>
</tr>
<tr>
<td>III.</td>
<td>CHANNEL MEMBER DEFINITIONS AND PROFILES</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>A. Characteristics of Channel Members</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Characteristic Definitions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Distributor Profiles</td>
<td></td>
</tr>
<tr>
<td>IV.</td>
<td>PRODUCT FLOW ANALYSIS</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>A. Market Size</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Distribution Discussion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Windows</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Patio Doors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E. Entry Doors</td>
<td></td>
</tr>
<tr>
<td>V.</td>
<td>ISSUES AND TRENDS</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>A. Channel Member Trends</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Regional Trends</td>
<td></td>
</tr>
<tr>
<td>VI.</td>
<td>NON-RESIDENTIAL WINDOWS AND DOORS</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>A. Non-residential Windows and Glazing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Non-residential Windows and Glazing Supply Channel Chain Definitions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Non-residential Window Distribution Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Non-residential Door Channel Member Definitions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E. Non-residential Door Distribution Analysis</td>
<td></td>
</tr>
</tbody>
</table>
# INDEX OF EXHIBITS

<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Title</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>III.1</td>
<td>Definitions – Categorizing Process</td>
<td>10</td>
</tr>
<tr>
<td>III.2</td>
<td>Millwork Wholesaler Profile</td>
<td>13</td>
</tr>
<tr>
<td>III.3</td>
<td>Big Box Profile</td>
<td>16</td>
</tr>
<tr>
<td>III.4</td>
<td>Lumberyard Profile</td>
<td>18</td>
</tr>
<tr>
<td>III.5</td>
<td>Shortline Distributor Profile</td>
<td>20</td>
</tr>
<tr>
<td>III.6</td>
<td>Specialty Retailer Profile</td>
<td>22</td>
</tr>
<tr>
<td>III.7</td>
<td>Summary of Distribution Definitions</td>
<td>24</td>
</tr>
<tr>
<td>IV.1</td>
<td>2017 Market Size - Residential</td>
<td>25</td>
</tr>
<tr>
<td>IV.2</td>
<td>2017 Windows – Manufacturer Direct</td>
<td>27</td>
</tr>
<tr>
<td>IV.3</td>
<td>2017 Windows – Secondary Distribution Channels</td>
<td>28</td>
</tr>
<tr>
<td>IV.4</td>
<td>2017 Windows - Total Volume by Channel Distribution</td>
<td>29</td>
</tr>
<tr>
<td>IV.5</td>
<td>2017 Millwork Wholesaler – Actual Window Purchases and Sales</td>
<td>30</td>
</tr>
<tr>
<td>IV.6</td>
<td>2017 Big Box – Actual Window Purchases and Sales</td>
<td>31</td>
</tr>
<tr>
<td>IV.7</td>
<td>2017 Lumberyard – Actual Window Purchases and Sales</td>
<td>32</td>
</tr>
<tr>
<td>IV.9</td>
<td>2017 Shortline Distributor – Actual Window Purchases and Sales</td>
<td>33</td>
</tr>
<tr>
<td>IV.10</td>
<td>2017 Specialty Retailer – Actual Window Purchases and Sales</td>
<td>34</td>
</tr>
<tr>
<td>IV.11</td>
<td>2017 Summary of Window Volumes – Segmented by End User</td>
<td>35</td>
</tr>
<tr>
<td>IV.12</td>
<td>2017 Summary of Window Volumes – Segmented by Construction Type</td>
<td>36</td>
</tr>
<tr>
<td>IV.13</td>
<td>2017 Patio Doors – Manufacturer Direct</td>
<td>37</td>
</tr>
<tr>
<td>IV.14</td>
<td>2017 Patio Doors – Major Distribution Channels</td>
<td>38</td>
</tr>
<tr>
<td>IV.15</td>
<td>2017 Patio Doors – Total Volume by Channel of Distribution</td>
<td>39</td>
</tr>
<tr>
<td>IV.16</td>
<td>2017 Millwork Wholesaler – Actual Patio Door Purchases and Sales</td>
<td>40</td>
</tr>
<tr>
<td>IV.17</td>
<td>2017 Big Box – Actual Patio Door Purchases and Sales</td>
<td>41</td>
</tr>
<tr>
<td>IV.18</td>
<td>2017 Lumberyard – Actual Patio Door Purchases and Sales</td>
<td>42</td>
</tr>
<tr>
<td>IV.20</td>
<td>2017 Shortline Distributor – Actual Patio Door Purchases and Sales</td>
<td>43</td>
</tr>
<tr>
<td>IV.21</td>
<td>2017 Specialty Retailer – Actual Patio Door Purchases and Sales</td>
<td>44</td>
</tr>
<tr>
<td>IV.22</td>
<td>2017 Summary of Patio Door Volumes – Segmented by End User</td>
<td>45</td>
</tr>
<tr>
<td>IV.23</td>
<td>2017 Summary of Patio Door Volumes – Segmented by Construction Type</td>
<td>45</td>
</tr>
<tr>
<td>IV.24</td>
<td>2017 Entry Doors – Manufacturer Direct</td>
<td>46</td>
</tr>
<tr>
<td>IV.25</td>
<td>2017 Entry Doors – Secondary Distribution Channels</td>
<td>47</td>
</tr>
<tr>
<td>IV.26</td>
<td>2017 Entry Doors – Total Volume by Channel of Distribution</td>
<td>48</td>
</tr>
<tr>
<td>IV.27</td>
<td>2017 Millwork Wholesaler – Actual Entry Door Purchases and Sales</td>
<td>49</td>
</tr>
<tr>
<td>IV.28</td>
<td>2017 Big Box – Actual Entry Door Purchases and Sales</td>
<td>50</td>
</tr>
</tbody>
</table>
### INDEX OF EXHIBITS

(continued)

<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Title</th>
<th>Page Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV.29</td>
<td>2017 Lumberyard – Actual Entry Door Purchases and Sales</td>
<td>51</td>
</tr>
<tr>
<td>IV.30</td>
<td>2017 Shortline Distributor – Actual Entry Door Purchases and Sales</td>
<td>52</td>
</tr>
<tr>
<td>IV.31</td>
<td>2017 Specialty Retailer – Actual Entry Door Purchases and Sales</td>
<td>53</td>
</tr>
<tr>
<td>IV.32</td>
<td>2017 Summary of Entry Door Volumes – Segmented by End User</td>
<td>54</td>
</tr>
<tr>
<td>IV.33</td>
<td>2017 Summary of Entry Door Volumes – Segmented by Construction Type</td>
<td>54</td>
</tr>
<tr>
<td>V.1</td>
<td>Historic View of Window and Door Product Distribution Channel</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Characteristics</td>
<td></td>
</tr>
<tr>
<td>V.I.1</td>
<td>Non-residential Construction Specification Process and Cycle</td>
<td>60</td>
</tr>
<tr>
<td>V.I.2</td>
<td>Architectural Glazing Products Supply Chain</td>
<td>67</td>
</tr>
<tr>
<td>V.I.3</td>
<td>Shop-Fabricated Commercial Window Supply Chain</td>
<td>70</td>
</tr>
<tr>
<td>V.I.4</td>
<td>Non-residential Door Product Flow</td>
<td>73</td>
</tr>
</tbody>
</table>

Copyright © 2018 AAMA

All rights reserved.

This report or any part thereof, may not be reproduced in any form without the written permission of the publisher.