



Plastic Pipe: Global Markets

May 2017

Jason Chen

Report Code: PLS053B

Table of Contents

<i>Chapter 1 Introduction</i>	<i>1</i>
Introduction	1
Study Goals and Objectives	1
Reasons for Doing This Study	2
Intended Audience	2
Scope of Report	3
Information Sources	3
Research Methodology	3
Geographic Breakdown	4
Analyst's Credentials	5
Related BCC Research Reports	5
<i>Chapter 2 Summary and Highlights</i>	<i>6</i>
Summary and Highlights	7
<i>Chapter 3 Piping Industry Overview</i>	<i>10</i>
Piping Industry Overview	11
Historical Perspective	11
The Pipe Industry	12
Definitions and Descriptions	12
Materials Used	15
Desired Physical and Chemical Properties	18
Applications	19
Prices for Pipe and Tubing	21
Building and Construction	21
Public Sector Demand	22
Private Sector Demand	22
Other Piping Uses	22
<i>Chapter 4 Technology</i>	<i>23</i>
Technology	24
Aluminum Pipe/Tubing	24
Desirable Properties of Aluminum	24
Primary Types of Aluminum Pipe and Tubing	26
Aluminum Pipe and Tubing Applications	26
Manufacturing of Aluminum Pipe and Tubing	27
Clay Pipe	27
Desirable Properties of Clay Pipe	29
Clay Pipe Manufacturing	29
Concrete Pipe	30
Desirable Properties of Concrete Pipe	31
Copper Pipe and Tubing	32
Desirable Properties of Copper	33
Copper Pipe and Tubing Manufacturing	34
Iron Pipe	35
Gray Iron Pipe	35
Ductile Iron Pipe	36

Desirable Properties of Iron Pipe	36
Primary Types of Iron Pipe	37
Iron Pipe Manufacturing	37
Iron Pipe Coatings and Linings.....	38
Steel Pipe.....	38
Desirable Properties of Steel Pipe	39
Alloys Used in Steel Pipe and Tubing.....	40
Primary Types of Steel Pipe	40
Corrugated Steel Pipe.....	40
Steel Pipe Manufacture	41
Plastic Pipe/Tubing	41
Thermoplastic Resins.....	41
Thermosetting Resins	44
Trenchless Technology	45
Cured-In-Place Pipe (CIPP).....	46
Sliplining	47
Microtunneling	47
Pipebursting.....	48
Thermoformed Pipeliners	49
TT for Municipal Water, Sewer and Gas Pipe Repair	49
TT for Natural Gas Pipeline Repair	50
Plastic Pipe Materials Used in Trenchless Technology.....	50
Piping System Design	51
Piping System Fabrication and Joining	52
Pipeline Inspection	53
Pipeline Locating	53
<i>Chapter 5 Global Plastic Pipe Markets by Type of Resin</i>	<i>54</i>
Global Plastic Pipe Markets by Type of Resin	55
Global Plastic Pipe Market by Region.....	55
Global Plastic Pipe Market by Type of Resin	56
Thermoplastic Plastic Pipe	57
Special Properties and Benefits of Thermoplastic Pipe.....	58
Fluoropolymers	61
Polyethylenes	63
Polypropylene.....	70
Thermosetting Plastic Pipe.....	77
Global Plastic Pipe and Tubing Markets by application and End User	84
Building and Construction	85
Water Transmission Service	85
Petroleum Service Pipe	89
Machinery, Process and Other Equipment Pipe/Tubing	91
Electrical and Telecommunications Pipe/Tubing	92
Mechanical and Structural Pipe Applications.....	93
Specialty and Other Pipe/Tubing.....	94
<i>Chapter 6 U.S. Plastic Pipe Markets.....</i>	<i>96</i>
U.S. Plastic Pipe Markets.....	97
U.S. Plastic Pipe Market by Type of Resin	97
Thermoplastic Plastic Pipe.....	98
Thermosetting Plastic Pipe.....	104

U.S. Plastic Pipe and Tubing Market by Application and End User	105
Building and Construction	107
Petroleum Service Pipe	110
Machinery, Process and Other Equipment Pipe/Tubing	112
Electrical and Telecommunications Pipe/Tubing	114
Mechanical and Structural Pipe Applications.....	115
Specialty and Other Pipe/Tubing.....	116
International Aspects of the U.S. Pipe Industry	116
Foreign Investment and Ownership in Plastic Pipe.....	116
Imports and Exports of Plastic Pipe and Tubing.....	117
Environmental and Regulatory Issues	118
Environmental Issues	119
Regulatory Matters.....	119
Impact of Regulatory and Environmental Issues on Pipe Markets	120
<i>Chapter 7 European Plastic Pipe Markets.....</i>	<i>127</i>
European Plastic Pipe Markets	128
European Plastic Pipe Market by Country.....	128
European Plastic Pipe Market by Type of Resin	128
Thermoplastic Plastic Pipe.....	129
Thermosetting Plastic Pipe	134
European Plastic Pipe and Tubing Market by Application and End User	135
Building and Construction	136
Petroleum Service Pipe	139
Machinery, Process and Other Equipment Pipe/Tubing	140
Electrical and Telecommunications Pipe/Tubing	141
Mechanical and Structural Pipe Applications.....	141
Specialty and Other Pipe/Tubing.....	142
<i>Chapter 8 Asian Plastic Pipe Markets.....</i>	<i>143</i>
Asian Plastic Pipe Markets	144
Asian Plastic Pipe Market by County	144
Asian Plastic Pipe Market by Type of Resin.....	144
Thermoplastic Plastic Pipe.....	145
Thermosetting Plastic Pipe	150
Asian Plastic Pipe and Tubing Market by Application and End User.....	150
Building and Construction	151
Petroleum Service Pipe	154
Machinery, Process and Other Equipment Pipe/Tubing	156
Electrical and Telecommunications Pipe/Tubing	157
Mechanical and Structural Pipe Applications.....	157
Specialty and Other Pipe/Tubing.....	158
<i>Chapter 9 Chinese Plastic Pipe Market.....</i>	<i>160</i>
Chinese Plastic Pipe Market.....	161
Chinese Plastic Pipe Market by Type of Resin.....	161
Thermoplastic Plastic Pipe.....	162
Thermosetting Plastic Pipe	167
Chinese Plastic Pipe and Tubing Market by Application and End User.....	167
Building and Construction	168
Petroleum Service Pipe	171

Machinery, Process and Other Equipment Pipe/Tubing	173
Electrical and Telecommunications Pipe/Tubing	174
Mechanical and Structural Pipe Applications.....	174
Specialty and Other Pipe/Tubing.....	175
<i>Chapter 10 Plastic Pipes Market in the Rest of the World.....</i>	<i>177</i>
Plastic Pipes Market in the Rest of the World	178
ROW Plastic Pipe Market by Region.....	178
ROW Plastic Pipe Market by Type of Resin	178
Thermoplastic Plastic Pipe.....	179
Thermosetting Plastic Pipe	184
ROW Plastic Pipe and Tubing Market by Application and End User	184
Building and Construction	185
Petroleum Service Pipe	188
Machinery, Process and Other Equipment Pipe/Tubing.....	190
Electrical and Telecommunications Pipe/Tubing	191
Mechanical and Structural Pipe Applications.....	191
Specialty and Other Pipe/Tubing.....	192
<i>Chapter 11 Industry Structure and Competitive Issues</i>	<i>194</i>
Industry Structure and Competitive Issues.....	195
Competition Among Plastic Piping Materials.....	195
Water Transmission and Building Service Plumbing Pipe	196
Building Drain, Waste and Vent (DWV) Pipe.....	198
Sewers and Culverts	200
Petroleum Product Pipe	205
Machinery, Process and Other Equipment Pipe/Tubing.....	206
Electrical and Telecommunications Pipe/Tubing	207
Mechanical and Structural Pipe/Tubing	209
Specialty and Other Pipe/Tubing.....	209
Distribution and Sale of Plastic Pipe.....	209
<i>Chapter 12 Company Profiles</i>	<i>211</i>
Company Profiles	212
<i>Appendix A Appendix: Glossary of Terms</i>	<i>229</i>
Appendix: Glossary of Terms	230
Glossary of Important Terms, Abbreviations and Acronyms	230
<i>Lists of Tables and Figures</i>	<i>236</i>
<i>About BCC Research</i>	<i>242</i>
About BCC Research.....	243
BCC Library Access.....	243
BCC Custom Research	243



Lists of Tables and Figures

List of Tables

Table 1	Summary Table: Global Market for Plastic Pipe/Tubing, by Application, through 2021 (Million Pounds).....	8
Table 2	Dimensions of Common Pipes (Inches)	14
Table 3	Comparison of Trenchless Pipe Technology Methods (Inches, Feet).....	51
Table 4	Global Market for Plastic Pipe/Tubing, By Region, through 2021 (Million Pounds)	55
Table 5	Global Market for Plastic Pipe/Tubing Resins, through 2021 (Million Pounds)	56
Table 6	Global Market for ABS Plastic Pipe, by Application, Through 2021 (Million Pounds).....	60
Table 7	Global Market for Fluoropolymer Pipe, by Application, Through 2021 (Million Pounds).....	63
Table 8	Nominal Pipe Diameters for Hmw-HDPE Applications (Inches)	67
Table 9	Global Market for Polyethylene Pipe, by Application, through 2021 (Million Pounds)	69
Table 10	Global Market for Polypropylene Pipe, by Application, through 2021 (Million Pounds).....	71
Table 11	Global Market for PVC/CPVC Pipe, by Application, through 2021 (Million Pounds)	75
Table 12	Global Shipments of Fiberglass-Reinforced (FRP) Pipe, By Application, through 2021 (Million Pounds).....	82
Table 13	Global Shipments of Plastic Pipe/Tubing, by Application, through 2021 (Million Pounds)	84
Table 14	Global Market for Water Transmission, By Plastic Pipe/Tubing, through 2021 (Million Pounds)	86
Table 15	Global Market for Plumbing Service, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	87
Table 16	Global Market for Drain, Waste and Vent (DMV), by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	87
Table 17	Global Market for Sewer, Storm Drains and Culverts, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	88
Table 18	Global Market for Sewer, Storm Drains and Culverts, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	89
Table 19	Global Market for Petroleum Transmission and Distribution (Line Pipe), by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	90
Table 20	Global Market for Machinery Process and Other Equipment, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	91
Table 21	Global Market for Electrical and Telecommunications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	92
Table 22	Global Market for Mechanical and Electrical Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	93
Table 23	Global Market for Specialty and Other Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	94
Table 24	U.S. Market for Plastic Pipe/Tubing Resins, through 2021 (Million Pounds)	98
Table 25	U.S. Market for ABS Plastic Pipe, by Application, through 2021 (Million Pounds).....	100
Table 26	U.S. Market for Fluoropolymer Pipe, by Application, through 2021 (Million Pounds)	101
Table 27	U.S. Market for Polyethylene Pipe, by Application, through 2021 (Million Pounds)	102
Table 28	U.S. Market for Polypropylene Pipe, by Application, through 2021 (Million Pounds).....	103
Table 29	U.S. Market for PVC/CPVC Pipe, by Application, through 2021 (Million Pounds).....	104
Table 30	U.S. Shipments of Fiberglass-Reinforced (FRP) Pipe, by Application, through 2021 (Million Pounds).....	105
Table 31	U.S. Market for Plastic Pipe/Tubing, by Application, through 2021 (Million Pounds)	106
Table 32	U.S. Market for Water Transmission, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	107

Table 33	U.S. Market for Plumbing Service, by Plastic Pipe/Tubing, Through 2021 (Million Pounds) ...	108
Table 34	U.S. Market for Drain, Waste and Vent (DWV), by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	109
Table 35	U.S. Market for Sewer, Storm Drains and Culverts, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	110
Table 36	U.S. Market for Oil Country Tubular Goods (OCTG), by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	111
Table 37	U.S. Market for Petroleum Transmission and Distribution (Line Pipe), by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	112
Table 38	U.S. Market for Machinery, Process and Other Equipment, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	113
Table 39	U.S. Market for Electrical and Telecommunications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	114
Table 40	U.S. Market for Mechanical and Structural Pipe Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	115
Table 41	U.S. Market for Specialty and Other Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	116
Table 42	European Market for (Plastic Pipe/Tubing, by Country, through 2021 (Million Pounds)	128
Table 43	European Market for Plastic Pipe/Tubing Resins, through 2021 (Million Pounds).....	129
Table 44	European Market for ABS Plastic Pipe, by Application, through 2021 (Million Pounds)	130
Table 45	European Market for Fluoropolymer Pipe, by Application, through 2021 (Million Pounds) ..	131
Table 46	European Market for Polyethylene Pipe, by Application, through 2021 (Million Pounds).....	131
Table 47	European Market for Polypropylene Pipe, by Application, through 2021 (Million Pounds)...	132
Table 48	European Market for PVC/CPVC Pipe, by Application, through 2021 (Million Pounds)	133
Table 49	European Shipments of Fiberglass-Reinforced (FRP) Pipe, by Application through 2021 (Million Pounds).....	134
Table 50	European Market for Plastic Pipe/Tubing, by Application through 2021 (Million Pounds)....	135
Table 51	European Market for Water Transmission, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	136
Table 52	European Market for Plumbing Service, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	137
Table 53	European Market for Drain, Waste and Vent (DWV), by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	138
Table 54	European Market for Sewer, Storm Drains and Culverts, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	138
Table 55	European Market for Oil Country Tubular Goods (OCTG), by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	139
Table 56	European Market for Petroleum Transmission and Distribution (Line Pipe), by Plastic Pipe/Tubing, through 2021 (Million Pounds)	140
Table 57	European Market for Machinery, Process and Other Equipment, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	140
Table 58	European Market for Electrical and Telecommunications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	141
Table 59	European Market for Mechanical and Structural Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	142
Table 60	European Market for Specialty and Other Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	142
Table 61	Asian Market for Plastic Pipe/Tubing Resins, by Country, through 2021 (Million Pounds)	144

Table 62	Asian Market for Plastic Pipe/Tubing Resins, through 2021 (Million Pounds)	145
Table 63	Asian Market for ABS Plastic Pipe, by Application, through 2021 (Million Pounds)	146
Table 64	Asian Market for Fluoropolymer Pipe, by Application, through 2021 (Million Pounds)	147
Table 65	Asian Market for Polyethylene Pipe, by Application, through 2021 (Million Pounds)	147
Table 66	Asian Market for Polypropylene Pipe, by Application, through 2021 (Million Pounds)	148
Table 67	Asian Market for PVC/CPVC Pipe, by Application, through 2021 (Million Pounds)	149
Table 68	Asian Shipments of Fiberglass-Reinforced (FRP) Pipe, by Application, through 2021 (Million Pounds)	150
Table 69	Asian Market for Plastic Pipe/Tubing, by Application, through 2021 (Million Pounds)	151
Table 70	Asian Market for Water Transmission, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	152
Table 71	Asian Market for Plumbing Service, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	153
Table 72	Asian Market for Drain, Waste and Vent (DWV), by Plastic Pipe/Tubing, through 2021 (Million Pounds)	153
Table 73	Asian Market for Sewer, Storm Drains and Culverts, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	154
Table 74	Asian Market for Oil Country Tubular Goods (OCTG), by Plastic Pipe/Tubing, through 2021 (Million Pounds)	155
Table 75	Asian Market for Petroleum Transmission and Distribution (Pipe Line), by Plastic Pipe/Tubing, through 2021 (Million Pounds)	156
Table 76	Asian Market for Machinery, Process and Other Equipment, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	156
Table 77	Asian Market for Electrical and Telecommunications, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	157
Table 78	Asian Market for Mechanical and Structural Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	158
Table 79	Asian Market for Specialty and Other Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	158
Table 80	Chinese Market for Plastic Pipe/Tubing Resins, through 2021 (Million Pounds)	162
Table 81	Chinese Market for ABS Plastic Pipe, by Application, through 2021 (Million Pounds)	163
Table 82	Chinese Market for Fluoropolymer Pipe, by Application, through 2021 (Million Pounds)	164
Table 83	Chinese Market for Polyethylene Pipe, by Application, through 2021 (Million Pounds)	164
Table 84	Chinese Market for Polypropylene Pipe, by Application, through 2021 (Million Pounds)	165
Table 85	Chinese Market for PVC/CPVC Pipe, by Application, through 2021 (Million Pounds)	166
Table 86	Chinese Shipments of Fiberglass-Reinforced (FRP) Pipe, by Application, through 2021 (Million Pounds)	167
Table 87	Chinese Market for Plastic Pipe/Tubing, by Application, through 2021 (Million Pounds)	168
Table 88	Chinese Market for Water Transmission, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	169
Table 89	Chinese Market for Plumbing Service, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	170
Table 90	Chinese Market for Drain, Waste and Vent (DWV), by Plastic Pipe/Tubing, through 2021 (Million Pounds)	170
Table 91	Chinese Market for Sewer, Storm Drains and Culverts, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	171
Table 92	Chinese Market for Oil Country Tubular Goods (OCTG), by Plastic Pipe/Tubing, through 2021 (Million Pounds)	172

Table 93	Chinese Market for Petroleum Transmission and Distribution (Pipe Line), by Plastic Pipe/Tubing, through 2021 (Million Pounds)	173
Table 94	Chinese Market for Machinery, Process and Other Equipment, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	173
Table 95	Chinese Market for Electrical and Telecommunications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	174
Table 96	Chinese Market for Mechanical and Structural Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	175
Table 97	Chinese Market for Specialty and Other Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	175
Table 98	ROW Market for Plastic Pipe/Tubing Resins, by Region, through 2021 (Million Pounds)	178
Table 99	ROW Market for Plastic Pipe/Tubing Resins, through 2021 (Million Pounds)	179
Table 100	ROW Market for ABS Plastic Pipe, by Application, through 2021 (Million Pounds).....	180
Table 101	ROW Market for Fluoropolymer Pipe, by Application, through 2021 (Million Pounds)	181
Table 102	ROW Market for Polyethylene Pipe, by Application, through 2021 (Million Pounds)	181
Table 103	ROW Market for Polypropylene Pipe, by Application, through 2021 (Million Pounds).....	182
Table 104	ROW Market for PVC/CPVC Pipe, by Application, through 2021 (Million Pounds).....	183
Table 105	ROW Shipments of Fiberglass-Reinforced (FRP) Pipe, by Application, through 2021 (Million Pounds).....	184
Table 106	ROW Market for Plastic Pipe/Tubing, by Application, through 2021 (Million Pounds)	185
Table 107	ROW Market for Water Transmission, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	186
Table 108	ROW Market for Plumbing Service, by Plastic Pipe/Tubing, through 2021 (Million Pounds)	187
Table 109	ROW Market for Drain, Waste and Vent (DWV), by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	187
Table 110	ROW Market for Sewer, Storm Drains and Culverts, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	188
Table 111	ROW Market for Oil Country Tubular Goods (OCTG), by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	189
Table 112	ROW Market for Petroleum Transmission and Distribution (Pipe Line), by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	190
Table 113	ROW Market for Machinery, Process and Other Equipment, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	190
Table 114	ROW Market for Electrical and Telecommunications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	191
Table 115	ROW Market for Mechanical and Structural Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	192
Table 116	ROW Market for Specialty and Other Applications, by Plastic Pipe/Tubing, through 2021 (Million Pounds).....	192
Table 117	Comparison of Properties of Copper and CPVC for Potable Water Piping Applications.....	197
Table 118	Comparison of Properties of ABS and PVC for DWV Applications	199
Table 119	Comparison of Properties of Gravity Sewer Pipe Materials.....	201
Table 120	Comparison of Properties of Pressure Sewer Pipe Materials	203
Table 121	Comparison of Properties of Storm Sewer/Culvert Pipe Materials	204
Table 122	Comparison of Properties of Gas Pipe Materials	206
Table 123	Comparison of Properties of Conduit Pipe Materials.....	208

List of Figures

Summary Figure: Global Market for Plastic Pipe/Tubing, by Application, 2015-2021 (Million Pounds).... 9



About BCC Research

About BCC Research

With our unparalleled 45-year history, BCC Research provides comprehensive analysis of global market sizing, forecasting and industry intelligence, covering markets where advances in science and technology are improving the quality, standard and sustainability of businesses, economies and lives.

BCC Library Access

From market sizing and forecasts, to opportunity assessments and competitive analyses, our ever-expanding library gives you the data, insights and intelligence required to ensure your project is a success. With myriad options for access to fit all needs and budgets, call 866-285-7215 or email info@bccresearch.com to request a demo.

BCC Custom Research

Our experts provide custom research projects to those working to identify new markets, introduce new products, validate existing market share, analyze competition and assess the potential for products to impact existing markets. With impressive academic credentials and broad and deep knowledge of global industrial markets, our independent analysts and consultants develop the facts, figures, analysis and assessments to inform the decisions that will move your company ahead. Confidential inquiries to: custom@bccresearch.com or 781-205-2429.

DISCLAIMER

The information developed in this report is intended to be as reliable as possible at the time of publication and is of a professional nature. This information does not constitute managerial, legal or accounting advice, nor should it be considered as a corporate policy guide, laboratory manual or an endorsement of any product, as much of the information is speculative in nature. BCC Research and the author assume no responsibility for any loss or damage that might result from reliance on the reported information or from its use.

ISBN: 1-62296-484-5
May 2017