

A green line-art icon of a bar chart with three bars of increasing height, enclosed within a hexagonal frame. A green arrow points from the top of the third bar towards the right, pointing towards the main title.

PULSE *OF THE* **INDUSTRY**

AMERICAN COMPOSITES MANUFACTURERS ASSOCIATION

ACMA 2Q23 Pulse of the Industry Survey

Vault

Release: April 10, 2023
Compiled by Vault Consulting, LLC

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Summary of Key Findings

- 68% of total respondents believe the outlook for customer demand is increasing in the Infrastructure market in 2Q23 vs. 1Q23. The outlook for customer demand for the Transportation market follows with 47% indicating it is increasing this quarter vs. last quarter.
- For 2023 vs. 2022, the story is similar where 72% of respondents indicate the outlook for customer demand for the Infrastructure market is increasing. The Transportation market follows at a distant second with 49% reporting the outlook for customer demand is increasing year over year.
- Product lead times are perceived to be stable across all inventory inputs. A quarter of total respondents indicate lead time for thermoplastics and carbon fiber reinforcements is increasing.
- A majority indicate that current inventory inputs are at the right amount for all products, except carbon fiber reinforcements, where 48% feel the amount is right and 40% indicate it is leaning towards being low.
- The vast majority, 86%, of respondents believe supply chain disruptions are

Customer Demand in Q2 2023 Compared with Q1 2023

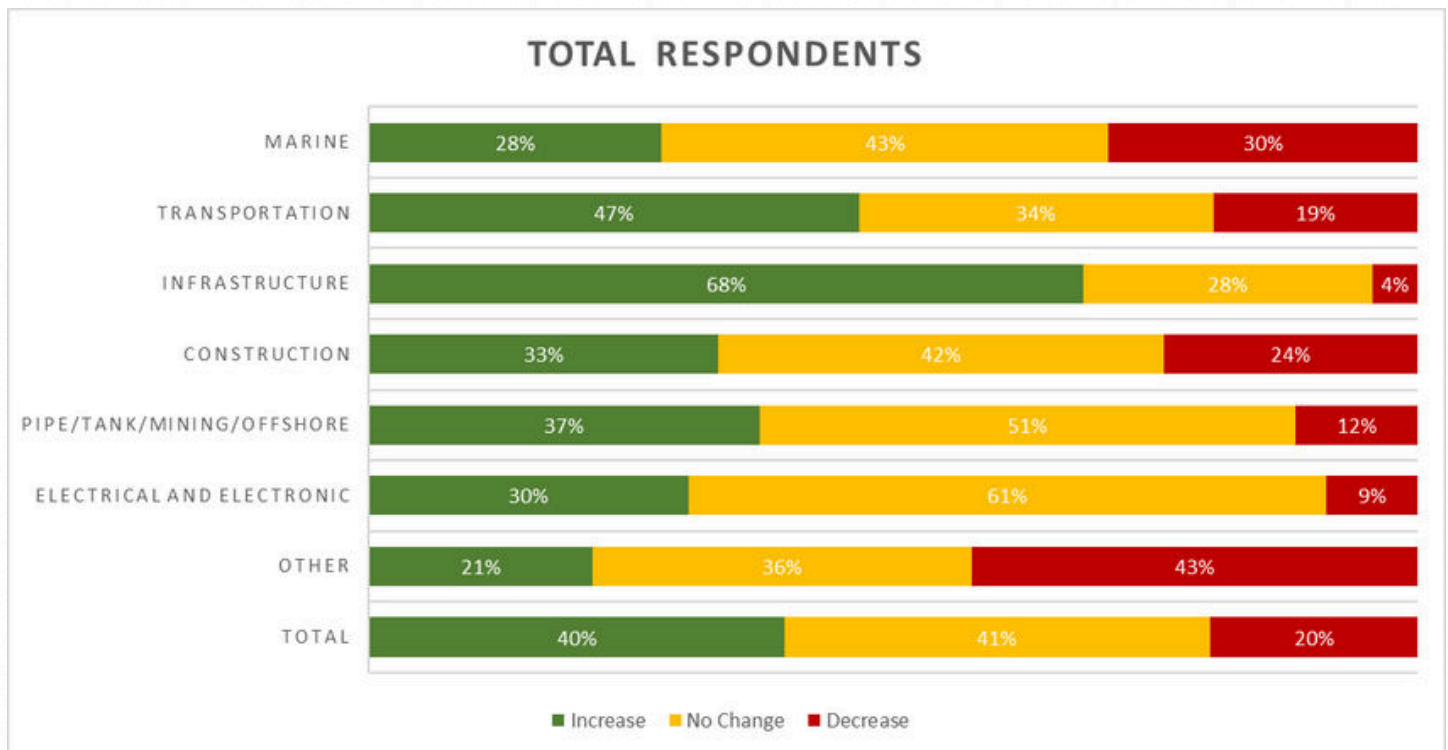


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Overall Market

Market	Increase	No Change	Decrease
Marine	28%	43%	30%
Transportation	47%	34%	19%
Infrastructure	68%	28%	4%
Construction	33%	42%	24%
Pipe/Tank/Mining/Offshore	37%	51%	12%
Electrical and Electronic	30%	61%	9%
Other	21%	36%	43%
Total	40%	41%	20%

Company Count

61
77
69
66
43
46
47
89

Manufacturer

Market	Increase	No Change	Decrease
Marine	30%	41%	30%
Transportation	52%	27%	21%
Infrastructure	68%	27%	5%
Construction	29%	46%	24%
Pipe/Tank/Mining/Offshore	22%	65%	13%
Electrical and Electronic	22%	67%	11%
Other	7%	48%	44%
Total	37%	43%	21%

Company Count

37
48
44
41
23
27
27
58

Supplier / Distributor

Market	Increase	No Change	Decrease
Marine	18%	47%	35%
Transportation	32%	45%	23%
Infrastructure	61%	33%	6%
Construction	22%	44%	33%
Pipe/Tank/Mining/Offshore	43%	50%	7%
Electrical and Electronic	29%	64%	7%
Other	21%	29%	50%
Total	32%	44%	23%

Company Count

17
22
18
18
14
14
14
22

Affiliate

Market	Increase	No Change	Decrease
Marine	43%	43%	14%
Transportation	57%	43%	0%
Infrastructure	86%	14%	0%
Construction	86%	14%	0%
Pipe/Tank/Mining/Offshore	83%	0%	17%
Electrical and Electronic	80%	20%	0%
Other	83%	0%	17%
Total	73%	20%	7%

Company Count

7
7
7
7
6
5
6
9

Small: 1 - 10 Employees			
Market	Increase	No Change	Decrease
Marine	60%	20%	20%
Transportation	57%	29%	14%
Infrastructure	83%	17%	0%
Construction	67%	33%	0%
Pipe/Tank/Mining/Offshore	67%	0%	33%
Electrical and Electronic	33%	67%	0%
Other	67%	0%	33%
Total	64%	24%	12%

Company Count
5
7
6
6
3
3
3
8

Medium: 11 - 100 Employees			
Market	Increase	No Change	Decrease
Marine	23%	62%	15%
Transportation	61%	28%	11%
Infrastructure	56%	33%	11%
Construction	35%	35%	29%
Pipe/Tank/Mining/Offshore	38%	50%	13%
Electrical and Electronic	36%	55%	9%
Other	17%	50%	33%
Total	40%	42%	18%

Company Count
13
18
18
17
8
11
12
23

Large: 101+ Employees			
Market	Increase	No Change	Decrease
Marine	26%	40%	35%
Transportation	40%	37%	23%
Infrastructure	71%	27%	2%
Construction	28%	47%	26%
Pipe/Tank/Mining/Offshore	34%	56%	9%
Electrical and Electronic	28%	63%	9%
Other	19%	34%	47%
Total	37%	42%	22%

Company Count
43
52
45
43
32
32
32
58

Survey Question: What is the outlook for customer demand in North America in Q2 2023 compared to Q1 2023 for the following markets? Please only answer for markets for which you have knowledge.

*Darker shading represents the higher responses by market segment. Shading does not represent statistical significance.

Customer Demand in North America Year Over Year

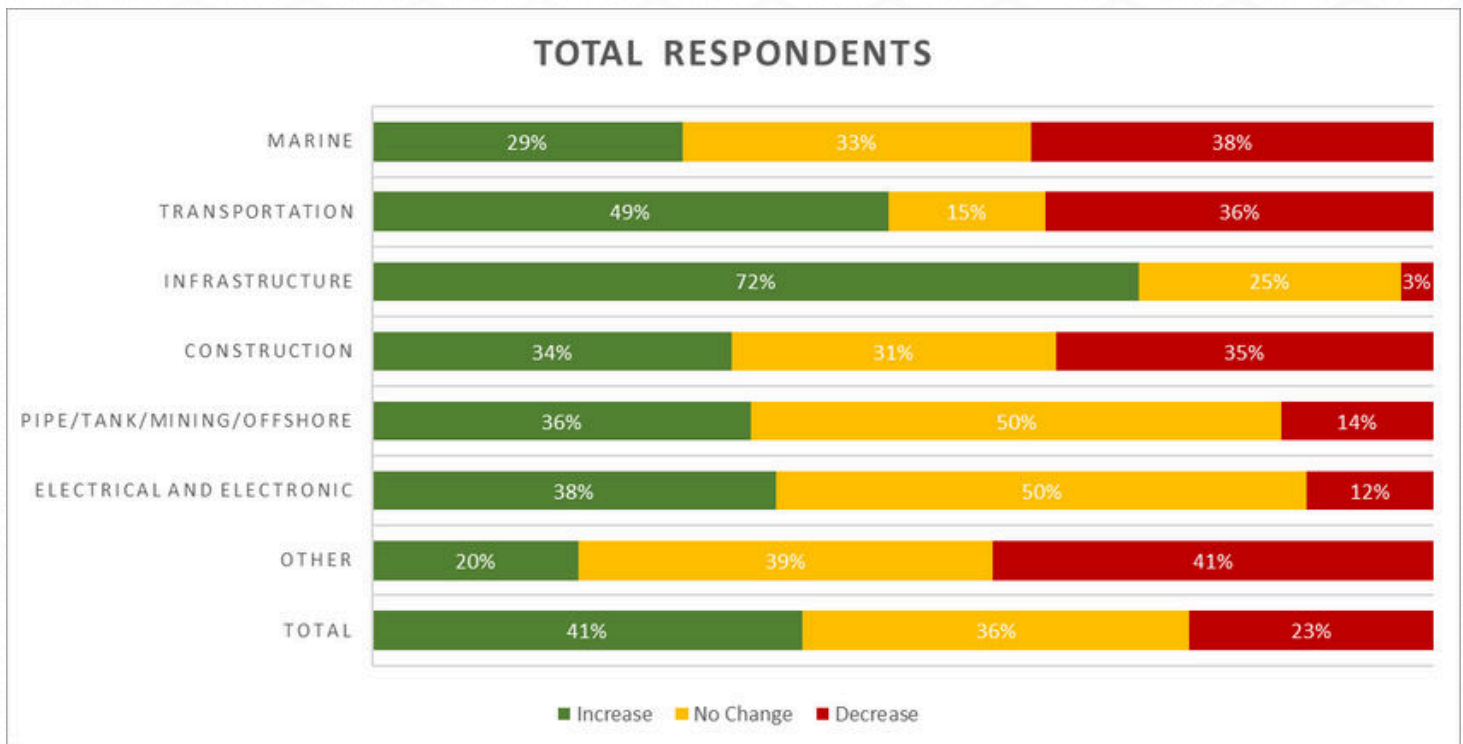


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Overall Market			
Market	Increase	No Change	Decrease
Marine	29%	33%	38%
Transportation	49%	15%	36%
Infrastructure	72%	25%	3%
Construction	34%	31%	35%
Pipe/Tank/Mining/Offshore	36%	50%	14%
Electrical and Electronic	38%	50%	12%
Other	20%	39%	41%
Total	41%	36%	23%

Company Count
58
74
65
62
42
42
41
74

Manufacturer			
Market	Increase	No Change	Decrease
Marine	37%	26%	37%
Transportation	54%	13%	33%
Infrastructure	78%	20%	2%
Construction	32%	30%	38%
Pipe/Tank/Mining/Offshore	26%	52%	22%
Electrical and Electronic	28%	56%	16%
Other	8%	46%	46%
Total	42%	30%	27%

Company Count
35
48
41
37
23
25
24
51

Supplier / Distributor			
Market	Increase	No Change	Decrease
Marine	6%	44%	50%
Transportation	26%	16%	58%
Infrastructure	53%	41%	6%
Construction	17%	39%	44%
Pipe/Tank/Mining/Offshore	38%	62%	0%
Electrical and Electronic	42%	50%	8%
Other	18%	36%	45%
Total	28%	40%	32%

Company Count
16
19
17
18
13
12
11
15

Affiliate			
Market	Increase	No Change	Decrease
Marine	43%	43%	14%
Transportation	71%	29%	0%
Infrastructure	86%	14%	0%
Construction	86%	14%	0%
Pipe/Tank/Mining/Offshore	67%	17%	17%
Electrical and Electronic	80%	20%	0%
Other	67%	17%	17%
Total	71%	22%	7%

Company Count
7
7
7
7
6
5
6
8

Small: 1 - 10 Employees

Market	Increase	No Change	Decrease
Marine	25%	50%	25%
Transportation	40%	40%	20%
Infrastructure	60%	20%	20%
Construction	67%	17%	17%
Pipe/Tank/Mining/Offshore	33%	33%	33%
Electrical and Electronic	33%	67%	0%
Other	33%	33%	33%
Total	45%	34%	21%

Company Count
4
5
5
6
3
3
3
6

Medium: 11 - 100 Employees

Market	Increase	No Change	Decrease
Marine	30%	50%	20%
Transportation	72%	0%	28%
Infrastructure	80%	20%	0%
Construction	50%	19%	31%
Pipe/Tank/Mining/Offshore	29%	71%	0%
Electrical and Electronic	71%	29%	0%
Other	33%	33%	33%
Total	56%	26%	18%

Company Count
10
18
15
16
7
7
9
16

Large: 101+ Employees

Market	Increase	No Change	Decrease
Marine	30%	27%	43%
Transportation	41%	18%	41%
Infrastructure	71%	27%	2%
Construction	23%	38%	40%
Pipe/Tank/Mining/Offshore	38%	47%	16%
Electrical and Electronic	31%	53%	16%
Other	14%	41%	45%
Total	37%	34%	29%

Company Count
44
51
45
40
32
32
29
52

Survey Question: What is the outlook for customer demand in North America in 2023 compared to 2022 in the following markets? Please only answer for markets for which you have knowledge.

*Darker shading represents the higher responses by market segment. Shading does not represent statistical significance.

Current Product Lead Time

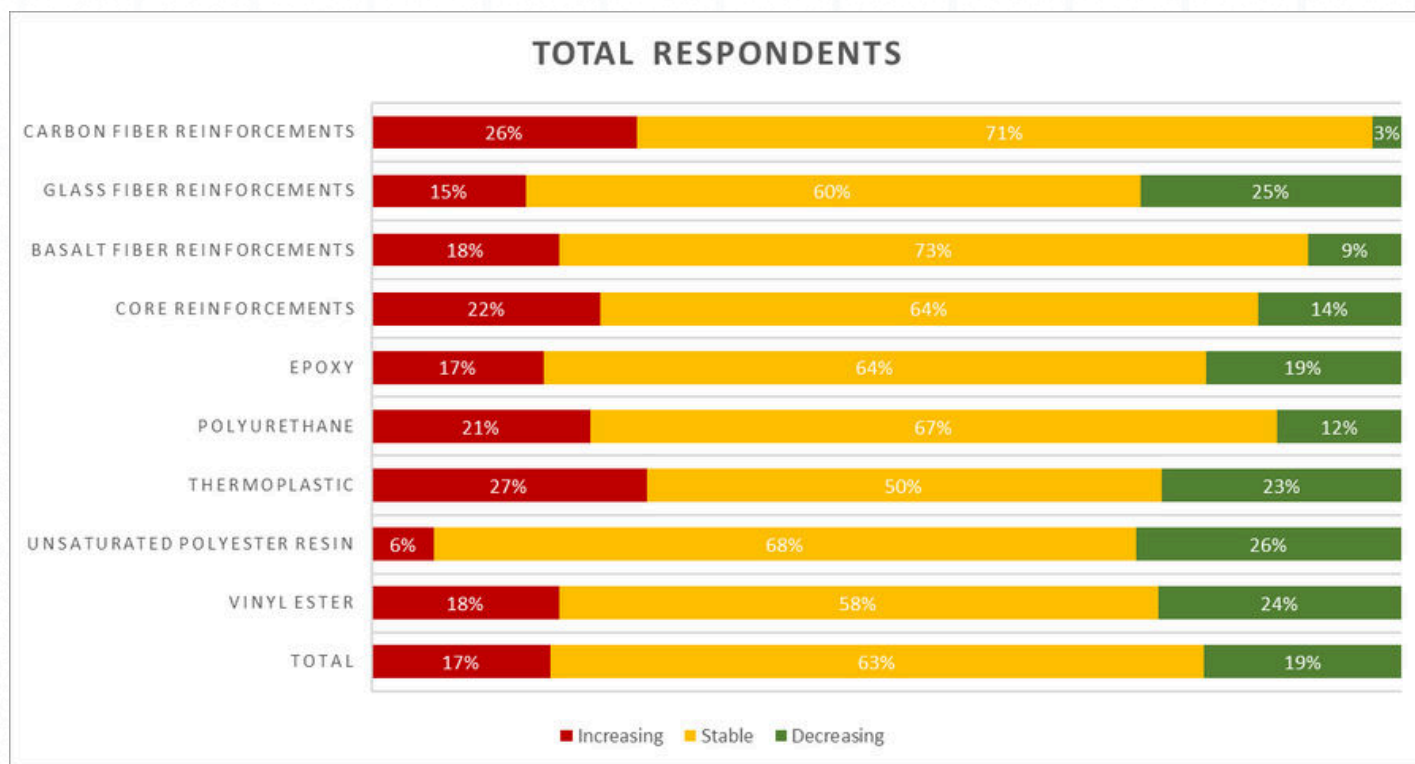


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Overall			
Product	Increasing	Stable	Decreasing
Carbon Fiber Reinforcements	26%	71%	3%
Glass Fiber Reinforcements	15%	60%	25%
Basalt Fiber Reinforcements	18%	73%	9%
Core Reinforcements	22%	64%	14%
Epoxy	17%	64%	19%
Polyurethane	21%	67%	12%
Thermoplastic	27%	50%	23%
Unsaturated Polyester Resin	6%	68%	26%
Vinyl Ester	18%	58%	24%
Total	17%	63%	19%

Company Count
35
67
22
36
42
33
30
66
55
91

Manufacturer			
Product	Increasing	Stable	Decreasing
Carbon Fiber Reinforcements	21%	74%	5%
Glass Fiber Reinforcements	12%	63%	24%
Basalt Fiber Reinforcements	22%	67%	11%
Core Reinforcements	21%	63%	17%
Epoxy	17%	57%	26%
Polyurethane	24%	65%	12%
Thermoplastic	29%	41%	29%
Unsaturated Polyester Resin	2%	74%	24%
Vinyl Ester	14%	67%	19%
Total	15%	65%	20%

Company Count
19
49
9
24
23
17
17
46
36
59

Supplier / Distributor			
Product	Increasing	Stable	Decreasing
Carbon Fiber Reinforcements	50%	50%	0%
Glass Fiber Reinforcements	10%	40%	50%
Basalt Fiber Reinforcements	29%	71%	0%
Core Reinforcements	33%	50%	17%
Epoxy	8%	75%	17%
Polyurethane	22%	67%	11%
Thermoplastic	29%	43%	29%
Unsaturated Polyester Resin	0%	54%	46%
Vinyl Ester	15%	46%	38%
Total	19%	55%	26%

Company Count
8
10
7
6
12
9
7
13
13
23

Affiliate			
Product	Increasing	Stable	Decreasing
Carbon Fiber Reinforcements	13%	88%	0%
Glass Fiber Reinforcements	38%	63%	0%
Basalt Fiber Reinforcements	0%	83%	17%
Core Reinforcements	17%	83%	0%
Epoxy	29%	71%	0%
Polyurethane	14%	71%	14%
Thermoplastic	17%	83%	0%
Unsaturated Polyester Resin	43%	57%	0%
Vinyl Ester	50%	33%	17%
Total	25%	70%	5%

Company Count
8
8
6
6
7
7
6
7
6
9

Small: 1 - 10 Employees

Product	Increasing	Stable	Decreasing
Carbon Fiber Reinforcements	25%	75%	0%
Glass Fiber Reinforcements	20%	80%	0%
Basalt Fiber Reinforcements	0%	100%	0%
Core Reinforcements	33%	67%	0%
Epoxy	33%	50%	17%
Polyurethane	60%	40%	0%
Thermoplastic	25%	75%	0%
Unsaturated Polyester Resin	25%	50%	25%
Vinyl Ester	25%	25%	50%
Total	29%	61%	11%

Company Count
4
5
3
3
6
5
4
4
4
8

Medium: 11-100 Employees

Product	Increasing	Stable	Decreasing
Carbon Fiber Reinforcements	57%	43%	0%
Glass Fiber Reinforcements	25%	56%	19%
Basalt Fiber Reinforcements	33%	67%	0%
Core Reinforcements	30%	50%	20%
Epoxy	20%	60%	20%
Polyurethane	33%	67%	0%
Thermoplastic	40%	60%	0%
Unsaturated Polyester Resin	13%	60%	27%
Vinyl Ester	38%	50%	13%
Total	29%	56%	15%

Company Count
7
16
3
10
5
3
5
15
8
25

Large: 101+ Employees

Product	Increasing	Stable	Decreasing
Carbon Fiber Reinforcements	17%	79%	4%
Glass Fiber Reinforcements	11%	59%	30%
Basalt Fiber Reinforcements	19%	69%	13%
Core Reinforcements	17%	70%	13%
Epoxy	13%	68%	19%
Polyurethane	12%	72%	16%
Thermoplastic	24%	43%	33%
Unsaturated Polyester Resin	2%	72%	26%
Vinyl Ester	14%	63%	23%
Total	13%	66%	21%

Company Count
24
46
16
23
31
25
21
47
43
58

Survey Question: What is the current lead time for the following inputs? Please only answer for products for which you have knowledge.

*Darker shading represents the higher responses by market segment. Shading does not represent statistical significance.

Current Inventory

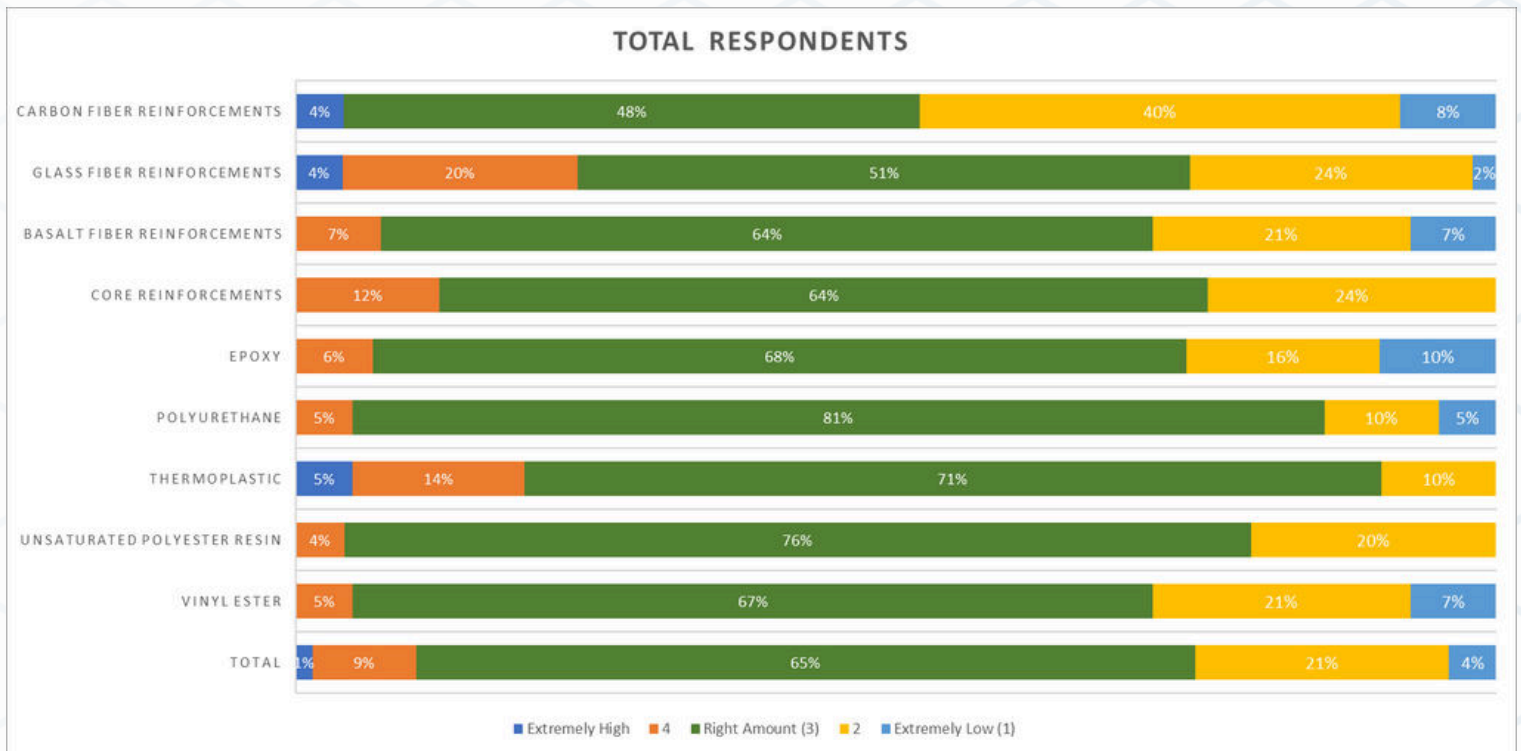


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Overall					
Product	Extremely High	4	Right Amount (3)	2	Extremely Low (1)
Carbon Fiber Reinforcements	4%	0%	48%	40%	8%
Glass Fiber Reinforcements	4%	20%	51%	24%	2%
Basalt Fiber Reinforcements	0%	7%	64%	21%	7%
Core Reinforcements	0%	12%	64%	24%	0%
Epoxy	0%	6%	68%	16%	10%
Polyurethane	0%	5%	81%	10%	5%
Thermoplastic	5%	14%	71%	10%	0%
Unsaturated Polyester Resin	0%	4%	76%	20%	0%
Vinyl Ester	0%	5%	67%	21%	7%
Total	1%	9%	65%	21%	4%

*Total based on Manufacturer and Supplier / Distributor responses only.

Company Count
25
51
14
25
31
21
21
49
42
83

Manufacturer					
Product	Extremely High	4	Right Amount (3)	2	Extremely Low (1)
Carbon Fiber Reinforcements	0%	0%	53%	42%	5%
Glass Fiber Reinforcements	0%	20%	56%	24%	0%
Basalt Fiber Reinforcements	0%	11%	67%	11%	11%
Core Reinforcements	0%	14%	62%	24%	0%
Epoxy	0%	9%	68%	14%	9%
Polyurethane	0%	7%	86%	7%	0%
Thermoplastic	0%	19%	69%	13%	0%
Unsaturated Polyester Resin	0%	3%	76%	21%	0%
Vinyl Ester	0%	6%	68%	19%	6%
Total	0%	10%	66%	21%	3%

Company Count
19
41
9
21
22
14
16
38
31
56

Supplier / Distributor					
Product	Extremely High	4	Right Amount (3)	2	Extremely Low (1)
Carbon Fiber Reinforcements	17%	0%	33%	33%	17%
Glass Fiber Reinforcements	20%	20%	30%	20%	10%
Basalt Fiber Reinforcements	0%	0%	60%	40%	0%
Core Reinforcements	0%	0%	75%	25%	0%
Epoxy	0%	0%	67%	22%	11%
Polyurethane	0%	0%	71%	14%	14%
Thermoplastic	20%	0%	80%	0%	0%
Unsaturated Polyester Resin	0%	9%	73%	18%	0%
Vinyl Ester	0%	0%	64%	27%	9%
Total	6%	4%	60%	22%	7%

Company Count
6
10
5
4
9
7
5
11
11
19

Affiliate					
Product	Extremely High	4	Right Amount (3)	2	Extremely Low (1)
Carbon Fiber Reinforcements	0%	0%	75%	25%	0%
Glass Fiber Reinforcements	0%	13%	63%	25%	0%
Basalt Fiber Reinforcements	0%	0%	67%	17%	17%
Core Reinforcements	0%	0%	67%	33%	0%
Epoxy	0%	0%	50%	50%	0%
Polyurethane	0%	0%	43%	57%	0%
Thermoplastic	0%	14%	57%	29%	0%
Unsaturated Polyester Resin	0%	14%	57%	14%	14%
Vinyl Ester	0%	0%	57%	29%	14%
Total	0%	5%	59%	31%	5%

Company Count
8
8
6
6
8
7
7
7
7
8

Small: 1 - 10 Employees

Product	Extremely High	4	Right Amount (3)	2	Extremely Low (1)
Carbon Fiber Reinforcements	0%	0%	75%	25%	0%
Glass Fiber Reinforcements	0%	0%	50%	33%	17%
Basalt Fiber Reinforcements	0%	0%	50%	50%	0%
Core Reinforcements	0%	0%	50%	50%	0%
Epoxy	0%	0%	40%	60%	0%
Polyurethane	0%	0%	50%	50%	0%
Thermoplastic	0%	0%	75%	25%	0%
Unsaturated Polyester Resin	0%	0%	50%	25%	25%
Vinyl Ester	0%	0%	25%	50%	25%
Total	0%	0%	51%	40%	9%

Company Count
4
6
2
2
5
4
4
4
4
7

Medium: 11 - 100 Employees

Product	Extremely High	4	Right Amount (3)	2	Extremely Low (1)
Carbon Fiber Reinforcements	14%	0%	29%	57%	0%
Glass Fiber Reinforcements	8%	15%	46%	31%	0%
Basalt Fiber Reinforcements	0%	0%	100%	0%	0%
Core Reinforcements	0%	0%	63%	38%	0%
Epoxy	0%	0%	60%	20%	20%
Polyurethane	0%	0%	33%	33%	33%
Thermoplastic	20%	20%	40%	20%	0%
Unsaturated Polyester Resin	0%	8%	58%	33%	0%
Vinyl Ester	0%	0%	38%	38%	25%
Total	5%	6%	50%	33%	6%

Company Count
7
13
3
8
5
3
5
12
8
18

Large: 101+ Employees

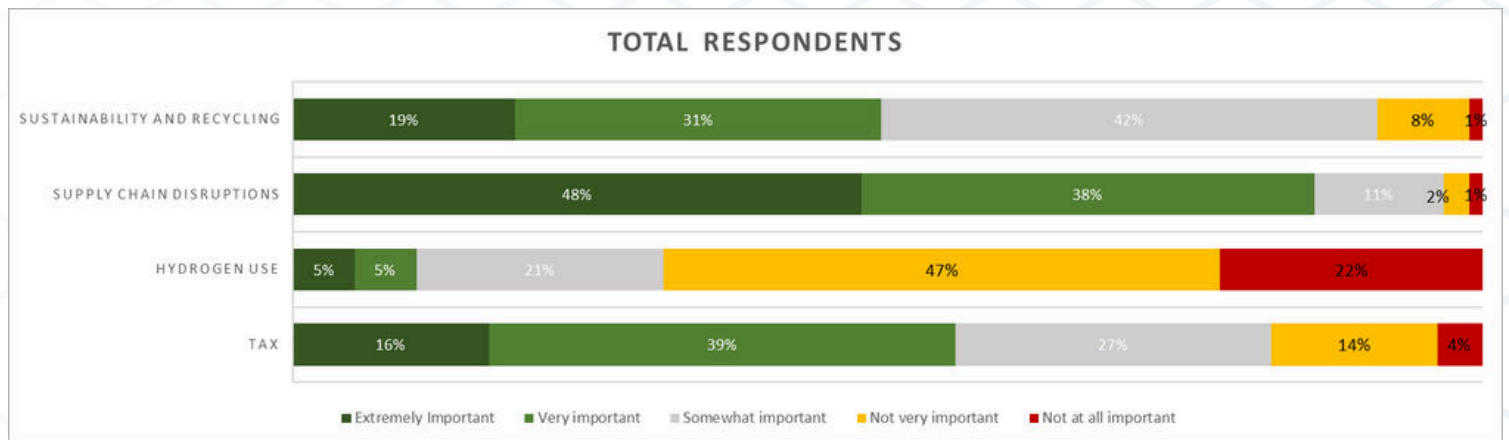
Product	Extremely High	4	Right Amount (3)	2	Extremely Low (1)
Carbon Fiber Reinforcements	0%	0%	59%	32%	9%
Glass Fiber Reinforcements	3%	23%	55%	20%	0%
Basalt Fiber Reinforcements	0%	7%	60%	20%	13%
Core Reinforcements	0%	14%	67%	19%	0%
Epoxy	0%	7%	69%	17%	7%
Polyurethane	0%	5%	81%	14%	0%
Thermoplastic	0%	16%	74%	11%	0%
Unsaturated Polyester Resin	0%	5%	80%	15%	0%
Vinyl Ester	0%	5%	76%	16%	3%
Total	0%	9%	69%	18%	3%

Company Count
22
40
15
21
29
21
19
40
37
58

Using a scale of 1 to 5 where “1” means extremely low inventory, “3” means the right amount, and “5” means extremely high inventory, how do you view inventory for the following inputs? Please only answer on products for which you have knowledge.

*Darker shading represents the higher responses by market segment. Shading does not represent statistical significance.

Industry Topics of Interest



Top Two Topics of Interest

Topic	Percent Very or Extremely Important
Supply Chain Disruptions	44.89%
Sustainability and Recycling	25.57%

*Top Two Topics calculated as the highest percentage of very or extremely important topics out of all very or extremely important responses.

Table continued on next page

Overall					
Topic	Extremely Important	Very important	Somewhat important	Not very important	Not at all important
Sustainability and Recycling	19%	31%	42%	8%	1%
Supply Chain Disruptions	48%	38%	11%	2%	1%
Hydrogen Use	5%	5%	21%	47%	22%
Tax	16%	39%	27%	14%	4%

Company Count
91
92
77
79

Manufacturer					
Topic	Extremely Important	Very important	Somewhat important	Not very important	Not at all important
Sustainability and Recycling	18%	33%	41%	7%	2%
Supply Chain Disruptions	48%	39%	10%	3%	0%
Hydrogen Use	4%	4%	19%	50%	23%
Tax	13%	45%	25%	15%	2%

Company Count
61
62
52
55

Supplier / Distributor					
Topic	Extremely Important	Very important	Somewhat important	Not very important	Not at all important
Sustainability and Recycling	19%	29%	38%	14%	0%
Supply Chain Disruptions	57%	38%	5%	0%	0%
Hydrogen Use	6%	6%	22%	50%	17%
Tax	24%	35%	35%	6%	0%

Company Count
21
21
18
17

Affiliate					
Topic	Extremely Important	Very important	Somewhat important	Not very important	Not at all important
Sustainability and Recycling	22%	22%	56%	0%	0%
Supply Chain Disruptions	22%	33%	33%	0%	11%
Hydrogen Use	14%	14%	29%	14%	29%
Tax	29%	0%	14%	29%	29%

Company Count
9
9
7
7

Small: 1 - 10 Employees

Topic	Extremely Important	Very important	Somewhat important	Not very important	Not at all important
Sustainability and Recycling	29%	0%	57%	14%	0%
Supply Chain Disruptions	29%	29%	29%	0%	14%
Hydrogen Use	25%	0%	50%	25%	0%
Tax	25%	25%	25%	0%	25%

Company Count
7
7
4
4

Medium: 11 - 100 Employees

Topic	Extremely Important	Very important	Somewhat important	Not very important	Not at all important
Sustainability and Recycling	18%	14%	64%	5%	0%
Supply Chain Disruptions	30%	61%	9%	0%	0%
Hydrogen Use	6%	0%	18%	53%	24%
Tax	20%	50%	25%	5%	0%

Company Count
22
23
17
20

Large: 101+ Employees

Topic	Extremely Important	Very important	Somewhat important	Not very important	Not at all important
Sustainability and Recycling	18%	40%	32%	8%	2%
Supply Chain Disruptions	56%	31%	10%	3%	0%
Hydrogen Use	4%	7%	20%	46%	23%
Tax	15%	36%	27%	18%	4%

Company Count
62
62
56
55

Survey Question: Based on what you have read and heard, how important do you consider each of the following issues to your company?

*Darker shading represents the higher responses by market segment. Shading does not represent statistical significance.

Background:

Purpose:

The purpose of the survey is to gauge perceptions about how the composites industry is performing over time. Published data from the survey will allow members to assess how their company's markets and inputs are trending relative to the overall composites industry; and enable ACMA to identify hot topics in the composites industry for which the association should be engaged on behalf of its members.

ACMA will also use the survey to gauge the perceived value of association membership and identify any strengths and areas for improvement.

Survey Objectives:

To assess perceptions of end market segments over the next quarter and next 9 months
To determine the size of composites inputs inventory
To identify issues that members perceive to be important in the composites industry

Survey Methodology:

The survey is conducted on a quarterly basis among members of ACMA.

The survey takes approximately 5 minutes to complete and remain in the field for roughly two weeks.

Vault Consulting will distribute the survey each quarter and will be responsible for collecting, aggregating, and reporting results each quarter. Reports will be published roughly two weeks after fieldwork closes.

Sample sizes for 2Q23 were as follows:

Total Respondents 95

Manufacturers 63

Supplier/Distributor 23

Affiliates 9

Data collection was conducted between 3/7 and 3/27/2023.

For more information on this survey or how to participate please contact Paige Patterson at ppatterson@acmanet.org