



CompositesWorld Top Shops 2024

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Welcome to *Composites World's* Top Shops Benchmarking Survey. By completing this survey, you will receive a benchmarking report customized for your facility and have opportunities to earn top shop status as well as special recognition.

CompositesWorld's Top Shops survey has a lot of questions. That's because we know each question is useful to some people. We also know you want the benefit of benchmarking and recognition without investing a ton of time in a survey. That's what you told us.

And we listened. For 2024, we've divided the survey into core and modules. Core questions have been answered by most people in the past. The rest of the questions are organized into modules. You may pick and choose modules based on areas of particular interest to you/your business. Once you select a module, we encourage you to answer all of the questions it includes.

Now for your part:

1. Complete the core survey by April 30, 2024, for the opportunity to receive a customized benchmarking report, earn Top Shops status, and/or be recognized as an honoree.
2. Opt-in to up to (4 or 5) modules of additional benchmarking questions. More on that after you complete the core survey.

FAQ's on answering Q's

If your company:

1. *has multiple locations*, answer for the location or combination of locations you know the most about.
2. *is a captive facility*, answer in the terms your facility uses to report metrics internally to the broader company.

Tips

You may stop and start the survey using the same device as many times as you like until you select 'Submit Responses' on the final page.

- We encourage you to review the list of questions for data you will need to complete the core survey. You may download a PDF of the core survey by [clicking here](#) before entering answers online.
- If you have questions, please contact Jan Schafer, Director of Market Research, Gardner Intelligence, at jschafer@gardnerweb.com.

* 1. Does your facility perform manufacturing operations that convert fiber and resin raw materials into fully consolidated and finished composite parts or structures?

- Yes
- No

Do not complete this survey if your facility does not meet the description above. The benchmarking does not apply to your facility and you would not receive a custom report.



CompositesWorld Top Shops 2024

Company & Contact Information

2. To receive a custom report of your facility's results, please fully complete the survey and provide your email address:

3. For the option to be part of the CW Top Shops Honors Program competition, please provide the following information:

Your Name

Title

Company Name

Address

City/Town

State/Province

ZIP/Postal Code

Country

Company Website

**Company Phone
Number**



CompositesWorld Top Shops 2024

Section 1: Profile Information

This first section of the survey includes questions pertaining to the general characteristics that help describe your facility.

Please read the instructions at each question for the accepted format for responses. If you receive an error message and your format is correct, your value is likely an exception outside of the reasonable range, and won't be accepted.

4. Which **composites manufacturing processes** did your facility perform in 2023? *Select ALL that apply.*

- | | |
|---|---|
| <input type="checkbox"/> Additive manufacturing/3D printing | <input type="checkbox"/> Infusion |
| <input type="checkbox"/> Automated fiber placement (AFP) | <input type="checkbox"/> Injection molding |
| <input type="checkbox"/> Automated tape laying (ATL) | <input type="checkbox"/> Pultrusion |
| <input type="checkbox"/> Compression molding | <input type="checkbox"/> Resin transfer molding (RTM) |
| <input type="checkbox"/> Cutting/kitting | <input type="checkbox"/> Sprayup |
| <input type="checkbox"/> Filament winding | <input type="checkbox"/> Thermoforming |
| <input type="checkbox"/> Hand layup | |

5. Which **secondary processes** did your facility perform in 2023? *Select ALL that apply.*

- | | |
|--|---|
| <input type="checkbox"/> Assembly | <input type="checkbox"/> Moldmaking - metallic |
| <input type="checkbox"/> CNC machining/finishing | <input type="checkbox"/> Physical testing |
| <input type="checkbox"/> Design engineering | <input type="checkbox"/> Pre-production manufacturing |
| <input type="checkbox"/> Design simulation | <input type="checkbox"/> Prototyping |
| <input type="checkbox"/> Low-rate production manufacturing | <input type="checkbox"/> Research and development |
| <input type="checkbox"/> Materials testing | <input type="checkbox"/> None of these |
| <input type="checkbox"/> Moldmaking - composite | |



CompositesWorld Top Shops 2024

Profile Information

6. Which **fiber and format combinations** are used at your facility?

For each format listed in rows, select the fibers your facility uses with it or select NONE.

	Aramid	Carbon, dry	Carbon, pre-pregged	Glass, dry	Glass, pre-pregged	Natural	None
Braided fabric	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chopped	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multiaxial fabric	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spread tow fabric	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unidirectional tape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Woven fabric	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Which **resins** are used at your facility? *Select ALL that apply.*

- | | |
|--|--|
| <input type="checkbox"/> Epoxy | <input type="checkbox"/> PES |
| <input type="checkbox"/> Nano-based resins | <input type="checkbox"/> Phenolic |
| <input type="checkbox"/> PAEK | <input type="checkbox"/> Polyamide (nylon) |
| <input type="checkbox"/> PEEK | <input type="checkbox"/> Polyester |
| <input type="checkbox"/> PEI | <input type="checkbox"/> Polyimide |
| <input type="checkbox"/> PEKK | <input type="checkbox"/> Vinyl ester |

8. Which **tooling materials** are used at your facility? *Select ALL that apply.*

- | | |
|---|--|
| <input type="checkbox"/> Aluminum | <input type="checkbox"/> Soluble |
| <input type="checkbox"/> Composite | <input type="checkbox"/> Steel |
| <input type="checkbox"/> Invar | <input type="checkbox"/> Tooling board |
| <input type="checkbox"/> Nickel | <input type="checkbox"/> Wood |
| <input type="checkbox"/> Rubber/latex (bladder) | |



CompositesWorld Top Shops 2024

Profile Information

9. How many **total individual parts** did your facility fabricate in 2023?

Please enter a whole number only; no decimals, commas, or other symbols.

10. What size parts did your facility fabricate in 2023? *Select all ranges that apply.*

- less than 5 feet long
- 5 to 15 feet long
- over 15 feet long

11. Which descriptor below applies to your shop? *Select ONE only.*

- Captive shop (component of a larger company)
- Contract/custom/job shop



CompositesWorld Top Shops 2024

Profile Information

12. Which of the following industries does your facility primarily serve? *Select ALL that apply.*

- | | |
|---|---|
| <input type="checkbox"/> Aerospace, commercial | <input type="checkbox"/> Industrial Motors/Hydraulics/Mechanical Components |
| <input type="checkbox"/> Aerospace, general aviation | <input type="checkbox"/> Machinery/Industrial Equipment |
| <input type="checkbox"/> Appliances | <input type="checkbox"/> Marine/Ship & Boat Building |
| <input type="checkbox"/> Architectural/Infrastructure/Construction Components | <input type="checkbox"/> Mass Transit |
| <input type="checkbox"/> Automotive | <input type="checkbox"/> Medical/Dental |
| <input type="checkbox"/> Consumer Goods | <input type="checkbox"/> Offroad/Construction/Agricultural Machinery |
| <input type="checkbox"/> Defense/Government | <input type="checkbox"/> Oil/Gas Field & Mining Machinery |
| <input type="checkbox"/> Electronics/Computers | <input type="checkbox"/> Packaging |
| <input type="checkbox"/> Energy Storage (pressure vessels) | <input type="checkbox"/> Power Generation (turbines, batteries) |
| <input type="checkbox"/> Firearms/Ammunition | <input type="checkbox"/> Pumps, Valves & Plumbing |
| <input type="checkbox"/> Forming & Fabricating (non-automotive) | <input type="checkbox"/> Sporting Goods |
| <input type="checkbox"/> Furniture Manufacturing | <input type="checkbox"/> Wind Energy |
| <input type="checkbox"/> Hardware/Fasteners | <input type="checkbox"/> Wire Goods/Pipes |
| <input type="checkbox"/> Other (please specify) | |

13. Which certifications does your facility have currently? *Select ALL that apply.*

- | | |
|--|--|
| <input type="checkbox"/> ISO 9001:2015 | <input type="checkbox"/> Nadcap |
| <input type="checkbox"/> ISO 13485:2016 | <input type="checkbox"/> AS9100D |
| <input type="checkbox"/> ISO 14001:2015 | <input type="checkbox"/> None of these |
| <input type="checkbox"/> IATF 16949:2016 | |

14. What is the **total square footage** of your entire building? Enter your best estimate if you do not have the measurements handy.

Please enter a whole number only; no decimals, commas or other symbols.



CompositesWorld Top Shops 2024

Section 2: Technology/Equipment

This section of the survey includes questions pertaining to the technology your facility uses in composites manufacturing.

15. Which **curing methods** does your facility use? *Select ALL that apply.*

- Autoclave
- Heated mold
- Infrared/microwave
- Oven
- Room temperature

16. Which, if any, type(s) of **automation** does your facility use? *Select ALL that apply.*

- Automated adhesive application
- Automated cutting/kitting
- Automated fiber/tape placement
- Automated part inspection
- Automated parts transfer
- Automated preforming
- None of the above

17. Which types of **part measurement/assessment equipment** does your facility use? *Select ALL that apply.*

- CMM in quality department
- Laser trackers
- Microscopes
- Optical comparators
- Plant floor CMMs
- Portable measuring arms
- Vision systems
- None of these



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Technology/Equipment

18. Which types of **non-destructive inspection (NDI) equipment** does your facility use? *Select ALL that apply.*

- | | |
|---|--|
| <input type="checkbox"/> Acoustical | <input type="checkbox"/> Thermographic |
| <input type="checkbox"/> Holographic | <input type="checkbox"/> Ultrasonic |
| <input type="checkbox"/> Manual (tapping) | <input type="checkbox"/> X-ray |
| <input type="checkbox"/> Shearographic | <input type="checkbox"/> None |

19. Which management **software** does your facility use? *Select ALL that apply or NONE only.*

- Process monitoring
- Production monitoring
- Enterprise resource planning (ERP)
- None



CompositesWorld Top Shops 2024

Section 3: Operations

This section of the survey includes questions pertaining to product quality and facility efficiency.

20. Which of the following practices and improvement methodologies does your shop use?

Select ALL that apply OR the last option only.

- | | |
|---|--|
| <input type="checkbox"/> 5S workplace organization | <input type="checkbox"/> Lean manufacturing |
| <input type="checkbox"/> Benchmarking | <input type="checkbox"/> Overall Equipment Effectiveness (OEE) monitoring and analysis |
| <input type="checkbox"/> Cellular manufacturing | <input type="checkbox"/> Poka yoke (error prevention) |
| <input type="checkbox"/> Continuous improvement program | <input type="checkbox"/> Six Sigma |
| <input type="checkbox"/> Customer surveys | <input type="checkbox"/> Theory of constraints |
| <input type="checkbox"/> Daily layered accountability | <input type="checkbox"/> Total productive maintenance |
| <input type="checkbox"/> Design of experiments | <input type="checkbox"/> Total quality management |
| <input type="checkbox"/> Just-in-time movement of materials | <input type="checkbox"/> Value-stream mapping |
| <input type="checkbox"/> Kaizen events/blitzes | <input type="checkbox"/> No formal methodology |
| <input type="checkbox"/> Kanban and pull systems | |

21. Does your facility measure machinery/equipment uptime?

- Yes
- No



CompositesWorld Top Shops 2024

Operations

Please read the instructions at each question for the accepted format for responses. If you receive an error message and your format is correct, your value is likely an exception outside of the reasonable range, and won't be accepted.

22. What was your facility's total machinery and equipment **uptime percentage** in 2023?
Enter your number between 1 and 100 without a % sign.

You may enter a decimal, but no other signs or symbols.

23. On average, how many hours per week was your facility in operation in 2023?

Please enter a whole number only; no decimals, commas, or other symbols.

24. What was your facility's average **capacity utilization** percentage in 2023?

There is no single formula that fits how every facility figures **capacity utilization**. For this question, please think about what you consider to be at full capacity for your facility. Then enter as a percentage the degree to which your facility's capacity was typically in use relative to being at full capacity in 2023.

Enter your number between 1 and 100 without a % sign. You may enter a decimal, but no other signs or symbols.

Example: If your facility was typically using capacity that represented about 85% of full capacity in 2023, meaning your facility typically had 15% capacity available, you would enter 85 for capacity utilization.

25. What was your facility's average **order lead time** in 2023, defined as the number of days from receipt of order to delivery to customer?

Please enter a whole number only; no decimals, commas, or other symbols.

26. What was your facility's **on-time delivery rate** in 2023, defined as the percentage of goods delivered on timing committed? Enter your number between 1 and 100 without a % sign.

You may enter a decimal, but no other signs or symbols.



CompositesWorld Top Shops 2024

Operations

27. What was your facility's **finished product first-pass quality yield** in 2023, defined as the percentage of product that passed inspection on first attempt? (i.e., no re-work was required). Enter your number between 1 and 100 without a % sign.

You may enter a decimal, but no other signs or symbols.

28. What was your facility's **scrap and rework UNIT percentage**, defined as the number of 2023 scrapped or reworked parts as a percentage of 2023 total parts produced? This includes trimmings, offcuts, and non-repairable finished parts. Enter your number between 0 and 100 without a % sign.

You may enter a decimal, but no other signs or symbols.

Example: If 83 parts were scrapped or reworked, and 1000 parts were produced, you would enter 8.3.

29. What was your facility's **scrap and rework COST percentage**, defined as the cost of scrapped or reworked materials as a percentage of 2023 total dollar sales? This includes trimmings, offcuts, and non-repairable finished parts. Enter your number between 0 and 100 without a % sign.

You may enter a decimal, but no other signs or symbols.

Example: If \$550 worth of materials were scrapped and sales were \$50,000, you would enter 1.1.

30. What percentage of your facility's scrap material, by volume, was **reused or diverted from landfills** in 2023? Enter your number between 0 and 100 without a % sign. A '0' would indicate that your facility doesn't process in-house scrap material.

You may enter a decimal, but no other signs or symbols.

Example: For 80% you would enter 80. for 80.5% you would enter 80.5.



CompositesWorld Top Shops 2024

Operations

31. What proportion of all parts does your facility typically inspect prior to delivery to the customer? *Select ONE only.*

- All of them
- Most of them
- About half of them
- Less than half of them
- Just a few of them

32. Generally speaking, which parameters of quality are critical to the parts your facility fabricates? *Select ALL that apply.*

- | | |
|---|---|
| <input type="checkbox"/> Corrosion resistance | <input type="checkbox"/> Stiffness |
| <input type="checkbox"/> Dimension | <input type="checkbox"/> Strength |
| <input type="checkbox"/> Durability | <input type="checkbox"/> Toughness |
| <input type="checkbox"/> Mass/weight | <input type="checkbox"/> Transmissivity |
| <input type="checkbox"/> Porosity | <input type="checkbox"/> Weather resistance |

33. How, if at all, does your facility track and manage materials expiration? *(Select ALL that apply)*

- Manually with paper-based system
- Manually with computer-based system
- Automatically with computer-based system
- Our facility does not track materials expiration



CompositesWorld Top Shops 2024

Section 4: Business Strategy & Performance

The next section of the survey includes questions pertaining to financial, operational and customer information.

Please read the instructions at each question for the accepted format for responses. If you receive an error message and your format is correct, your value is likely an exception outside of the reasonable range, and won't be accepted.

34. Which of the following supply chain practices does your shop use? *Select ALL that apply.*

- | | |
|--|---|
| <input type="checkbox"/> Accessing/using customer forecasts | <input type="checkbox"/> Just-in-time deliveries to customers |
| <input type="checkbox"/> Certification of major suppliers | <input type="checkbox"/> Sharing forecasts with suppliers |
| <input type="checkbox"/> Collaborative design/DFM with customers | <input type="checkbox"/> Inventory managed by suppliers |
| <input type="checkbox"/> Collaborative design/DFM with suppliers | <input type="checkbox"/> Inventory managed for customers |
| <input type="checkbox"/> Customer satisfaction surveys | <input type="checkbox"/> None of these |
| <input type="checkbox"/> Just-in-time deliveries from suppliers | |

35. Were any **capital investments** made in your facility in 2023?

- Yes
- No
- Not sure



CompositesWorld Top Shops 2024

Business Strategy & Performance

36. How much did your facility spend (in US dollars) on **capital equipment** in 2023?

Round to the nearest dollar and enter without any signs or symbols.

37. Please provide your facility's 2023 **capital equipment expenditure as a percentage of gross sales**. Round to the nearest whole number and enter without a % sign.

Formula = $[(2023 \text{ cap equip exp} / 2023 \text{ gross sales}) * 100]$

Example: If your capital equipment expenditure was \$500 and your gross sales were \$5000, you would enter 10.

38. Please provide your facility's 2023 **overall profit margin percentage**, defined as your facility's net income (after tax) relative to gross sales, rounded to the nearest whole number. Include a minus sign if your number is negative.

Formula = $[(2023 \text{ net income} / 2023 \text{ gross sales}) * 100]$

Example: If your 2023 net income was negative \$300 and your gross sales were \$5000, you would enter -6.

39. Please provide your facility's 2023 **ROA**, defined as your facility's net income (after tax) relative to total assets, rounded to the nearest whole number. Include a minus sign if your number is negative.

Formula = $[(2023 \text{ net income} / 2023 \text{ total assets}) * 100]$

Example: If your 2023 net income was negative \$300 and your total assets were \$10,000, you would enter -3.



CompositesWorld Top Shops 2024

Business Strategy & Performance

40. Please provide your facility's **total revenue** for 2023 in US dollars. Providing your facility's revenue confidentially enables us to perform useful calculations on your behalf.

Please enter a whole number only; no decimals, commas, or other symbols.

41. Please provide your facility's 2023 **gross sales per employee** in US dollars.

Example: If your gross sales were \$5000 and you have 20 employees, you would enter 250.

Round to the nearest dollar and enter without any signs or symbols.

42. Please provide your facility's **percent change in annual sales** from 2022 to 2023 using the following formula. Round to the nearest whole number, using a minus sign if necessary.

Formula = $[(2023 \text{ gross sales} - 2022 \text{ gross sales}) / 2022 \text{ gross sales}] * 100$

Example: If your 2022 sales were \$4000 and your 2023 sales were \$5000, you would enter 25.



CompositesWorld Top Shops 2024

Business Strategy & Performance

43. What was your facility's **customer retention rate** for 2023? This is the number of your facility's customers in 2023, who were also customers in 2022, as a percentage of your 2022 total customer base. Enter your number between 1 and 100 without a % sign.

You may enter a decimal, but no other signs or symbols.

Example: If you had 50 customers in 2023 who were also customers in 2022, and a total of 60 customers in 2022, your customer retention rate would be 83%, and you would enter 83.

44. What percentage of total orders specify the **types of raw materials** your facility must use? Enter your number between 0 and 100 without a % sign.

Please enter a whole number only; no decimals, commas, or other symbols.

45. What percentage of total orders specify that **raw materials must come from a specific supplier**? Enter your number between 0 and 100 without a % sign.

Please enter a whole number only; no decimals, commas, or other symbols.



CompositesWorld Top Shops 2024

Business Strategy & Performance

46. About how many **years** has your facility been involved in composites fabrication?

Please enter a whole number only; no decimals, commas, or other symbols.

47. As best as you can say, what percentage of your facility's revenue is **derived from composites manufacturing**? Enter your number between 0 and 100 without a % sign.

Please enter a whole number only; no decimals, commas, or other symbols.



CompositesWorld Top Shops 2024

Section 5: Human Resources

The final section of the core survey pertains to employees, training, and safety.

48. How many **total people** did your facility employ in 2023 at the location(s) to which your answers apply?

Please enter a whole number only; no decimals, commas or other symbols.

49. What was your facility's **annual labor turnover rate of plant floor employees** in 2023? This is the number of voluntary plus involuntary separations of plant floor employees as a percentage of the total usual number of plant floor staff. Enter your number between 0 and 100 without a % sign.

You may enter a decimal, but no other signs or symbols.

Example: If 6 plant floor employees left in 2023 and your usual plant floor staff totals 30, you would enter 20.

50. What was the approximate **average hourly wage rate** in US dollars, without overtime, for non-management plant floor employees in 2023?

You may enter a decimal, but no other signs or symbols.



CompositesWorld Top Shops 2024

Thank you for completing the core questions!

Next are opportunities for additional benchmarking that can be just as useful as the core. The choice to take advantage is yours.

There are 4 categories of questions that we call modules: profile, operations, business strategy, and human resources. Some modules may be of more interest to you than others. If you are, for example, re-examining your shop's business strategies, you may want to complete that module. Any questions you do answer will be included in your custom benchmarking report.

If you opt out of all modules, you will be taken to the end of the survey to submit your core responses.

* 51. Please select the additional modules in which you'd like to participate. Choose as many as you like **or** select the last option to proceed to a screen where you submit your core responses.

- Profile/Shop module (3 questions)
- Operations module (3 questions)
- Business Strategy & Performance module (13 questions)
- Human Resources module (10 questions)
- I cannot benefit from additional benchmarking