

DESIGN AND DEVELOPMENT TODAY



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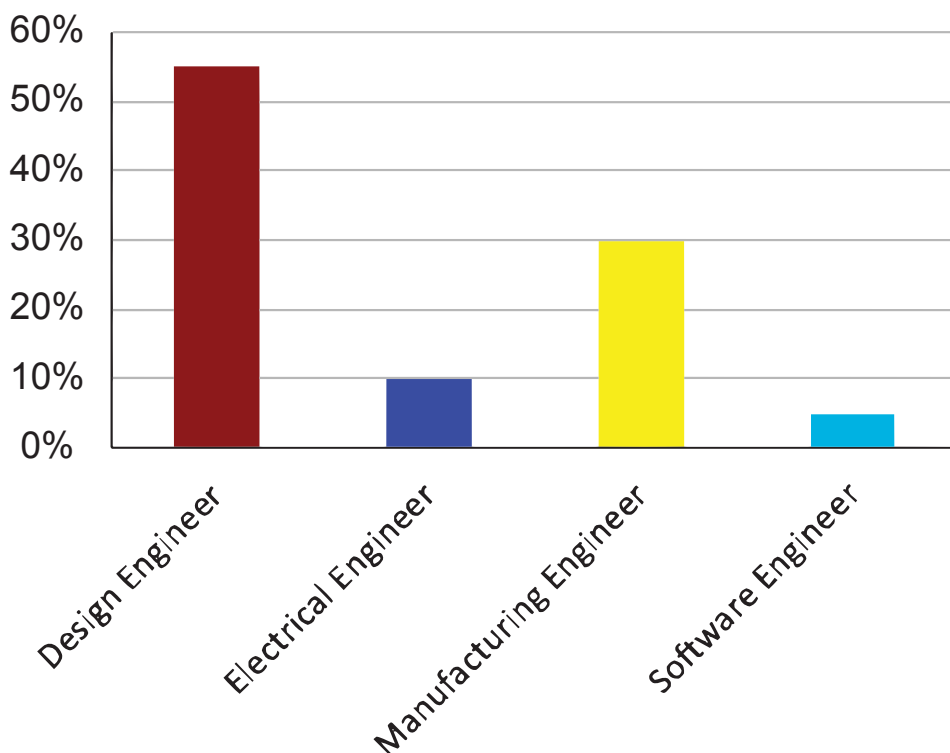
PANDUIT[®]

**HEAVY DUTY TRANSPORTATION
MARKET REPORT**

What is the most important specification when an engineer selects a component for the latest heavy-duty trucks or transportation equipment? Where do engineers go for technical information, and are value-added services, such as technical support and customized product development, deal-sealers between engineers and manufacturers?

A new study sought to answer these questions, and many more, by surveying engineering professionals who work in the heavy-duty transportation market. The study looks at the challenges engineers encounter when bringing new products to market. For clarity, the respondents include design engineers, electrical engineers, manufacturing engineers, and software engineers.

HOW WOULD YOU DEFINE YOUR ROLL?

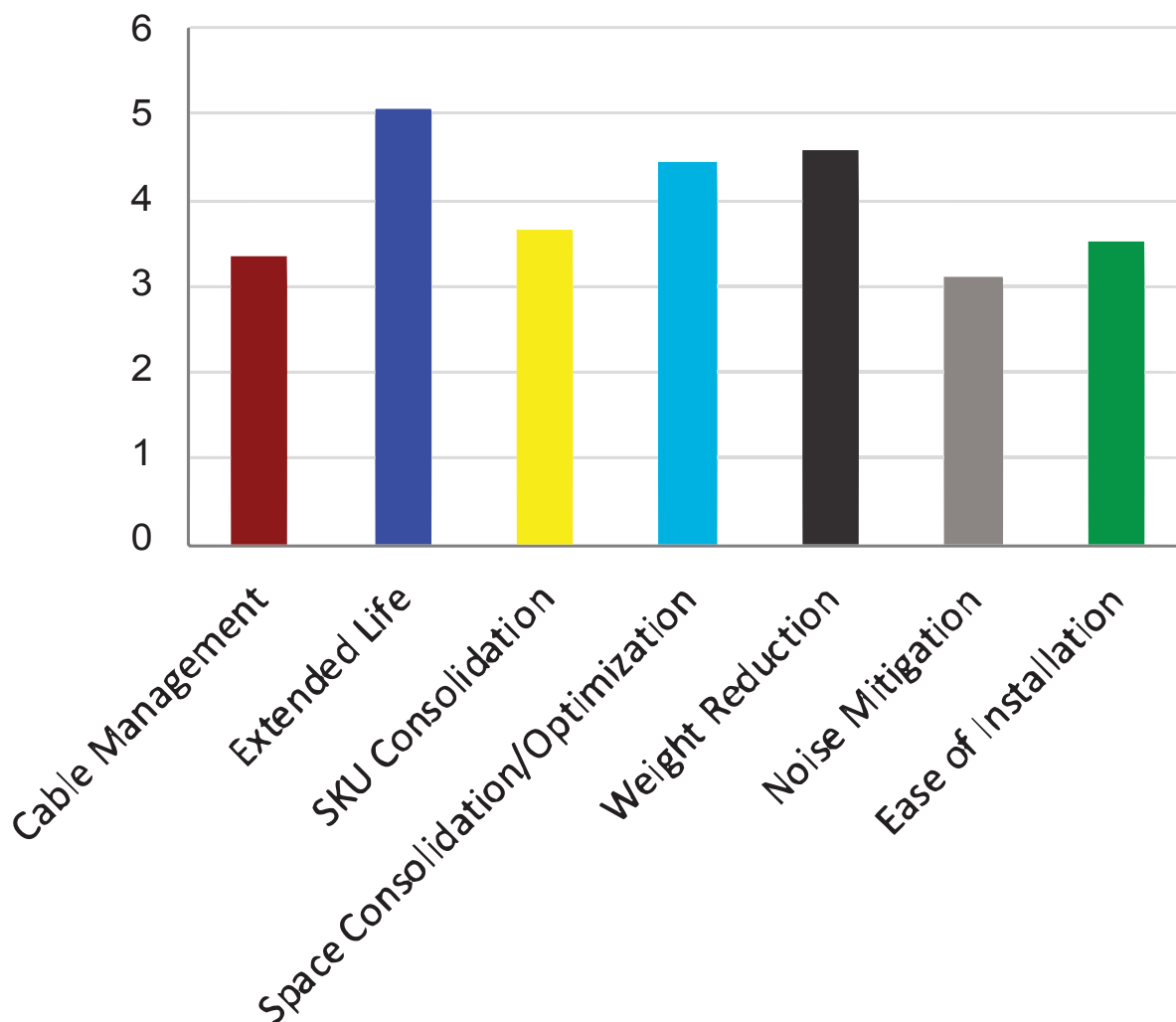


LIFE OF THE PRODUCT

When engineers rank their challenges in order of importance, extended product life was the top choice. With a weighted score of 5.06, nearly 24% of respondents say that extending the life of the product is the top priority when designing heavy-duty transportation equipment.

Space consolidation/optimization came in third (4.44), followed by SKU consolidation (3.65), ease of installation (3.53), cable management (3.35), and noise mitigation (3.13). Overall, engineers are looking to design a superior, more efficient product that lasts longer in the field, and they are looking for components that help meet these objectives.

PLEASE RANK YOUR CHALLENGES IN ORDER OF IMPORTANCE:



BREAKDOWN BY TITLE: DESIGN CHALLENGES

The priorities are different for each position.

Design Engineers:

1. Extended Life & Weight Reduction
2. Space Consolidation/Optimization
3. SKU Consolidation
4. Cable Management
5. Ease of Installation
6. Noise Mitigation

Electrical Engineers:

1. Cable Management
2. SKU Consolidation
3. Extended Life & Noise Mitigation
4. Space Consolidation/Optimization
5. Ease of Installation
6. Weight Reduction

Manufacturing Engineers:

1. Ease of Installation
2. Extended Life & Weight Reduction
3. Noise Mitigation
4. Space Consolidation/Optimization
5. Cable Management & SKU Consolidation

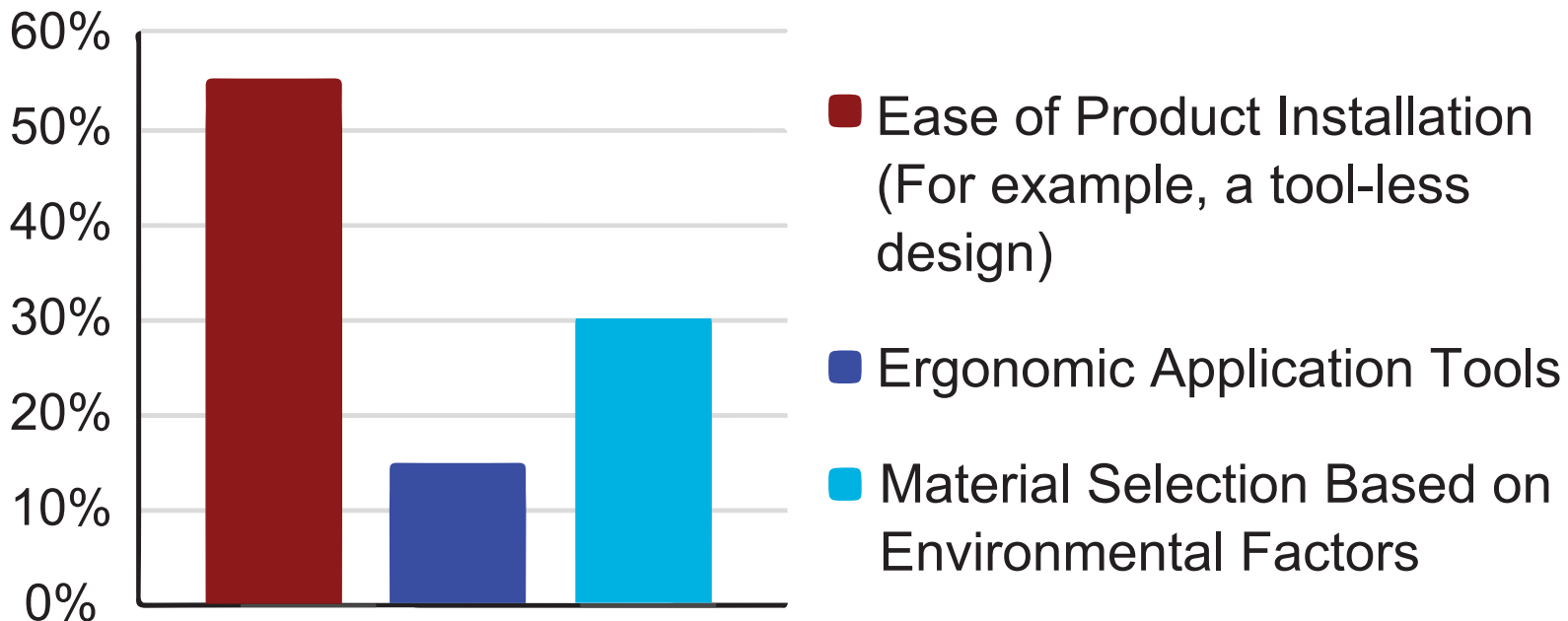
TOP SPECIFICATIONS

When designing equipment for the heavy-duty transportation market, engineering professionals were asked to identify the top specification most important to new designs.

While some engineers focus on component materials and sustainability, the majority are looking for something easy to install.

Even when broken down by title, the priorities remain the same: ease of installation is at the top, followed by material selection and then ergonomic application tools. Load rating was a fourth provided option, but no respondents of any title issued a vote for this specification consideration.

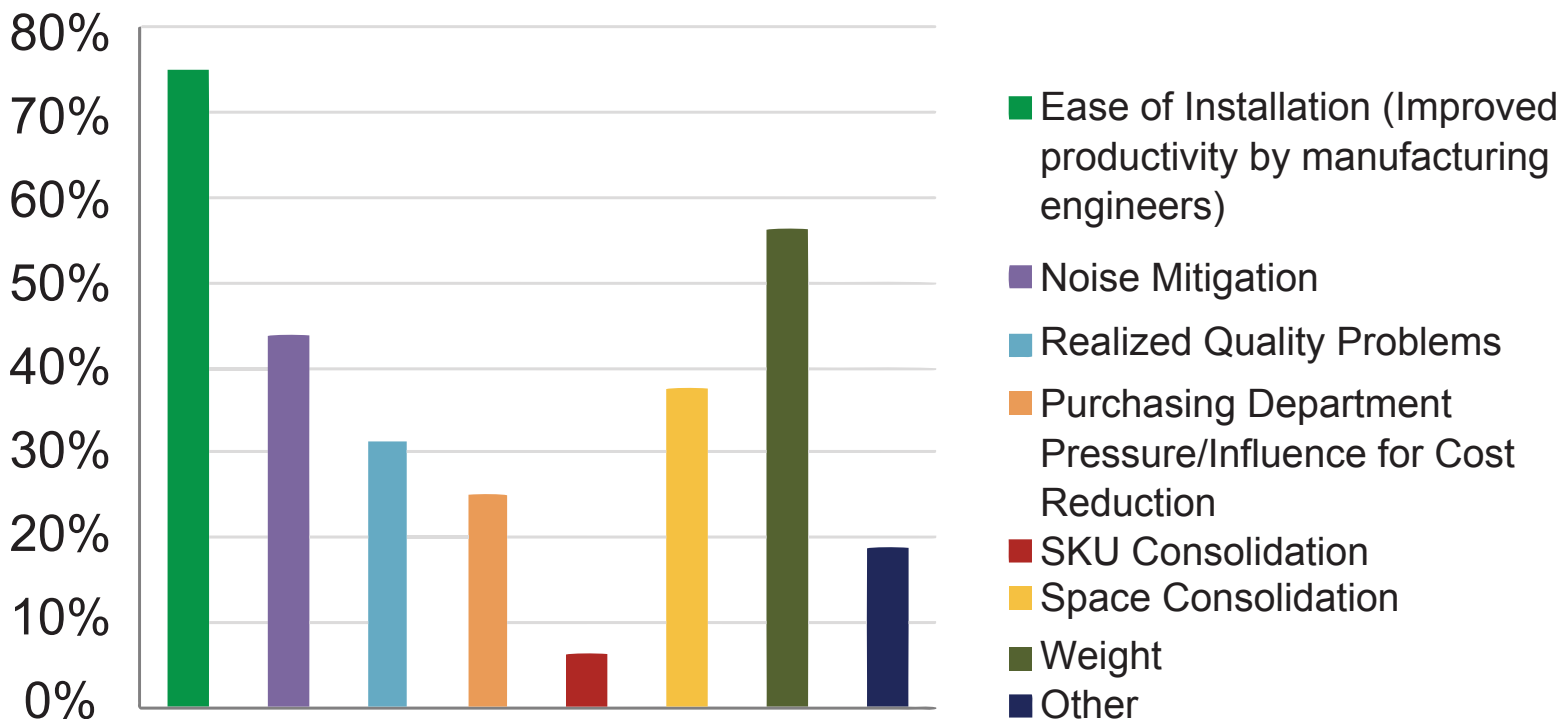
WHICH OF THE FOLLOWING SPECIFICATIONS IS THE MOST IMPORTANT IN YOUR DESIGNS?



FORCING CHANGE

In new designs, engineers are looking to improve productivity and make installation easier. Increased efficiency and space consolidation are on the radar, but the pressure to control cost and SKU consolidation have much less influence.

IN EXISTING DESIGNS, WHICH FACTORS ARE IMPACTFUL ENOUGH TO FORCE A CHANGE IN SPECIFIED PRODUCT?



BREAKDOWN BY TITLE: FACTORS FORCING CHANGE

Design Engineers:

1. Ease of Installation/Improved Productivity
2. Weight
3. Space Consolidation
4. Realized Quality Problems
5. Noise Mitigation
6. Pressure to Lower Cost
7. SKU Consolidation

Manufacturing Engineers:

1. Ease of Installation/Improved Productivity
2. Noise Mitigation & Weight
3. Pressure to Lower Cost
4. Realized Quality Problems & Space Consolidation
5. SKU Consolidation

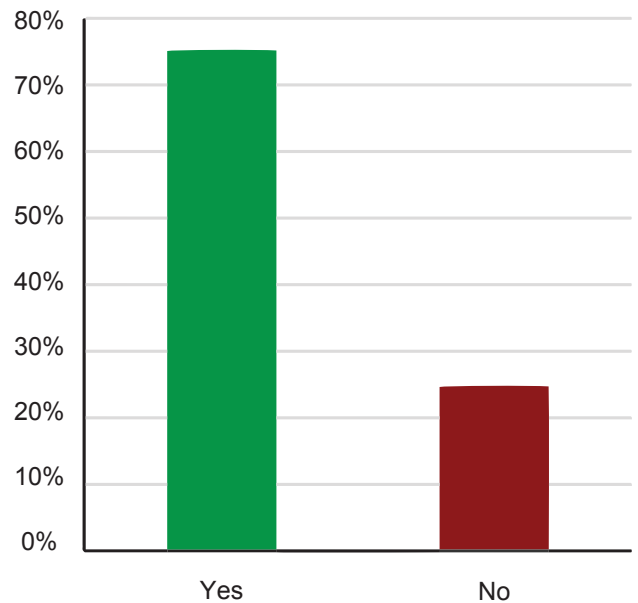
TOOLING SUPPORT

In addition to a broad range of application specific heavy duty cable management products, Panduit also offers installation tooling and tooling services to meet the highest OEM.

PURCHASING POWER

The ability to purchase components is vital to many engineers as it can expedite the procurement process, particularly when purchasing departments don't stand in between an engineer and his/her preferred part. Of the engineers surveyed, some 75% have component purchasing power within his/her company.

DO YOU HAVE COMPONENT PURCHASING POWER?



BREAKDOWN BY TITLE: ENGINEERS WITH PURCHASING POWER (Percentage of respondents with purchasing authority)

1. Electrical & Software Engineers: 100%
2. Design Engineers: 73%
3. Manufacturing Engineers: 67%

For those who don't have the authority, purchasing falls to various departments, most notably operations, supplier/supply chain management, or senior engineering staff.

The primary challenge that engineers run into when placing order requests is part availability or quantity in stock. Deliver timelines were also an oft-quoted reason, as well as component cost.

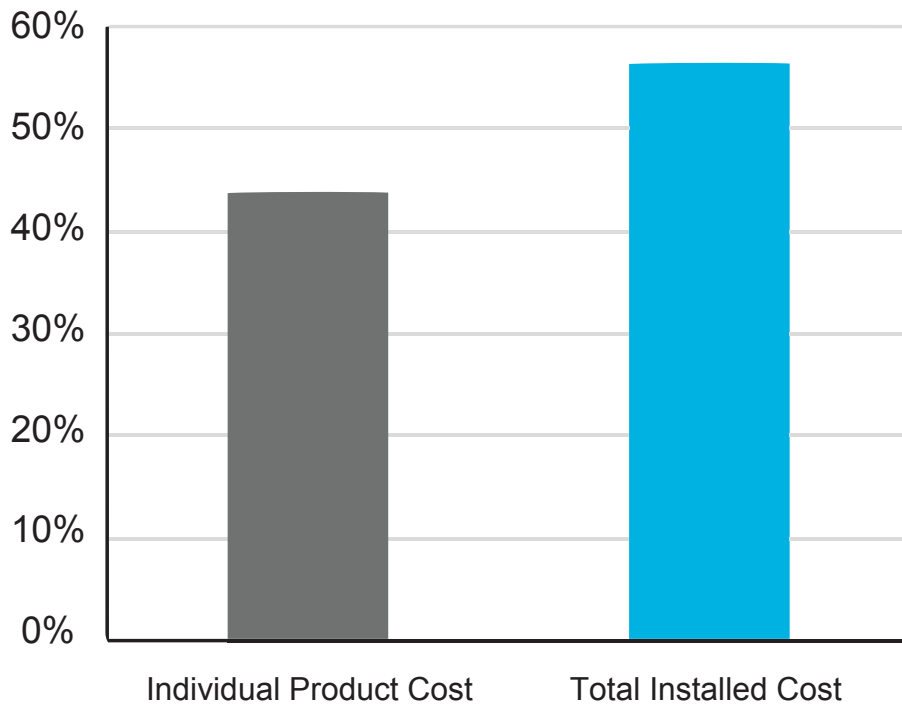
One electrical engineer says, "nobody makes exactly what I need, so I have to compromise." A design engineer adds that he has difficulty receiving sample components for testing.

Among the other issues, engineers say waiting for approval, finding a competitive price, and getting quotes in a timely fashion are challenges they frequently face when placing order requests.

INDIVIDUAL PRODUCT COST VS. TOTAL INSTALLED COST

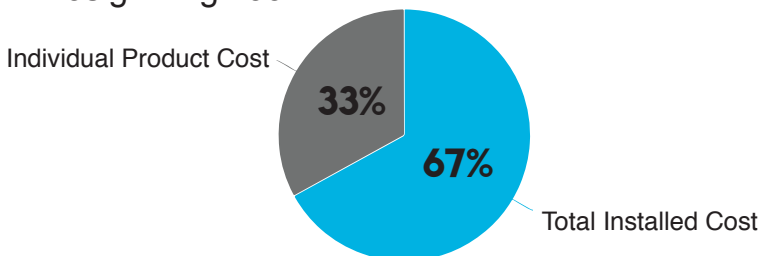
When specifying a component, engineers look both at individual product cost as well as total installed cost. However, the majority of engineering professionals are swayed by the total installed cost (56%).

WHEN SPECIFYING A PRODUCT, WHAT HAS THE LARGEST INFLUENCE OVER YOUR DECISION?

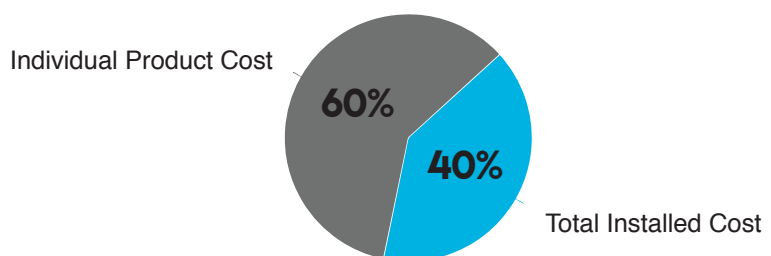


BREAKDOWN BY TITLE: WHAT HAS THE LARGEST INFLUENCE?

● Design Engineer:



● Manufacturing Engineer:



MANUFACTURER/BRAND LOYALTY

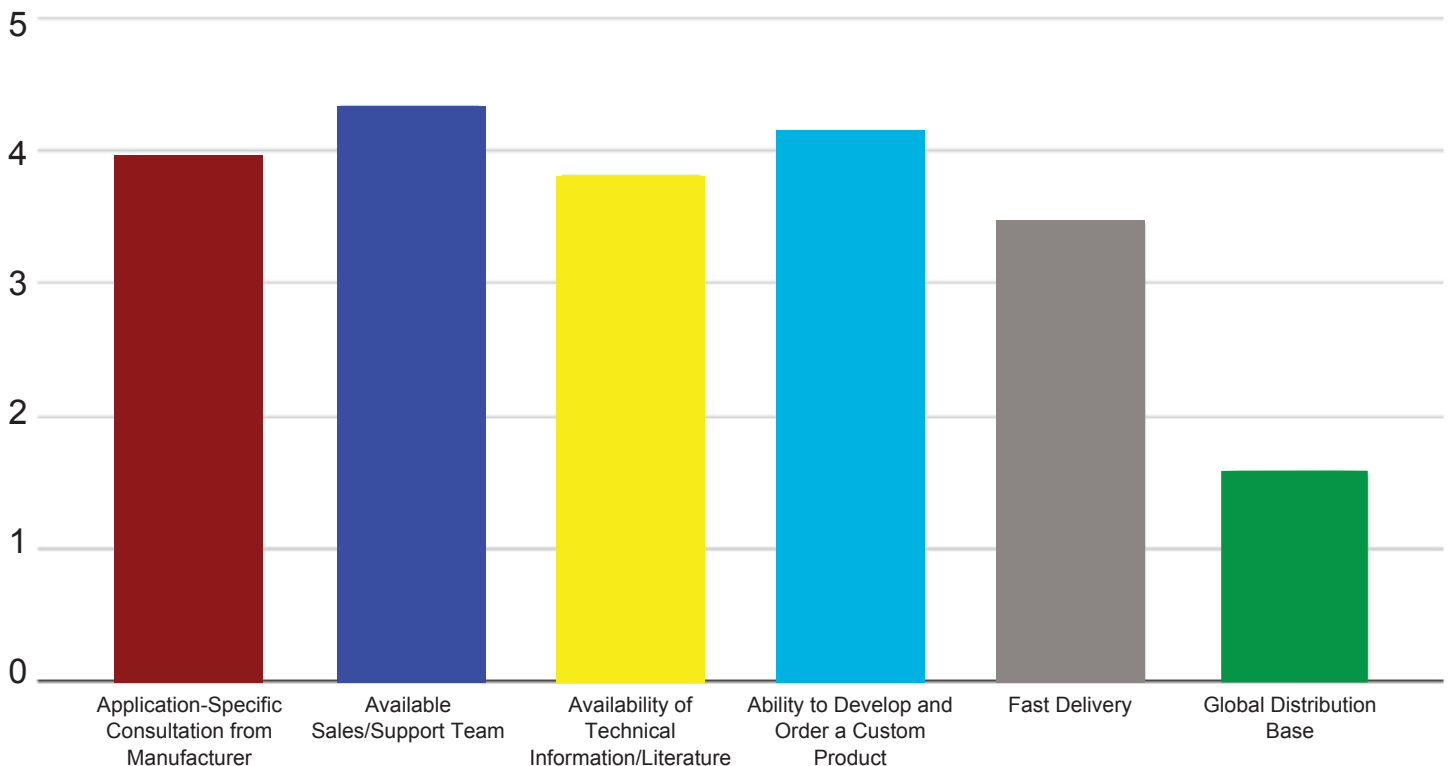
Finally, we wanted to investigate the factors that influence engineers to choose a specific manufacturer or brand - specifically, the value-added services that enter the equation. Each option received a weighted score based on overall rankings.

The top factor for engineers, with a weighted score of 4.33, is a manufacturer's available sales and support team. While sales and support had the highest overall rating, it didn't receive the most first-place votes.

The option that received the most first-place votes is the ability to develop and order a custom product. This option had a weighted score of 4.13, but nearly 11% more first-place votes from engineers.

Application-specific consultation from the manufacturer comes in third with a score of 3.94, followed by availability of technical information/literature (3.8), fast delivery (3.47), and a global distribution base (1.56). A global distribution base is identified as the least important factor by nearly 70% of engineering professionals.

PLEASE RANK THESE OTHER FACTORS THAT MAY INFLUENCE YOUR SELECTION OF A MANUFACTURER/BRAND

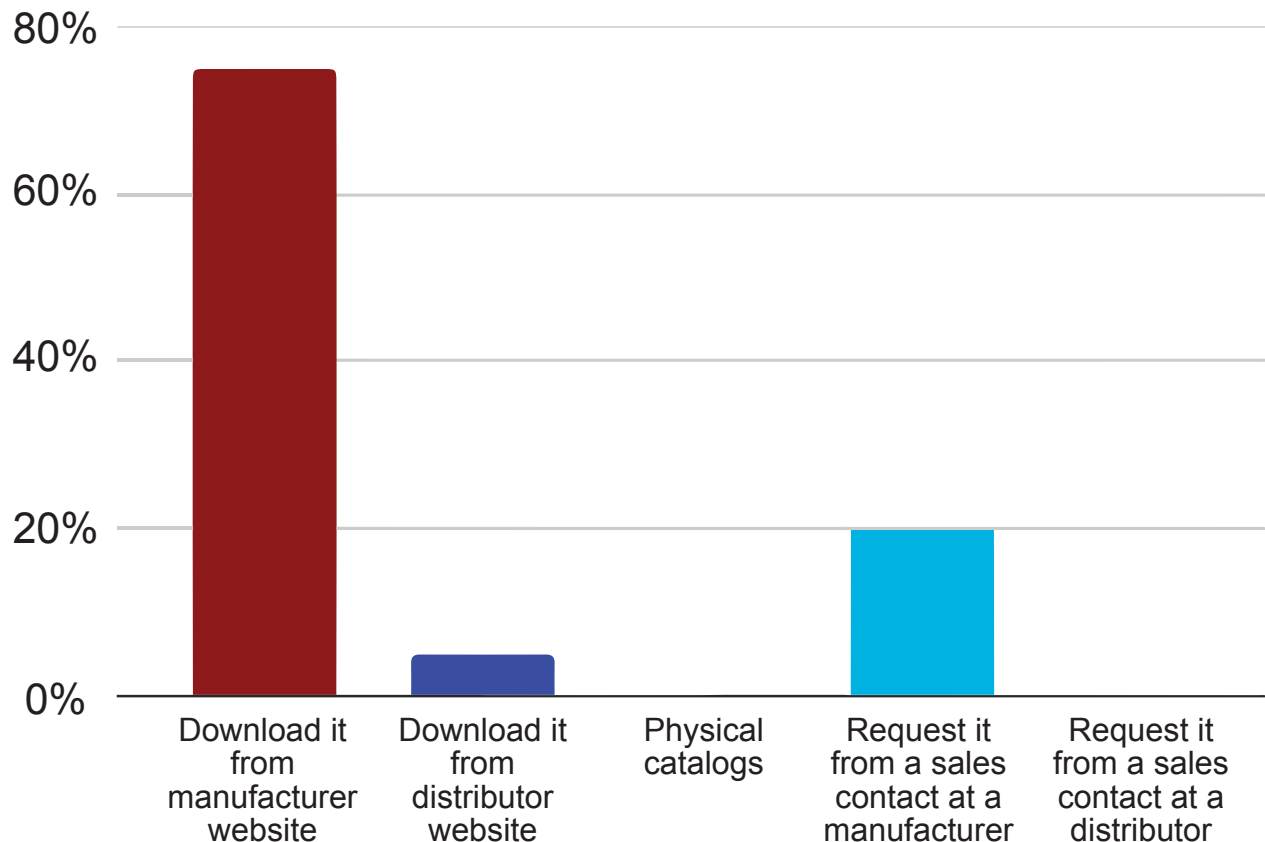


TECHNICAL INFORMATION

The internet provides an abundance of avenues to technical information on components. While some companies still offer physical catalogs, it appears that very few professionals turn to paper when looking for information. As a matter of fact, not a single engineer surveyed still uses a physical catalog.

When accessing technical information for components, 75% of engineering professionals download it directly from the manufacturer's website. About 20% request it from a sales contact at the manufacturer, and 5% of engineers download it from a distributor's website.

HOW DO YOU ACCESS TECHNICAL INFORMATION FOR COMPONENTS?



CONCLUSIONS

Based on the results, it is clear that engineering professionals are designing new heavy-duty transportation products for the long haul. They are looking for components with a tool-less design or easy installation; however, weight reduction/efficiency does play a role in component selection.

CONSULTATIVE ENGINEERING

For the many design decisions and application issues encountered, engineers need help identifying the cable management products best suited for each application. Panduit provides consultative engineering assistance to engineers working on truck, bus, and heavy equipment applications.

Every day, engineers face cable management decisions that will impact the performance, quality, and migration plans of their vehicle platforms.

Panduit is equipped with expertise and robust heavy duty cable management products that help simplify the installation process and lower total installed costs.

To get started, visit www.panduit.com.

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