

# EQUIPMENT PROTECTION

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## FEATURE

### 12 Key Points To Consider Before Buying An Electronic Enclosure

From an interview with Steve Radike

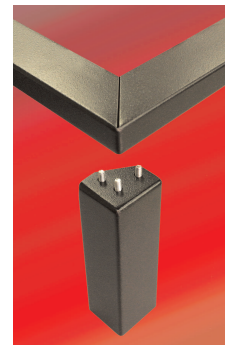
Electronics enclosures are by nature, not particularly exciting. No flashing lights, no bells, no whistles, etc. However, the function they serve is absolutely "mission critical" when it comes to protecting valuable electronic equipment. Because enclosures have a tendency to look very similar, it is sometimes difficult to assess their quality and/or functionality. To some extent the same might be said for the various enclosure manufacturers. Slick ads and inflated marketing claims are the order of the day anymore. So how do you sort through the maze of claims and offerings to find the best electronics enclosure manufacturer for your needs?

Steve Radike is a System Test Engineer at a large communications manufacturer. He has been deploying RF Test setups for 25 years and specifying test set components for the last 10 years. Steve spent a decade supporting some older test systems and experienced first hand the results of component selections that cause high maintenance and modification costs. The electronic enclosures in those older test systems were one sore point with Steve. From the ability to reduce dust inside the enclosure to color choice and quality of racking components, Steve had developed some definite design criteria that reduced his company's future test system's cost-of-use.

"Over the years we have noted the same concerns voiced over and over again as technicians worked with the older enclosures and the failed electronic equipment housed in them. Our selection criterion for new test racks repeated previous purchasing decisions. It was the easy path. I knew we needed to change, so I searched for the right electronics enclosures. Strength and overall rigidity are probably two of the most important enclosure features, however, other features considered critical include functional expandability and the

design flexibility to meet unique requirements. The following is a list of 12 key points we recommend electronic enclosure customers consider before buying." Radike said.

1. Insist on Fully welded frames. The strength and security provided by fully welded frames far exceeds that of bolt-together units. Not only are bolt-together frames not as strong, they can require considerable time to assemble. When you consider the increased assembly costs associated with a bolt-together unit, the actual cost difference between bolted and welded enclosures is generally negligible.



2. Ask about Configure-to-Order capability and color choices. Be sure your supplier has the capability to configure your enclosure product to meet your specific needs. Applications vary widely and standard "off-the-shelf" solutions usually involve compromises of some sort. Avoid rework or secondary operations by seeking a supplier who can deliver a tailored solution up front. Ask about your supplier's engineering expertise, flexibility and agility in developing custom designs. Get a handle on their internal process for custom designs; even their internal process to assign a new part number to a

custom design can cause delay. Ask about your supplier's quoting process: does it take days or can they turn a quote quickly, especially for custom designs.

Many enclosure manufacturers offer only one or two color choices. More complete solution providers offer a variety of color choices in addition to the capability to consistently match Fed Standard or custom colors. This is particularly important when adding on to existing installations or creating a unique identity for your project or installation.

3. Verify that your enclosures will be pre-assembled and delivered "ready-to-use". If specific locations for shelves, panels and other accessories are provided, make sure the supplier will install these per your requirements at no additional cost. Installers and technicians simply don't have time to waste bolting together components. They want something that is pre-assembled and ready to populate with equipment. But look for flexibility on this point, also. For newer racking designs, you may want shelves and accessories shipped separately, while on repeat builds, have them installed by the enclosure supplier. (A bit of advice: ensure your facility's doorways will allow you to move the height and width the final assembly...including the writing top or work surface!)

4. Insist on in-house design and manufacturing capabilities. Many enclosure suppliers sub-out one or both of these critical areas. The ability to develop design concepts and subsequently coordinate with in-house manufacturing assures continuity, accuracy, and overall quality within the project. In-house manufacturing also allows the manufacturer to efficiently and effectively modify standard products to meet specific customer needs. In-house control from start to finish is also the best assurance of a quality and timely delivery. This point is critical for successful customization. Also, don't assume that you will not need a supplier's design expertise in the future if an off-the-shelf solution meets your current needs. The flexibility of your enclosure supplier can directly affect your customer's satisfaction.

5. Make sure the supplier has the manufacturing capacity to handle the project. Suppliers sometimes bid on projects that are quite honestly, beyond their ability to produce. For the buyer it can be disastrous to discover that the project will be late or out of spec because the scope of the project exceeds the supplier's ability to deliver. Check out the supplier thoroughly, including their ability to respond to demand surges, before awarding a contract. Insist on products that are "Made in America" to insure quality, and to avoid the risk of supply interruption caused by delays in overseas logistics.

6. Insist on an ISO certified manufacturer. Companies must go through rigorous testing and certification procedures to become ISO certified. These certifications provide assurance that the manufacturer has a proven quality system in place that supports production of the highest quality product. Not all enclosure manufacturers

are ISO 9001/2000 certified so don't simply assume that they are.

7. Specialty Expertise. If your requirements include Seismic, EMI, RFI, NEMA, or other special needs, make sure your supplier has specific expertise with these product types. Not all companies have this expertise and a misstep here can be very costly.

8. Confirm that the supplier can provide rapid prototyping. When time critical design of a new system is required, verify that your supplier can not only provide design support but also produce "first build" quickly and accurately.

9. Check the supplier's financial strength and reputation. Check size, reputation, financial stability, years in business, and probably most important, evaluate potential suppliers by the companies they serve. A customer list of Fortune 500 companies is a pretty good indication of quality, integrity, and reliability.

10. Ask about the supplier's on time shipping history. Promises are easy to make. Top-notch companies should be able to provide a documented history showing their percentage of on-time delivery.

11. Ask about in-house transportation capabilities. If possible, choose a manufacturer that has the capability to deliver with its own company trucks and drivers. Company drivers are usually specially trained to handle enclosures plus they have additional incentives to provide "dock-to-dock" damage free direct delivery.

12. Verify references! A quality supplier will be happy to provide references from longstanding customers who have consistent experience with the supplier.

In addition to the 12 points above, Radike suggests checking how well the enclosure handles thermal requirements. Today's computer equipment is generally more powerful and generates more heat than older models. Heat dissipation in a rack can be greatly affected by the cleanliness of the surrounding environment. If your rack is going to be located in a typically dirty environment, then your enclosure supplier must be able to handle filtered and adequate air flow to keep your electronic instruments operational and reduce maintenance costs. It is critical to choose an enclosure that is specifically built to address these increased thermal demands in your unique environment. Radike also recommends having a good understanding of the intended application plus an awareness of the required lead time. Electronic enclosures are often one of the last items orders but are one of the first items needed to start the project.

Radike added "Not everyone has the same enclosure requirements, but if you follow these guidelines you can be sure that you will end up with an electronic enclosure that will meet both your current and future needs."