

Not All Equipment Protector Cases Are Created Equal

By Kevin Deighton, Pelican Products

In today's work environment, protecting sensitive equipment in the field is of great importance to mobile technicians. Imagine carrying a soft tool bag with a sensitive meter or other work instruments and it falling down a flight of stairs, off a building or even a table top? Would a soft bag protect your equipment? No way. Damaged equipment could mean the loss of thousands of dollars to the company because the job couldn't be completed and hours of headaches, stress and inconvenience to the technician and customer.



Luckily, there are a wide variety of light weight and tough equipment protector cases available on the market today. They can now be waterproof, dustproof, dent-proof and very light weight when compared with wood or aluminum cases.

Injection molding and rotational molding cases offer the best results and are the most popular among professionals that demand extreme protection such as law enforcement, military and firefighters. If you buy the right kind of case it can meet almost any need for protection in almost any environment and can even stand up to missile fire (more on that later). However, the most expensive or best looking case won't necessarily protect your equipment. Depending on which kind you buy, there can be glaring differences in quality and durability.

Injection molded cases are manufactured by melting ultra high-impact copolymer plastic pellets and injecting the mix into a highly pressurized mold with a plunger much like a syringe. Mixture in the mold is cooled, exposed and removed mechanically. The rotational molding process works by pouring powdered resin into a mold. The powder is then heated and slowly rotated until it has liquefied like moving a cooking pan back and forth to cover it in oil. The process is over when the sides of the mold are coated and cooled to create a solid walled hollow structure.

You might ask yourself, "They're plastic cases, how could one be different than the other?"

To start, look at the cases' warranty. If the manufacturer offers an unconditional lifetime warranty then you know they'll stand behind their product and any problem will usually result in replacement at no charge. If the case comes with a limited lifetime warranty, then a buyer should definitely look at the fine print. Some cases with this kind of warranty can only be fixed by the manufacturer multiple times before they're replaced. Some companies even charge for repairs.

More differences include the fact that rotational molding doesn't have a great capability to mold structural details. As a result, rotational molded cases need hardware such as handles and latches that need to be attached and/or screwed into the walls. This weakens the case overall and promotes cracking. Injection molded case hinge and handle mounts can be molded into the body of the case so there is a minimal need for additional hardware.



Injection molding can create right angle integral ribs, hinges and handles that can contribute to its overall strength and impact resistance. The ribs can deflect blows to

the case without shearing, protecting the latches and handles and strengthening an already tough case. The hinges are stronger since they're integrated onto the case. Rotational molded cases don't have that capability.

Higher-end injection molded cases are usually engineered with cell-core construction and can feature deceptively thick walls that are lighter than thinner-walled, cheaper non-cell core cases. Cell core technology works with special foaming agents that are mixed in with the plastic during the molding process to create a strong internal structure made of tiny bubbles. The resulting case doesn't have sinks and voids and greatly improves rigidity and toughness. Rotational molded cases are on the average somewhat heavier than their counterparts because thickness cannot be varied in its solid case walls.

Conversely, rotational molded cases have the capability to be manufactured with double walled construction designed to absorb outside impact while protecting the inside contents. They can be great for transporting bulk products like food and liquids but when size and weight are an issue (and they usually are) this adds to the overall dimensions of the case. This can also dramatically decrease the internal space capacity (sometimes by two inches all the way around) and mean hundreds and sometimes even thousands of dollars in extra transit costs.

Professionals across the world use injection molded equipment cases to protect their gear in some of the most extreme situations. US Military Serviceman Jason Bitterman found out first hand just how tough the cases can be. "I am with 5th Special Forces Group stationed at Fort Campbell, Kentucky. I deployed into Iraq on the 18th of March and during infiltration one of the helicopters crashed. No one was seriously hurt, but to keep the technology from falling into enemy hands, we had to destroy the helicopter with two Maverick missiles. When we returned to the crash site, we were astonished to find that the only thing salvageable was the case and that it only sustained minor burns and a broken latch. But the most amazing part was that its contents (**6 satellite phones, an electronic radio system, a highly sensitive digital camera and a block of C-4 explosive**) were completely intact and working," said Bitterman.

To the naked eye, the differences between cases aren't always evident. When choosing a case buy the one made with the process that allows for the least error, has the best warranty and promises to be the toughest. In extreme situations the differences between rotational and injection molded and cheaply and well made cases become painfully obvious. The key is to not find out the hard way. Your equipment will thank you for it.

Sources:

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