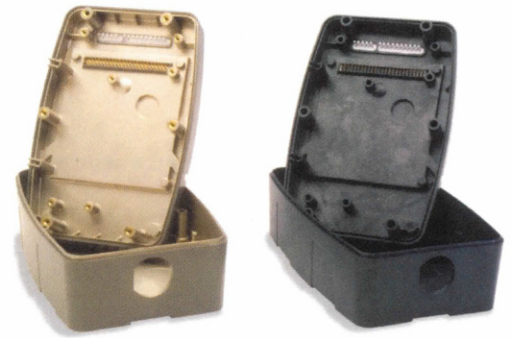


SABIC Innovative Plastics' technology eliminates electroplating to help cut costs and shorten cycle time for I.D. Systems, Inc.

LNP* Faradex* specialty compound provides built-in EMI shielding and flammability resistance

Based in Hackensack, N.J., I.D. Systems, Inc. provides wireless solutions for corporate asset management. These systems enable managers to remotely control and track the location and status of their assets – from forklifts and cranes to automobiles and trucks – in real time. One of I.D. Systems' products is the Vehicle Asset Communicator (VAC), a wireless computer installed in vehicles to restrict access, manage safety and security issues, track location and monitor a wide range of vehicle utilization data. As a fast-growing company – named to the 2005 Deloitte Technology Fast 500 list – I.D. Systems was looking for ways to further strengthen its market position by streamlining its VAC manufacturing process.



Challenge Eliminating secondary operations while improving performance

I.D. Systems' existing process for manufacturing the VAC housing called for injection-molding the two halves of the 6 inches by 8 inches by 3 inches enclosure from flame-retardant polycarbonate (PC) resin and then electroplating the part with a copper substrate and nickel top coat to provide shielding against electromagnetic interference (EMI). Electromagnetic compatibility (EMC) is essential for the VAC's wireless communications, and using the enclosure to deliver electromagnetic shielding has proven itself to be an effective means for meeting the functional and regulatory requirements.

However, the secondary electroplating operation was a drawback for several reasons. First, it added cost and time to the manufacturing process. Second, the bosses and standoffs incorporated into the housing design made it difficult to ensure even coverage of the metalized coating, resulting in part rejects. And, the coating operation raised concerns about worker exposure to emissions and recycling difficulties.

According to Greg Smith, Vice President of Marketing and Corporate Communications for I.D. Systems, "Our VACs must have EMI shielding and comply with UL requirements for flammability resistance, but we wanted a better way to provide

these properties – a new approach that would help us save money and time while reducing environmental and health risks. On the other hand, we didn't want to go through the expense and delay of retooling for a new material. Thankfully, our molder put us in touch with SABIC Innovative Plastics, who provided an excellent solution for us."

Solution LNP Faradex specialty compound for intrinsic EMI shielding and flame retardance (FR) meeting halogen-free requirements

To meet all of I.D. Systems' requirements, the company selected SABIC Innovative Plastics' LNP Faradex DS-1003 FR HI specialty compound, which offers intrinsic EMI shielding through the incorporation of fine, stainless steel fibers into PC resin. LNP Faradex specialty compound provides approximately 40 to 70 dB of EMI attenuation, depending upon frequency and part geometry. It is formulated to achieve balanced dispersion of the steel fibers to optimize shielding effectiveness.

In addition, the material provides other important performance properties, including enhanced low-temperature impact to help prevent damage to VACs during exterior use, and low surface resistivity that can make it easier to ground the electronic device. It can also be custom colored to meet specific aesthetic requirements. Another benefit of LNP Faradex specialty compound is that it processes

very similarly to unfilled PC with nearly similar shrinkage, enabling I.D. Systems to use its existing tooling. Finally, LNP Faradex specialty compound addressed the need for the use of halogen free flame retardants, while still meeting the need to use a material with a UL 94 V-0 flammability rating.

Value-added services

Design assistance and processing expertise

"Our technical resources were used by I.D. Systems and their molder during material selection discussions and molding trials," said Jim Fagan, Product Manager for SABIC Innovative Plastics. "We were engaged on tooling and processing details to help our customer ensure that gating configuration and molding procedures were optimized for the best shielding performance. Our expertise helped ensure the housing not only looks great, but also delivers superior performance across the board."

Benefits

Faster cycle times and improved environmental compliance without retooling

Replacing electroplated PC with LNP Faradex DS-1003 FR HI specialty compound allowed I.D. Systems to eliminate a costly and time-consuming secondary operation while continuing to fulfill the requirement for EMI shielding of its VAC devices.

Thanks to the inherent shielding of the material, the company has been able to reduce production time and costs. Further, eliminating electroplating has addressed health concerns from toxic emissions during the metalization process and the need to remove the metalized layer prior to recycling the part. As an added benefit, LNP Faradex specialty compound solved the issue of part rejects due to inconsistent or incomplete application of the electroplating.

Equally important, the company was able to swap materials without retooling, achieving additional time and cost benefits.

Details at

id-systems.com

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