

Published in: **Asphalt Pro (April/May 12)**
IEE (July 12)

Pavement Preservation OEM Seals in Safety with Dead Front, Switch-Rated Plugs and Receptacles

When needing a power connector for the removable, electric infrared, asphalt heaters on its rollers and trucks, Seam Sealing Systems Inc., a pavement preservation firm, sought a connecting device designed for a mobile application that required a high capacity, compact, safe, quick connect plug/receptacle. After inspecting a wide variety of connection devices, Project Engineer Isaac Sargent decided to specify the Deconnector™ Series switch-rated plugs and receptacles for all their machines.

“We looked at other plugs and most of them were heavy and bulky. Meltric plugs were compact, switch-rated and dead front,” said Sargent. “Since we operate our machines at construction sites in remote locations, we were also concerned about safety. After considering the worst case scenario of someone possibly pulling the plug out ‘live,’ we chose the Meltric plug because that’s never a problem.”

Solving a Leading Cause of Pavement Failures

Founded in 2008, Hermon, ME-based Seam Sealing Systems Inc. designs and builds machinery used to preserve the condition of airport and highway pavements by solving one of the leading causes of asphalt pavement deterioration: the failure of the longitudinal joint. Studies have found that premature deterioration of the longitudinal joint is primarily caused by a non-watertight, low-density joint. To solve this problem, Seam Sealing Systems Inc. developed a joint sealing process based on electric infrared heating technology that can create a solid, compacted and watertight joint with increased bonding strength, which can not only extend the service life of the pavement, but also can reduce overall maintenance costs.

“The problem we’re solving is the crack in the center of the road. We use electric infrared technology to heat the pavement material safely. As the material bonds together, a strong watertight joint forms, which becomes invisible after heating,” said Sargent. To seal the longitudinal joint, Seam Sealing installed electric infrared heaters on its rollers and trucks. The roller travels directly behind an asphalt-paving machine to heat and seal the longitudinal joint. The truck provides increased mobility and has a blower system to remove large amounts of water on the pavement while heaters dry the residual moisture.

Switch-Rated Plugs: The Ideal Connector for High Amperage, Removable Asphalt Heaters

When Mr. Sargent assumed responsibility as the lead engineer of the seam sealing machines, he was charged with finding ways of making them more user-friendly, safer and easier to operate. One of those ways involved the power connector used for the electric infrared asphalt heaters, which are frequently removed either for transport to a job site or moved to a different side of the machine based on a particular sealing job’s requirements.

Due to limited space on the machines for mounting junction boxes or electrical disconnects, he sought a compact connecting device that had a quick changeout feature. Most of the plugs he inspected were not well suited for these requirements. “But the switch-rated, dead front, Meltric plugs stood out from the other devices,” Sargent



Electric infrared asphalt heaters are quickly and safely connected or disconnected using switch-rated plugs and receptacles from Meltric Corporation.

said. “The size of the Meltric plug is so small and compact in comparison to everything else. Nothing else was switch-rated. We connected it right on the machine and didn’t need a junction box.” Presently, all the heaters and dryers on the sealing machines are connected with Meltric DS-100 plugs and receptacles.

The Meltric DS Series switch-rated plugs combine the safety and functionality of a disconnect switch with the convenience of a plug and receptacle. They are an approved ‘line of sight’ disconnect switch, which eliminates the need for space-consuming interlocks and auxiliary disconnects, giving it a much more compact footprint than other types of connecting devices. It also has pushbutton circuit disconnection, which gives it a quick connect/disconnect capability.

While the size, electrical ratings and performance of Meltric DS-100 plugs satisfied the power connection requirements of the asphalt heaters, Mr. Sargent liked the dead front safety feature of the plugs. “We work on projects where some of the laborers who work around our machines aren’t familiar with electricity. So we were concerned about someone walking up to the plug and potentially unplugging it while it’s in use. You can’t do that with a Meltric plug,” Sargent said. The dead front design makes it virtually impossible for a user to be exposed to either ‘live’ parts or arc flashes. In addition, Meltric’s plugs have provisions for Lock Out/Tag Out (LOTO). Both of these features help employers simplify compliance to workplace electrical safety standards like NFPA 70E.

The Growth of Pavement Preservation

“As we sell more sealing machines, we plan to purchase more Meltric plugs for our connection needs. We already use them on quite a lot of different projects,” said Sargent. At the present time, Seam Sealing has focused on developing the longitudinal joint sealing business for airport applications. “Airports have very strict specifications on their joints and there are penalties if they don’t meet those specifications,” said Sargent. But airports are only a part of the potentially large, national market for pavement preservation products and services. The pavement preservation industry has experienced both increased interest and growth in recent years as the costs to rehabilitate or reconstruct pavements is increasing and experience has shown that pavement preservation can extend the life of “a structurally sound pavement by 5 to 10 years,” according to the U.S. Department of Transportation, Federal Highway Administration. As a decades long supplier of electrical connecting devices in the construction and heavy equipment industry, Meltric Corporation will continue to be an important supplier and business partner for pavement preservation companies in the years to come.



Switch-rated plugs and receptacles from Meltric Corporation can be used to safely make or break electrical loads.



Meltric’s DS 100 receptacles feature a safety shutter that prevents exposure to live parts.