

Heat Design Equipment

Heat Design Equipment manufactures infrared heaters for asphalt construction and repair using patented, state of the art technologies.

Headquarters	1197 Union Street, Kitchener, Ontario, N2H 6N6
Year Established	1976
NAICS	333120 - Construction machinery manufacturing, 333416 - Heating equipment and commercial refrigeration equipment manufacturing
Employees	25
Major Expansions	2016
Exports	US, UK, Australia, United Arab Emirates, Peru
Parent Company	N/A
Other Locations	N/A

Each winter, Canadian roads take a beating. Snow, ice, salt, and snow plows contribute to their deterioration. As winter fades and the asphalt appears from beneath the melting slush, the roadways are inevitably riddled with cracks, gapes, and holes.

For years, contractors and local governments wished that there were some sort of paving and patching methods to fix these cracks and ensure they are less likely to reappear. Fortunately, now there are. Heat Design Equipment (HDE), located in Kitchener, Ontario, manufactures unique infrared heaters designed to patch and mend asphalt roads. Standard techniques replace the asphalt in the problem area with cold, uncompacted asphalt. The lack of tight compaction and/or heat used in the technique increases the likelihood of water seeping into crevices, freezing under cold temperatures, and causing more cracks and holes. HDE's patented technology heats and reworks the existing asphalt, recompacting it in place with seamless, water-tight joints. The entire process not only recycles existing material, but is also significantly faster and longer lasting than traditional patching techniques.

Bob Kieswetter, president and founder of HDE, is an expert in the gravel business. He came across an early version of infrared heating technology in the mid-1990s. In 1996, Kieswetter acquired the patent for this technology, and began manufacturing infrared heaters purposed to construct and pave new roads. Further development in the field by HDE led to the development of infrared heaters designed to repair problem areas in asphalt roads. In 2002, Kieswetter left the gravel business entirely in order to focus on the manufacturing and marketing of HDE's equipment.

HDE's technique and technology are truly unique. Although there are virtually no manufacturers of hot,

compacted paving methods in Canada, and only a few U.S. manufacturers competing on the types of products that HDE sells, the company's biggest challenge is gaining the trust of contractors and expanding its customer base. Contractors and municipalities are often hesitant to experiment or invest in new technologies. However, through extensive research and marketing, HDE has experienced increased sales in recent years.

HDE's products include hotbox reclaimers (storage containers for asphalt), infrared asphalt maintenance vehicles, and patching trailers. Its sister company, Infrared Pavement Repair Corporation, provides repair services using HDE's equipment, as well as training sessions on HDE products. HDE's equipment and technique can be used for most asphalt roads across many countries. Currently, most of its Canadian sales are within Ontario, with some in Eastern Canada. Several cities in Southern Ontario—including Hamilton and Waterloo—have adopted the HDE paving technique for new road construction.

Roughly 50 per cent of HDE's sales are exports to countries such as the United States, England, Australia, the United Arab Emirates, and Peru. Its customers include municipalities, parks, and large maintenance and paving contractors.

HDE is an active participant at construction- and paving-related trade shows and expos. Kieswetter sends a team of employees to roughly 15 trade shows each year. It was at an expo that HDE acquired its most famous customer to date: the White House. Under the Bush administration (2001–2009), a request went awry to pave an antique-looking road that was seven lanes wide with camel-coloured asphalt. Repairs to the road would have cost upwards of \$2 million. Using traditional methods, the existing pavement would have had to be removed, and seven new pavers required to lay the road (since previously used pavers would have been stained black from regular asphalt, and the dark tint would ruin the lighter colour of the requested asphalt). HDE was able to repair the problem using the existing asphalt within a shorter time frame, and at a substantially lower cost.

HDE's approximately 25 employees have backgrounds in mechanical engineering and industrial trades. Over the past several years, the company has informally hired co-op students from engineering and trades programs at local educational institutions, including Waterloo University and Conestoga College. Kieswetter hopes to continue HDE's relationship with these schools, and eventually establish a regular and formal co-op program at the company.

Kieswetter describes the manufacturing possibilities for infrared technologies as limitless. HDE has completed numerous custom jobs building special infrared tools. For example, the New York State Parks Commission purchased a custom infrared weed killer, and another customer purchased a custom infrared insect-killing tool. For now, Kieswetter plan is to keep HDE's focus on its primary product line, gain further customers, and expand more broadly into global markets.

In early 2016, the company underwent an expansion and moved locations within Kitchener—from Bleams Road to Union Street. The HDE team is in the process of developing a mini-asphalt manufacturing plant using 100% asphalt waste. The asphalt will be produced using infrared as opposed to flame heat. The final product will be used by HDE in its services, sold to customers, and used in research and development. Kieswetter hopes to have parts of this project ready for display at the company's next major trade show. For



HDE, the road to future success—and the future of Canada’s roads—looks smooth.