



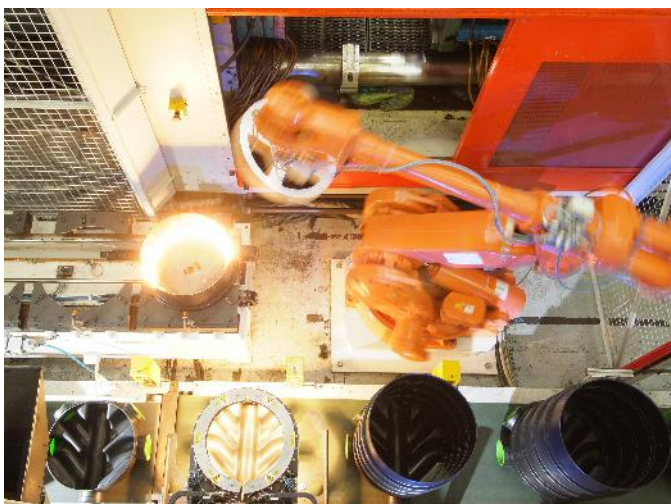
Infrared helps increase process efficiencies for automatic plastic welding

An infrared welding system using special-purpose infrared emitters from Excelitas has helped Hepworth Drainage improve the quality of an inspection chamber assembly production process, while eliminating any environmental problems associated with a hot melt adhesive technique that was formerly used. Hepworth Drainage is one of the largest manufacturers of drainage systems.

One of its major product lines is a polypropylene inspection chamber, which provides access to inspect below ground drainage systems from the surface. This product consists of a base unit offering multiple connections to clay or plastic drainage systems. The addition of two or four raising pieces creates the required depth of inspection chamber. An important step in the manufacturing process is the joining of the raising pieces, first to the base unit of the inspection chamber and then to each other as required.

This was formerly done using a hot melt adhesive. Modern environmental protection requirements and the requirement for cost-savings, led the British company to investigate for potentially more efficient solutions. A complex automated process with a robot which brings the various component tubes into an infrared welding cell and welds them together, now takes only 22 seconds. As a result, the production cycle times for plastic inspection chambers at Hepworth have been significantly reduced and the quality of the components significantly increased. Moreover, the new heating process is environmentally-friendly as, in contrast to the previous hot melt adhesive system, as there is very little fume production.

These process improvements have also been made possible because quartz glass emitters can be shaped to match the product three-dimensionally. Consequently, the heat is generated only where it is required. In addition, infrared emitters need to be switched on whenever the heat is actually needed, so that energy is saved.



Features

- Welding of plastic pipes with a base unit
- Energy efficient
- Time saving
- Contact-free heating is environmentally friendly

Technical Data

- Small custom-designed, short wave emitters,
- Each delivering 15W/mm,
- Distributed around the product surface
- Cycle times of around 22 seconds

