Melting the end of a plastic tube to create a seal

**Objective**  
Melting the end pieces of a plastic tube together to create an air tight seal

**Material**  
Plastic tube 2.5” (63.5mm) long, 0.75” (19mm) diameter

**Frequency**  
185 kHz

**Equipment**  
- Ambrell 4.2 kW induction heating system, equipped with a remote workhead containing two 1.5µF capacitors for a total of 0.75µF  
- An induction heating coil designed and developed specifically for this application.

**Process**  
A single turn coil encapsulated in custom blocks is used for sealing the tube. Two tubes are placed between the coil blocks and a 7lb (3.2kg) load is applied to the top of the coil. Power is only supplied to the top block of the coil for 250 milli-seconds causing the plastic to melt and create an air tight seal.

**Results/Benefits**  
Induction heating provides:  
- Fast and precise application of heat  
- Hands-free heating that involves no operator skill for manufacturing  
- Even distribution of heating
Ends of tubes in coil with pressure applied prior to heating