


















PREHEATING METHOD COMPARISON CHART

	INDUCTION HEATING	FLAME HEATING	RESISTANCE HEATING
SETUP/TEARDOWN	<p> EASY 20 minutes or less per joint. Teardown time is fast, as induction tools can immediately be moved to the next joint without cooldown time.</p>	<p> EASY</p>	<p> COMPLEX Approximately 3 hours per joint. Teardown times are also lengthy, as crews must first wait for the heating equipment to cool.</p>
TIME TO TEMPERATURE	<p> FAST 20 minutes or less per joint</p>	<p> SLOW Up to 3 hours, depending on part/material size and thickness</p>	<p> SLOW Up to 3 hours, depending on part/material size and thickness</p>
JOINT TEMPERATURE UNIFORMITY	<p> EXCEPTIONAL Thorough and even heat profile</p>	<p> POOR Subject to hot and cold spots</p>	<p> MARGINAL</p>
HEATING EFFICIENCY	<p> EXCEPTIONAL 90% efficient</p>	<p> POOR Much heat lost to air; reheating needed after breaks and off hours</p>	<p> GOOD Marginal heat lost to air</p>
SAFETY	<p> EXCEPTIONAL Tools do not heat up; no toxic byproducts or noise</p>	<p> POOR</p> <ul style="list-style-type: none"> • Risks burn injuries, fires and explosions • Excessive noise levels • Toxic, combustible byproducts 	<p> MARGINAL</p> <ul style="list-style-type: none"> • Ceramic pads are as hot as the work surface, bringing risk of burn injuries • Damaged/incorrectly used heating tools bring risk of electric shock • Inhaling insulation fibers/particles is a health hazard
OPERATING COST	<p> LOW</p> <ul style="list-style-type: none"> • Delivers strong return on investment • Electricity cost: \$5/hr • Induction air-cooled cables and air-cooled quick wraps are ruggedly constructed for repeatable uses 	<p> HIGH</p> <ul style="list-style-type: none"> • Fuel cost: \$50/hr • Fire-watch personnel must often be hired 	<p> HIGH</p> <ul style="list-style-type: none"> • Preheating contractors can charge up to \$2,000 per joint, and final project costs often exceed original bid pricing • Requires installation of electrical infrastructure • Ceramic pads require frequent replacement • Used insulation is considered hazardous waste; proper disposal is costly