


Field Metallurgy

Field Metallography can be used as a tool to determine remaining life, fitness for service, damage assessment from creep mechanisms or fire damage and the cause for cracking, degree of overheating or other damage mechanism manifested by microstructural changes.

The Hendrix Group can provide on-site evaluation of plant equipment without the need to destructively remove samples. Using field metallographic techniques we can observe and evaluate the microstructure of an equipment item. This provides valuable information concerning creep damage, fire damage and cracking mechanisms. Typical applications of field metallography include fired heater tubes, high-temperature piping, steam systems, and equipment susceptible to environmental cracking, including cracking from environments containing wet hydrogen sulfide, chloride, ammonia, carbon dioxide or caustic.



As plants age, equipment and piping operating at elevated temperatures undergo microstructural changes which can reduce original design properties and cause unexpected failures. Field Metallography is a useful tool for on-site examination and evaluation of plant equipment without the need to destructively cut samples from the equipment item or component.

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Applications

Fire Damage

Cracking Mechanisms

Alloy Type

Overheating

Heater Tubes

Boiler tubes

Steam Piping

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