

What are the outcomes of failing to repair a subsurface crack in a steel container?

Failing to repair a subsurface crack in a steel container can lead to several serious consequences, primarily due to the crack's potential to propagate under stress. Here are some key outcomes:

Contamination of product

Surface cracks and subsurface porosities can act as entry points for contaminants. For containers holding sensitive or sterile materials, this can result in product contamination, rendering the contents unusable or unsafe. This is particularly critical in industries such as food processing, pharmaceuticals, and chemicals, where purity is essential.



Fatigue failure

Subsurface cracks can grow due to cyclic loading, a process known as fatigue. Over time, the crack may reach a critical size, leading to sudden and catastrophic failure of the container. This is especially dangerous if the container is used to store hazardous materials, as it could result in leaks or explosions.

Safety hazards

For containers used in industrial settings, an unaddressed crack poses serious safety risks to workers and the environment. The potential for unexpected failure can lead to accidents, injuries, and environmental contamination.

Reduced structural integrity

The presence of a crack compromises the structural integrity of the steel container. Even if immediate failure does not occur, the container's ability to withstand pressure and external forces is significantly diminished. This can lead to deformation, leakage, and a higher likelihood of other mechanical failures.

Increased maintenance costs

Allowing a crack to propagate without repair can lead to more extensive damage that is costlier to fix. Additionally, there may be increased downtime for inspections, repairs, and possibly even replacement of the container.

Loss of operational efficiency

Cracks can cause operational inefficiencies, such as pressure loss in pressurized containers or contamination in containers holding sensitive materials. This can disrupt processes and lead to significant economic losses.

In summary, not fixing a subsurface crack in a steel container can lead to severe safety hazards, increased costs, operational inefficiencies and potential contamination of the product. Regular inspections and timely repairs are crucial to maintaining the integrity, safety and cleanliness of steel containers.

How Magnerscan can help address these issues

The Magnerscan, from EIT International, is an advanced technology designed for the detection of surface and subsurface cracks in steel containers. By utilizing this system, many of the negative outcomes associated with undetected cracks can be mitigated or entirely avoided. Here's how Magnerscan can help:



Contamination of product

Magnerscan can detect both surface cracks and subsurface porosities that might act as entry points for contaminants. By ensuring that these defects are identified and repaired, the system helps maintain the purity and safety of the contents, which is crucial in industries like food processing, pharmaceuticals, and chemicals.

Fatigue failure

Magnerscan can detect even small subsurface cracks that are not visible to the naked eye. Early detection allows for timely repairs, preventing cracks from growing due to cyclic loading and reducing the risk of sudden and catastrophic failure.

Safety hazards

The early detection capabilities of Magnerscan significantly reduce the risks of accidents, injuries, and environmental contamination by ensuring that cracks are repaired before they can cause unexpected failures. This enhances overall safety for workers and the environment.

Reduced structural integrity

By identifying cracks early, Magnerscan enables maintenance teams to repair them before they compromise the structural integrity of the container. This ensures that the container maintains its ability to withstand pressure and external forces, preventing deformation and leakage.

Increased maintenance costs

Regular use of Magnerscan for inspections allows for the early detection of cracks, which can be repaired before they become more extensive and costly. This proactive approach reduces downtime for repairs and helps avoid the higher costs associated with more significant damage or container replacement.

Loss of operational efficiency

By preventing pressure loss and contamination through early crack detection and repair, Magnerscan helps maintain operational efficiency. This ensures that processes are not disrupted, reducing the risk of economic losses due to inefficiencies.

Ready to make your predictive maintenance strategy a competitive advantage? Talk to our team about the tools that can turn maintenance and safety into growth

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