بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / مني مغربي أحمد

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: لا يوجد

FAILURE ANALYSIS OF CHAIN CONVEYOR LINK AND FIREFIGHTING PIPE

By

Dalia Said Mousa Mohamed Shahin

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
METALLURGICAL ENGINEERING

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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Title of Thesis:

Failure Analysis of Chain Conveyor link and Firefighting Pipe

Key Words:
Failure analysis; Fatigue failures; Casting Defects; Corrosion Failures; Microbiologically influenced Corrosion

Summary:

An application of failure analysis procedure was performed on two case studies. The first case is a chain conveyor link which broken in a brittle manner due to its brittle phase and presence of large portion of nonmetallic inclusions and linear defects which were a preferred site for fatigue crack initiation.

The second case is a fire water pipe which experienced a leakage. Analyzing the obtained data and results of performed examinations demonstrated that the cause of failure is a damage happened to the pipe lining which led to initiation of a corrosion pit and this localized corrosion was aggravated by microbiologically influenced corrosion, chloride ions and oxygen cell.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Dalia Said Mousa Mohamed Shahin Date: 24 / 8 / 2021

Signature:

Dedication

I dedicate this work to souls we have missed however they stay alive in our hearts

Acknowledgments

I sincerely gratitude my god who always been and still the main support of me, my family, my professors and everyone who taught me whatever a bit.