



LiftEx 2017

EXHIBITION | CONFERENCE | INNOVATION

Crane Rope Inspection and Discard - Magnetic Rope Testing

Barrie Mordue - Tensology Ltd

Why MRT?

- Signature trace
- Internal inspection
- External inspection (lubrication, dirt)
- Full length of rope
- Quantitative results (LMA)
- Permanent record/off-line analysis
- Legislation

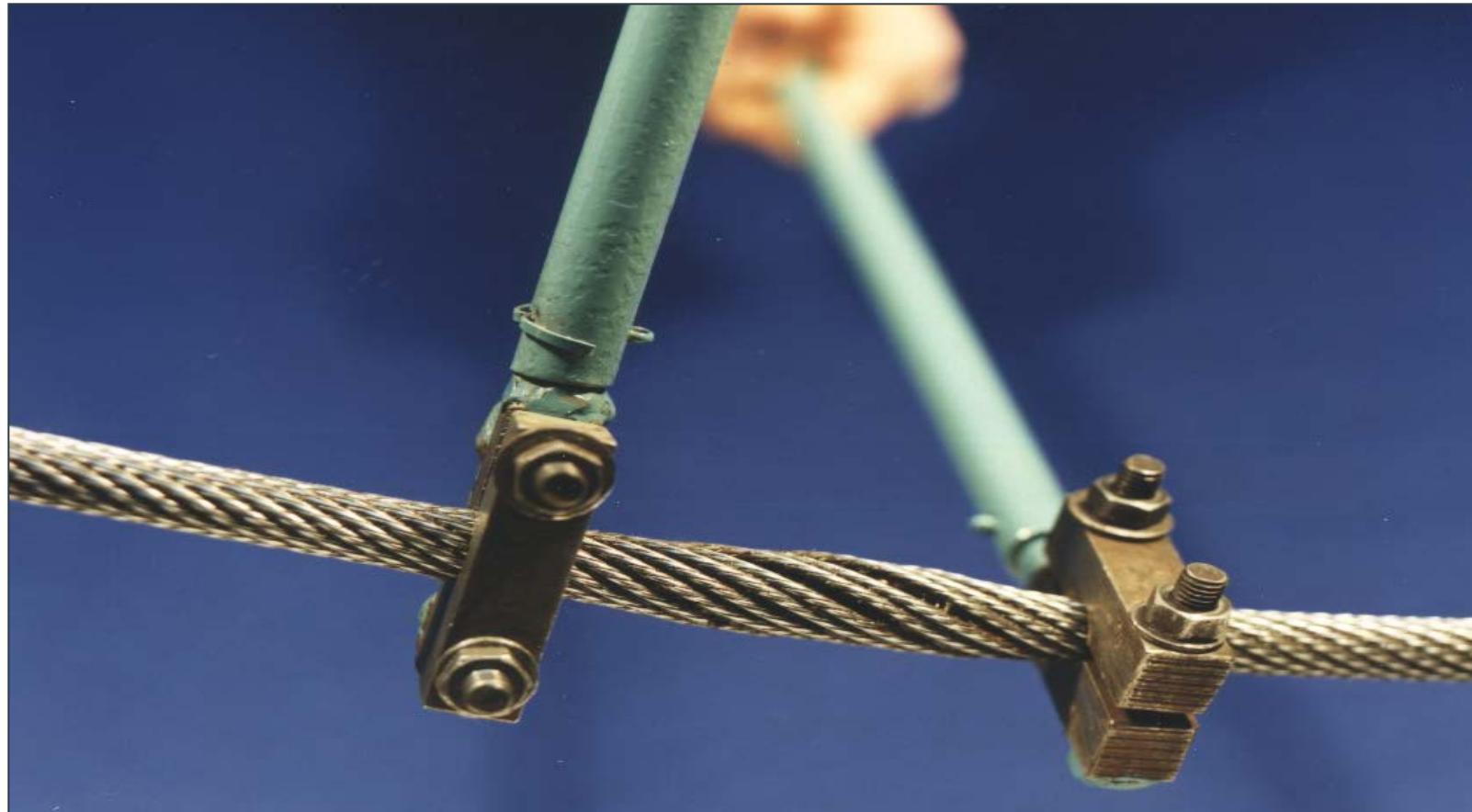




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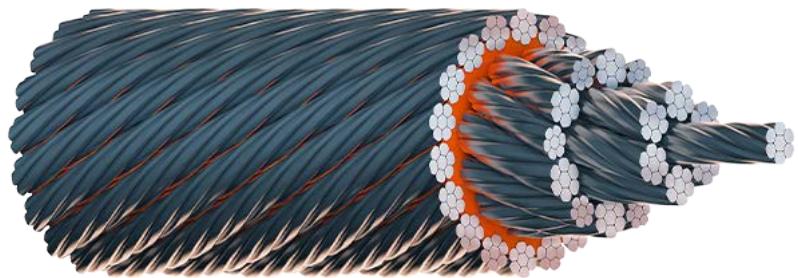
TENS
OLOGY



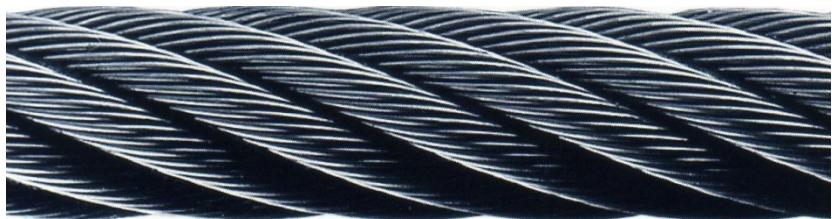
Traditional
internal
examination



Plastic impregnated or PFV ropes



Traditional
internal
examination



New/lightly
lubricated ropes



Used/Heavily lubricated ropes



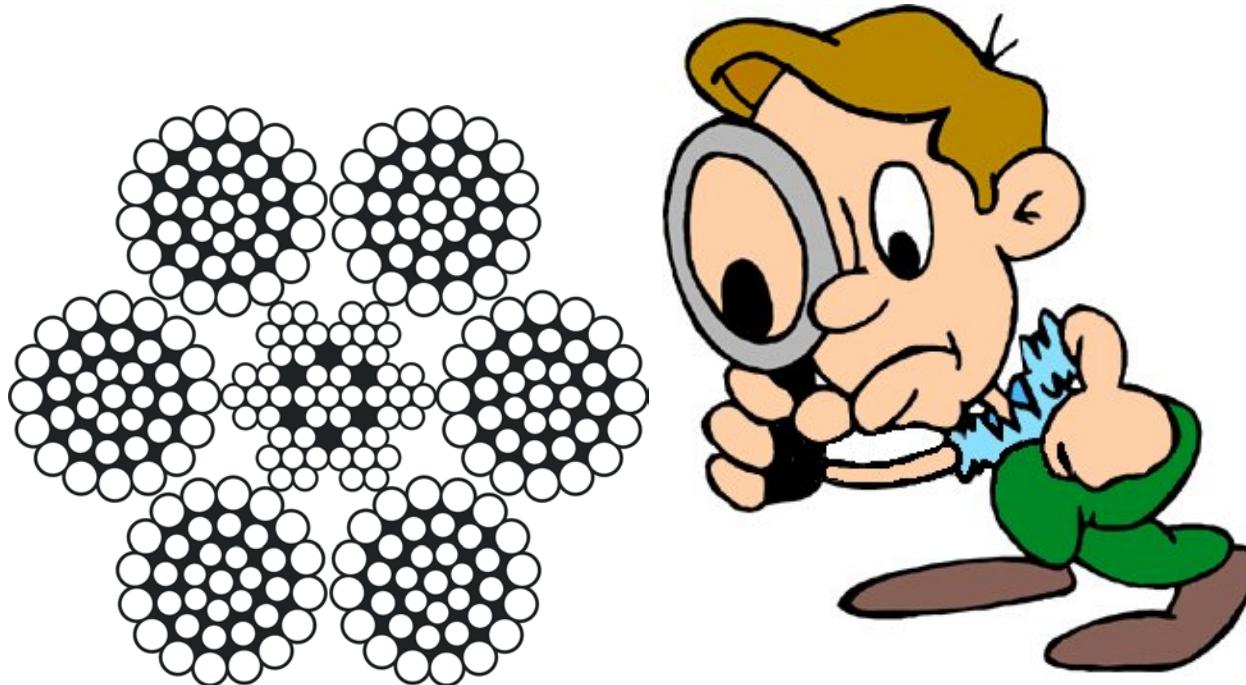
Traditional
external
examination



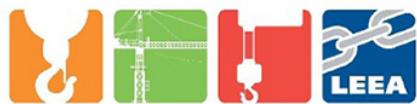
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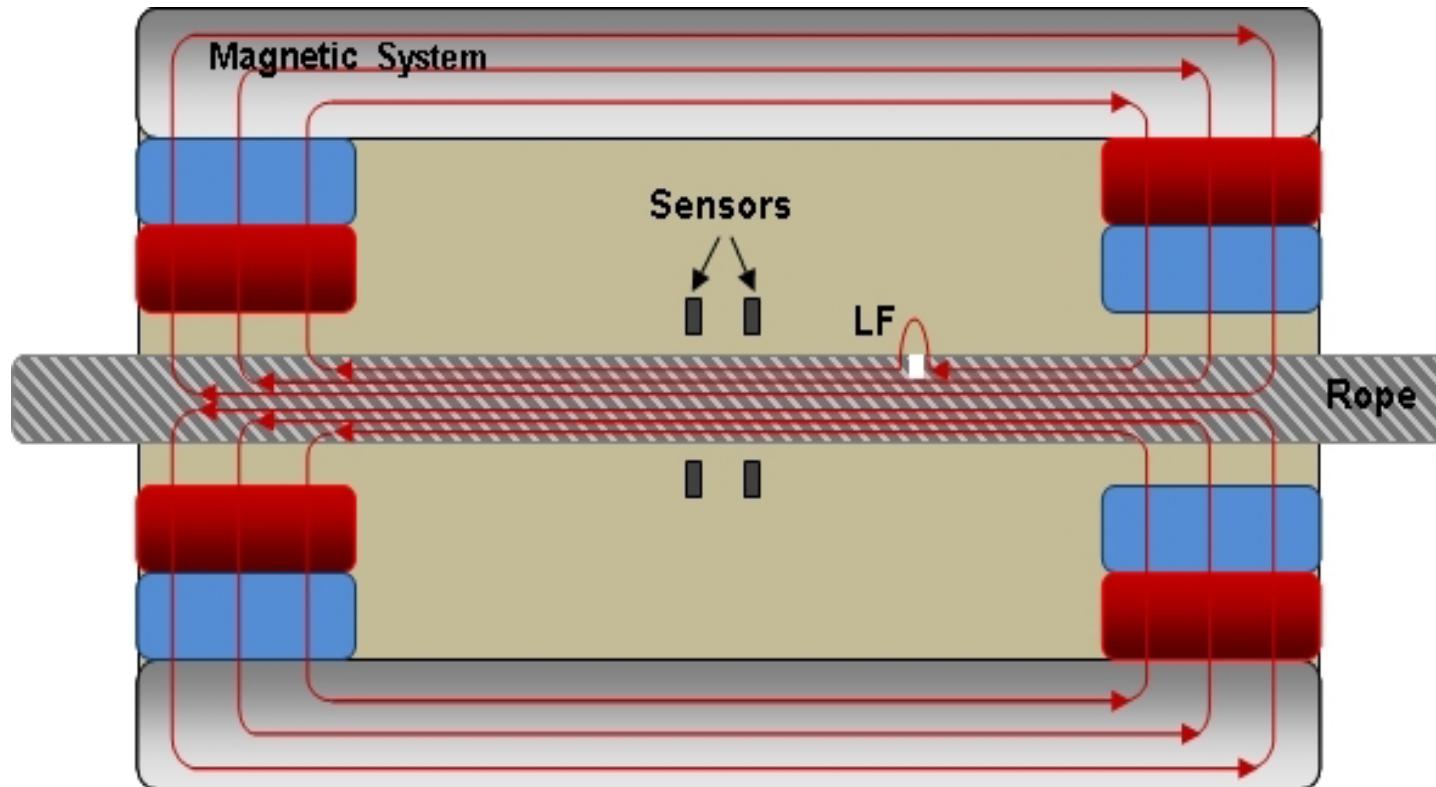
Traditional
external
examination



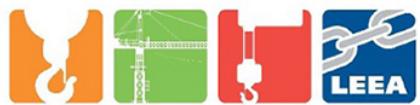
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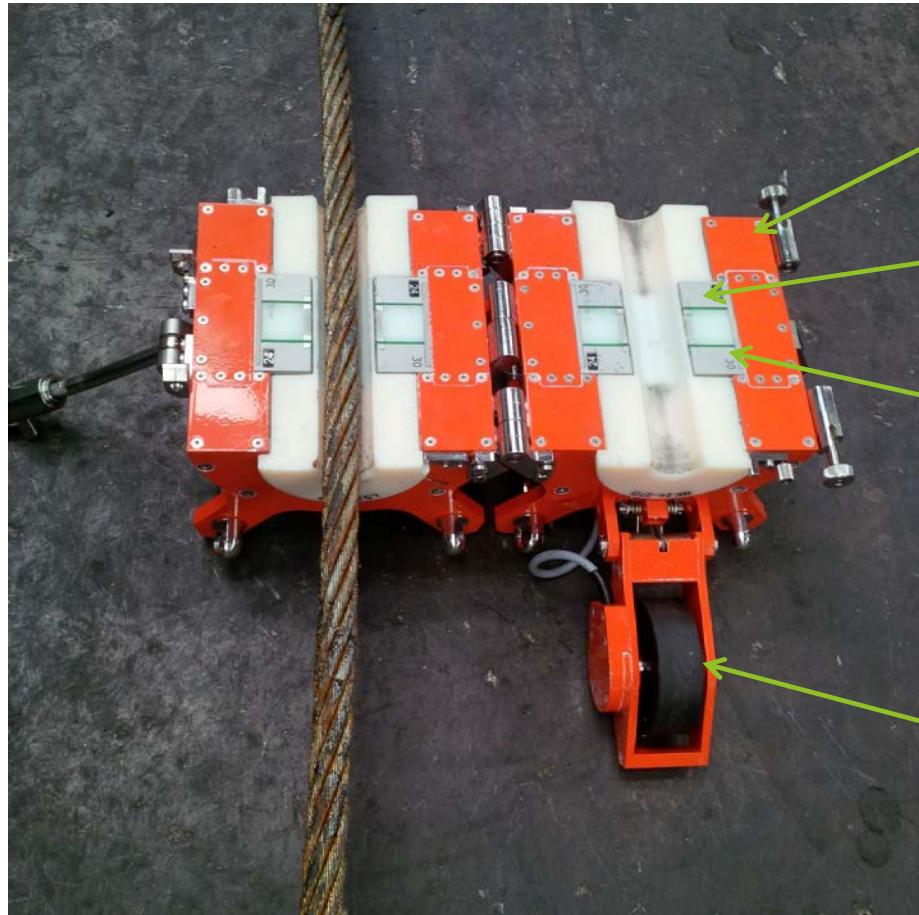


Magnetic Rope
Testing



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Powerful permanent magnet

High accuracy sensors

Dual function,
simultaneously detect LF
and LMA

Length measurement

Magnetic Rope
Testing



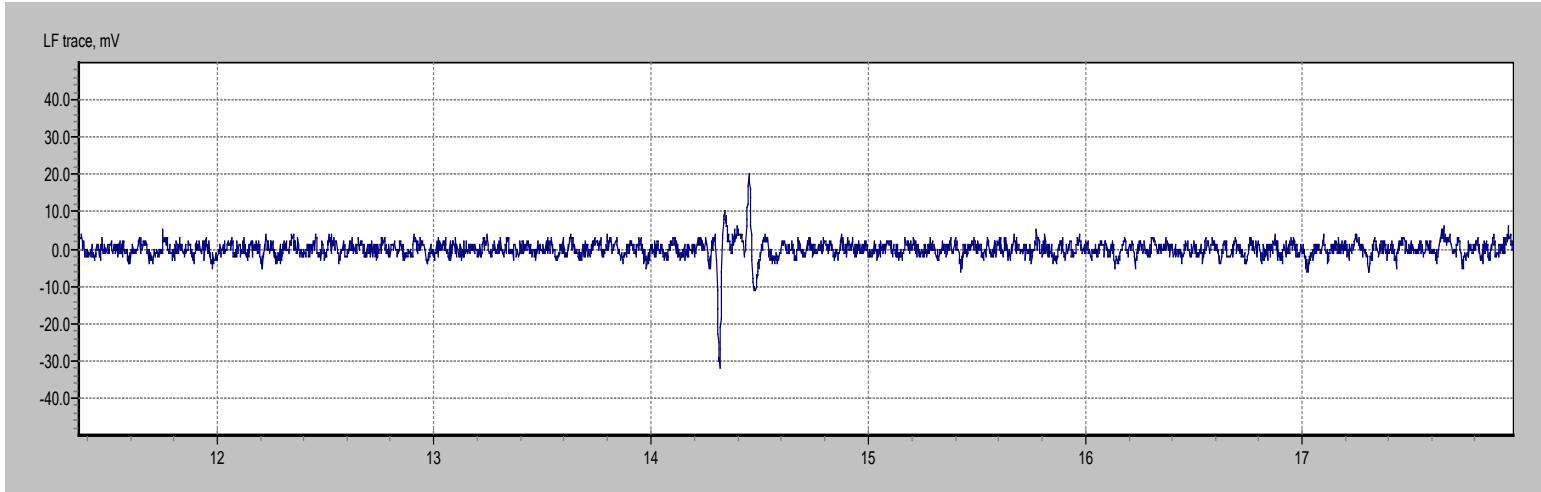
Analysis and
interpretation of
results

Real time viewing



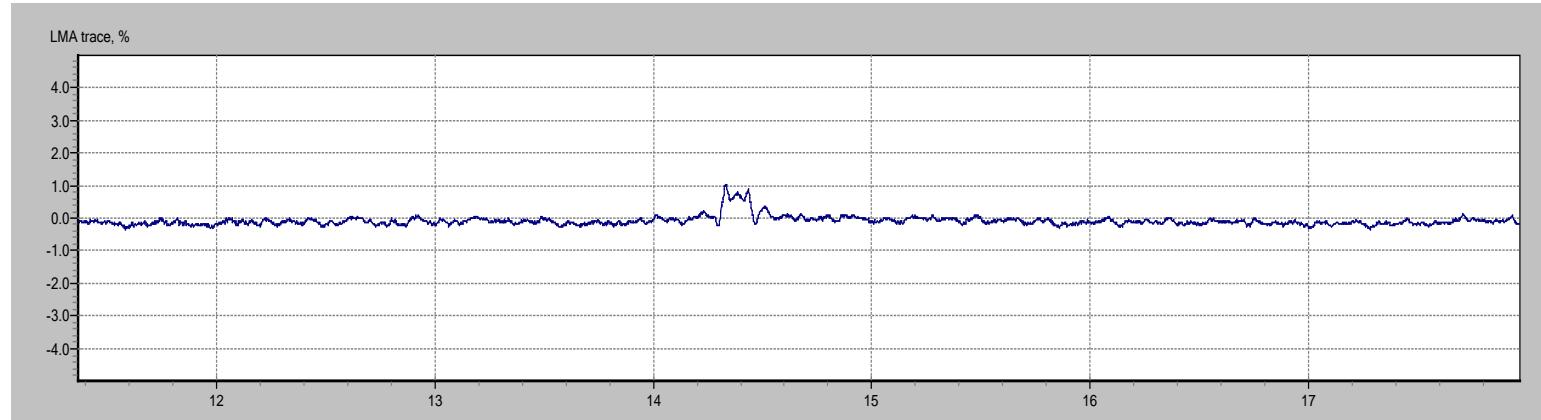
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Localised Faults (LF)



Output traces

Loss in Metallic Area (LMA)





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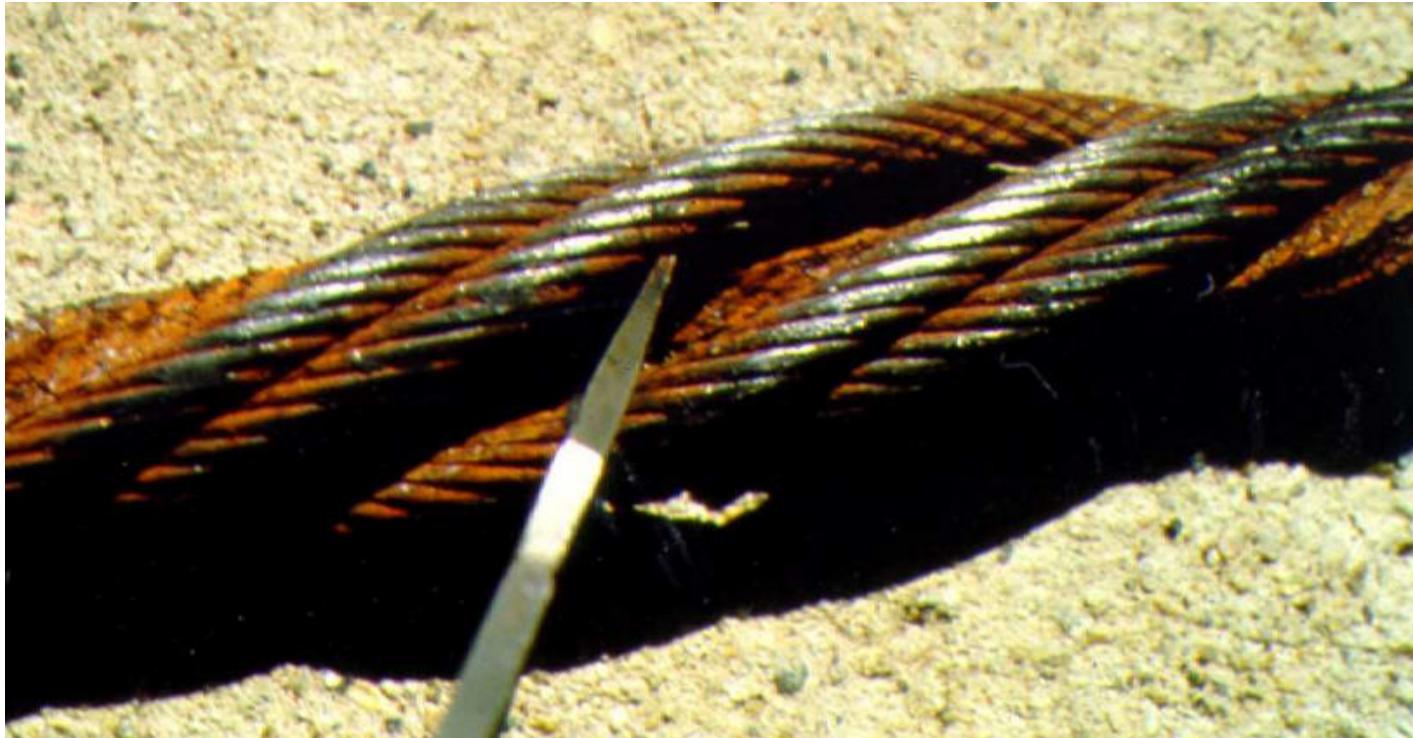
Signature trace



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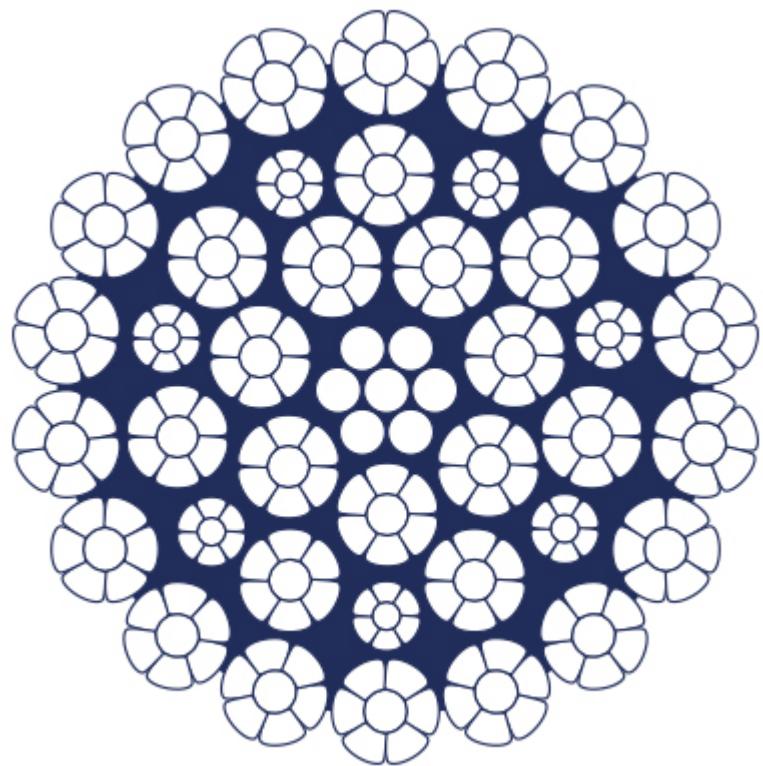
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MRT

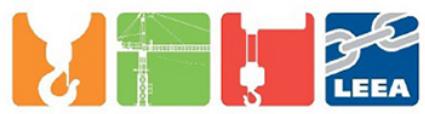
Internal
degradation



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MRT

Internal
degradation



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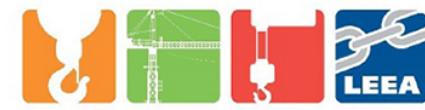
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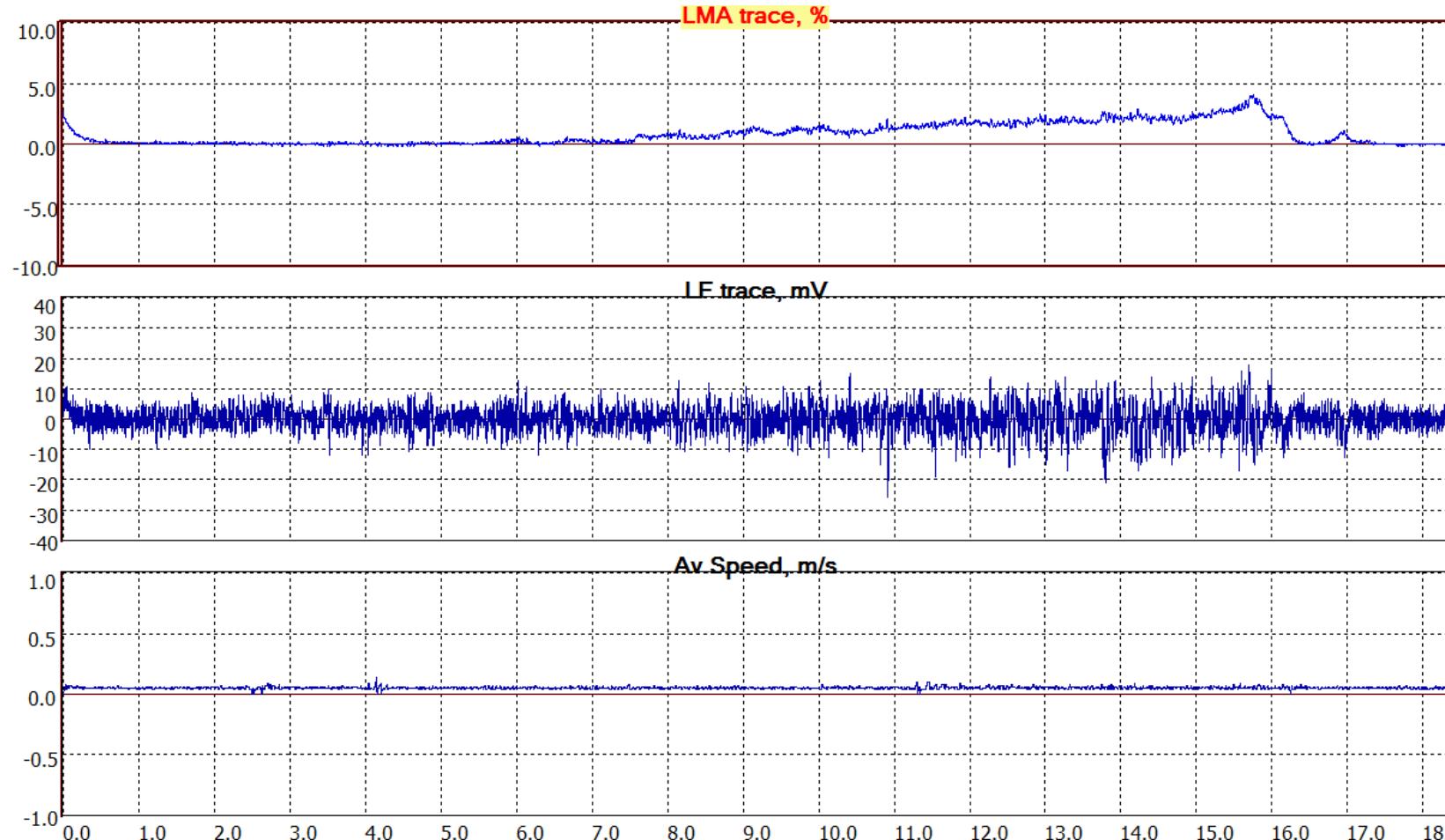
Fretting corrosion



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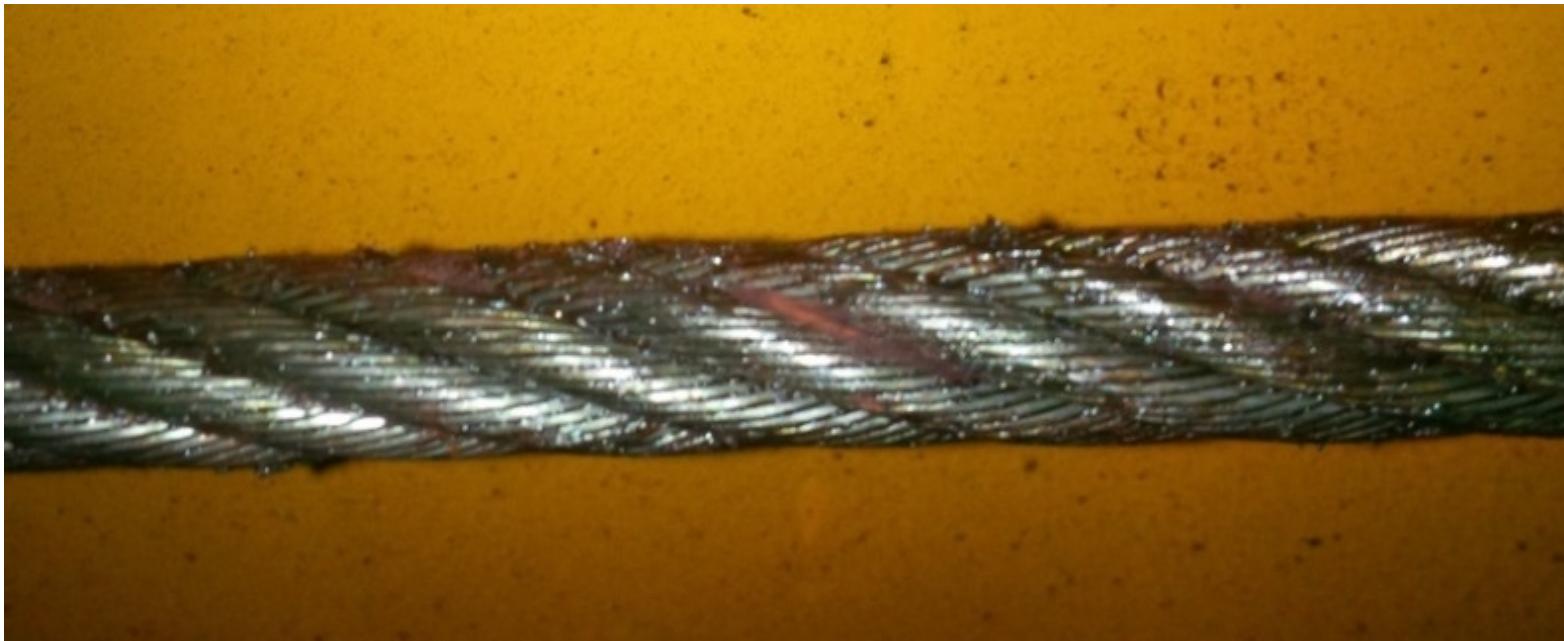


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Fretting corrosion



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Fretting corrosion



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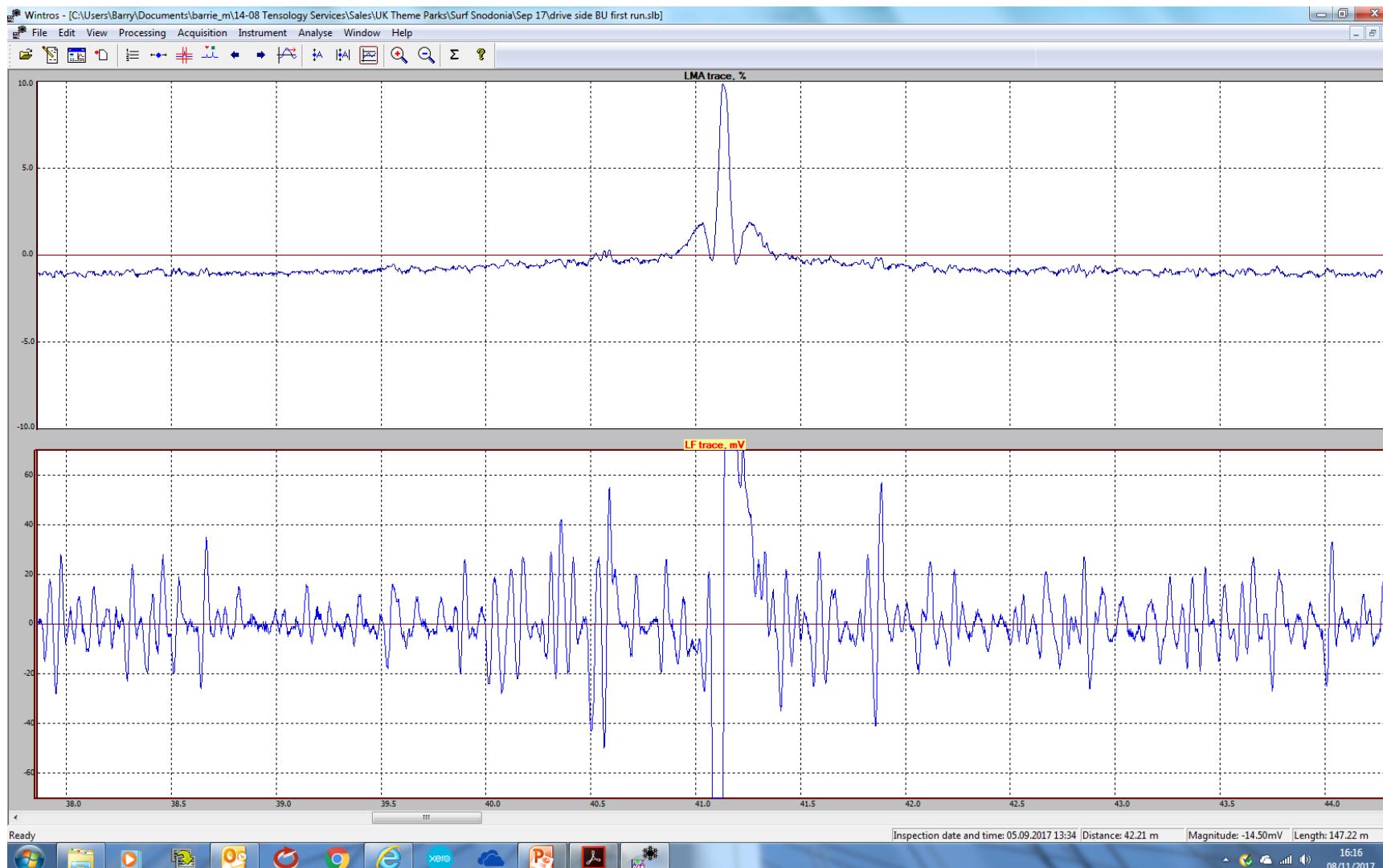
MRT

Core degradation



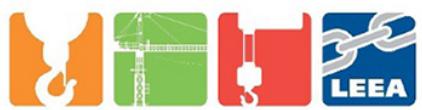
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Core degradation



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Core degradation

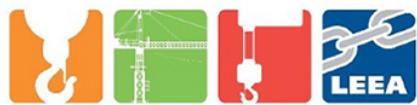


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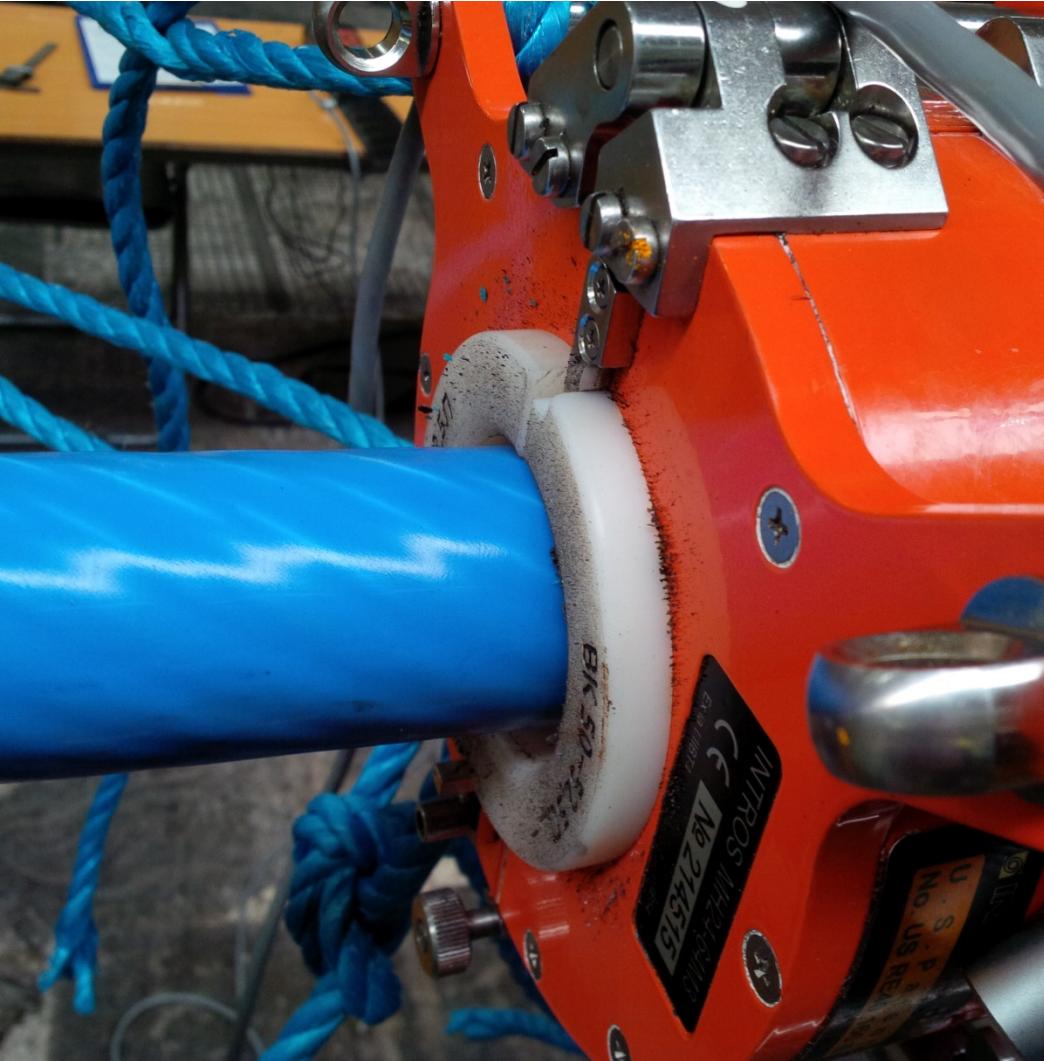
MRT

Core degradation



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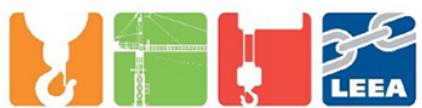
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Internal and
external
inspection



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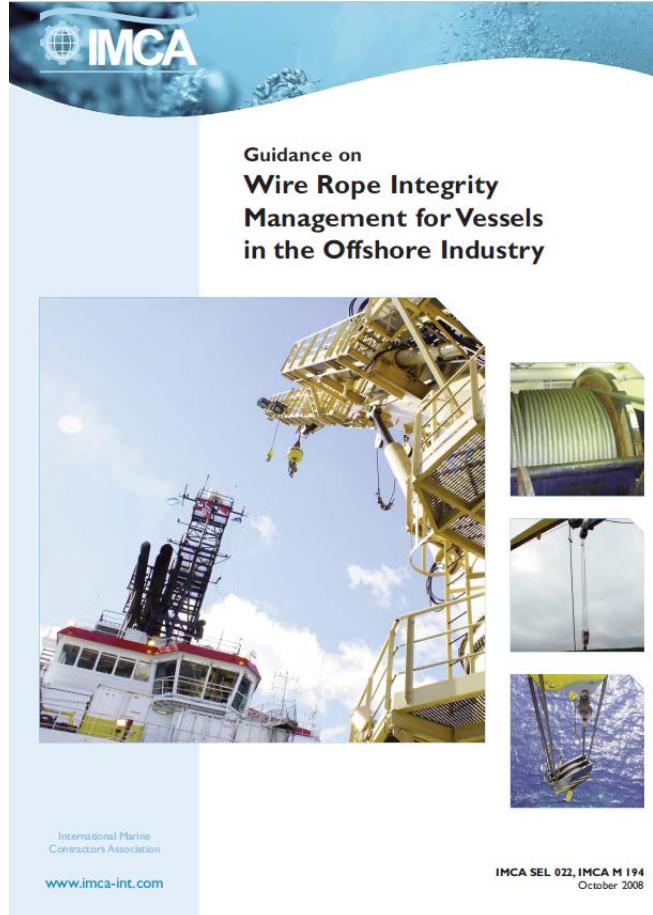
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Internal and
external
inspection



IMCA

Guidance on
Wire Rope Integrity
Management for Vessels
in the Offshore Industry

International Marine Contractors Association
www.imca-int.com

IMCA SEL 022, IMCA M 194
October 2008



Offshore lifting
ropes



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BRITISH STANDARD

BS EN
12927-8:2004

**Safety requirements for
cableway installations
designed to carry
persons — Ropes —**

Part 8: Magnetic rope testing (MRT)

The European Standard EN 12927-8:2004 has the status of a British Standard

ICS 45.100

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BSI
British Standards

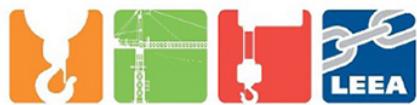
Cableway ropes
MRT



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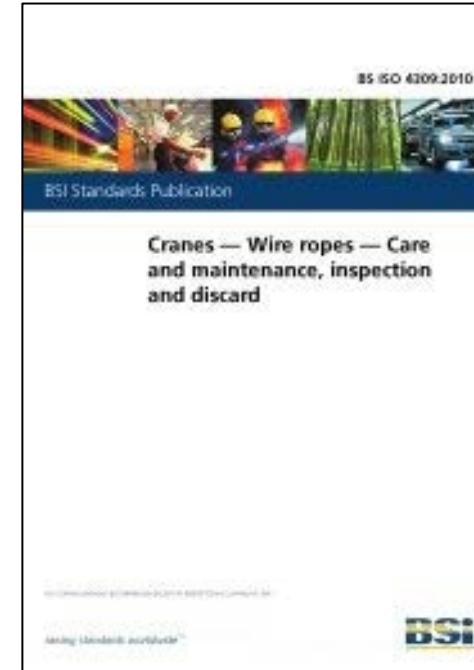
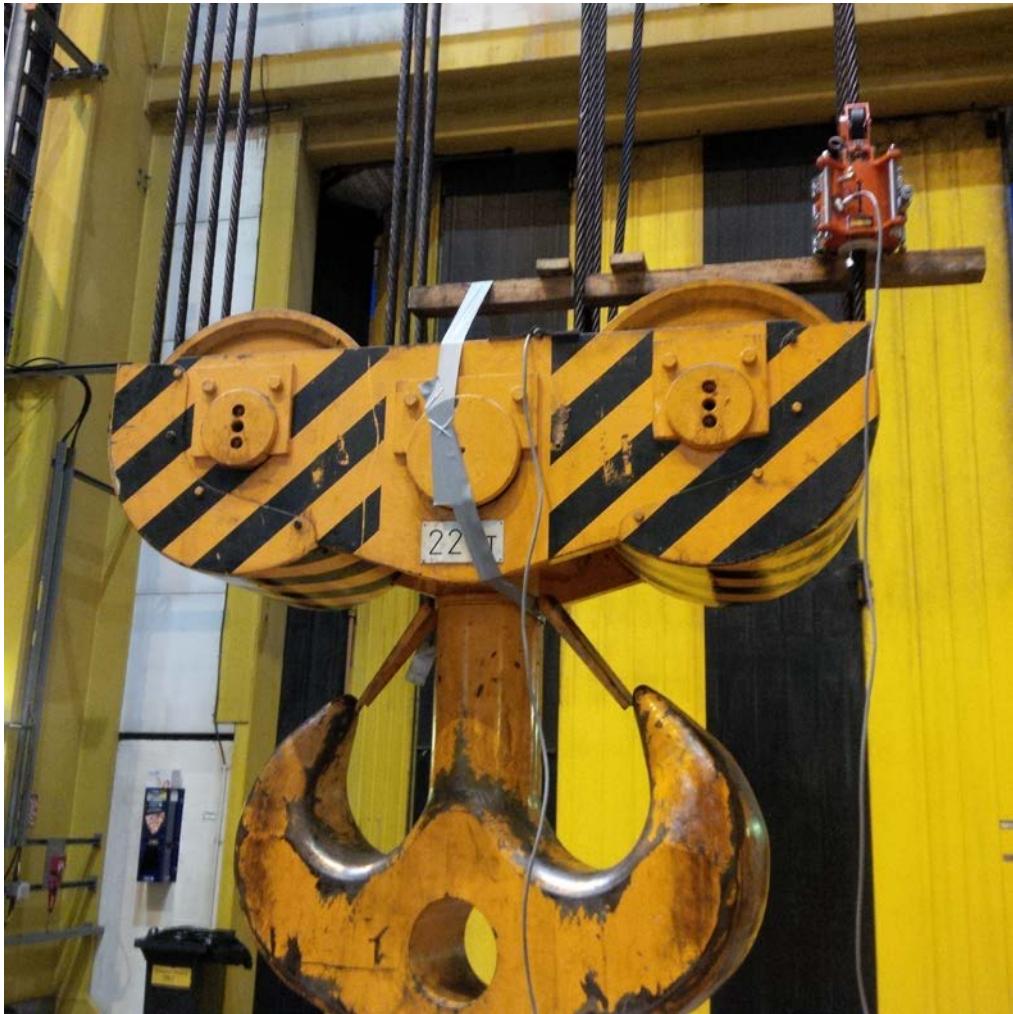


Mooring ropes



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Crane ropes

MRT - current use

- O&G
- Mining
- Aerial ropeways

MRT - future use

- As above +
- Rope factory (signature trace)
- Cranes (ISO 4309)
- Mooring ropes





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Thank you