Hoist Performance Fingerprint
Availability, Productivity and Safety
Hoist Performance Fingerprint
Underground mining service portfolio

Long-Term Service Agreement (LTSA)

Site audit

Inventory audit

Condition monitoring

Competence development

Evolution & upgrades

Long-term scheduled maintenance

Spare parts lists and kits

Periodic maintenance

Training partnership

Engineering, optimization & consulting

Long-term on-site support

On-demand spares

Troubleshooting

On-site

Extended start-up support

Emergency spares

Supportline

Classroom

On-demand service

Field services

Spare parts services

Remote services

Training services

Special services

Abb
Hoist Performance Fingerprint Concept

### Electrical Fingerprint

- Consists of high resolution data collected from over 20 pre-defined electrical points in the hoist system.
- Collected data form the backbone for further analysis and an associated comprehensive report.
- Provides information and evaluates:
  - Hoist normal operation; safety brake system; hoist supervision

### Mechanical Fingerprint

- A structured hoist equipment assessment tool to check all critical hoist components
- All gathered information and testing results are analysed and compared to best industry practices
- Results are compiled in a detailed report identifying gaps, possible risks and recommendations
Hoist Performance Fingerprint (HPFP) Concept

HPFP

Hoist performance baseline established
Hoist current equipment condition
Recommendations for improvements

Past
Now
Future
Hoist Performance Fingerprint
Your challenges

- Are you certain your hoist will stop safely?

- Is your hoist’s production cycle set at optimum rate?

- Do you know the performance of your individual brake units?

- Is your Maintenance budget reduced compared to previous years?

- Do you have all necessary skilled resources to maintain your mine hoist at its optimum level?
The Hoist Performance Fingerprint consists of mechanical and electrical inspections, represents a comprehensive hoist equipment condition assessment, as well as preventive maintenance program review, directly linked to increase productivity and safety.

ABB’s inspections cover the legislative requirements for the hoist owners in Canada, U.S.A. and Mexico regulated by the local mining authorities.

ABB is a service provider of both mechanical and electrical assessments

– one point of contact

Team work delivers better results due to seamless interaction between engineering fields

– better general overall hoist verification
Hoist Performance Fingerprint

How can this service help you?

The structured hoist equipment assessment and testing can identify:

- Compliance against local statutory requirements
- Shortfalls in preventive maintenance activities
- Shortfalls in required maintenance training
- Status of equipment life cycle
Hoist Performance Fingerprint
Where does it fit in your overall maintenance strategy?

- Total Hoist Management
- ABB System 800xA, Hoist Performance Monitoring Services
- Remote Performance Services, Hoist Performance Monitoring Scan, Equipment Upgrades & Optimisation
- Mechanical Fingerprint
- Electrical Fingerprint
- Maintenance trouble shooting and fault finding support
- Regular Maintenance performed by Customer’s technicians

Operational Excellence - Total Equipment Care
Total Equipment and Process Integration & Proactive Maintenance
Predictive Maintenance and equipment Life Cycle Analysis
Preventive Maintenance, Equipment Assessment and Mandatory inspections
Reactive Maintenance
Planned Maintenance

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# Hoist Performance Fingerprint

## Technical concept – Mechanical Fingerprint

<table>
<thead>
<tr>
<th>Check of:</th>
<th>Result</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brake test at emergency stop</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Retardation performance.</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Brake test, test functions</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Air gap brake units</td>
<td>OK</td>
<td></td>
</tr>
</tbody>
</table>

![Diagram](image.png)
Hoist Performance Fingerprint
Technical concept – Electrical Fingerprint

<table>
<thead>
<tr>
<th>Check of</th>
<th>Result</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revolution / Hoist Speed</td>
<td>OK</td>
<td>2.3.1.1</td>
</tr>
<tr>
<td>Retardation</td>
<td>OK</td>
<td></td>
</tr>
<tr>
<td>Brakes in normal Operation (Start/Stop)</td>
<td>FAULT</td>
<td>2.3.1.2</td>
</tr>
<tr>
<td>Motor Current / Normal Operation</td>
<td>REMARK</td>
<td>2.3.1.3</td>
</tr>
<tr>
<td>Performance check on Hoist cycle</td>
<td>OK</td>
<td>2.3.1.4</td>
</tr>
<tr>
<td>Hoist Weight balancing</td>
<td>OK</td>
<td>2.3.1.5</td>
</tr>
<tr>
<td>PG / TG</td>
<td>OK</td>
<td>2.3.1.6</td>
</tr>
<tr>
<td>Brake Test at Emergencystop</td>
<td>FAULT</td>
<td>2.3.1.7</td>
</tr>
</tbody>
</table>

**Pressure not decreasing when Valve 132 set to off (0V) shows that Setting of valve are wrong or valve not working properly**

**Pressure already at test pass value when execute of system test, not certain if valve are working as expected**
Hoist Performance Fingerprint
Execution

**Action**

**Report**
- Gap analysis
- Action plan

**Interpret**

**Analyze**
- Standard methodology
- Best industry practices
- Analysis expertise
- Performance visualization

**View**

**Collect data**

**Assessment**
- Mechanical & Electrical inspections/testing
- Hoist parameters
- Customer interview
- Local regulations

**Report**

**Performance evaluation**
- Benchmark
- Findings
- Recommendation

**People**
- Process
- Tools

**Equipment**
- Condition assessment

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Hoist Performance Fingerprint
Information flow
Hoist Performance Fingerprint
Your benefits

- Hoisting equipment assessed against the local statutory requirements
- Reduced downtime as inspections are done simultaneously
- Engineering and reliability approach to equipment testing/assessing
- Periodical equipment assessment and testing
- Comprehensive written report contains recommendations to increase overall equipment performance and safety
- The report can be used as
  - Statutory document
  - Maintenance planning
  - Maintenance budgeting
- Technical support available between the assessments
- Reliable service partner who knows your equipment
Hoist Performance Fingerprint
Inspection reference list

- BHP Billiton Cannington, friction hoist, Qld, AU
- BHP Billiton Leinster, double drum hoists, WA, AU
- Glencore CSA Mine, friction hoist, NSW, AU
- Anglo American Coal, Grasstree Mine, double drum, Qld, AU
- Bluestone Mines Tasmania, Renison mine friction hoist, Tas, AU
- New Boliden, Garpenberg mine, friction & single drum hoists, Sweden
Hoist Performance Fingerprint
You want to know more?

We would be happy to assist you with your inquiry:

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