

Tire Manufacturing Industry

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Vibration program using SmartCBM® identifies Mixer Motor critical bearing replacement



50+ hours of unplanned downtime avoided plus no collateral damage

OBJECTIVE

Ensure maximum mixer performance through condition monitoring technologies and eliminate risk of catastrophic failures

OVERVIEW

- After maintenance work was performed on the coupling, vibration readings were collected to ensure proper installation
- Using a vibration analyzer our analyst identified bearing degradation on the outboard bearing
- Our analyst generated a fault in SAP using our SmartCBM® program
- The motor is planned for shutdown to repair

ENABLING TECHNOLOGY AND PEOPLE

- Vibration data analyzer used to take direct vibration measurements
- Data analysis by Allied reliability analyst
- Reporting and data management using SmartCBM

Multi-CBM technologies identify motor replacement for Mixer Motor Blower >> Motor



50+ hours of unplanned downtime avoided plus no collateral damage

OBJECTIVE

Maximize use of CBM technologies to confirm and corroborate electric motor issues

OVERVIEW

- During a routine infrared inspection, a mixer motor was identified as running with a high temperature
- Using a vibration analyzer our analyst identified potential issues with the rotor and stator
- Our analyst confirmed motor problems using motor circuit analysis and generated a fault in SAP using our SmartCBM® program to replace motor
- The motor was replaced during shutdown

ENABLING TECHNOLOGY AND PEOPLE

- IR camera ,Vibration data analyzer and off-line motor test analyzer were used to confirm electrical issues with motor
- Data analysis by Allied reliability analyst
- Reporting and data management using SmartCBM

Infrared technology identifies lubrication issues of outboard bearing in Mixer Motor Blower >> Fan



8 hours of unplanned downtime avoided plus no collateral damage

OBJECTIVE

Use mechanical infrared technology to identify potential mechanical issues in rotating equipment to mitigate failures

OVERVIEW

- During a routine infrared inspection, a mixer motor blower fan was identified as running with a high temperature on outboard bearing
- Work order was issued to check the lubrication auto-lube device. It was verified that bearing was insufficient lubrication.
- Corrective work was performed, and bearing was back to normal preventing an impending bearing failure.

ENABLING TECHNOLOGY AND PEOPLE

- IR camera used to detect high bearing temperature
- Data analysis by Allied reliability analyst
- Reporting and data management using SmartCBM®

Oil analysis identifies contaminated oil in profile extrusion gearboxes



20+ hours of unplanned downtime avoided plus no collateral damage

OBJECTIVE

Use oil analysis to identify early issues with lubrication oil in gearboxes to prevent more significant undetected failures

OVERVIEW

- During a routine sampling and analysis of several gearboxes in the profile extrusion area, significant oil contamination was detected
- Work order was issued to check oil and filter or replace as needed.
- Corrective work was performed to filter oil back to ISO standards. Work completed preventing accelerated damage to gearboxes

ENABLING TECHNOLOGY AND PEOPLE

- Lubrication oil analysis
- Data analysis by Allied reliability analyst
- Reporting and data management using SmartCBM®

Oil and vibration analyses identify bearing defect on intermediate shaft bearing of mixer gearbox



20+ hours of unplanned downtime avoided plus no collateral damage

OBJECTIVE

Use oil and vibration analysis to identify early issues in gearbox to prevent more significant undetected failures

OVERVIEW

- During routine sampling and analysis of the mixer gearbox increasing iron levels indicated a problem
- Vibration analysis confirmed that a bearing defect on the inner race of the outboard bearing of intermediate shaft had a defect
- Work order was issued to replace bearing and clean oil
- Corrective work was performed to filter oil back to ISO standards and bearing replaced. Work completed preventing accelerated damage to gearbox

ENABLING TECHNOLOGY AND PEOPLE

- Lubrication oil and vibration analysis
- Data analysis by Allied reliability analyst
- Reporting and data management using SmartCBM®

Infrared technology detects failing motor starter in the profile extrusion area Hydrotherm Head Pump >> Motor Starter



6 hours of unplanned downtime avoided plus no collateral damage

OBJECTIVE

Use infrared technology to detect electrical failures identify early issues in electrical equipment such as motor starters

OVERVIEW

- During routine infrared scanning high temperatures were detected on the motor starter for the head pump
- Work order was issued to inspect starter connections and parts
- Corrective work was performed to replace contactor, tighten connections and replace overload fuses

ENABLING TECHNOLOGY AND PEOPLE

- Infrared camera
- Data analysis by Allied reliability analyst
- Reporting and data management using SmartCBM®

Vibration monitoring identified a column bottoms pump motor with damaged bearings requiring replacement of motor



12 hours of unplanned downtime avoided plus no collateral damage

OBJECTIVE

Use vibration monitoring technology to detect failures in equipment

OVERVIEW

- During routine vibration monitoring a bearing defect was identified in a columns bottom pump motor
- Allied analyst recommended motor replacement upon inspection and initiated a work request
- Corrective work was performed to replace motor

ENABLING TECHNOLOGY AND PEOPLE

- Portable vibration data analyzer
- Data analysis by Allied reliability analyst
- Reporting and data management using SmartCBM®

Vibration monitoring identified an intermediate shaft problem in a gearbox for a blend transfer pump



12 hours of unplanned downtime avoided plus no collateral damage

OBJECTIVE

Use vibration monitoring technology to detect failures in equipment

OVERVIEW

- During routine vibration monitoring of the gearbox, indication showed damage of intermediate shaft
- Allied analyst recommended gearbox replacement and initiated a work request
- Corrective work was performed to replace gearbox

ENABLING TECHNOLOGY AND PEOPLE

- Portable vibration data analyzer
- Data analysis by Allied reliability analyst
- Reporting and data management using SmartCBM®