



# Aladon

The Risk & Reliability

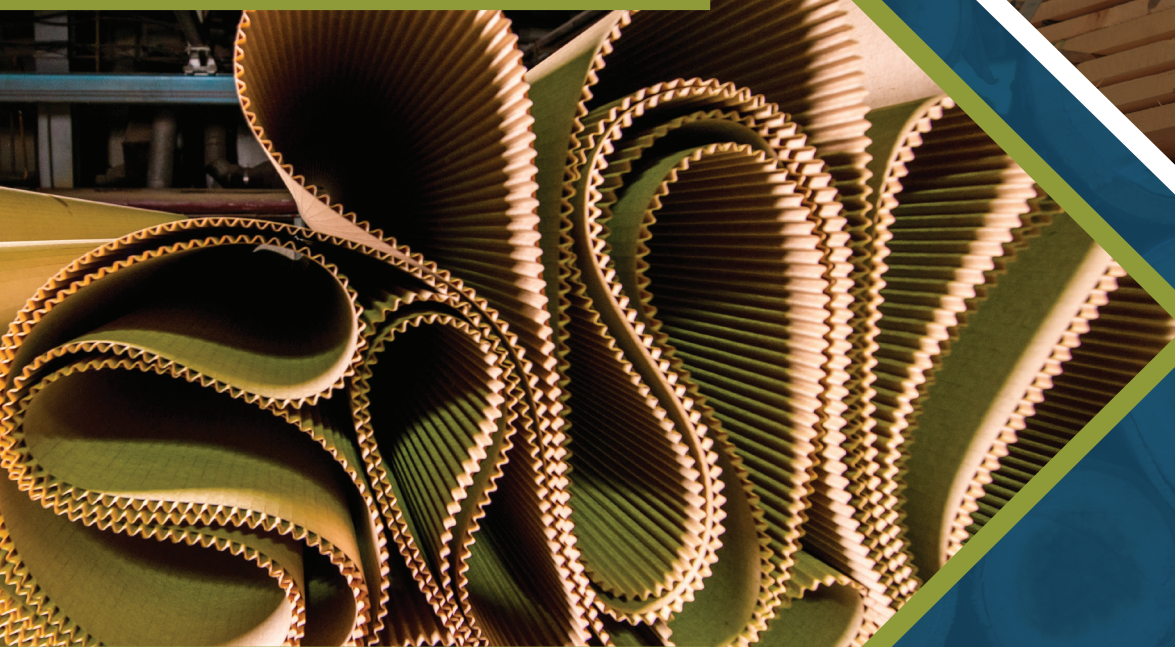
GLOBAL NETWORK

## RCM FOR FOREST PRODUCTS

### RISK AND RELIABILITY-BASED SOLUTION

World-Class Training and Consulting Services for Forest Product Industry

Best Practices and Templated Solutions



[www.aladon.com](http://www.aladon.com)

## FOREST PRODUCT-CENTRIC RELIABILITY CENTERED MAINTENANCE

Aladon and the Aladon Network have been assisting customers improving reliability of their physical assets for more than 30 years. The Aladon Network has implemented RCM2™ on all continents in every endeavor known to mankind and are now using that experience to offer industry-centric solutions. The Aladon industry-centric RCM solutions are based on years of experience implementing RCM and reliability improvement programs in specific industries. The Aladon track record in forest products speaks volumes and includes references from all commodity and commercial grades. Aladon understands the challenges faced by the forest product industry and what it takes to be competitive. Our new Industry-centric programs offer a comprehensive experienced-based solution to expedite the implementation of an RCM-based reliability program.

### THE ALADON FOREST PRODUCT-CENTRIC RCM PROGRAM OFFERS THE FOLLOWING:

- *Standard Operating Philosophy Templates* that cover most aspects of manufacturing
- *Equipment Reliability Templates* for physical assets used in manufacturing and treatment
- *Best Practice Maintenance and Operating Strategies* based on comprehensive industry experiences and latest technologies (Continuous Monitoring, Predictive Analytics, Interconnectivity)
- *Implementation and Sustaining Results*

**THE STANDARD OPERATING PHILOSOPHY TEMPLATES** contain information used to develop the Customer-specific Operating Context, thus saving time and money. It is an essential and very important part of the RCM process and the template provides the basic information required to develop the Operating Context. The templates are developed for specific processes in manufacturing and treatment and is based on generic process design and regulatory standards. It includes equipment and process specific templates (washer, vacuum drums, rolls, chip conveyor, ash handling, etc.) and process (logistics, inventory management, spare parts management, testing, quality control, etc.) information. We work with some of the world's largest Pulp, Paper, Tissue and Forest Products producers.

Our experience has shown that regardless of where we implement RCM in forest product industry, our customers all use the same or similar equipment to do the same or similar jobs. We have collected information on these assets over many years and used it to develop the **EQUIPMENT RELIABILITY TEMPLATES**. These templates do not replace our “zero-base” approach for doing RCM, but it is valuable for ensuring equipment reliability programs are derived from not only the experience of the people who know the equipment best (operators and maintainers), but also the experience from peers in the same and like type industries. Our comprehensive template library includes the majority (if not all) of the equipment used today. The templates are comprehensive, including multiple and different types of assets.

The **BEST PRACTICE MAINTENANCE AND OPERATING STRATEGIES** are based on the experience we gained working with the many Pulp, Paper, Tissue and Forest Product producers of leading brands around the world. Our global Network of Practitioners have worked in all industries, including Pulp, Paper and Tissue before joining the Aladon Network and are available to help your organization. The templated solutions and strategies are based on specific Operating Context and equipment specific information and must not be implemented without proper review. The templates are continuously updated and provide our customers a technical base for verification and making sound decisions. The templates include the newest technology information and are especially useful for sustaining Operations and for developing **OPERATOR DRIVEN RELIABILITY PROGRAMS**. A key principle to Aladon has been to capture the knowledge of the aging workforce and synthesize that knowledge so that it can be passed down to the next generation. Our use of templates facilitates that knowledge transfer.



**IMPLEMENTATION AND SUSTAINING RESULTS** are probably the largest challenge faced by any organization embarking on a reliability improvement program. The biggest downfalls are the lack of executive sponsorship and proper Change Management. The Aladon methodology is focused not only on changing the way maintenance is being done, but also changing the minds of the people involved.

Our award-winning approach starts by introducing the concept of Reliability Centered Maintenance to the executives and senior managers to obtain the necessary support and sponsorship. Our systematic approach continues by involving engineers, maintainers and operators (and anybody else who is involved in the process) who ultimately will be responsible for the implementation and sustaining the results.

Our training programs provide the necessary change management to develop a reliability culture within the organization while our world-class software provides the platform and framework for sustainable results.

### **THE ALADON FOREST PRODUCT-CENTRIC RCM PROGRAM PROVIDES:**

- Forest Product specific overview and training sessions - available in Multiple Languages
- Forest Product specific Operating Philosophy and Equipment Reliability Templates
- Forest Product specific RCM training material and worked case studies
- RCM manual (in book format soon) specific to the Forest Product Industry
- World-class consulting services from experienced Network members
- Advanced software for effective and efficient RCM facilitation and sustainable implementation of the results

### **THE ALADON ADVANTAGE TO FOREST PRODUCT-CENTRIC RCM PROGRAM IS:**

- Extensive experience in implementation of reliability improvement programs with specific industry focus and content
- A well-documented methodology for improving maintenance and operations with proven results
- Sharing in the experience of others in Forest Products from around the world
- A pragmatic approach to ensure effective use of resources
- Software to capture institutional knowledge and ensure sustainable results
- Template library for verification and guidance





Our clients who have adopted a reliability culture will have access to the templates for hundreds of pieces of equipment. The templates assist our clients in accelerating the implementation of an RCM-based reliability program and further provide them with the information for verification and guidance to ensure failure modes, effects and failure management best practices are consistent with the industry.

The screenshot displays the RCM3™ Information Worksheet software interface. On the left, a 'Location Tree' lists various failure modes for a 'BELT CONVEYOR (BELT CONVEYOR)', including '1 - DRIVE MOTOR TRIPPED', '2 - MOTOR BEARING SEIZED', '3 - STARTER CONTACTS BURNT', '4 - MOTOR INSULATION BREAKDOWN', '5 - ELECTRICAL CONNECTION LOOSE', '6 - ELECTRICAL CONTACTORS BURNT', '7 - BELT TORN', '8 - GEARBOX WORN', '9 - GEARBOX MOUNTING BOLTS FAILED', '10 - GEARBOX SEIZE', '11 - MOTOR OUTPUT SHAFT COUPLING', '12 - GEARBOX OUTPUT SHAFT COUPLING', '13 - EMERGENCY STOP ACTIVATED', '14 - DRIVE PULLEY BEARINGS WORN', 'B - Fails to convey material at the required rate', '1 - PULLEY LAGGING WORN', 'C - Fails to contain the material without spillage', '1 - BRACKETS DEFLECTED', '2 - BELT HOLED', '3 - CHUTE LINERS WORN', and '4 - BELT TORN'. The right pane shows the 'Information Worksheet' for the selected location, with fields for 'Analysis Location ID' (BELT CONVEYOR), 'Function' (1 - To convey material to next conveyor), 'Failed State' (A - Fails to convey at all), 'Failure Mode Cause' (1 - DRIVE MOTOR TRIPPED), 'FM Location ID', 'Local Effect' (Material dust can build up on motor fins...), 'Next Higher Level Effect' (Conveyor will stop in fully loaded condition), and 'End Effect' (Conveyor will stop in fully loaded condition...).

The above example is a template for the RCM3™ Information Worksheet. Our comprehensive approach has been developed over 30-years of industry experience working with companies in all industries. The templates are available in our software for use by qualifying customers.

