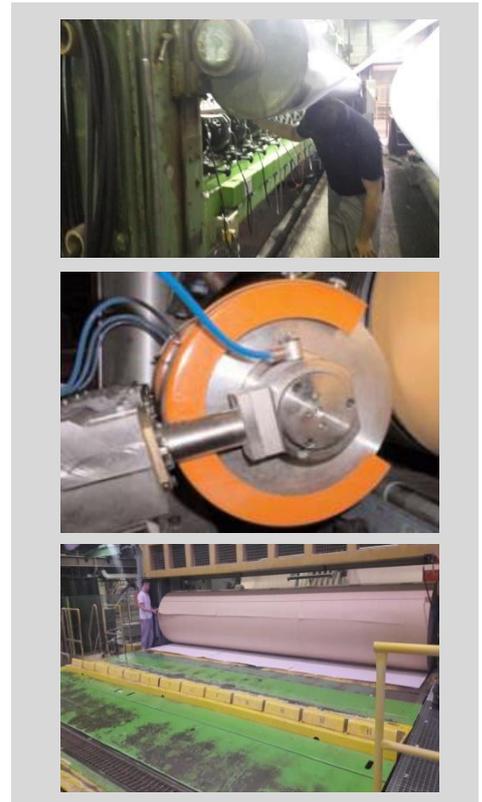




## Safety requirements for re-winder areas



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## Scope

This practice note applies to all Mondi paper mills. All mills are to assess their associated risks and develop plans to implement the requirements listed in this practice note.

The re-winder area starts at the loading area for the threading process and ends with the ejection of and final manipulation of the cut reels. If additional hazards exist, the scope needs to be extended based on a risk assessment approach.

## Objective

The objective of this Practice Note is to standardise the minimum requirements for re-winder areas across all Mondi operations.

All mills are to adhere to the minimum requirements within five years (end 2022). The relevant BU CEO and/or COO shall approve any exceptions of the requirements as listed in this practice note.

## Tasks and hazards

1. Tasks conducted at the pope reel area include:
  - Tambour loading
  - Clean and prepare the mother reel area
  - Set up the slitter knives
  - Clean the slitters in case of web brake
  - Maintain the slitters (replacement)
  - Core feeding (manual)
  - Preparation of the web connection for threading
  - Threading the paper web from mother reel into the re-winder
  - Pull out of the web on full width
  - Cut of the paper web on full width
  - Stick / glue of the paper to the core
  - Visual control of the slitting and re-winding pattern
  - Detecting defects (holes)
  - Slitting adjustment and removing wrinkles
  - Winding up in case of web break:
    - Broke cleaning
    - Re-threading
    - Straight cut of the paper web
    - Connect the paper web with the roll by tape
  - Release of the rolls from the re-winder
  - Tape the sheet to the roll



- Split reel into rolls
- Manipulate rolls (including thin side runs) into storage or re-pulping

## 2. Main hazards at the re-winder area include:

- Suspended loads
- Falling objects (including flip over of thin side runs)
- Squeezing between reels etc.
- Nip points
- Contact with sharp edges (slitting knives, knives, paper and the re-winder construction)
- Moving and rotating equipment
- Conducting work on step ladders
- Pressurised air and/or hydraulic systems (sudden ejection of the cores, etc.)
- Flying paper and broke
- Crushing by the ejection table (raising/lowering)
- Usage of manual instruments (hammer and chock for reel splitting, etc.)
- Exposure to transport system (floor conveyer, forklifts, etc.)
- Trips and falls

## Minimum requirements

The following requirements are based on the elements of the hierarchy of controls, being substitution, engineering controls, administration and personal protective clothing and equipment.

### 1. Elimination

The present risks shall be eliminated as follows:

- Standstill of the re-winder must be ensured if the core is fed directly in between the rolls (elimination of nip points);
- Standstill of the re-winder must be ensured whilst connecting the paper web to the core during threading process (elimination of nip points).

### 2. Substitution

The present risks shall be substituted as follows:

- The re-winder's rider roll must be in open position while performing slitting task on crawl speed after web break (elimination of nip points);
- Certified vinyl hammer and chock shall be used to perform the reel split after ejection from the re-winder;
- In order to avoid manual pushing of the cut reels, easy movers shall be used to fulfil the work task;
- Collective mechanized transport (forklifts, crane, etc.) of the side runs must be ensured (to guillotine, etc.) in order to minimize the manual handling and possibility of them falling.



### 3. Engineering controls

In order to reduce the risk levels to an acceptable level, the following is required to provide suitable protection of personnel:

#### a. Access to tambour loading area

- The tambour loading area must be fully fenced off and equipped with interlock and or loading area detection by sensors, ensuring there is no access possible to this no-go area during loading operations;
- Clear view for the crane operator must be ensured even in “blind spots” of the loading area by usage of camera systems with monitor.

#### b. Maintenance of slitting knives

- The knives area must be fully fenced and interlocked ensuring standstill of the re-winder when maintenance of the knives is performed;
- The slitting knives must be equipped by suitable edge guarding, avoiding contact with the sharp edge;
- In order to ensure safe handling of the knives special magnetic handling tool shall be available and used thereby avoiding direct contact with the knives;
- The guide roll must be equipped with brake system, ensuring the standstill of the roll during maintenance of the knives.

#### c. Core loading

- Core feeders must be properly guarded and interlocked preventing the core lock from falling.

#### d. Threading

- The threading area must be fully fenced off and interlocked ensuring access of the area only if the re-winder is stopped or on crawling speed;
- Interlocking system must be separately installed for the re-winder's basement area;
- Crawl speeds shall not exceed 10 m/min;
- The threading shall be supported by transporter, air or by other solutions;
- If required safe, task designed step ladders can be used for overhead threading;
- Light curtains (multi position, etc.) shall be installed at the core nip point;
- The gap between the re-winders frame and the second roll must be minimized.

#### e. Ejecting and handling of the reels



- No-go areas at ejecting area must be clearly defined and restricted by installing controls such as fencing, light curtains, detectors pressure mats, etc.;
- Special bumpers shall be applied to stop the ejected reels (risk-based approach);
- Special storage areas designated and supports shall be available for safe storage of the side runs;
- Manipulators for heavy reels to prevent need for manual reel handling by operators and subsequent injuries (back/spine etc.) (risk based approach).

f. General requirement for overall re-winder

- All moving and rotating equipment that is in normal reach of persons shall be sufficiently guarded, including gears, drive shafts, couplings, nip points, drums, tambours, etc.;
- Minimum guarding requirements to be in line with local legislation and site specific standards;
- Foam protection to be fitted to sharp edges of the low structures to prevent head injuries.

4. Administrative controls

Although implementing administrative controls does not necessarily reduce the risk levels, sites shall provide the necessary information of the risks and provide safe tools and equipment and warnings enable the operators to conduct the tasks safely, these include:

- The period when it is possible to enter the area to the re-winder is indicated by a light signal as follows:
  - Green light indicating that authorised persons may enter the area for defined tasks and periods;
  - Red light indicating that the doors are locked and entry is forbidden;
  - The lights shall be installed at each entrance to the winder area;
- Warning signs, (no entry and moving and rotating equipment) are displayed at each entrance. Loading areas are clearly marked with painting on the floor;
- Wearing of any jewellery in the re-winder area is strictly forbidden;
- The operation speed of the re-winder must be set up on the upmost minimum of each re-winder for the revision of slitting pattern;
- Tambour loading and roll ejection shall be provided by light and sound signal;
- Access to the re-winder area is allowed only for authorised personnel, and it is regulated the safe operation procedure and included risk assessment.

5. Personal protective clothing and equipment

Suitable personal protective clothing and equipment shall be issued (risk-based approach) in addition to the controls listed above and in the site-specific task based risk assessments and safe operating procedures. These include, but not limited to the following:

- Foot protection fitted with steel toe-caps;
- Hearing protection;
- Level 5 cut resistant gloves while working with safe knives and slitting knives;
- Only approved safety knives may be used.

## Additional requirements

The following requirements are compulsory when designing and/or purchasing new paper machines as well as during major rebuilds of paper machines or parts thereof.

- Automatic loading system from pope reel to the re-winder area, without crane operation with tambour;
- Automatic slitting set up.

## References

- SD PR 19.11 (Machine Guarding).
- Safety Rules to Live By.
- Audit template for safe operation of paper machines.
- HSE Executive: Safe use of reeling and slitting machines

## Document Control

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