

REWINDER DUST CONTROL TECHNOLOGY



DUST IN TISSUE INDUSTRY

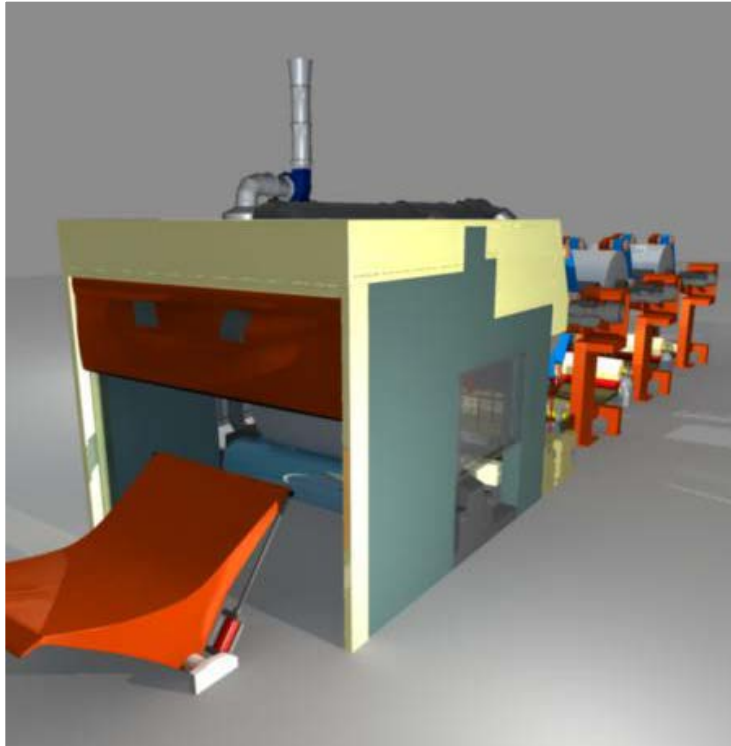


Dust for Tissue industry is like an infective virus.

Problems created are infections of:

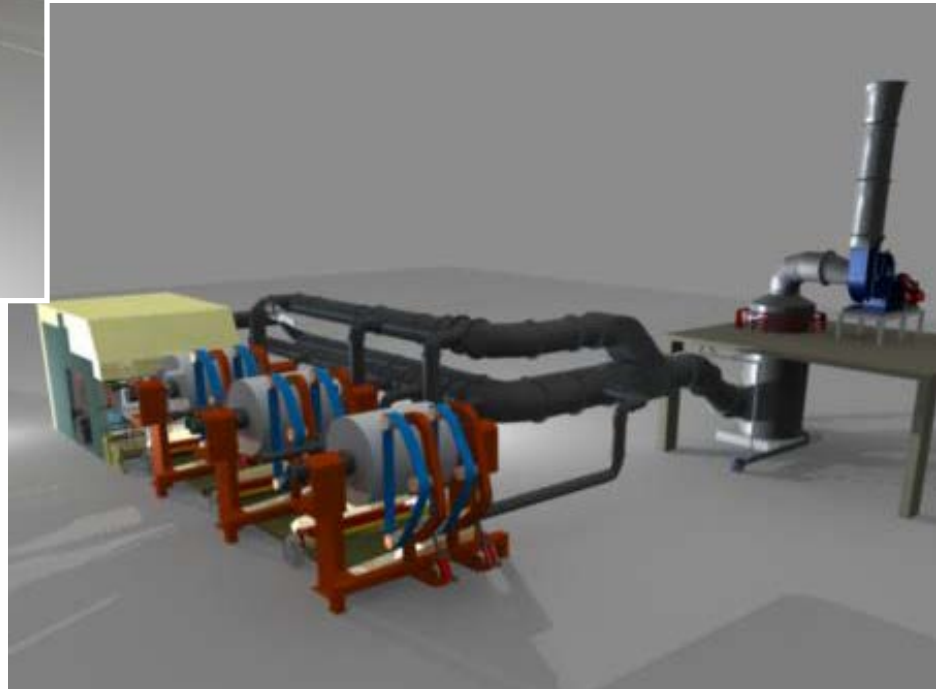
- Machine room environment
- Final product for converting
- Rewinder crew's health

NOVIMPIANTI DUST CONTROL TECHNOLOGY FOR TISSUE



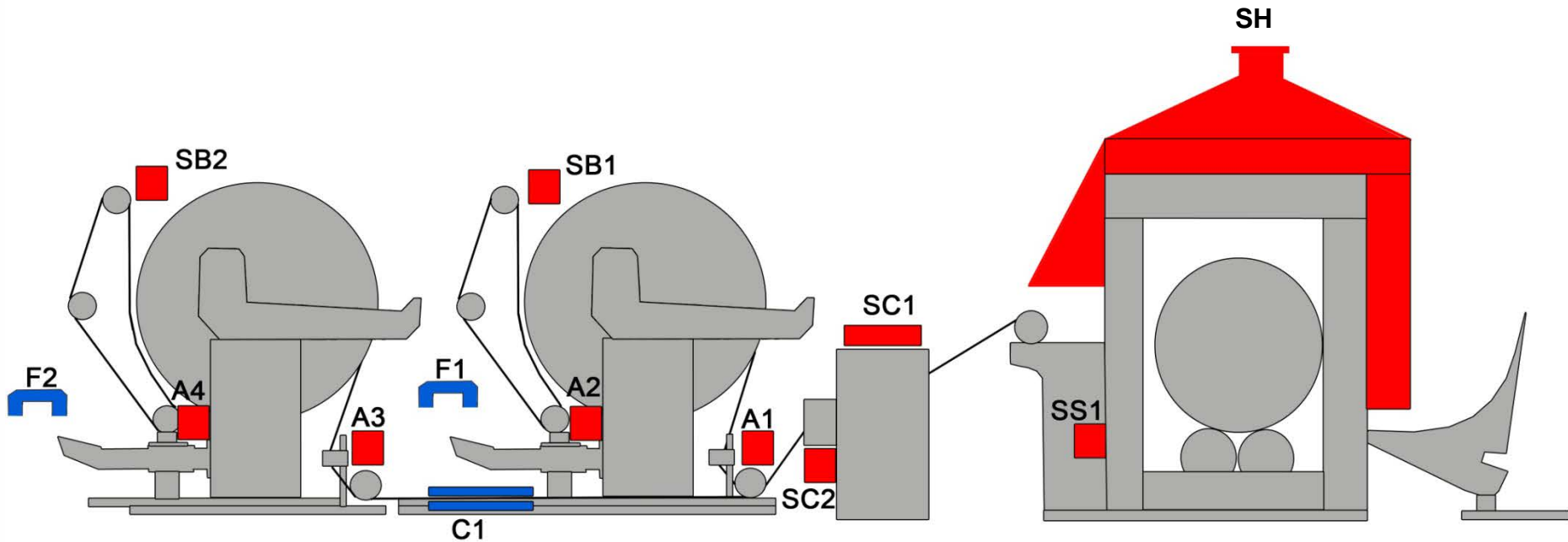
Novimpianti has developed and consolidated dust control technology for:

- Tissue winders
- Tissue machines



NOVIMPIANTI REWINDER DUST CONTROL TECHNOLOGY

REWINDER General Overview



5 BOXES TOTAL CONCEPT



Novimpianti rewriter dust control technology is based on a **5 Boxes** total concept:

A Boxes for **Across** suction

S Special Boxes for belts,slitter, calender

C Boxes for web **Cleaning** before winder

T Box for **Total** winder enclosure

F Boxes for **Floor** cleaning



ACROSS BOXES



A **Boxes** are positioned on the critical points where dust is usually created :

- Where Unwinding
- Where Calendering
- Where Rewinding



SPECIAL DUST SUCTION BOXES



S Boxes are positioned on special areas where dust is usually created:

- Where belts are unwinding/scratching the jumbo roll
- Where Slitter are cutting the web and releasing dust
- Where Calender press the paper and release dust

CANOPY HOOD



Special suction roof over
rewinder:

- Integrated with the enclosure
to assure full dust containment
in the area
- Automatically driven curtain
to allow reel operations

SHEET CLEANING BOXES



C Boxes (Option) are positioned before the rewinding of final jumbo roll to clean across the web the remaining boundary dust:

- on top/bottom surface to provide converters jumbo with clean web surfaces

SHEET CLEANING BOXES



C Boxes (Option) allow the following benefits:

- Providing a clean product to converting
- Avoiding dust converting problems with glue and printing inks operations
- Allowing a final better / cleaner product to the market

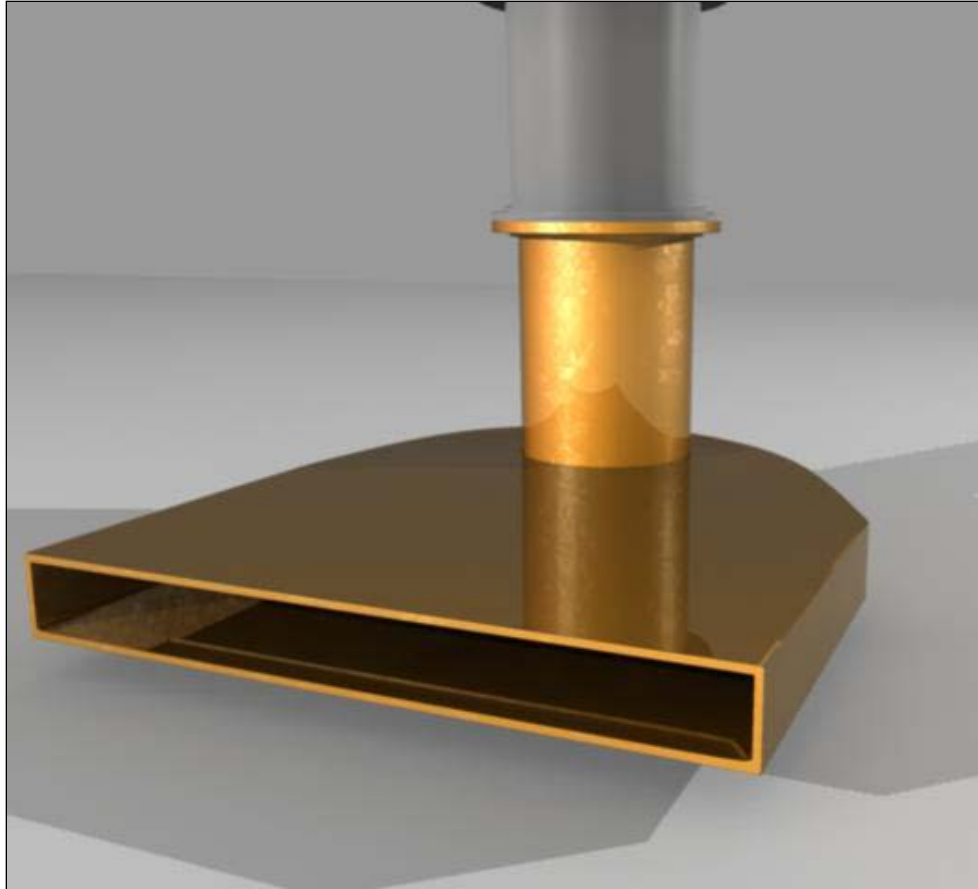
TOTAL BOX OPTION



T Box (Option) for total winder closure, made by 4 walls and an opening roof:

- Encapsulating the winder and its dust control guarantees highest environmental standards (below 2 mg/m³)
- Avoiding airborne dust to contaminate the surroundings and migrate to other areas (Tissue machine)
- Reducing the energy consumption and noise during winder operations

FLOOR BOXES



The **F Boxes** (Option) positioned at floor level at drive side of the machine

- To avoid the dust spreading during cleaning operation
- To help operators during maintenance operations

DUST SEPARATION



The whole dust suction system is connected to an external air system.

According to local water availability, the air system can be of 2 types:

- Wet Scrubbing
- Dry Collecting

DUST SEPARATION WITH WET SCRUBBING



Wet Scrubbing is made of:

- Ducting from rew. line dust collectors
- Venturi section
- Wet scrubber
- Ducts to exhaust fan

DUST SEPARATION WITH DRY FILTERING



Dry filtering is made of:

- Ducting from rew. Line to dust collectors
- Dry filtering group with fabric bags
- Ducts to exhaust fan

DRY FILTERING GROUP



Main features of dry filtering group are:

- Filtering by fabric bags reinforced and antistatic
- Differential pressure transmitter to measure pressure drop
- High efficiency cleaning system for filtering bags with pneumatic solenoid valves
- Continuous discharge of collected dust with motorized cochlear conveyor
- Bricket Press to generate bricks with the collected dust (option)
- Accordance to ATEX rules for external installation (option for adaptation to internal installation)



ENERGY CONSUMPTIONS

Production [tpd]	100	200
Paper at reel [mm]	2800	5600
Flow rate [m ³ /h]	45-58.000	80-100.000
Electric consumption [kW]	80	140
Water consumption [m ³ /h]	5	10

Novimpianti dust removal system brings low energy consumptions because :

- The system is strictly designed for customer production and winder
- The number of working unwind stations “drives” the fan volume / motor power consumption
- Reduction up to 10% compared to other suppliers similar installation

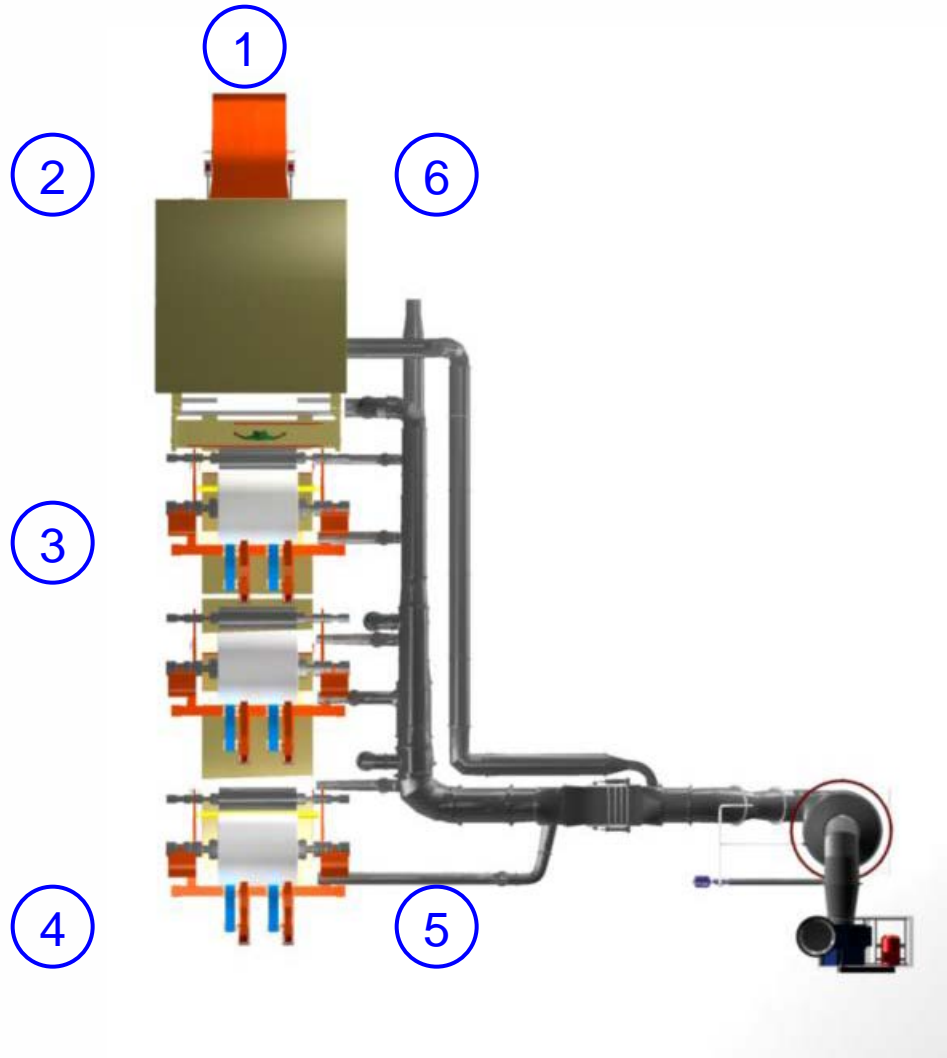
PERFORMANCE GUARANTEE

- Novimpianti guarantees that the dust control system will provide an airborne exposure level at the rewinder area not exceeding:

	Standard System	with Total Box
Dust Level Guarantee	5 mg/m ³	2 mg/m ³

- The **Total Box** option allows to achieve the highest environmental standards

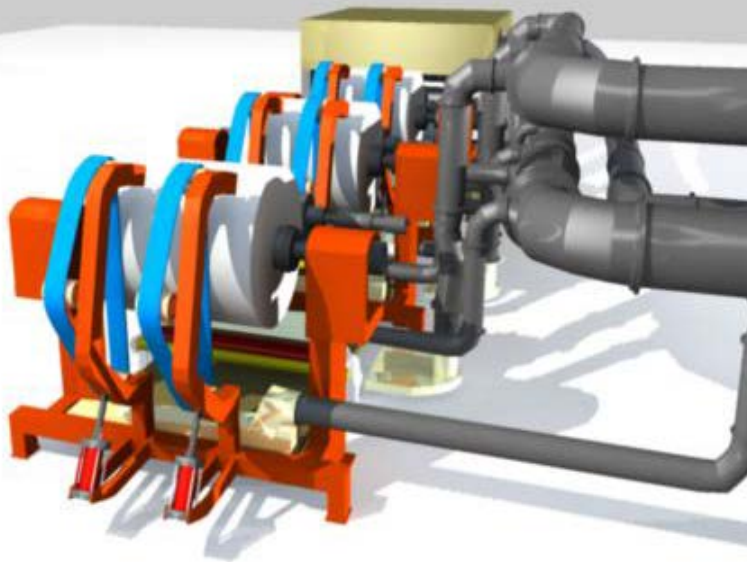
PERFORMANCE GUARANTEE



Performance test protocol assumes that:

- The dust level measure is taken in different stations at 1,5m from the rewinder and 1,5 from floor level
- Operators in different stations around the rewinder's area are endowed with special dosimeters
- At shift end the collected dust is weighted and averaged by time and stations to obtain the value

BENEFITS SUMMARY



Novimpianti latest dust technology, compared to other suppliers, provides:

- The most efficient boxes to remove the dust
- The lowest energy consumption
- The highest environmental standards for final product and for the operators