

Wumag Texroll: Energy saving with insulated housing for cylinder dryers

The costs for energy have been rising drastically and in future the energy prices are expected to increase significantly. The textile and nonwoven industry and in particular the finishing plants suffer from this scenario. Although the manufacturers have already discovered the advantages in energy efficiency of cylinder drying in comparison to various air drying methods, this article by Wumag Texroll explains that an insulated housing for a cylinder dryer will save at least 10 - 15% of energy and that the investment can pay back in only 15 months.



Functioning and effects of an insulated housing

The cylinder dryer operates in an interactive relationship to surrounding area and hall ambient. In most cases the evaporated water is extracted with a simple steam extraction hood. The air extraction speed underneath the hood has to be set relatively high in order to avoid steam escaping to the surrounding area. Furthermore, one has to take care that the relative air humidity does not reach the saturation limit, otherwise the condensation of steam within the cylinder dryer or in the hood area would cause drop spots on the fabric.

In an open installation of a cylinder dryer, energy loss is caused by radiation and convection. The side plates of cylinders, uncovered cylinder surfaces and non insulated piping emit heat to the surround-

ing area. Due to the necessary extraction of great quantities of ambient air an even higher loss of energy is created by convection, therefore cylinders and fabric loose heat by cold air and eventually, all of that creates a loss of expensive steam or thermo oil energy.

The Cylinder Dryer with insulated housing is separated from hall ambient. Due to this feature the quantity of extracted air is decreased considerably and the temperature within the housing increases from 40°C upto 70°C. Therefore cylinder and fabric are surrounded by air with higher temperature and can not cool down.

The steam absorbing capacity of air is increasing from 38g water per kg air at 40°C to 290 g/kg at 70°C. This implies that only reduced volume of preheated air has to be supplied to the production halls.

Conclusion

Wumag Texroll insulated housings are designed to offer the following benefits:

- ❖ Saving of energy.
- ❖ Short time of amortization.
- ❖ Higher running speed of fabric.
- ❖ Relief of hall heating / air conditioning systems.
- ❖ Drip free drying.
- ❖ Better working conditions in surrounding area of cylinder dryer.

According to Rüdiger Müller, Sales Director of Wumag Texroll, "In a current case the amortization time is 15 months only, as one of our customers has used use an insulated housing for his 20 drying cylinder machines." In his opinion cost of energy are expected to increase in the future and thus the energy savings will be correspondingly higher. ♦

BASF presented ideas for innovative technical textiles

BASF is the world's leading chemical company: Its portfolio ranges from chemicals, plastics and performance products to agricultural products, fine chemicals and oil and gas. In addition to a variety of textile coating solutions, the focus this year is on electro conductive textiles.

E-Textiles will open up new possibilities

electro conductive textiles, so called E-Textiles, combine typical textile properties such as flexibility, tensile strength and handle with electrical or metallic functions such as thermal and electrical conductivity. BASF introduces under the name Texapret®E, a new technology, where these products can be produced on an industrial scale. E-Textiles can be used in diverse fields of applications, such as the automotive and construction sectors.

Various possible applications for this innovation were presented at the show:

- ❖ The surrounding environment can be observed with textiles fitted with sensors: A sensor-equipped carpet, for example, could detect, evaluate and relay movements. Such textiles can be used in nursing homes where unusual falls can be immediately reported and assistance can be provided immediately.

- ❖ Textiles with LEDs (light-emitting diodes) open up new possibilities for furnishings and advertising media. For example, flags and banners that are visible at night.

Textile solutions for construction and home textile applications: self-cleaning effect and water-, oil-, and dirt-repellence. BASF Textile Chemicals have a variety of solutions for both inside and outside any building, including private homes.

For example, when textiles are treated with BASF's Mincor®, even stubborn dirt particles can be washed off easily simply with water. Mincor® is a finishing system based on nanotechnology for self-cleaning technical textiles that can be used for awnings or parasols allowing textiles to remain clean and look new for longer. Since its launch in 2007, the technology has been continually improved. For example, the customized dispersions for flame retardancy are effective even at low application rates, and thereby hardly affecting the handle of the fabrics.

Tablecloths and upholstery fabrics are protected from dirt and stain when textiles are finished with Lurotex® fluorocarbon finishing that gives textiles long-lasting water, oil, and dirt repellency. For automotive and upholstery fabrics, BASF's unique solution provides additional protection against pilling caused by hook and loop fasteners making them look new for longer.

BASF will also present a new textile coating solution based on its unique Texapret® range for manufacturing artificial leather that can be used for furniture, such as sofas.

The Textile Chemicals business unit of BASF Group offers textile auxiliaries for weaving, pretreatment and dyeing, as well as comprehensive solutions for pigment printing, finishing and textile coatings. BASF products are manufactured and marketed worldwide.

More information on their website: www.basf.com/textile. ♦