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THERMOSAFE LMK LTD
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Wind turbine blades

Custom heating jackets cut time and cost from curing process

Around the world, wind power is becoming an increasingly important part of energy production. As the industry advances, so do demands on manufacturers to produce larger turbines and thus longer blades.

Long blades produce greater power, but they also create difficult challenges for designers, manufacturers and maintenance staff. The component parts are usually manufactured from GRP composites in complex, aerodynamically-efficient shapes, and assembled in sections.

Post curing and re-working of molded parts during initial manufacture is often required. If the design requires components to be embedded in the blade, for example sensors or lightening conductors, then this will necessitate some post-mould re-working. Processes used to increase the durability of the blade's leading edge also usually require steady state heat curing.

Large, heavy blades are especially prone to being damaged in transit or during site installation, and repair and re-working will be required in such situations.

Furthermore, as they suffer wear during use, repair is more difficult than for smaller blades. Adhesives and composite materials often require heat to be applied at precise temperatures and uniformly across a surface, in order for to produce a high quality result – requirements that are even harder to meet on site than in a purpose-built factory. The use of unsuitable, pieced-together on-site heating solutions is a mistake that can prove extremely costly. However, the cost of getting large blades back to a factory for rework after installation is usually prohibitive, especially as many wind farms are located offshore or in remote, mountainous areas.

The best solution to this common dilemma is to use custom flexible heating jackets, such as those designed and manufactured by LMK Thermosafe Ltd specifically to match individual blade profiles. Our quality control and design capacity gives unrivaled ability to build heater products to North American, European and Worldwide safety standards, and for harsh use both indoors and outdoors

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Since 2003 LMK Thermosafe's ability to design and produce top quality, precision heating jackets has won us an unparalleled international reputation, and a long list of world-class clients, including Sinopec, BASF, Vestas, Akzo Nobel, Johnson & Johnson, and many more.

All our products are designed and made at our high-tech automated factory in Haverhill, England. This allows us to have complete control over the development, manufacturing and quality control process. It also enables us to create heating jackets for complex shapes like turbine blade tips, to our customers' exact specifications.

A superior quality heating element is machine-stitched into each jacket – its careful positioning plus the jacket's high density insulation work together to ensure that heat is distributed evenly and efficiently.

A range of power ratings and fixed or variable thermostat options (typically 40°C, 90°C, 160°C) are available to suit your exact temperature needs. Jackets can be created in a wide variety of shapes, and can be joined together to heat the most complex-shaped items. The jacket's own fully-adjustable straps ensure a perfect fit.

Contact LMK Thermosafe today to discuss your composite curing requirements, and we'll design a quality heating jacket solution that will save your business time and money.

Pair of custom heating jackets for leading edge, 5m long

Custom-designed heating jacket for blade tip application.

Ready for installation [above]

In use at customer's factory [left]

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