

MechCaL and I-CAT Collaborate to Optimize Energy Efficiency

Pretoria, 8 December 2015: MechCaL have teamed up with I-CAT to develop a custom designed evaporator using one of MechCaL's patented fan designs to create a high energy efficient unit with the first completed units destined for Douglas Colliery.

MechCaL and leading environmental solutions provider I-CAT have announced that they will join forces to develop an optimized evaporation canon using MechCaL's low pressure high flow fans to evaporate mine water. The companies will work closely to leverage MechCaL's technical leadership in the use of composite materials with the I-VAP 500's ability to perform in harsh environments while providing remarkable evaporation capability.

The aim of this cooperation is to further the efforts of both companies in bringing high performance energy efficient evaporation products to the mining industry. MechCaL's Managing Director, Professor Jan du Plessis predicts that the joint venture will enable both companies to benefit from a simpler yet highly effective process for manufacturing products that are used in the evaporation of excess mine water. "MechCaL is focused on providing the best mining ventilation and cooling solutions to help mines achieve high efficiency with lower energy usage. We expect that our collaboration with I-CAT will streamline the process for our clients by providing them with a dual solution that is custom designed as opposed to having to secure these products separately."

He added that MechCaL product's quality design and manufacturing also increase the product life as well as increasing the mean time before failure while reducing maintenance requirements.

The two companies have entered into a MOA with I-CAT being designated as the sole distributor. Six evaporator/fan units were produced at MechCaL's manufacturing facility in Pretoria during October and final assembly of the units with the intelligent weather control system was undertaken by I-CAT at their facilities.

The I-CAT I-VAP 500 was originally developed following the identification of a need for an effective and environmentally safe evaporation system that can be applied in reducing excess wastewater at mines. After thorough research and development done in conjunction with the environmental department at I-CAT, a prototype of the I-VAP 500 was designed and built for trial use.

The I-VAP 500 is capable of handling 500 cubic metres of water per twelve-hour day. The evaporation rate is measured as between 60% – 65% depending on ambient weather conditions. In order to ensure that the unit is light, durable and mobile as well as being resistant to rust it must be constructed from composite materials – the use of which is one of MechCaL's areas of expertise.

The high energy efficiency unit will have an inlet cone and nozzle configuration that is made from composite materials. The nozzle itself is designed using CFD coding to assist in an optimum flow pattern and droplet throw distance. The MechCaL manufactured I-VAP 500 will also incorporate MechCaL's patented nose and tail cones and state-of-the-art Stator

design that improves air flow by reducing turbulence and assisting in laminar flow being achieved.

The units are designed to be 'fit-for-purpose' with an emphasis on energy, evaporative efficiency and noise reduction. Working within harsh environments, the I-VAP 500 will ultimately manage excess water through evaporation but will also be adaptable for use in dust suppression as well as potential fire fighting applications by changing the water nozzle and pump configuration.

In commenting on the future relationship with I-CAT, Professor du Plessis says: "I-CAT is a prime example of an innovative company that seeks continuous improvement in environmental applications and thus the innovative nature of our two companies is a hand in glove fit."

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About MechCaL:

MechCaL Pty Ltd was established in 2002 to design and manufacture industrial fans. The company has developed proprietary software that allows for high efficiency designs to address the much-needed green economy to reduce CO2 emissions to the atmosphere through using less energy while providing the same performance. At their manufacturing facilities in Pretoria, MechCaL focuses on developing specialised fans made from advanced composite materials. Every fan is designed for a specification application tailored to suit the needs of each client by matching the required performance with maximum efficiency. MechCaL has been awarded the prestigious Technology Top 100 award six times and has been a runner up four times. They have also won the Enabling Award from Frost and Sullivan. All of this success was garnered from reinforcing advances in technology to enable savings.

Visit www.mechcal.co.za for more information.

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About I-CAT:

I-CAT has been a leading environmental management company with its primary focus in supplying products and services to assist companies in environmental compliance since 2005. They deliver expert services and products through four main divisions: Dust Solutions, Fire Solutions, Water Solutions and Environmental Solutions. Their additional Agro-Forestry Solutions division operates within their Environmental Solutions division. I-CAT is committed to providing real benefits to their clients, adding value to their clients' business, and providing clients with a competitive edge through their ability to deliver the correct product to spec at the right time and at the best price.

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