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Newsletter Issue 3 Under Raps Pty Ltd 2/211 Balcatta Road Balcatta WA 6021

The power of Shrink-Wrap

Lucas Heights Reactor

In a project reminiscent of the works of avant-garde artist Christo, the building housing the nuclear research reactor at Lucas Heights was recently shrink-wrapped in white plastic.

However, the project has less to do with art than with preparations to give the building a fresh coat of paint. The reactor will continue to operate, producing radioisotopes for medicine and industry.

However, Ian Kemp of ANSTO's Nuclear Technology Division said that because of the need to protect the environment from dust and paint, the building was being surrounded with plastic in a process known as Under-Raps™ encapsulation.



Turbines encapsulated

As part of an ongoing maintenance program, a number of power station turbines were recently serviced.

As they are very large and delicate pieces of equipment the blasting and X raying of the turbines had to be performed on the operations level of the station.

This meant that they had to be encapsulated to a high standard to contain the dust and stop any foreign matter entering the opened generators.



Nuclear equipment protected at Dresden

Dresden in Illinois, USA is the location of the first nuclear power plant built in the United States. Activated in 1960, Dresden I was the first nuclear power plant built with private funds.

The Dresden units are General Electric boiling water reactors. They are located

near Morris, Illinois.

The power plant serves Chicago and the northern quarter of the State of Illinois. Dresden I was retired in 1978. FPM has been involved at Dresden, protecting equipment with Intercept Shrink-film.

Areva USA ships to Australia in Intercept film

Areva T & D in Charleroi, PA, USA is now shipping all offshore items in Intercept products.

In the photos below, transmission equipment is being packaged in Static

Intercept tubing material for shipment to Australia. The Intercept material protects vulnerable electrical connections.

This will ensure 100% performance when the units are reassembled in the field.



Destined for the Middle East

Armoured cabs wrapped in reusable wooden packaging incorporating Intercept Shrink-Film

Shortly before crating production commenced, the U.S. Army's Tank-automotive and Armaments Command (TACOM) program manager dropped a bombshell on the design group charged with packaging armoured cabs for delivery to the Middle East.

TACOM made it clear that the cabs might have to be stored for years in Iraq, so they wanted a container with a long life.

Some members of the design team had attended past conferences of the National Institute of Packaging, Handling and Logistics Engineers.

One contact at the conferences proved particularly valuable for this project. Randy Dutton, vice president of FPM Inc., had spoken at conferences about Intercept Technology, a material that provides protection against corrosive gases.

Intercept prevents corrosion caused by wood emissions or, in other words, organic vapour off-gassing, Randy had said. He had also pointed out that Intercept Technology was poised to revolutionise how wood crating was used with regards to anti-corrosive protection.

By removing corrosive gases trapped within wood packaging and preventing the migration of additional corrosive gases through the packaging, Intercept Technology's products provide a number of benefits for crates and containers and their contents.

They are particularly effective when used as:

- Pallet sheets and pallet covers over a palletised load to prevent upward migration of corrosive gases and

wind blown contaminants from and through the pallet;

- Corrugated or wood crate liner bags;
- Bags to individually wrap components in a crate or box;
- Liners installed on individual side, top, and bottom crate panels;
- Protective envelopes over very large custom skids with mounted equipment;
- Battery operated air purification systems (Active



Foam Filtration System) to purge the corrosive gases from an enclosed container.

After looking at Intercept Technology, the team came up with the idea of lining the crate top and bottom with Intercept Technology material. They made a

presentation to Jim Russell, the TACOM packaging representative, comparing the cost of the wooden container with Intercept Technology lining, to a metal container. TACOM decided to go with the wood container with Intercept Technology lining.

By: Rick LeBlanc

Protecting parts for the automotive industry.



These automotive dies are currently not being used in vehicle production. However, they need to be accessible should they be required.

The actual intent in wrapping the dies in Intercept Shrink-film was to prevent rust from running into the ground in order to meet the requirements of the Environmental Protection Agency.



Over 1000 Automotive Dies Protected From Corrosion



Under-Raps™ Intercept Canvas Covers

New HMMVVE reusable canvas cover tames corrosion



Intercept Fabric™ is a new outdoor fabric with anti-corrosive and ESD protective properties, offering a durable cover and a corrosive gas scavenging barrier.

The inner layer scavenges the corrosive gases that cause corrosion, provides



galvanic corrosion protection upon contact with the covered item, provides electro-static discharge (ESD) protection and inhibits mould/mildew from forming on the inside cover surface.

Intercept Fabric is a material with which we make reusable form fitting covers. While the exact fabric may vary to meet particular requirements, Intercept Fabric basically is comprised of five layers.

The first (outer) layer is a durable outdoor fabric using denier yarn in the

warp and fill. It is pliable, yet strong, and is easily laminated.

The yarn is solution dyed and is UV, fade and mildew resistant. It has excellent cleanability and abrasion properties. Many colours are possible.

The second (middle) layer is a 1.5-mil thermoplastic copolymer extruded between the first and third layers in a hot, continuous layer. This co-polymer does not come in contact with the surface of the item being protected and will not leave a residue on the surface.

Its primary function is to bind the outer fabric and the Intercept technology plastic together.

The final three (inner) layers comprise the Intercept Shrinkfilm™, which in itself consists of three co-extruded layers.

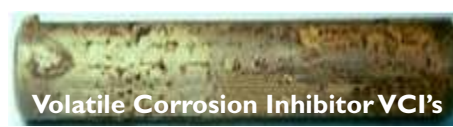
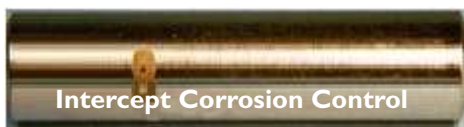
The two outer layers (fourth and fifth layers) are a special shrink/stretch polyolefin film, which remains flexible after shrinking and contains an advanced ultra-violet inhibitor that helps prolong the life of the film.

The fifth layer is co-extruded with the first two and contains Static Intercept Technology resin, which blocks corrosive gases that have migrated through the first two layers.

Corrosive Gases Try To Penetrate Intercept-But Fail

Intercept provides a reactive barrier to the corrosive gases - reacting and permanently neutralising them. As the Intercept is used up it changes colours: **Corrosion Intercept®: Dark Brown to Black**

Chlorine 15yr./mil
Sulphur 10yr./mil



Under-Raps Intercept™ to the “Max”.

A breakthrough technology - Intercept Max & Solo™

It's a world first anti-corrosion coating for packaging - a ground breaking process that will protect and extend shelflife.

We are talking about the world's first liquid-based anti-corrosion coating for corrugated packaging - a coating set to completely revolutionise the way many products are packaged in the future.

The Intercept coating is a copper particle based liquid which, when applied to the inside lining of any form of corrugated packaging, acts like a solid sheet of highly reactive metal.

This provides the ultimate corrosion and electrostatic discharge protection for the contents for at least five years, depending on atmospheric conditions.

It was originally developed in a plastic and powder form by Engineered Materials Incorporated (a licensee of the patent holder, Bell Labs), to provide corrosion protection for sensitive electronics and telecommunications equipment.

The Intercept coating acts as a barrier, creating a micro-chamber and preventing atmospheric gases that cause corrosion from entering the packaging.

The coating also acts as a preferential corrosion site, attracting gases trapped within a container to the Intercept coating, causing a reaction that leaves the gases permanently neutralised.

In addition to the copper coating on the inside, Intercept MAX carries a black conductive coating on the outside for ultimate protection."



"It is a very strong alternative to conventional volatile corrosion inhibitors in that it is non-hazardous, non-toxic, non-polluting and bio-degradable.

The coating is also an effective bactericide, mildewcide and fungicide.

In addition, any packaging coated with Intercept or Intercept Max is totally recyclable.

"Another advantage is that Intercept looks and acts like copper in that it loses its luster and starts to go grey when it is coming to the end of its life span.

This self-indicating capability is extremely useful when judging how long components can remain in storage before deterioration eventually begins."



Meet Greg Owens - Director



Role: Sales and Marketing

Greg joined Under-Raps four years ago and provides a wealth of experience in plant design, construction and operation in the mining industry.

He also has considerable know-how in the field of Passive Fire Protection involving spray application.

Greg was instrumental in the introduction of the Caeco product range to Perth's larger construction companies, such as Multiplex, Woodside and Clough Engineering.

He has also been involved in mathematical program development to assist in the calculation of quantities of product, labor costs and time required to implement systems.

Disclaimer

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In the next Edition

★ New product:

Under-Raps Fire Protection

Intercept Foam will react with and neutralise the atmospheric pollution within cabinets or other storage areas.

The Intercept Technology has the ability to absorb and neutralise gases (including ozone, nitrous groups, formaldehyde, sulphur compounds, chlorine compounds, gaseous acetic acid and more)

★ New product

High Pressure Water Mist System