temperzone news
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temperzone QUALITY AIR CONDITIONING

# Coal exports keep their cool with Temperzone

**When it comes to creating custom designed air conditioning units for the toughest conditions, Temperzone has a reputation that's unbeatable.** So even though the conditions at the Abbot Point Coal Loader are amongst the harshest we've encountered, contractors A.E. Smith knew we could handle the job.

It's hot. It's dusty. And it's built over salt water. As a site for an air conditioning unit, they don't come much more challenging. And with Australia's coal exports becoming an increasingly vital resource to underpin our economy, reliability of supply is critical. That's why the Abbot Point Coal Terminal in northern Queensland has such an important role to play. Commissioned in 1984, it has been exporting coal continuously ever since. The original terminal capacity of around 15 million tonnes per annum (mtpa) was first increased to 21 mtpa with the official opening of the $116 million X21 Expansion in November 2007.

No sooner had work on the first stage of the expansion commenced than it was decided to further expand the facility's capacity to 25 mtpa. Growth continued unabated, so Ports Corporation of Queensland has now responded to commitments from coal exporters to underpin demand for further expansion to 50 mtpa by the end of 2010!

## SOPHISTICATED ELECTRONICS KEEPS SUPPLY FLOWING

To handle the anticipated output, the new coal loader relies on a sophisticated switch room which is exposed to the blazing north Queensland sun.

## "WE'VE HAD A GOOD RELATIONSHIP WITH TEMPERZONE FOR MANY YEARS," SAYS MICHAEL O'FARRELL, "BASED ON THEIR ABILITY TO DELIVER QUALITY EQUIPMENT THAT'S UP TO THE JOB".

AE Smith, the largest privately owned mechanical services contractor in Australia, was contracted by construction giant John Holland to come up with an engineering solution that would not only keep the switch room equipment at the right temperature level once installed, but also withstand the rigors of the location for years to come.

AE Smith's Project Manager Michael O'Farrell says that Temperzone equipment was a natural choice for the job.

In this case, the job involved custom designing a package unit that would meet the strict specifications insisted on by AE Smith. Michael O'Farrell says that these included constructing the unit from stainless steel and several other upgrades to ensure the unit could perform reliably in all conditions. "The potential cost of down time is huge at a coal loader like Abbott Point", he points out, "so the hydraulics and electronics have to perform at peak efficiency year in, year out."

## TEMPERZONE'S CUSTOMISED SOLUTION

The Custom-Built Stainless Steel Temperzone Unit

Temperzone's Queensland Branch manager, Shane McBride, says that the unit customised for the Abbott Point project is based on Temperzone's OPA330RKT-S roof top package. The unit is an ideal starting point for an installation of this size, and uses R410A, the environmentally friendly and thermodynamically efficient refrigerant.

## "THE HEAT, THE COAL DUST AND THE CORROSIVE ENVIRONMENT MAKE IT A NIGHTMARE LOCATION FOR ANY EQUIPMENT," SAYS SHANE MCBRIDE.

"So we started by constructing the unit's outer skin from 316 marine grade stainless steel." Also the subject of special attention were the drain trays. "When the unit's condensate water is mixed with coal dust, corrosion is a major risk. So again, stainless steel was used," says Shane, "and the same applied to all the external fixings."

These weren't the only changes made to protect the unit against corrosion. The OPA330 supply fan, casing and wheel have been powder coated to ensure they could survive the elements. "We also epoxy coated the condenser and evaporator coils," says Shane McBride, adding, "For further protection against damage by the extreme weather and against on-site damage, condenser coil guards were also fitted to the OPA330 condenser coils. It's an extremely comprehensive protection package."

Another concern at any coal loading facility is the risk of fine coal dust finding its way into places it isn't wanted. As a result, the specifications of the unit include an upgraded electrical panel and special gasketing to the unit paneling to keep the coal dust at bay.

"Constructing the coal loader and floating it to Abbot Point is a massive undertaking," concludes

AE Edwards' Michael O'Farrell. "We have every confidence that the stainless steel package extensively customised by Temperzone is the right one for the job."

## FLOATING SOME INNOVATIVE IDEAS

Constructing the huge coal loader – essentially a conveyor belt on a huge scale – called for many innovative solutions. Not the least of these was the decision to construct the loader in a dry dock in Brisbane and float it up to Abbot Point on a barge when completed, making it possible to tap into the engineering expertise and workforce flexibility offered in the Queensland capital.

Getting the completed unit to its new location will not be without its challenges either. The massive steel structure is around 100 metres tall – so tall in fact, that its journey under Brisbane's towering Gateway Bridge will have to be timed to coincide with low tide in the area! With a base approximately 20 metres wide, the effect will be similar to seeing a 15-storey building passing under the bridge.