



Xstrata uses SURELINE® at Mount Isa mines

The challenge of building an 11kV power line through rugged, hilly terrain with limited access has been overcome on a Mount Isa mine site through the use of lightweight, high strength SURELINE® steel sub transmission power poles supplied by BlueScope Steel.

The new line was designed by Synerg Group and constructed by MG Electrical under the supervision of Xstrata Zinc's senior electrical engineer Dan Baccari.

The project required the relocation of critical infrastructure so mining at Xstrata Group's Black Star Open Cut zinc mine could double its size.





Above: SURELINE® sub transmission poles were used in pairs with H-Frame configuration and two cross arms for extra strength for a 670 metre span over a haul road.

“An existing 11kV power line with underground and overhead sections was directly in the path of the pit expansion,” Leif Welin, Electrical Supervisor of Xstrata’s Black Star Open Cut at Mount Isa said.

“The line was vital to power a fan that delivered fresh air to Xstrata’s nearby Enterprise copper mine 1.6 kilometres below ground.

“To continue mining underground the fan needs to operate constantly, so we had to come up with a relocation solution before the zinc mine expansion could continue,” Leif said.

“The relocation route chosen rises out of the valley up into the hills in a section of the mining lease which hasn’t been used before.

“We identified the need, appointed Synerg Group as consulting engineers, reviewed their design drawings, went to tender, selected MG Electrical to carry out construction and had the new line commissioned, all within six months.

“Because it is a termite prone area we could not use timber poles. The expectation is that the new line will be in service for at least 25 years, so that was another reason for the selection of the SURELINE® steel poles.”

Andrew Wiklund of Synerg Group consults on construction project management, contract management, materials procurement, feasibility studies and design for a number of major transmission lines and distribution lines in Australia, Papua New Guinea and Malaysia.

He knew that selecting a line route that would not interfere with current or future activity in the Mount Isa mining lease would lead to potential access challenges for the installation crew.

“There was very limited access to the route and you definitely couldn’t get a low loader up there,” Andrew said. “It is pretty rugged country with only a narrow track going up into it.

“We hadn’t specified SURELINE® steel poles before, but we thought they would be ideal for the conditions through which the line passes. There’s a

“The expectation is that the new line will be in service for at least 25 years, so that was another reason for the selection of the SURELINE® steel poles.”

Leif Welin, Electrical Supervisor, Xstrata Black Star Open Cut



tradition of using steel poles at Mount Isa, so we knew that Xstrata would be happy with the suggestion to use them. Construction involved the use of 18 metre SURELINE® sub transmission poles to carry a long span of 670 metres over a haul road.

“One of the reasons we went for the two-part SURELINE® sub transmission pole solution was because of the difficulties involved with taking poles up into the hills on the western side of the existing pit,” Andrew Wiklund said.

“The SURELINE® pole sections were assembled on site after delivery. For the long span over the haul road we used two poles in an H-Frame configuration at either end with cross arms in between.”

The two-part poles in BlueScope Steel’s SURELINE® range are supplied with an engineered internal joiner so pole sections can be efficiently transported and assembled in the field.

Above: The lightweight SURELINE® two-part sub transmission poles are fitted with an engineered internal joiner.

"The two poles linked by cross arms just went up at either end of the span and we put 700kg on each wire. The SURELINE® steel poles are very strong."

Mick Gould, MG Electrical Services



"That was our first design job using SURELINE® steel poles," Andrew said. "Their lightness and the ease of standing them in country when equipment access is limited is what drove us, but their strength to weight ratio is also unparalleled.

"On the basis of the performance of the SURELINE® poles on that first job we'll be specifying them for another couple of projects which we have been asked to consult on in the Mount Isa area."

Construction of the new ring feeder line was carried out by Darwin based MG Electrical Services Pty Ltd. Company principal Mick Gould, who supervised the project estimated MG Electrical Services has used over 10,000 concrete, steel and timber poles since its inception.

"The SURELINE® steel poles are a good concept," he said. "The two piece design was really useful and it comes into its own in rugged country. You would never have got concrete poles into several of the spots where we erected the SURELINE® poles.

"The system we adopted was to stand and concrete in the bottom halves with their joiner already in place so that we could then deal with them using much smaller equipment than would have otherwise been required.

"We slid down the top halves and the two sections were bolted together. That can be very useful if there are crane restrictions because of nearby live lines. They would be very good in situations where you have to erect an additional pole between existing poles."

Mick Gould said the long span over the haul road had not presented a problem. "In all honesty that was probably the easiest part of the entire job," he said. "The two poles linked by cross arms just went up at either end of the span and we put 700kg on each wire. The SURELINE® steel poles are very strong."



9 320075 051419

**For more information
on SURELINE® call
1800 800 789
or visit
www.sureline.com.au**

