

## CERAMIC LINED PIPE UPGRADE

### HMA Wear Solutions Piping Systems

<b>Client</b>	Ombilin Power Station
<b>Location</b>	Indonesia
<b>Industry</b>	Power Generation

HMA Wear Solutions has completed a major US\$1.5 million contract to manufacture 279 ceramic-lined pipes – including all fasteners, gaskets, and pipe supports – for an upgrade project at the Ombilin power station in remote Sawah Luto in West Sumatra, Indonesia. This ageing power station was experiencing major issues in terms of efficiency – especially in and around its pulverised fuel delivery system, resulting in increased emissions from incomplete combustion. This was further compounded by the condition of the Pulverised Fuel (PF) pipes, which resulted in pressure losses and cooling of the preheated stream.

The inconsistencies in fuel delivery made it an ideal candidate for the Pulverised Fuel Metering System (PFMS) from Greenbank of the UK, distributed by sister company HMA Power Generation. Subsequently the project expanded to include upgrading of the pipework and valves, a specialty area for HMA Wear Solutions. This afforded the HMA Group the opportunity to offer a turnkey solution showcasing the latest technology and innovation, whilst engaging as partner with the client to assist in engineering design and project scope.

The pipework was approved for purchase by end November 2018. However, due to there being no existing drawings, the scope included a full 3D scan of the boiler plant in order to produce the pipework drawings necessary for pipeline design and fabrication. Due to scheduling and site access, the drawings were completed in early May 2019, resulting in a six-month lag in the project schedule, with the client still wishing to aim for a planned shutdown from 15 July to 23 October 2019. At this point, HMA Wear Solutions' production facilities worked around the clock to complete the manufacturing and shipping of the pipework to Indonesia in three shipments. The final vessel departed Townsville at the end of June 2019.



"We had six weeks to produce 279 pipes. There was a lot of pressure and no room for error as we had a strict shutdown schedule and contractual agreements to meet," HMA Wear Solutions Project Manager Patrick Sheehan comments. Thus, the HMA Wear Solutions manufacturing facility in Mackay, North Queensland worked two shifts daily for the entire project period to ensure on-time delivery.

With production expedited, shipping soon became the major focus, and posed a significant challenge from the small port of Townsville. At one stage, HMA Wear Solutions repositioned additional 40-foot-long containers from Darwin in the Northern Territory – a staggering distance of 2,500 km at significant cost to the project to avoid delay. Furthermore, vessels sail from Townsville direct to Jakarta once a month. However, the project was predicated on four bimonthly shipments. "We had to amend our production and shipping schedules in order to meet the agreed delivery period," Sheehan commented.

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The HMA project team of Brett Hyland, Patrick Sheehan and Surung Simarmata attended a kick-off meeting on-site shortly after the first delivery in mid-July, where they worked with the mechanical contractor to fine-tune the pipework installation programme. "We identified a range of tools needed on-site, and provided specific pipework installation, storage and preservation instructions. Additionally we prepared the pipework in the laydown area for the installation contractor such that each pipeline was laid out consecutively according to the general arrangement drawings, allowing for each pipe to be brought into the plant one-by-one in correct order," Sheehan explains.

The local installation team had never carried out a project of this magnitude before. "Thus there were some unique challenges associated with this project," Sheehan comments. What magnified the complexity of

the project was that this was a customised solution from the get-go. "There were static loads, weight limitations, equipment limitations and a myriad of factors to consider when designing and installing these pipelines. The solution we provided was highly detailed and customised."

Feedback to date from the client has been excellent. "The client is very happy with the quality of the equipment that arrived at site. Everything was installed as per the drawings, and hence fitted correctly. There were some minor fabrication adjustments carried out on-site. However, these were negligible." Following the successful upgrade of the first boiler, Ombilin plans to commence upgrading its second boiler immediately, which is likely to translate into a repeat order for a similar quantity of pipework in the near future, Sheehan concludes.



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