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## Metalloys Meyerton Project

Tenova is a worldwide supplier of advanced technologies, products and services for the metal and mining industries providing innovative integrated solutions. Combined process automation and metallurgical know-how enhance the value delivered to the customers. Tenova is committed further to develop its technology in the areas that mostly impact the future of the industries it serves: quality of the products delivered by the customers, energy saving and environmental safeguard.



Tenova Pyromet is a leading company in the design and supply of high-capacity electric submerged-arc smelting furnaces and complete smelting plants for the production of ferroalloys, base metals, slag cleaning and alloy refining.

Tenova Pyromet has a long and successful history in the ferroalloy industry and also designs and supplies equipment for material handling and pre-treatment, alloy conversion and refining, granulation of metal, matte and slag, furnace off-gas fume collection and treatment, treatment of hazardous dusts and wastes.

The company has been certified to ISO 9001:2008 for "The Design and Supply of Smelting Technology and Equipment".

Pyromet has supplied a tapping and casting dust and fume control system featuring localised extraction hoods and a bag filter plant for furnaces M10 and M11 at the BHP Billiton's Metalloys Ferro Manganese Plant in Meyerton. The turnkey supply, design, manufacture installation and commissioning of the plant was completed within seven months.

Dust and fume control are done at the metal and slag tap holes, launders and casting machine for each furnace. The complete plant is a Pyromet in-house design.

The limited access around furnaces, which had to continue operating during the project implementation, led to various innovative designs of the hoods and ductwork. Isolating dampers are installed at each suction point to optimise suction. These dampers are automatically switched by the control program with the selection of a specific tapping configuration by the plant operator on the SCADA system.

Dust sampling was conducted prior to commencing with the design phase to determine dust characteristics (particle size distribution, dust loading, air/gas temperature, type) for determining the type of filter material and air to cloth ratio's. Based on this information, a polyester needle-felt material with anti static properties was selected as the filter material and the bag filter was sized to operate at 1.28 m/min air to cloth ratio.

The plant uses two centrifugal fans, each with a 450 kW motor, for extraction to ensure at least a 50% plant (at a reduced suction) availability in the event of fan maintenance.

Over-temperature and over-pressure protection was also included to prevent damage to the filter bags and structural damage to the compartment steelwork in the event of the isolating dampers being closed. The plant is controlled through a PLC and local pulse control panels with full operator interface via the SCADA.



## Project Information

Project name:	M10 & M11 Secondary Fume Extraction
Client:	Metalloys (Samancor)
Site:	Meyerton
Project description:	Turnkey supply of a secondary fume extraction system on furnace M10 & M11
Produces:	FeMn
Plant capacity:	2 x 75 MVA Submerged Arc Furnaces
Project duration:	7 months
Project award:	July 2004
Commissioned:	February 2005

## Project Statistics

Concrete:	280 m <sup>3</sup>
Steel structures:	25 tons
Plate work:	143 tons
Electric cabling:	1920 m
Pyromet project team:	7 persons
Project site team:	85 persons (at peak)

