

# TATA STEEL



## Case study

### Manjung Power Station, Perak, Malaysia

**Client:** TNB Janamanjung

**Main contractor:** ABB Alstom, Sumitomo Corp & Daelim

**System manufacturer & Sub-contractor/  
Installer:** European Profiles (EPM)

**Colorcoat® products:** Units 1-3 219,600m<sup>2</sup> Colorcoat HP200® double sided, Unit 4 & 5 164,570m<sup>2</sup> Colorcoat HPS200 Ultra® double sided

**Colours:** Britannia, Dark Sand, Goosewing Grey, Hamlet, Honesty, Straw and White

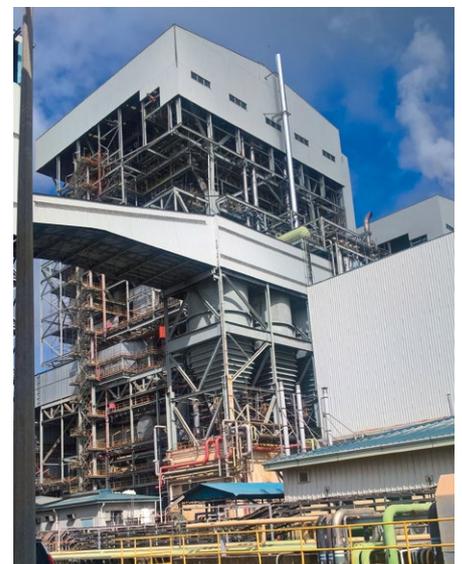
**Year:** 2003, 2004, 2014, 2016

#### The project

Located in the state of Perak on the west coast of the Malaysian Peninsula, the Manjung power station is a 4,180MW coal-fired facility which is said to be the largest electricity generating plant in South East Asia.

Manjung has been constructed over three phases, with a further fourth phase anticipated to start in the near future.

The initial phase of works consisted of three 700MW units, built between 2002 and 2003, while the next phase, consisting of Asia's first ultra-supercritical coal plant came online in early 2015 adding 1,080MW of power.







Most recently, Manjung phase three has been completed. This 1,000MW plant also utilises ultra-supercritical technology, as it is considered to be the current gold standard for coal-fired plants across the world.

#### The Problem

A cladding product was required that could resist the hot and humid Malaysian weather, which is considered to be tough for any pre-finished steel, particularly as it has exceptionally high UV all year round.

In order to meet these requirements, it was important that a product was specified that could meet the highest European rating for UV resistance - Ruv4.

*“The durability of the product has been extremely important due to the harsh local environment,”* said EPM Chief Operating Officer Joachim Lee.

In addition, the plant is in a coastal environment, which adds airborne sea salt to the aggressive environment so it was essential a durable product was selected.

Supplying the client’s exact choice of colour scheme is also an important consideration for any project, and consequently for Manjung’s three phases seven different shades were supplied in the pre-finished steel.

#### Tata Steel products:

Colorcoat HPS200 Ultra® uses the unique and proven Galvalloy® metallic coating, which features a special mix of 95 per cent Zinc and 5 per cent Aluminium – providing unrivalled corrosion protection. The metallic coating is essential to the performance of the pre-finished steel and the Galvalloy® metallic substrate offers a combination of increased barrier and sacrificial protection when compared with conventional HDG coatings. In the case of the Manjung

power plant these were crucial considerations due to the aggressive external and internal environments the facility will be subject to.

Colorcoat HPS200 Ultra® is also renowned for its durability and the client recognised this when an area of the plant, which had been clad with an alternative pre-finished steel product, failed in a short period of time and needed to be replaced. A decision was made to use Colorcoat HPS200 Ultra®, in line with the rest of the project.





### The Solution

All of Manjung's construction phases have made extensive use of Tata Steel's Colorcoat® pre-finished steel products for both roof and wall cladding.

According to the system manufacturer and sub-contractor EPM, the client and main contractor specified Colorcoat HPS200 Ultra® and its previous product generation, Colorcoat HP200®, due to its recognised durability and corrosion resistance properties.

"The durability of the product has been extremely important due to the harsh local

environment," said EPM Chief Operating Officer Joachim Lee.

The tough conditions that Colorcoat HPS200 Ultra® was specified to cope with are not limited to the building's exterior.

Inside the generation of steam and other emissions associated with coal-fired power stations meant the pre-finished steel was always supplied with a double-sided protection and constructed as a single skin application.

This provided the extra protection required for the demanding conditions, both internally

and externally, as the internal walls and roofs would be subjected to high levels of humidity and factors which could cause corrosion in the future.

For more information on our entire product range and design advice please contact a member of our design team on:  
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