

Palfinger specialises in maritime and mobile lifting solutions

Extending lifting capacity and reach

New high strength grades for yellow and green goods give OEMs the strength to innovate

Palfinger is already a leading supplier of mobile and maritime lifting solutions, and a long-term ArcelorMittal customer in Europe. But new products from ArcelorMittal are helping Palfinger develop innovative cranes which can reach further and lift heavier loads. The company has recently tested new grades in our [Amstrong® Ultra range](#) of high strength steels which are specifically designed for yellow and green goods.

“Innovation is critical to the success of our business,” explains Palfinger’s global strategic purchasing manager. “We are the market leader and we need to adapt our offer to maintain that leadership position.”

Increased reach leads to success

Palfinger’s ability to innovate has seen the company increase the reach of its

cranes significantly over the past decade. In 2006, Palfinger cranes had an average of 4.8 booms – the arms that allow the crane to reach higher or further. By 2016 this figure had risen to between 6.8 and 8 booms per crane.

This increase has been achieved through improved design, made possible by

the use of high strength steels such as ArcelorMittal’s Armstrong® Ultra range. Armstrong® Ultra grades start at 650 MPa, rising to 1,100 MPa for the latest ultra high strength grades.

Palfinger has recently completed testing of Armstrong® Ultra 900 and 960. “These grades are produced by very few mills in the world,” notes the Palfinger purchasing manager. “It was a typical technical project for us. We tested our laser cutting, folding, and bending operations on the trial pieces ArcelorMittal supplied, and then exchanged our experiences with the steelmaker.”

New steels allow profile innovation

The higher strength of the 900 and 960 MPa grades has enabled the Palfinger team to develop a new profile for booms as Palfinger's purchasing manager explains: "The existing profile had six edges per boom, but the new profile now has 13. This is closer to a perfect circle and will give our cranes additional lifting capacity and reach." Palfinger expects to begin integrating the new grades into the main booms of its cranes later this year.

"Our latest heavy duty and TEC cranes are the first to use a new design for the extension boom system – the P-profile (the P stands for polygon)," says Palfinger's purchasing manager. "The P-profile offers enhanced stability compared to conventional extension booms. At the same time, the revolutionary design dramatically reduces the crane's dead weight."



The mobile lift shows the main boom (red) and additional booms (black) which increase the reach of the crane.

ArcelorMittal steels are only utilised at Palfinger's European plants. The company has manufacturing sites worldwide and would like to take advantage of ArcelorMittal's global footprint where possible. "It is important for us to have a local steel supplier," says the Palfinger purchasing manager. "We're working with ArcelorMittal to improve the quality of the steels produced in places like South America. If they can get the quality at those mills up to the European level, we would be a worldwide customer."

Homogenous mechanical properties increase yield

The main advantage of ArcelorMittal's Armstrong® Ultra high strength grades are their guaranteed mechanical and in use properties which meet and exceed the requirements of the standard. "This is achieved through tight chemistry and



Palfinger lifting solutions are used in a wide variety of applications.

stringent control of the metallurgical process and parameters at the hot strip mill," explains Dirk Sauer, ArcelorMittal's business development manager for yellow and green goods. "The homogeneous mechanical properties over the length of the coil enable customers to adjust their machines and tools for the first sheet, and then process the rest of the batch without changing a parameter. This increases productivity significantly."

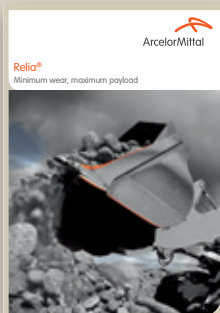
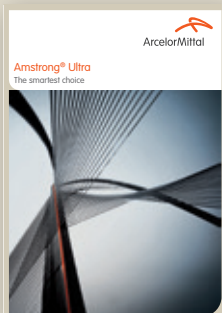
Another advantage of working with ArcelorMittal is our ability to produce plates with a larger width than the competition. As the purchasing manager notes, this also has a big impact on Palfinger's processes: "Larger plates reduce scrap. Other suppliers can only provide plates which are 1,500 mm wide. ArcelorMittal can provide 1,800 mm. That means we can produce our largest parts from a single plate."

The excellent mechanical properties of Armstrong® Ultra are already enabling OEMs like Palfinger to create innovative and market-leading solutions. The additional strength of these grades also allows manufacturers to lighten the weight of their products through down-gauging.

To find out how ArcelorMittal can help your business co-engineer the next generation of yellow and green goods visit:

industry.arcelormittal.com/equipment

New Armstrong® Ultra and Relia® offer launched at BAUMA



ArcelorMittal Europe – Flat Products launched its new **Armstrong® Ultra** and **Relia®** brands at the BAUMA trade fair held in Munich during April. The new high strength steels are designed specifically for yellow and green goods such as agricultural equipment, earth moving machinery, and mining vehicles.

The Armstrong® Ultra range of high strength steels combine excellent

formability with toughness at low temperature, and fatigue resistance. The range includes steel grades with a minimum yield strength ranging from 650 up to 1,100 MPa. Armstrong® Ultra grades are available as thermomechanically rolled coils, sheets/plates or as quenched and tempered sheets and quarto plates.

Relia® is ArcelorMittal's range of high hardness, low-alloyed martensitic steels. Relia® grades obtain their hardness through intense water quenching during manufacturing. As a result, Relia® offers outstanding resistance to abrasion – typically three to six times higher than construction steels in the 355 MPa range. Our Relia® grades were developed in conjunction with ArcelorMittal subsidiary Industeel which offers a complete range of steels for high wear applications.



LIFETIME EXCELLENCE

About Palfinger

Founded in 1932, Palfinger creates a range of innovative, reliable, and cost-effective lifting solutions for use on commercial vehicles and in maritime applications. Palfinger's core product is the Loader Crane which has close to 150 models and a market share of more than 30 percent.

Palfinger is headquartered in Austria, but sells its lifting solutions into more than 130 countries worldwide. The company has 34 manufacturing plants around the world. In 2015, Palfinger employed almost 9,000 people and had sales revenue of €1,230 million.

More info: www.palfinger.com