

**TATA STEEL**



**Ympress®**

More strength. Less weight.



# YMPRESS® OFFERING CONSISTENT, STRONG AND HIGHLY FORMABLE STEEL



Ympress® is a hot-rolled, high-strength, low-alloy (HSLA) steel with outstanding formability and consistent product characteristics. The high yield strength delivers weight savings and increased component strength. Downgauging results in a higher product output per tonne of steel. The Ympress® range is precisely tailored to meet a wide variety of end-product applications – from load-bearing structural components to safety-critical automotive parts.

#### A proven concept

Ympress® gains its strength from precipitation hardening and grain refinement. Tightly-controlled processing ensures consistent characteristics in steel chemistry, mechanical properties and dimensional tolerances. Extremely low sulphur content means that Ympress® is highly formable. Its elongation levels are considered among the best in the industry. The product offers excellent weldability, with robust welds.

Ympress® has been proven over three decades in a range of diverse applications. These include on-road and off-road vehicle chassis and body components, lifting and excavating equipment and ship building. It is ideal for applications subject to high dynamic or static loads. These include telescopic crane booms and load-bearing products for the construction industry.

The consistency contributes to the delivery of repeatable and reliable end-product quality and performance.

#### The benefits are clear

Ympress® delivers significant customer benefits for both product manufacturing and end-product performance. The high yield strength allows the user to reduce steel thickness or increase the strength of the finished product – or both. The reliable quality and characteristics of Ympress® mean customers can be confident of consistent steel behaviour during processing. Main benefits include:

- Lighter products
- Stronger products that are safer under heavy loads
- Cost savings
- Increased output per tonne of steel
- Choice and design freedom
- Trouble-free processing




# YMPRESS® IN ACTION

## State-of-the-art lightweight trailer

Ympress® S700MC is used to fabricate the longitudinal beams on a state-of-the-art trailer of a leading trailer manufacturer.

The strength, consistency and high formability of Ympress® has contributed to a unique lightweight trailer. This delivers increased earnings per kilometre through reduced fuel, wear and maintenance costs.



LIGHTWEIGHT  
ENGINEERING  
USING  
YMPRESS®  
S700MC



### Freedom in design

The biggest advantage of Ympress® is its high yield strength combined with high formability and consistency. It means designers can switch confidently to lower gauge steel, even for complex, load-bearing applications. This saves both cost and weight and provides end-product benefits. These benefits include reduced fuel consumption and a lower carbon footprint.

Stronger steel can also enable increased lifting and load-bearing capacity in a range of lifting, excavating and agricultural equipment – without the weight penalty.

Careful control of the steel chemistry, especially the very low sulphur content in Ympress® steel delivers outstanding formability and guaranteed minimum elongation levels. It is suitable for tight bending radii and stretch flanging. Tight gauge tolerances ensure reduced springback variability.

### Trouble-free processing

The coil-on-coil consistency of Ympress® allows for trouble-free processing. This can also have the added benefit of yield improvements. Consistency in steel chemistry, mechanical properties and gauge tolerances reduces the need for tool setting adjustment from batch to batch. Combined with the high surface quality, it helps to reduce tool wear. It can also mean fewer rework steps during manufacturing.

Ympress® offers the added advantage of excellent weldability, regardless of welding method or speed. This is due to the steel's low carbon equivalent value. There is no need for pre-heating or post-heating during welding operations.

The low silicon content results in steel with a reliably high surface quality. The majority of products in the range can be post-galvanised.

### Choice and flexibility

The Ympress® range offers choice and flexibility – with each steel product tailored to application requirements. The steels are available in a variety of strengths. Gauges range from 1.5mm to 20mm. The range of widths extends to 2070mm. Ympress® is available as coil or de-coiled sheet through our Steel Service Centres.

Ympress® benefits from continuing investment in product development. It means that new and stronger steels and an expanding choice of dimensions are available to customers on an ongoing basis. The range also includes Ympress® Laser products developed specifically for high-speed laser cutting.



### Product Range:

Steel grades:	
Ympress®:	S315MC, S355MC, S420MC, S460MC, S500MC, S550MC, E690TM, S700MC
Ympress® Laser:	E250C, S355MC, S420MC
Thickness range:	1.5 - 20mm (grade specific)
Width range:	750 - 2070mm (grade specific)
Surface treatment:	Hot rolled dry, Pickled & oiled

# MANUFACTURED WITH PRECISION

We utilise modern and reliable steelmaking methods to produce the Ympress® range. Ongoing investment in process technology enables the stringent control and monitoring of steel chemistry and process settings. It also enables us to produce steel to consistently tight dimensional tolerances at our advanced rolling mills. Tata Steel has recently completed a significant investment in upgrading one of the coilers on the Hot Strip Mill at its IJmuiden plant in the

Netherlands. The investment paves the way for the development of:

- heavier-gauge strip for use in the manufacture of articulated trucks
- higher-strength steel grades for use in cranes and machine boom arm applications.

We draw on many decades of steelmaking experience to manufacture steel for the modern world. We recognise that the skills

and knowledge of our people are critical to the success of our operations. We continue to invest in our people to ensure the safe, reliable and efficient production of high quality steel.





## Tata Steel

Tata Steel is one of Europe's largest steel producers. We serve many different and demanding markets worldwide. These include lifting and excavating, aerospace, automotive, construction, energy and power, rail and packaging. Our primary steelmaking operations in the UK and The Netherlands are supported by a global sales, processing and distribution network. Our European operations are a subsidiary of Tata Steel Group, one of the world's top ten steel producers.

Innovation and continuous improvement are at the heart of our performance culture. We aim to create value by offering a sustainable and value-added steel product range supported by unrivalled customer service.



## Working with you

By working in partnership with you, we find the best solutions to meet your needs and help your business to perform. Our technical services team is available at short notice to assist you and your customers. These skilled engineers can apply their knowledge of steel and its application helping customers optimise productivity, efficiency and product performance.

Customers can also take advantage of our research and development resources. Our scientists and technical experts can help resolve complex engineering issues and assist in the development of innovative products.



## Sustainability

The high yield strength of Ympress® makes it a sustainable choice. It reduces the amount of steel required to manufacture strong and load-bearing components. This means a reduction in associated raw material and energy resources.

Our steel is fully traceable and produced in accordance with ISO 14001 for environmental protection. We have adopted a class-leading framework for safety across our operations. We drive sustainability in our operations by focusing on manufacturing efficiency, safety, waste minimisation, carbon dioxide reduction and energy savings.

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**Tata Steel**

PO Box 10.000  
1970 CA IJmuiden  
The Netherlands  
[strip.enquiries@tatasteel.com](mailto:strip.enquiries@tatasteel.com)  
[www.tatasteeleurope.com/strip](http://www.tatasteeleurope.com/strip)

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