

TATA STEEL



Customer Technical Services

Proactively supporting your ambition





SERVING DEMANDING MARKETS

Tata Steel serves many different and demanding markets worldwide. These include automotive, construction, lifting and excavating, and packaging. Our wide range of strip products includes hot-rolled, cold-rolled, metallic coated and direct-rolled products.

To meet your demand for quality and put you at the forefront of your market, we continue to invest in manufacturing capabilities that deliver advanced products. These capabilities are complemented by a comprehensive range of customer services and include Customer Technical Services to help you maximise the potential offered by our product portfolio.



CUSTOMER TECHNICAL SERVICES

Proactively supporting your ambition

Our Customer Technical Services (CTS) go way beyond problem-solving. Working with you, they can help you to improve and grow by exploiting our advanced products to your advantage.

Our knowledgeable and proactive CTS team offers technical consultancy and practical hands-on support to customers around the globe. Focusing on quality, we can tailor product and process solutions to meet your needs and ambition. Backed by world-class Research & Development (R&D), our CTS has five main pillars: product support; process support; application support; support for your product development and provision of technical information and training.

PRODUCT SUPPORT

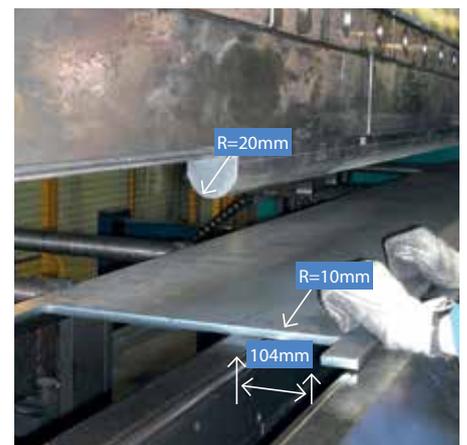
Turning our product knowledge to your advantage

To save you time and money on material evaluation, our CTS team shares in-depth product knowledge to find the best steel products for your application. You can be confident that our material runs efficiently at your installations and meets the most challenging end-product performance requirements.

Our CTS team knows everything there is to know about Tata Steel's products. We offer a wide product portfolio and our steel is used in many, wide-ranging applications. This provides valuable data on in-service material performance. Close working relationships with many customers mean

we also have experience and knowledge of production processes used throughout the supply chain. We use all of this know-how to match steel grades to your end-product application and processing capability.

To confirm the best performing products for your business, we are backed by Tata Steel's world-class R&D resources. Using these, we have the tools and expertise to deliver materials research specific to your needs.



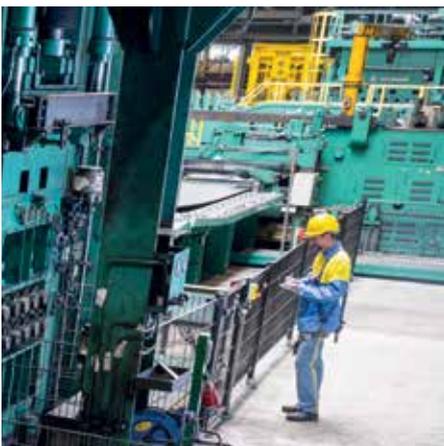
5%

Our process parameter optimisation with a heavy construction equipment manufacturer boosted truck beam production yield by up to 5%.



15%

We worked with a customer in the Lifting & Excavating sector to increase efficiency by 15% through faster laser cutting of our advanced steel.



10%

Following work with our R&D experts to optimise the levelling process, a steel service centre has reduced reject rates by up to 10% and has a wider processing window.

PROCESS SUPPORT

Tailored process optimisation to maximise your operating window

To maximise your operating window, our CTS team offers tailored support for development of your processes. We have extensive experience in the introduction of entirely new process lines.

Our service has helped customers to improve line capacity, minimise defects and maximise yield. We have deep understanding of manufacturing and processing technology including decoiling and levelling, cutting and slitting, forming, welding and enamelling. We work directly with tooling and process equipment suppliers. This allows us to offer new insight into maximising your installation's performance using our material – without the need for massive investment.

To help you develop the best possible processing environment, we work with you to identify which material properties are vital to efficient operations – opening up ideas for optimisation recommendations.

To deliver the best value for your business, we invest a lot of time in getting to know you. Close working relationships lie at the heart of our approach. Working together, we can quantify your needs and identify opportunities. We place great value on integrity – operating openly and transparently so you can feel confident in sharing your challenges and aspirations with us.

APPLICATION SUPPORT

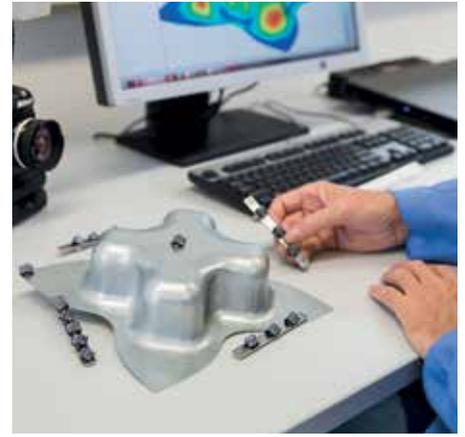
Ensuring your products are fit for purpose through the supply chain

For success in competitive, global markets, it is vital that products perform at every stage in the supply chain. This means your material must be suitable for a variety of processes and be fit for purpose in its ultimate end-use. Tata Steel's application support service offers expertise and tools that help ensure your business is a strong, reliable and vital link in the supply chain. We consider all steps in the chain when advising on material. So you can avoid investment in non-core R&D, we offer dedicated analysis and testing to meet your application needs.

Our qualified and experienced engineers, chemists, metallurgists and production specialists are here to share their knowledge and address your needs. To save you time and money, we can bring mobile testing facilities

directly onto your site. Capability includes full-field strain distribution mapping and several techniques to couple material properties with tooling-related geometry. Working with you, we can look at your product's design, your material and manufacturing environment to see the impact these have on product performance.

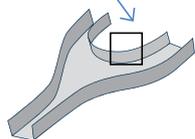
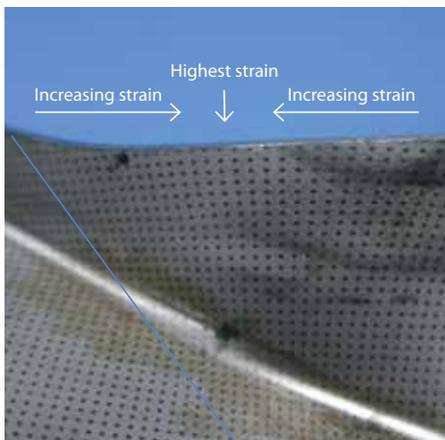
Application support is a recognised strength at Tata Steel – we have research centres dedicated to the automotive and packaging sectors. To optimise your processes and get the best from our material, we use up-to-date support methodology and testing facilities. Capability extends from prototyping for application development to component testing and advanced geometric measurement of end product contours and profiles.



A to Ω

We use mobile strain measurement equipment to fine-tune material to your forming process and end-uses – helping to ensure your products are fit for purpose through the entire chain.





PRODUCT DEVELOPMENT SUPPORT

Turning your ideas into reality by exploiting our steels

When you succeed, we do too! Our CTS team helps bring the 'voice of the customer' into our business and is here to support you in the development of new products to improve your offer and expand your portfolio.

Our past experience plays an important part in ensuring you get the right material from the very beginning of the design phase – whether it's in the early years of a passenger car pre-development or to resolve an urgent material challenge on a backhoe loader. CTS engineers are a fundamental part of a Tata Steel team that engages with our customers' designers and specifiers. We provide vital input to the design process and advise on the most suitable steels for new or improved products.

We can support deployment of new material and help to ensure smooth and efficient processing. For instance, adoption of Tata Steel's Protact® laminated steel for packaging can remove up to five, cost-intensive processing steps for a more sustainable packaging solution. Other differentiated products offering new benefits include Hybox® TT cold formed hollow section which removes the need for shot blasting and edge trimming before processing.

As a leading steel producer, Tata Steel has a proven track record in supporting customers in product development. We collaborate with research institutes and have a robust process for developing new steel grades. Work at our dedicated automotive and packaging R&D centres has resulted in innovation tuned to customer preferences.

100%

Our work with an automotive supplier led to a design change and improved product performance - through introduction of steel grades which increased edge ductility capacity by 100% without impacting on cut edge fatigue.

TECHNICAL INFORMATION & TRAINING

Knowledge to open new doors

We believe that insight into the benefits of our advanced steels can support your decision-making and open new doors for your business. That's why we take special steps to share our steel know-how with you. As well as technical literature including case studies, data sheets and brochures, we also offer personalised customer training and an exclusive on-line service providing material data. Our CTS engineers are always on hand to tell you about steel grades and properties. We tailor steel-focused technical training to enhance your understanding of how material properties impact your processes and products. We also offer specific training on new grades relevant to your business.

Customers tell us that our dedicated 'customer in steel' days at Tata Steel plants deliver excellent value – giving them first-hand knowledge of a variety of steelmaking processes and the material performance they deliver.

Tata Steel's Aurora® Online service provides fast and easy access to reliable material data. The online database offers a complete overview of steel grades suitable for application in the automotive sector. It provides ready-to-run input decks that can be used with computer-aided engineering (CAE) software for accurate, reliable simulations.



CAE

A leading automotive component manufacturer has told us that our ready-to-run data from Aurora® Online was a major factor in its decision to work with Tata Steel - enabling efficient Computer-Aided Engineering analysis during a vehicle development project.

TOGETHER WE MAKE THE DIFFERENCE

By understanding your business and goals, we can make a real difference to your performance where it counts.

Working in partnership with you, our dedicated Customer Technical Services team

can help you select and utilise steel products that give you a competitive advantage. Whether that's enhancing your product performance, improving your efficiency, helping you to access new markets or creating more sustainable solutions.



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