

STRENX[®]
PERFORMANCE STEEL



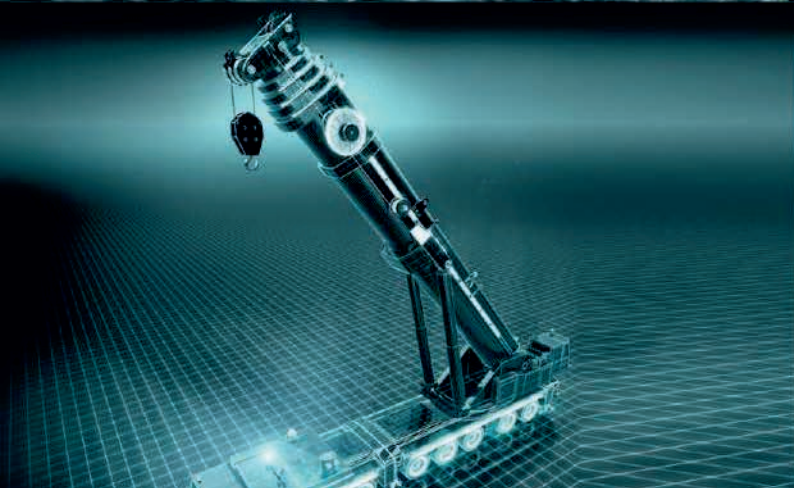
KAMLESH METAL & ALLOY

AN ISO 9001 : 2015 Certified Company



THE
BEAUTY

**SOLE DISTRIBUTOR
IN INDIA FOR
STRENX PLATES**



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ABOUT US

Kamlesh Metal & Alloy is the **“SOLE DISTRIBUTOR IN INDIA FOR HARDOX & STRENX STEEL PLATES”** Kamlesh Metal & Alloy has been a professionally managed stockist and supplier of Ferrous and Non-Ferrous Metals. We are capable of providing a vast range of materials, from stock, to suit your needs. From highly specialized non-standard material to of the shelf items, from production to prototype, from low miniums to mill runs. Kamlesh Metal & Alloy has the experience to solve your most difficult requirements.

STRONGER AND LIGHTER

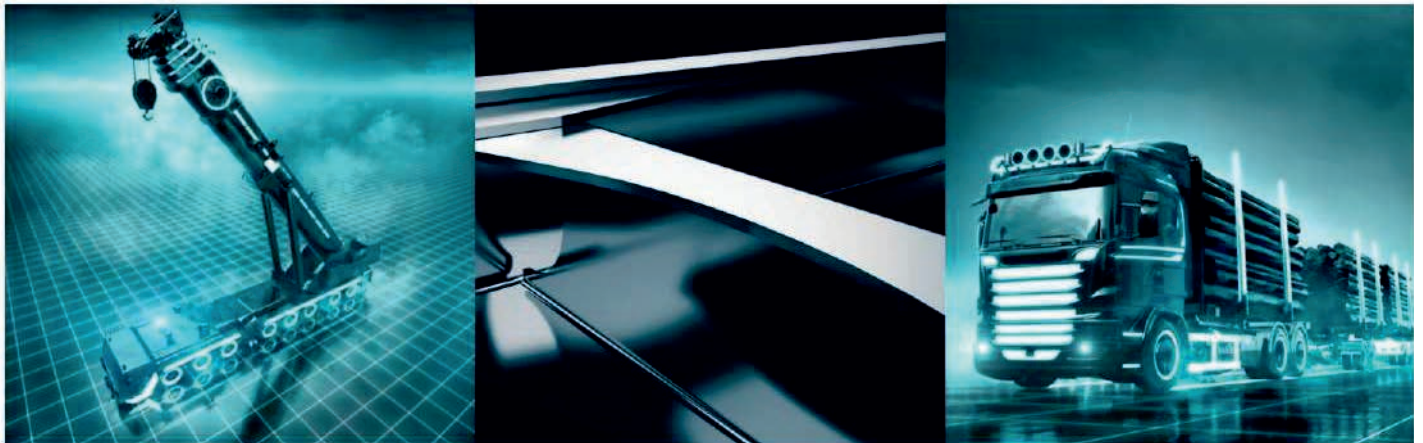
In the never-ending battle for improved performance of steel products, less weight wins.

To make products lighter you need stronger steel that can be used in thinner dimensions. Strenx® performance steel is our solution to this challenge. We call it performance steel, because it adds performance beyond ordinary high strength steel.

With Strenx steel, trailer manufacturers can specify more payload. Truck owners can cut down on fuel consumption and CO₂ emissions. Crane operators can improve their business by reaching higher and further. Farmers can cover more acres in a day.

That–s the beauty of Strenx steel: Whatever your application, Strenx offers new options for improving its performance.

CERTIFICATION



THE BEAUTY OF STRENX: DESIGN CHALLENGES AND REWARDS

Strenx performance steel makes the sport of chasing percentages much more interesting. Not only to watch, but also to take part in.

In the hands of skilled and ambitious design engineers, Strenx can produce outstanding results. Depending on the starting point, designers can cut 20, 30, 40 percent and more weight off steel structures and yet still achieve greater performance and a longer service life.

By thinking thinner you can achieve stronger and lighter solutions for a wide range of applications. Lifting and transportation are the primary areas where steel with a yield strength from 600 MPa and upwards is a game changer.

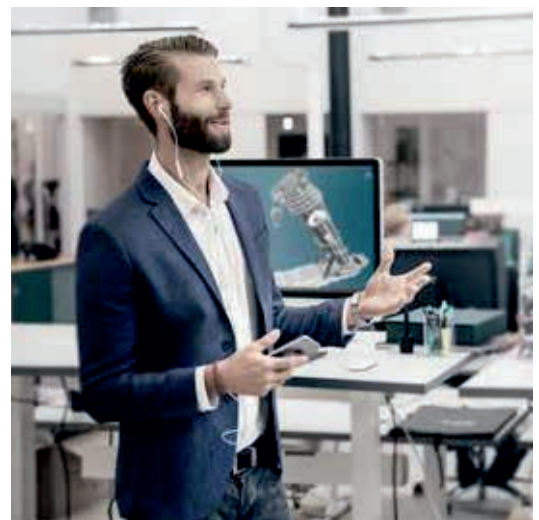
If a current design works fine with a lower strength steel, switching to Strenx can make it even better. However, by taking a more radical approach and starting over, the potential becomes even greater.

In reality, it is seldom that we start with a blank screen. Previous products, production facilities and other practicalities have a way of holding us back. However, a healthy dose of free thinking can reveal new ideas for stronger, lighter, and more competitive products. Strenx products, if you like.

Working with steel in the 600-1300 MPa range will certainly challenge some preconceptions of steel design. In some cases it is almost like handling a brand new material.

To support your new ideas, you are welcome to explore our design and innovation resources at the SSAB Knowledge Service Center. New design solutions can be tested virtually with the help of computer simulations for stress distribution, fatigue conditions, and other design criteria.

Now, let the race for percentages begin°



THE BEAUTY OF STRENX:

STEEL WITH SUPPORT INCLUDED

Strenx performance steel has great potential to make your products stronger, lighter, safer, more competitive and more sustainable. When you combine this superior steel with the knowledge and resources provided by SSAB, your products can reach new levels of performance.





SSAB has a long history of supporting its customers in product development, from innovation and the design of new applications to the choice of material, life cycle cost calculations, logistics solutions, and workshop recommendations.

In short, as a Strenx steel customer you have access to three areas of service and support:

SSAB Tech Support

The first line of technical support is staffed with experienced engineers on call around the clock, providing assistance in your own language or in English. Technical support handles all your practical, day-to-day questions about the choice of materials, welding parameters, production practices and much more. Tech Support can be reached by phone or via the SSAB help desk. You can learn more about technical support at ssab.com.

SSAB Shape

Provides engineering, preprocessing and logistics services to complement your own resources in a way that improves total production efficiency and economy. You have access to a network of service centers equipped with advanced machinery for the preprocessing of Strenx steel. You can even have semi-finished parts and ready-to-assemble kits delivered direct to your production lines.

SSAB Knowledge Service Center

A unique resource for application and production development. Our material and production specialists focus on making your products easier to manufacture, able to carry more payload, last longer and require less maintenance. The SSAB Knowledge Service Center has expert teams supporting our customers in different areas:

Structural technology team

Focuses on advanced design solutions and structural integrity relating to the use of high strength steel in strong and light constructions.

Forming technology team

The main objective of the forming technology team is to give customers support on the best practices for cutting and forming high strength steel.

Joining and thermal cutting team

Provides our customers with technical support and information on welding and thermal cutting of SSAB steel grades.

Production efficiency team

Performs production flow analysis and process optimization in order to find savings in production costs.





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THE BEAUTY OF STRENX:

FROM
600
TO
1300*
MPa

If you have ever thought that all steel is basically the same, Strenx performance steel will make you think differently. Strenx steel is strong and reliable from the surface to the core.

The first thing you will notice is the surface quality of Strenx steel. Thickness and flatness tolerances are equally impressive, and verified by the Strenx guarantees.

The properties within the steel such as yield and tensile strength, bending performance and impact toughness are also carefully tested to ensure reliability and consistency in every delivery.

*At the time of writing, open for extension.

www.kamleshmetalalloy.com/info@kamleshmetalalloy.com

THE PERFORMANCE PORTFOLIO FOR STRENX STEEL PLATE, STRIP, TUBE AND SECTIONS

Strenx hot rolled plate products							
Name	Thickness range [mm]	Yield strength $R_{p0.2}$, min [MPa]	Tensile strength R_m , min [MPa]	Elongation A_5 min %	Bendability Minimum punch radius R/t, transverse to rolling direction. $8 \leq t < 15$ mm	CET/CEV _{typical} Plate at t = 10 mm	Impact toughness [J] at -40°C
Strenx 700	4-53	700	780-930	14	1.5	0.29/0.43	69
	(53)-100	650	780-930	14			
	(100)-160	650	710-900	14			
Strenx 900	4-53	900	940-1100	12	2.5	0.36/0.55	27
	(53)-100	830	880-1100	12			
Strenx 960	4-53	960	980-1150	12	2.5	0.36/0.55	40
	(53)-100	850	900-1100	10			
Strenx 1100	4-(5)	1100	1250-1550	8	3.0	0.36/0.55	27
	5-40	1100	1250-1550	10			
Strenx 1300	4-10	1300	1400-1700	8	4.0	0.42/0.65	27

Strenx hot rolled strip products							
Name	Thickness range [mm]	Yield strength $R_{p0.2}$, min [MPa]	Tensile strength R_m , min [MPa]	Elongation A_5 min %	Bending radius [R/t] $3 < t \leq 6$ mm	CET/CEV _{typical}	Impact toughness [J] at -40°C
Strenx 600 MC	2-10	600	650-820	16	1.1	0.21/0.33	27
Strenx 650 MC	2-10	650	700-880	14	1.2	0.22/0.34	27
Strenx 700 MC	2-10	700	750-950	12	1.2	0.25/0.39	27
Strenx 700 MC Plus	3-12	700	750-950	13	1.0	0.24/0.38	40 (-60°C)
Strenx 900 MC	3-10	900	930-1200	8	3.0	0.25/0.50	27
Strenx 960 MC	3-10	960	1000-1250	7	3.5	0.28/0.51	27
Strenx 1100 MC	3-8	1100	1250-1450	7	4.0	0.56/0.33	27 (-40°C)

Strenx cold rolled products							
Name	Thickness range [mm]	Yield strength $R_{p0.2}$, min [MPa]	Tensile strength R_m , min [MPa]	Elongation A_{80} min %	Bending radius [R/t]	CET/CEV _{typical}	Impact toughness [J] at -20°C
Strenx 700 CR	0.7-2.1	700	1000-1200	7	2.0	0.29/0.40	
Strenx 960 CR	0.7-2.1	960	1200-1400	3	3.5	0.28/0.39	
Strenx 1100 CR	0.7-2.1	1100	1300-1500	3	3.5	0.30/0.41	

Strenx tubes and sections							
Name	Wall thickness [mm]	External dimensions [mm]	Yield strength $R_{p0.2}$, min [MPa]	Tensile strength R_m , min [MPa]	Elongation A_5 min %	CET/CEV _{typical}	Impact toughness [J] at -20°C
Strenx Tube 700	3-10	33.7 - 323.9 30 x 30 - 300 x 300 50 x 30 - 400 x 200	700	750-950	10	0.24/0.38	40
Strenx Tube 900	4-6	76.1 - 219.1 70 x 70 - 160 x 160 80 x 60 - 200 x 120	900	930-1200	7	0.25/0.50	40
Strenx Tube 960	4-6	76.1 - 219.1 70 x 70 - 160 x 160 80 x 60 - 200 x 120	960	980-1250	6	0.28/0.51	40
Strenx Section 650	2.5-10		650	700-880	12	0.22/0.34	40
Strenx Section 700	3-10		700	750-950	12	0.24/0.38	40
Strenx Section 900	3-6		900	930-1200	8	0.28/0.51	40

Strenx properties are covered by Strenx guarantees. For information about individual grades, please refer to the documentation available at ssab.com or from your SSAB sales contact. SSAB reserves the right to change specifications without prior notice. The tables are for reference only. The product data sheet assigned to a specific product holds all valid and guaranteed properties.

POTENTIAL APPLICATIONS

Container trailers
Flatbed trailers
Box trailers
Timber trailers
Tipper trailers
Bulk and tank trailers
Car carriage trailers
Train cargo wagons
Passenger trains
Light rail trains
Buses and light trucks
Telescopic and articulated boom lifts
Scissor lifts
Truck-mounted loader cranes
Telehandlers
Concrete pump cranes
Mobile cranes
Cargo handlers
Forestry harvesters
Forestry forwarders
Agricultural tippers and trailers
Front loaders and attachments
Sprayer chassis and booms
Jack-up legs
Pylons
Marine and offshore cranes
Safety boat davits
Winches and deck equipment
Ramps, decks and cargo hatches
Gears and racks





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THE BEAUTY OF STRENX:

A WIDE VARIETY OF APPLICATIONS

Whatever your application, Strenx steel offers new options for improving its performance. Here we present some products that benefit from using high strength steel to reduce the weight of the structure.

Reach higher and further

Strenx can make lifting equipment more competitive through increased reach both upwards and outwards. Smart design utilizes the high yield strength of Strenx to achieve greater performance without compromising on the high levels of personal safety required by lifting equipment. This can be done without making the complete unit too heavy for the roads on which it travels.

Load more and burn less fuel

The transport industry is constantly looking for ways to increase payload and improve fuel efficiency for every loaded ton, unit or passenger. Trucks, trailers, trains and buses need to become lighter without compromising on performance, safety and service life. Strenx steel is the answer, delivering yield strengths of 600-1300 MPa, while still being as welcome in the workshop as regular steel.

Good news for farming and forestry

High capacity and low weight are common needs for agriculture and forestry applications. A higher load capacity has a direct impact on the financial result. Low equipment weight minimizes soil compacting on crop fields as well as ground damage in the forest. A strong and light harvester fi whether it collects crops or timber fi means less fuel, less wear and less hours worked to get the same result. Good news for the owner and good news for the driver.

Safe and strong for marine and offshore structures

Strenx is the safe choice for strong and light structures operating in sensitive marine and offshore environments. Thanks to its unique combination of strength, toughness, consistency, and weldability it exceeds the demanding classification standards. The extreme cleanness of Strenx steel creates high toughness at low temperatures, a guarantee of the highest possible safety in critical applications.

Welding

Strenx can be welded using any conventional welding method. MAG welding is the most common technique today, since it is very easy to automate for high productivity. Other suitable methods are MMA welding, TIG welding, plasma welding, submerged arc welding and laser welding.



Thermal cutting

The fine surface finish of Strenx plate and strip makes it perfect for laser cutting without any additional surface preparation. Thermal cutting of hot-rolled Strenx steel sheet and plate is performed with oxy-fuel flame, plasma and laser.



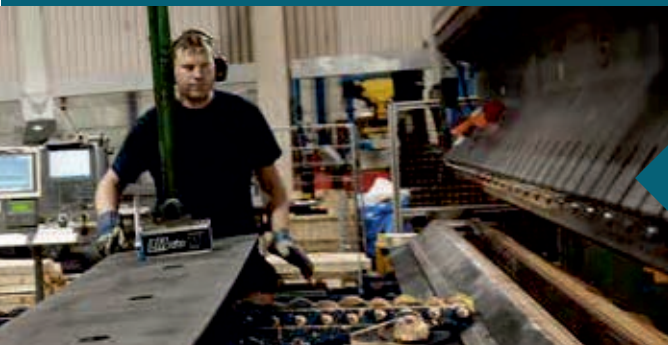
Bending

Free bending and roll bending of Strenx steel plate and strip can be done using standard bending machinery. Uniform properties, close thickness tolerances and high surface quality ensure a predictable bending process.



Mechanical cutting

Mechanical cutting of Strenx is best performed with guillotine shears. Consider carefully the settings of the cutting machine. The most important factors are clearance, cutting angle and blade hardness. The plate should be allowed to warm up thoroughly to around +20°C before it is cut.



Machining

Strenx can usually be machined without special equipment. Stable machinery fitted with high-speed steel and carbide tools is recommended when drilling, countersinking, tapping, turning, and milling.



**FOR MORE DETAILS
CONTACT
www.kamleshmetalloy.com**



THE BEAUTY OF STRENX:

WELCOME TO THE WORKSHOP

Pushing the limits of the steel and design solutions requires high consistency and precision of the steel to secure the performance and safety of the product.

Through constant process improvements we are able to deliver Strenx steel with a unique set of guarantees for thickness, flatness and bending properties. Strenx guarantees are your safeguard for trouble-free production, day after day, year after year. And the material can be processed by the same kind of machinery and technology used for conventional steel.

SSAB is the world's most experienced producer of high-end quenched and tempered steels. Strenx steel's extreme cleanliness, lean alloy solution and high-quality manufacturing processes have great impact on toughness, fatigue strength and performance in sub-zero conditions.

Since Strenx is stronger, it can be used in thinner dimensions to make lighter structures. It improves the final product, and it brings benefits along the way. Thinner material usually means less welding and faster production. Everyday handling in the workshop becomes lighter, and there is less steel to take up storage space.

When new design and innovative solutions require new and smarter production methods, you can always turn to SSAB Tech Support for guidance and recommendations. We are happy to provide you with expert advice on materials and processing when you are developing new and improved applications.

Strenx guarantees

Strenx guarantees cover thickness tolerances, flatness tolerances and bending properties.

Thickness guarantee

The thickness tolerances are more narrow than those specified in the relevant EN standards for each product group.

Flatness guarantee

Strenx has five classes of flatness tolerances, depending on the type of product and material strength. All classes conform to or are more stringent than specified in EN 10 029. Class A and B also conform to or are stricter than specified in EN 10 051.

Bending guarantee

The bending guarantee depends on the yield strength of the steel grade, and always conforms to or is more stringent than the requirements in the relevant EN standard for each product.



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59/61, Farida House, Shop No.4, Gr. Floor, 2nd Panjrapole Lane,
C.P. Tank Road, Mumbai - 400 004.



+91 6636 2180 / 6659 5260



info@kamleshmetalalloy.com



www.kamleshmetalalloy.com