HIGH STRENGTH STEELS

From SSAB Swedish Steel UK.

DOMEX®

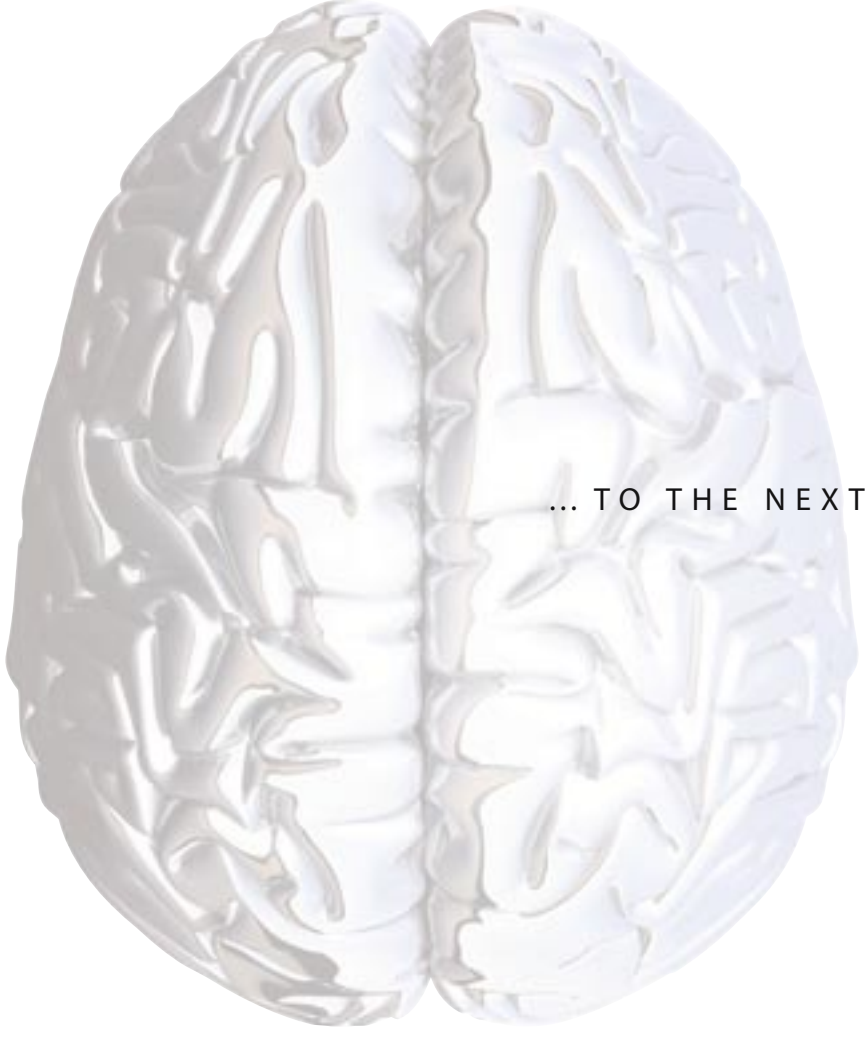
DOCOL®

DOGAL®

Strong, weight saving
and profitable.

SSAB
SWEDISH STEEL

OPEN YOUR MIND ...



... TO THE NEXT GENERATION

The SSAB Swedish Steel team UK
(pictured from left to right):
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OF STEELS
ADVANCED HIGH STRENGTH STEELS
BY SSAB

THE STRONG ALTERNATIVE.
AND THE MOST ECONOMICAL.

SSAB Tunnplåt is the largest manufacturer of steel sheet in the Nordic region and we are now one of the world's leading producers of extra-high and ultra-high strength steels (advanced high strength steels).

Our representation around the world is based on local knowledge and local presence. In the UK – just as in other important markets for our steels – we have established our own subsidiary with locally recruited employees.

Fast, direct contact with customers is just one of the factors that allow for active participation in product development with British companies. It allows access to our wealth of expertise and is important in developing long-term relationships.

Our aim of freely sharing our expertise with customers is one of the reasons for prioritising direct cooperation with British companies, while also working with steel service centres. Superior service and added value for our customers are prerequisites in the increasingly demanding UK steel market.

SUCCESSFUL PARTNERSHIP

Being British, we are accustomed to the prevailing domestic corporate culture and we have in-depth knowledge of dominant business activities. SSAB Tunnplåt has been active in the UK since the company was established. We are now one of the leading suppliers of high strength, extra-high strength and ultra-high strength steels, and we are regarded by many as the leading specialist company in this field.

Our global experience of the opportunities offered by using high strength steels and our local roots allow us to assist customers to avoid time-consuming and costly development projects. In-depth technical support is provided through technical experts who are specialists in applying high strength steels to a diverse range of applications.

Our broad technical and commercial knowledge of the advantages of using high strength steel is readily available to all UK customers. This enables them to put to immediate use the potential benefits of high strength steels, thus avoiding the need for unnecessary and often costly trials.

British manufacturers are increasingly taking advantage of the benefits of high strength steel. One driving force behind this development has been the demands of the automotive industry, where high strength steel is the recognized standard choice for critical safety applications.

ONE CONTACT POINT FOR INFORMATION

The focus in SSAB customer contacts is on fast and reliable supply of information. Customers have a single contact point that can deal with matters ranging from technical specifications to current delivery information, with the back up of online connections. We are dedicated to the needs of our customers and do our best to respond to their needs.

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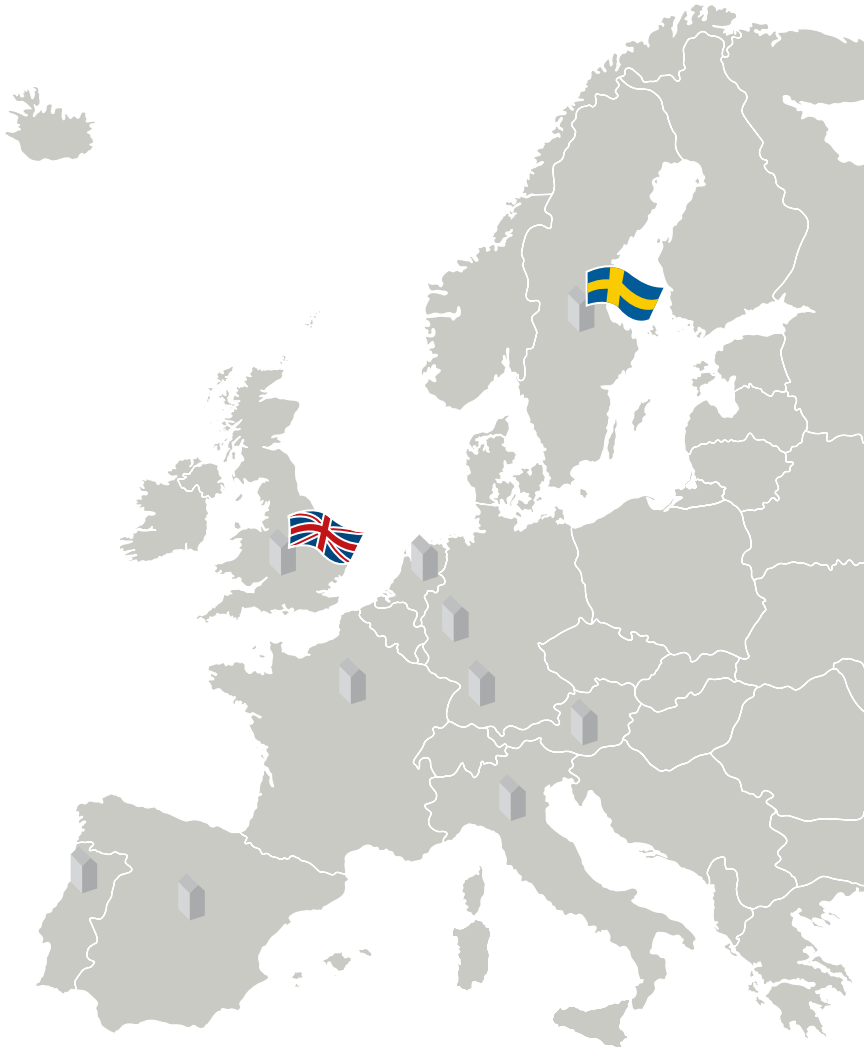


In-house seminars are available to companies that wish to broaden their knowledge of current developments and production opportunities by using high strength steels.

EFFICIENT LOGISTICS

Total cooperation with our customers involves not only affording access to the technical benefits of using high strength steels, but also providing efficient logistics solutions. Deliveries to the UK are made by two weekly shipments by sea to Goole on the Humber.

In addition to direct customer deliveries, we maintain an extra-high strength steel hot-rolled sheet stock at Goole. For major customers, a bespoke stock is available for call-off or scheduled despatch. A general stock of popular items is also maintained for despatch on demand to a wide variety of consumers. The benefits of fast and reliable material availability from local stocks are greatly appreciated by our customers.

SSAB Tunnplåt has advanced logistics systems that meet the growing needs of many steel purchasers in the UK for greater flexibility in ordering and stock keeping.

LIFT HIGHER. TRAVEL FURTHER. BE STRONGER.

High strength steels improve existing products by making them lighter and stronger, and entirely new products can be optimized right from the start to achieve better performance and more economical production.

INCREASED PAYLOAD, LESS FUEL

The main reason for switching to high strength steel is to achieve weight savings. Lower weight of a truck or earthmoving machine, for example, increases its load-carrying capacity. It also lowers fuel consumption and reduces wear on the machinery. Experience shows that the repair and maintenance costs for various types of vehicles are significantly reduced.

SAFETY THROUGH STRENGTH

The passenger car industry is a self-evident user of high strength steels for all types of safety components. Advanced high strength steel structures are used for producing the safety 'cages' of cars, and high strength steels are also used for other car components for which low weight and high strength are essential. Weight savings of up to 50 percent are attainable by switching from mild steel to our strongest steel for safety components. High strength steel is also much more economical to use than aluminium – the same weight and safety performance are delivered at a considerably lower price than aluminium.

Research at SSAB Tunnplåt is focused on the development and improvement of high strength steels for new applications, and of methods for forming, welding and joining.

ADVANCED HIGH STRENGTH STEELS BY SSAB

OPTIMIZING DESIGN AND PRODUCTION

High strength steels create new opportunities for designing and manufacturing key components that can withstand high loads, but must be simple and inexpensive to produce. Switching to high strength steel can result in great savings in production costs by offering the designer the freedom to make individual parts simpler and with fewer reinforcements.

PRODUCTION AS USUAL

In most cases, switching to high strength steel involves only minor adjustments to production methods and incurs no expensive investments. High strength steels can be sheared, cut, punched, bent and welded in the same way as mild steels, and conventional forming methods and joining techniques often perform very well.

HIGH STRENGTH STEELS FOR EVERY ADVANCED APPLICATION.

SSAB produces a wide variety of high strength steels. Some of these have a very wide field of application in the engineering and automotive industries, while others have been developed for very special demands and needs. In addition to our "standard" extra-high strength and ultra-high strength steels, we also produce wear resistant, corrosion resistant and ballistic protection high strength steels.

HIGH STRENGTH STEEL EVERY DAY

Since we are focused on high strength steels, we produce the various steel grades continuously. The production of high strength steel makes very strict demands on continuity, precision and expertise. To achieve the consistency of quality that characterizes SSAB steels, less variation in tolerances in our production process and more advanced production techniques are necessary than those needed when producing standard steels.

CONTINUITY, QUALITY AND STRINGENCY

Our advanced production process guarantees quality. Every steel delivery has virtually the same properties – the dimensions, tolerances and internal properties of the steel are consistent. This assures our customers of reduced rejection rates in their production system and minimized production disturbances.

DOMEX – Hot-rolled, cold-forming steels with yield strengths of up to minimum 700 MPa and even higher for ultra-high strength steels. Produced in thicknesses between 2.0 and 10.0 mm for extra-high strength steel and between 3.0 and 6.0 mm for ultra-high strength steel. Also available as Domex Wear wear-resistant steel, Domex Weather Resistant corrosion-resistant steel, Domex Protect ballistic protection steel, and also as hardenable steel. Typical applications of Domex steels include trucks, trailers, cranes, structural components for passenger cars, earth-moving machines and containers.

DOCOL – Cold-reduced steels with minimum guaranteed tensile strengths of up to 1400 MPa. Produced in thicknesses between 0.4 and 2.0 mm. Also available as Docol DP/DL dual-phase steels, Docol Wear wear-resistant steel, and Docol Weather Resistant corrosion-resistant steel, Docol Protect ballistic protection steel, Docol M martensitic steel and Docol Strap packaging steel. The DP and martensitic grades are also available in electrogalvanized condition. Typical applications of Docol steels include safety components for cars, car seats, tubular constructions, packaging and containers.

DOGAL – Corrosion-resistant hot-dip galvanized steels with tensile strengths of up to 1000 MPa. Produced in thicknesses between 0.5 and 2.0 mm. Available as Dogal YP micro-alloyed cold-forming steel or Dogal DP dual-phase steel. Typical applications of Dogal steels are safety and structural components for the automotive industry.

All of our steels are delivered in coils, slit strip or cut-to-length sheet. Quality in production is guaranteed to conform to EN ISO 9001:2000, ISO/TS 16949:2002 and EN ISO 14001:1996.


ADVANCED HIGH STRENGTH STEELS
BY SSAB

FACTS ABOUT THE SSAB GROUP.

By its focus on high strength steels and its qualified customer service, SSAB has currently become one of the world's most successful steel producers, with sales to more than a hundred countries all over the world and offices in 40 of them. The SSAB Swedish Steel Group has a total of around 9,400 employees, of whom SSAB Tunnplåt employs 4,500. The total turnover in 2004 was SEK 24,631 million, of which SSAB Tunnplåt accounted for SEK 12,693 million.

Service, knowledge and added value comprise an important part of every delivery from SSAB Tunnplåt.

Regular shipments and centrally located buffer stocks ensure just-in-time deliveries to all our customers in the UK.

SSAB Tunnplåt operates as resource-efficiently as possible, both in production and in transport. Our products are delivered mainly by rail or sea.

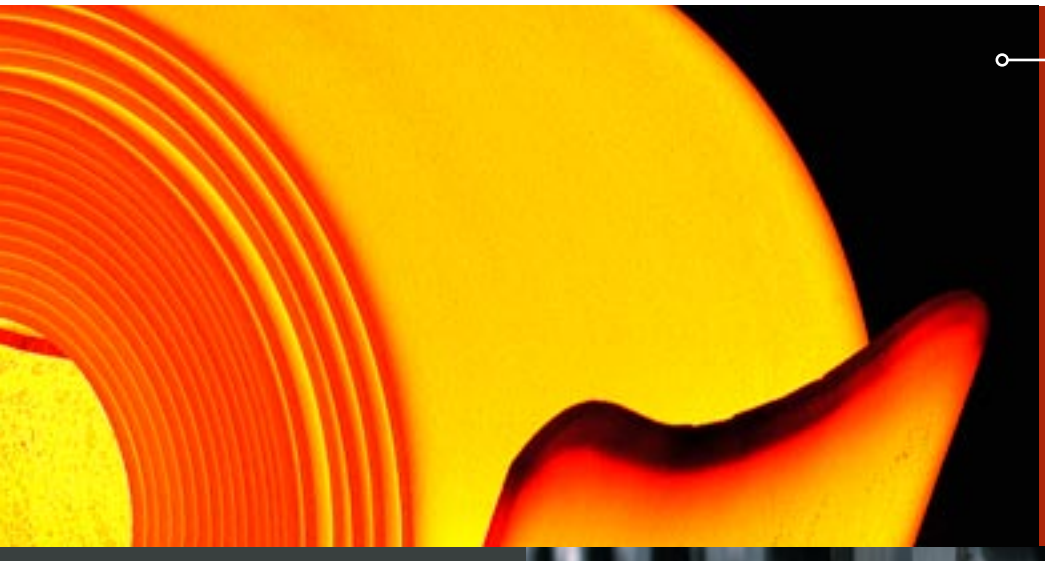
SSAB TUNNPLÅT is the biggest Scandinavian manufacturer of steel sheet and one of the world's leading suppliers of high strength steel sheets. SSAB Tunnplåt was formed in 1988 by the merger of the steelworks in Luleå and Borlänge. The company has its coking plant, blast furnaces and steelworks in Luleå, and rolling mills and coating plants in Borlänge.

SSAB OXELÖSUND is the world's leading producer of high strength heavy plate – quenched and tempered steels for structural and wear parts.

PLANNJA manufactures highly upgraded building products and product systems in steel and aluminium.

TIBNOR is the leading company in Swedish steel trading and markets, among others, steels from SSAB Tunnplåt.

ADVANCED HIGH STRENGTH STEELS BY SSAB



Devotion to quality characterizes production at SSAB Tunnplåt – from the exact chemical composition of the steel slabs to the advanced post-treatment processes.

Finished coils are stored under exactly the right conditions to ensure that the steel will have the same surface finish on delivery as it had when it left the rolling mill.

SSAB can supply cut-to-length sheet between 600 and 1600 mm in width and from 0.6 to 13 metres in length. The exact size can be specified by the customer.

Domex high strength steel has unmatched formability. The steel can be bent to a radius down to 1.2 times the thickness, which allows for an entirely new design approach.

ADVANCED HIGH STRENGTH STEELS – SUCCESSFUL APPLICATIONS IN SELECTED AREAS

PASSENGER CARS

Conformance to environmental demands and safety requirements is very important to the automotive industry. Ultra-high strength steel is the most cost effective way of improving safety, fuel consumption and performance of passenger cars. A weight saving of 1 percent yields a reduction of 0.5 percent in the fuel consumption.

Ultra-high strength steels can be used to achieve major weight savings on vital parts of the safety structure of a car, such as door beams and B pillars, while also improving the crashworthiness of the car. Other materials, such as aluminium, do not offer the same scope for cutting weight while retaining the energy absorption capability in a collision.

RAILWAYS

Goods wagons with critical components made of extra-high strength steels can carry higher payloads and are much more resistant to wear and damage than wagons made of ordinary steels. Open box wagons for steel scrap are one example in which resistance to wear results in lower maintenance costs.

The working conditions for railway personnel are another important reason in favour of extra-high strength steels. Sliding doors, partitions and locking arms made of extra-high strength steel are much lighter and easier to operate. Extra-high strength steel is also gaining ground in locomotive safety cages in order to improve driver safety.

ADVANCED HIGH STRENGTH STEELS BY SSAB

The centre row of seats of the Swedish Volvo XC90 is mounted on an advanced safety frame made of ultra-high strength steel. Although it weighs only 16 kilos, the frame can withstand collision forces of up to 6 tonnes.

Tatravagónka, the Slovak railway rolling stock manufacturer, has cut the deadweight of this wagon by one tonne by using Domex extra-high strength steel.

ADVANCED HIGH STRENGTH STEELS – SUCCESSFUL APPLICATIONS IN SELECTED AREAS

TIPPERS

Rocks, sand and gravel take a heavy toll on the bottom and the sides of a tipper. Wear, abrasion and rough handling may result in a very short useful life of a tipper made of mild steel. This is why ultra-high strength steel is becoming the new standard for both manufacturers and operators of tippers.

If Domex Wear is used for the bottom and the sides of a tipper, its useful life will be substantially increased, and service and repairs will be minimized. If Domex 700 is used for the ribs, the weight of the tipper will be reduced and the cost-effectiveness will be improved further.

Wielton is a leading Polish manufacturer of tippers and trailers. Ultra-high strength Domex 700 is such a vital part of the design that a Domex sign is applied to every tipper.

CARGO CONTAINERS

Extra-high strength steels can be used to achieve a tare weight of large 53 ft containers close to that of aluminium containers, but at a much lower cost and with higher strength, lower maintenance costs and better overall economy.

The weight of a container made of extra-high strength steel is lower than that of a container made of traditional steel, and its payload capacity is therefore higher. In many cases, the maintenance costs are also reduced. Containers often sustain wear during handling, and reduced damage cuts the maintenance costs. This enables the container to be used for longer periods between maintenance occasions, which generates increased revenue for the user. The benefits on 45 ft containers are well known, but the use of extra-high strength steels for 20 ft and 40 ft containers is now being investigated and tested.

Jindo Corporation of Korea has used 3 – 6 mm Domex 700 W and 1 – 1.2 mm thick Docol 700 W extra-high strength steels in the development of 53 ft containers for the domestic US market. The maintenance cost of these containers is only 25 percent of that of aluminium containers.

ADVANCED HIGH STRENGTH STEELS BY SSAB

TRAILERS

Hard economic facts favour the use of extra-high strength steels for trailers and trucks. Weight savings increase the payload and/or save fuel. The extra cost of a trailer made of extra-high strength steel will be recovered quickly – the operator can often expect an annual revenue increase of several thousand Euros per trailer.

A weight saving of 20 percent is not unusual when mild steel is replaced by extra-high strength steels such as Domex 700 MC or ultra-high strength steel like Docol 1200 M for the chassis and bodies of trucks and trailers. The economic benefits to the haulage industry of the high wear resistance of high strength steels are an additional advantage.

The use of Docol 1200 M ultra-high strength steel for the sides of this South African Trailord trailer body has enabled the material thickness to be reduced to only 1.5 mm.

SEATS FOR TRAINS AND COACHES

Every kilo saved on the weight of public transport vehicles is important to the economics and to passenger safety. This is why seat manufacturers use high strength steel for their latest products.

Seats must be able to withstand very high forces in the event of an accident. So a cold-reduced, extra-high strength, dual phase steel such as Docol 800 DP must be used for the vital structural parts of the seat. This steel is used for producing tubes and steel sheet parts, and the production process also involves stamping operations.

High strength steel also increases the useful life of the seats and reduces the risk of fatigue failure associated with seats made of aluminium.

The Spanish seat manufacturer Fainsa has reduced the weight of its seats by 30 percent by changing over to high strength steel. Tests have shown that the expected useful life of the new seat is 7 years.

Please contact us for further information!

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