

HARD STRIPS (INDIA)

An ISO 9001: 2008 Certified Company



**COLD ROLLED CARBON
STEEL STRIP**



What has our Cold Rolled steel strip got to do with your shoes?

Wearing shoes? Do you prefer shoes that are not only flexible and diminish the load incurred on your feet and calves, but also protect your feet from injuries? It is the shoe shank that gives the wearer the freedom of movement without feeling restricted. Why? The shoe shank made from Cold Rolled steel strips produced by Hard Strips (India) assist the shoe in bending at the toes instead of under the arch. But at the same time, it also prevents the wearer from wounds and bruises by preventing objects from penetrating the shoe from underneath.

Cold Rolled steel strips are used for many different applications in everyday life. For most of the applications, such as that in Automobile Industry it is hard to detect our material at the first glance. Although, Cold Rolled steel strips manufactured by Hard Strips (India) due to its high durability, breaking strength & wear resistance play a vital role in smooth functioning of the automobiles, e.g. shock absorber bush, timing chain, shims, washers, and circlips and in ensuring safety of the customers, e.g. seat sliders, driving seat belt buckle and airbags. Apart from Automobile Industry, Cold Rolled Carbon steel strips are also used for manufacturing many tools and saws.

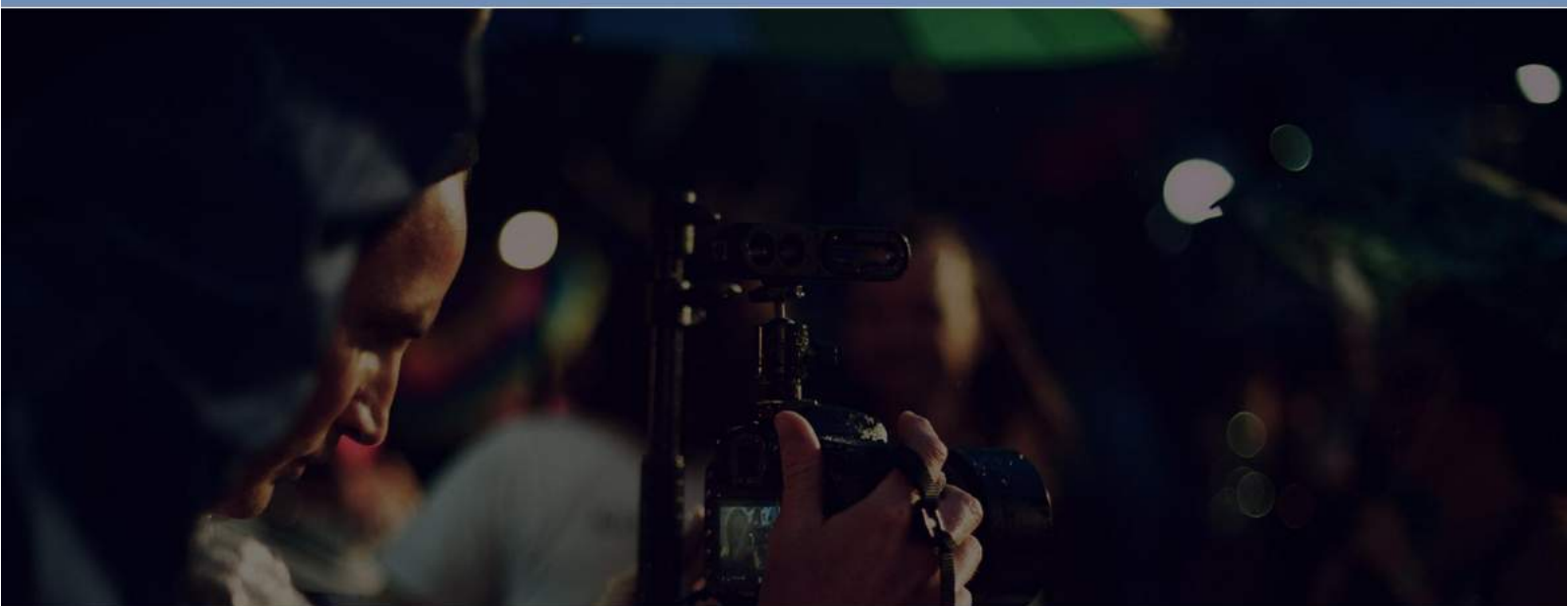


The surgical blades made from our C-98 & C-120 cold rolled steel strips have excellent wear resistance and strength, and require less frequent edge sharpening. Carbon being the most important hardening element also reduces the amount that the blade would wear over time. Also, the cold rolled steel strips offered by us for surgical blades not only have low Manganese content but also have a little bit of Chromium, thus increasing the strength of the blades.

Meeting industry demands

Hard Strips (India) has been manufacturing Cold Rolled & Hardened Tempered carbon steel strips for more than 3 decades. Due to our knowledge, experience, & constant process improvements, we have consistently been able to achieve precise results in the manufacturing of carbon spring steel strips.

Hard Strips (India) offers different grades of carbon steel strips. Our products have high workability, fatigue resistance, corrosion resistance & are suitable for use at high temperatures. Additionally, in order to serve our customers better, we offer tailored solutions to them. Our advanced cold rolling mills can produce strip in thicknesses down to 0.20mm. Through our fully integrated processes we ensure that our products are high quality and long lasting.



How can we help you increase your productivity?

Research & Development

It is our endeavor to look for various methods & techniques to improve the quality of our products. We are equipped with an in-house precision lab where we have the latest scientific instruments & equipments and where our highly experienced R&D personnel work in order to develop the new means of improving the product quality.

Quality Assurance

Hard Strips (India) is dedicated to customer service through Total Quality Management. Our ISO: 9001:2008 certification represents our on-going commitment of providing top quality products and services to our customers. The strips produced are strictly as per Technical Delivery Conditions required by the customers in particular or normal course as per the IS, BS, DIN, SAE standards.

Timely Delivery - On time - Every time.

We work with our customers to ensure that our delivery schedule is consistent with the customer's production schedule. This leads to greater efficiencies, increased competitiveness in the market, and greater customer satisfaction.

Tailored Solutions & Deliveries: Strong Relationships

Our experience and know-how is used for the interest of our customers. This usually needs a close communication between the customers and our technicians. The more precise we know which tasks have to be aimed for, the sooner we can optimize our products tailor made for the specific application. This can help to achieve significant savings for the development and manufacturing of our customers' products.

Process Control: Meeting your Expectation without any exception.

By continuously monitoring all the operations involved in steel strips manufacturing, quality control, and dispatch, we ensure that our products meet your expectations. We strive to perform to the highest degree.

We're changing ahead of time.

By innovating new products and continuously enhancing our existing products we remain uniquely positioned to help our customers enter new markets and segments faster.



Thickness	0.20 - 5 mm
Width	5 - 400 mm
Tolerances	According to EN 10140 and special agreements
Delivery form	Coils and fixed lengths
Surface conditions	Bright
Hardness	As Rolled, Annealed

Grades

Hard Strips (India) offers the following spring steel materials. Other grades such as 75Cr25, 75Cr1, 75Ni8, & 80CrV4 can be offered on request.

	Grades	Carbon %	Silicon %	Manganese %	Sulphur % (Max)	Phosphorous % (Max)	Chromium %	Vanadium %
Medium Carbon Steel	SAE 1045	0.42-0.50	0.15-0.30	0.60-0.90	0.05	0.04		
	SAE 1050	0.47-0.55	0.15-0.30	0.60-0.90	0.05	0.04		
	SAE 1055	0.52-0.60	0.15-0.30	0.60-0.90	0.05	0.04		
	SAE 1060	0.55-0.66	0.15-0.30	0.60-0.90	0.05	0.04		
	SAE 1065	0.60-0.70	0.15-0.30	0.60-0.90	0.05	0.04		
High Carbon Steel	SAE 1070	0.65-0.75	0.15-0.30	0.60-0.90	0.05	0.04		
	SAE 1075	0.70-0.80	0.15-0.30	0.40-0.70	0.05	0.04		
	SAE 1080	0.75-0.88	0.15-0.30	0.60-0.90	0.05	0.04		
	SAE 1085	0.80-0.93	0.15-0.30	0.70-1.00	0.05	0.04		
	SAE 1095	0.90-1.03	0.15-0.30	0.30-0.50	0.05	0.04		
Low Alloy Steel	C-125	1.10-1.25	0.10-0.35	0.30-0.60	0.03	0.03	.20-0.50	
	50CrV4	0.48-0.55	0.10-0.35	0.70-1.10	0.035	0.03	0.90-1.20	0.07-0.20

International Cross References

Grade	USA	Germany	Great Britain	France	Euronorm	Italy	Japan
	SAE/AISI	DIN	BS	NFA	EN	UNI	JIS
Medium Carbon Steel	1045	C 45 / CK 45		XC 45	C 45E	C 46 / C 43	S 45 C
	1050	C 50 / CK 50	CS 50	XC 50	C 50E	C 53	S 50 C / S 53 C
	1055	CK 55	EN 9	XC 55		C 55	S 55 C
	1060	C 60 / CK 60	CS 60	XC 60	C 60E	C 60	SUP 11 A / S 58 C
	1065	0.65-0.76	EN 42F				
High Carbon Steel	1070	C 67 / CK 67	CS 70	XC 68	C 67S	C 70	
	1075	C 75 / CK 75	EN 42J	XC 75	C 75S	C 75	
	1080	C 80	CS 80				
	1084	CK 85		XC 90	C 85S	C 90	SK 5
	1095	CK 101	CS 95	XC 100		C 100	SK 4 / SUP 4
Low Alloy Steel	6150	50CV4	EN 47 / 735A50	50CrV4	50CrV4	50CrV4	SUP 10

Sizes

We offer strip steel in the following size ranges.



Shape

Through our advanced cold rolling mills, we ensure that our cold rolled carbon steel strips have the desired thickness, flatness and straightness. By ensuring that there is no deviation from flatness, we ensure that there is no waviness, coil set, and crossbow in our steel strips.

Edge Conditioning

We deliver our steel strips with a variety of “stress-free” edge finishes, in order to fit our customers’ demands. The standard profiles are shown below:

Sheared edge

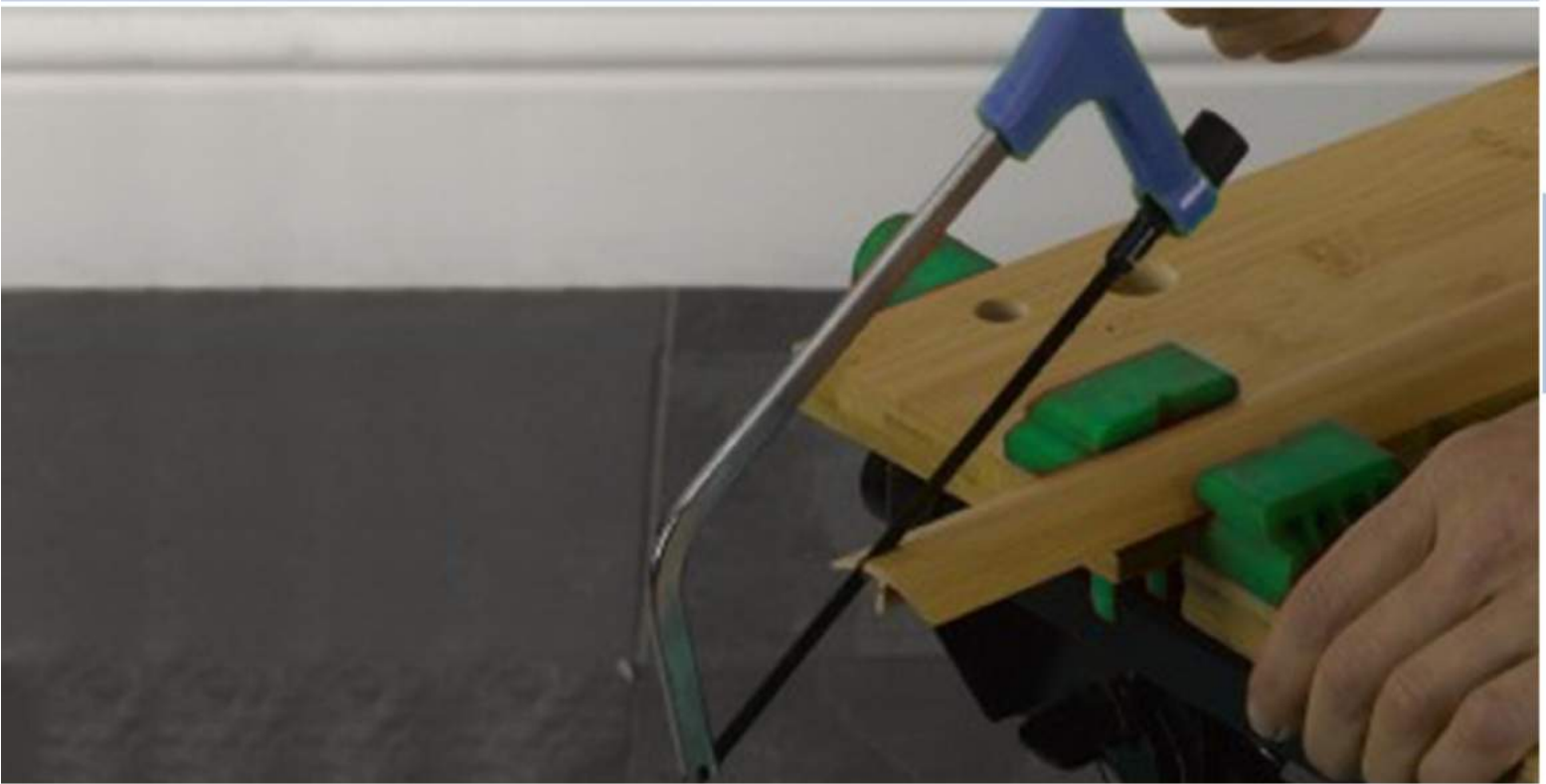
It is obtained while slitting the steel strips with a circular shear.

Round edge

Edge rounding helps to improve the fatigue life of the steel strips. Obtainable in widths up to 150 mm

Hardness Conversion Table

Vickers Hardness HV / VPN	Rockwell Hardness HRB	Rockwell Hardness HRC	Tensile Strength N/mm ²	Tensile Strength kgf/mm ²
319	107	32	1020	104
309	106	31	990	101
301	105	30	971	99
292	104	29	941	96
284	104	27.5	912	93
276	103	26.5	892	91
269	102	25.5	873	89
261	102	24	853	87
253	100	23	824	84
247	99	22	794	81
241	98	20.5	775	79
235	97		755	77
228	96		745	76
223	96		716	73
218	95		696	71
208	93		667	68
197	91		637	65
189	89		608	62
179	87		559	57
172	85		539	55
165	83		530	54
157	81		500	51



Highly durable material: Our Cold Rolled steel strips

Our Cold Rolled steel strips are excellent in terms of quality and long lasting. Our products have good properties in terms of blanking, forming, & machining, better elongation, higher tensile strength, higher workability and are ductile and uniform at all times. We ensure that our products meet the exact chemical and mechanical properties as required by our customers.

In order to ensure that our end products are reliable and adhere to the quality standards, our product development is continuously supported by stringent quality management procedures right from the starting.

Hacksaw

A good Hack saw is very useful for sawing light to medium hard materials. The Hack saw high carbon steel strip produced by Hard Strips (India) has good balance of wear resistance and mechanical shock absorbing properties. The hack saw made from our carbon steel provide hard edge with a flexible back, and thus avoid breakage.

Versatile & Flexible Spring Steel

The steel strips manufactured by Hard Strips (India) find a lot of application in the Spring Industry, due to its high yield strength, durability & form-stability, & the ability to return to its original shape on bending or twisting. Our spring steel also plays an important role in improving your driving experience, as it is the diaphragm spring made from our steel strips that ensures smooth working of the clutch and the gear.

Depending on the method through which the component is produced, we supply spring steel strips in either Annealed condition or in Hardened & Tempered condition. The Hardened & Tempered spring steel strips are generally used for the production of small springs, flat components or where the production involves laser cutting. The larger springs are manufactured using our Annealed Cold Rolled Steel Strips and are hardened after fabrication.

Narrow Steel Strips - Precision is the Key

Since last 32 years, Hard Strips (India) has been manufacturing Narrow medium & high carbon steel strips. With our modern and highly controlled manufacturing facilities, we are able to manufacture wear-resistant and strain resistant steel strips up to 5 mm width, and 0.20 mm thickness.

Are you worried about the product quality?

We are here to serve you well and in order to ensure precision our manufacturing department is supported by intensive quality control procedures.



Technical & Metallurgical Services

Our technical staff has more than 30 years of experience in the field of spring steel strip industry. We pride ourselves for our ability to assist the customers in continuous product improvement by both mutual development of the product specifications and by evaluation of the existing product specifications.

The services offered include:

- 1) Selection of an appropriate grade.
- 2) Surface & Edge Requirements
- 3) Microstructural Requirements
- 4) Permissible Tolerances
- 5) Blanking Properties
- 6) Wear Life
- 7) Fatigue & Bending properties
- 8) Packaging requirements

Product Packaging - Genuine Packaging for Genuine Products

After the carbon steel strips development, we at Hard Strips (India) also make sure that they reach your company in a superb condition. This has led us to concentrate on packaging as well. We understand that every means of transportation is different, and for this we have developed different types of packaging in order to meet both national and international demands. Due to our vast experience in this field, we ensure that through out packaging, our carbon steel strips are easily traceable and are able to resist the bumpy and long transportation.



HARD STRIPS (INDIA)



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