



Sargol Industrial
& Mining
(Zinc & Lead) Co.



Tala Tirmi
Sepahan Coal
Transportation Co.



Shahrekord Zarin
Steel Rolling Co.

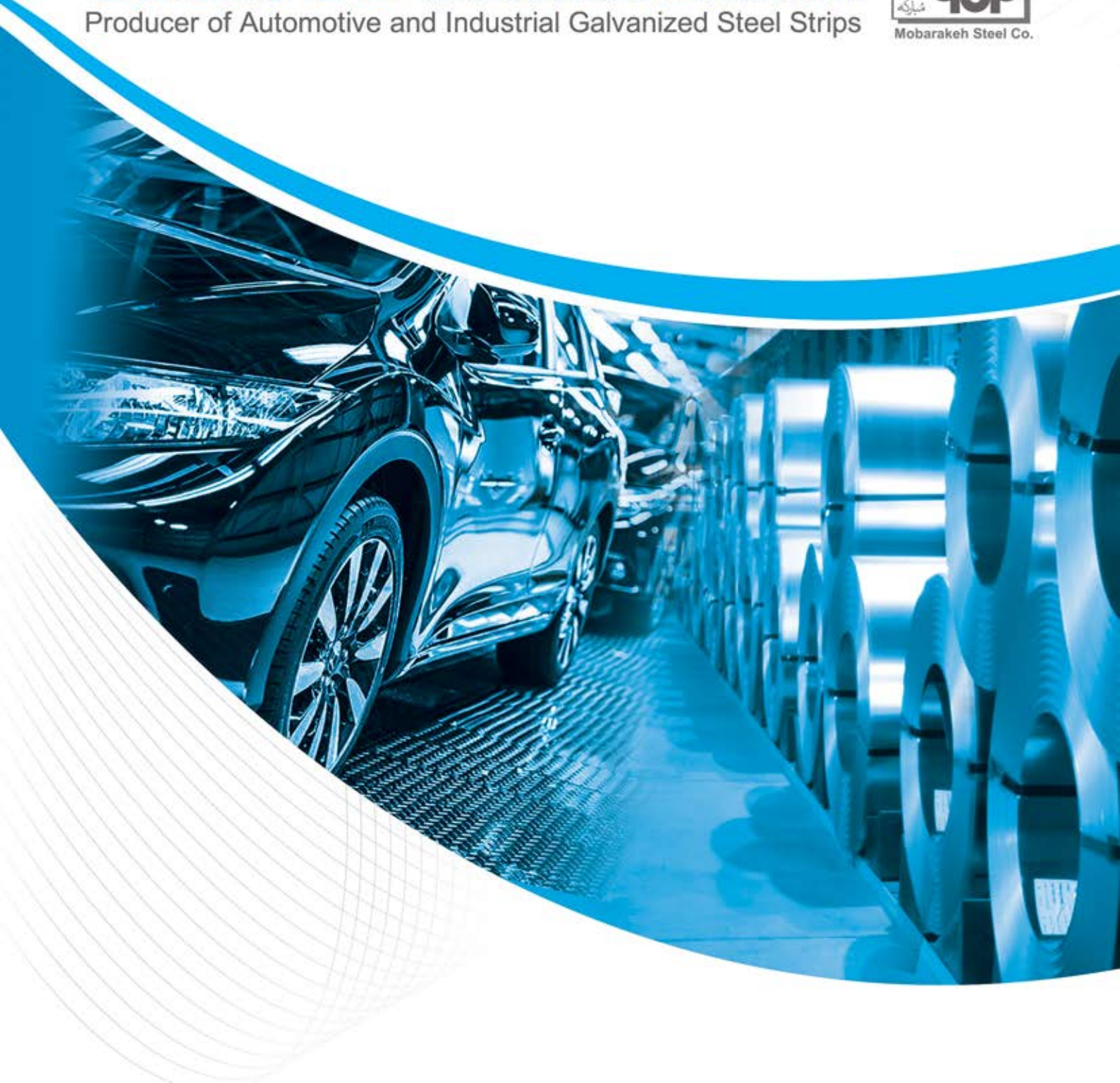
CBASCO

Chaharmahal & Bakhtiari Automotive Sheet Co.

Producer of Automotive and Industrial Galvanized Steel Strips



Mobarakeh Steel Co.



INTRODUCTION

This company, Chaharmahal & Bakhtiari Automotive sheet Company (CBASCO), one of the subsidiaries of the Mobarakeh Steel Company (M.S.C.) group, as the professional producer of the Galvanizes strips, has an important role in supplying the raw materials demanded by Automotive and the Home Appliances industries of the country.

This company is located in two positions of Chahar Mahal & Bakhtiary province, the location of the first factory is: KM 33 Boroujen-Shahrekord Road, Sefid dasht district and the second factory(taraz) is: Shahrekord, industrial Town, phase 3 (Development).

By exploiting two galvanizing lines with the nominal capacity of 660,000 Ton per Year, Running with two Single Stand cold rolled mills with the capacity of 430,000 Ton per year and pickling unit with the capacity of 500,000 ton per year, this company supplies a diverse production portfolio of the steel products to the market.

Beside the production activities and in association with the supply and mineral production of MSC companies, Chahar Mahal & Bakhtiari Automotive Sheet Company has invested in the Sarigol lead and zinc reservoir mine located at South Khorasan province, Esfarayen city;

This Mine with the area of 72 SQM and the capacity of 60,000 TPY Mettalic Ores, is a section of raw material supply chain of Chahar Mahal & Bakhtiari Automotive Sheet Company.



Certificates



Technical specifications of galvanizing steel strip line (Factory No.1)

Production Process		Hot Dip Galvanizing
Capacity		400,000 TPY
Speed Of Line In the Process Section		Max. 150 m/min
Thickness		2.5 - 0.4 mm
Width		800 - 1880 mm
Zinc Coating Mass		60 - 450 gr/m ² Total Weight
Surface Texture		Regular/minimized and Zero Spangle
Surface Treatment	Protective Oil Coating	0.2 - 4 gr/m ²
	Chrome Coating(Cr3+)	50 - 60 Mgr/m ²
Application		Automotive - Home Appliance - Industrial

Technical specifications of galvanizing steel strip line (Factory No.2 (taraz))

Production Process		Hot Dip Galvanizing
Capacity		260,000TPY
Speed Of Line In the Process Section		Max. 150 m/min
Thickness		0.28 – 2.5 mm
Width		750 – 1550 mm
Zinc Coating Mass		60 – 270 gr/m ² Total Weight
Surface Texture		Regular/minimized and Zero Spangle
Surface Treatment	Protective Oil Coating	0.2 – 4 gr/m ²
	Chrome Coating(Cr3+)	30 - 60 Mgr/m ²
Application		Automotive - Home Appliance - Industrial
Production of TOC sheet		

Technical specifications of Nord and acid washing lines

Line	Production Process	Producible Grades	Width	Entry Thickness	Final Thickness	Weight/Coil	Line Speed	Nominal Capacity
Mill 1	Mono-Tandem 6 - High	Q195-Q235- 08AL-SPHC (st22,st24,st37)	600- 1100 mm	1.5 - 4 mm	0.22-2 mm	Max 22 ton	Maximum 1000 Meter/Minutes	180000 TPY
Mill 2	Mono-Tandem 6 - High	Q195-Q235- 08AL-SPHC (st22,st24,st37)	600- 1300 mm	1.5 - 4 mm	0.22-2 mm	Max 22 ton	Maximum 900 Meter/Minutes	250000 TPY
Pickling Line	Semi - Continuous Hot Deep Process	CQ-DQ-HSS- SILICAN STEEL	750- 1580 mm	1.5 - 5.5 mm	1.5-5.5 mm	Max 25 ton	Maximum 150 Meter/Minutes	500000 TPY

Mechanical Properties

Designation		Yield strength	Tensile strength	Elongation min	Plastic strain ratio	Strain-Hardening	Bake-Hardenin g Index	Harden ess
Steel Grade	Standard	Re MPa	Rm MPa	A80 min %	r ₉₀ min	n ₉₀ min	BH ₂ min MPa	HRB
DX51D+Z	EN10346:2015	—	270 to 500	22	—	—	—	—
DX52D+Z		140 to 300	270 to 420	26	—	—	—	—
DX53D+Z		140 to 260	270 to 380	30	—	—	—	—
DX54D+Z		120 to 220	260 to 350	36	1.6	0.18	—	—
DX56D+Z		120 to 180	260 to 350	39	1.9	0.21	—	—
HX220YD		220 to 280	340 to 420	32	1.5	0.17	—	—
HX260YD		260 to 320	380 to 440	30	1.4	0.16	—	—
HX260LAD+Z		260 to 330	350 to 430	26	—	—	—	—
HX300LAD+Z		300 to 380	380 to 480	23	—	—	—	—
HX340LAD+Z		340 to 420	410 to 510	21	—	—	—	—
HX380LAD+Z		380 to 480	440 to 560	19	—	—	—	—
S220GD+Z		≥220	≥300	20	—	—	—	—
S250GD+Z		≥250	≥330	19	—	—	—	—
S280GD+Z		≥280	≥360	18	—	—	—	—
S320GD+Z		≥320	≥390	17	—	—	—	—
S350GD+Z		≥350	≥420	16	—	—	—	—
HX180BD+Z		180 to 240	290 to 360	34	1.5	0.16	30	—
HX220BD+Z		220 to 280	320 to 400	32	1.2	0.15	30	—
P220	PSA B53 3130	e ≤ 1.47	220 to 260	340 to 420	32	1.7	0.19	—
		e > 1.47				1.5		> 56
P260	PSA B53 3130	e ≤ 1.47	260 to 300	380 to 440	30	1.5	0.18	—
		e > 1.47				1.3		> 65
SPFC340	JIS G3135	0.6 ≤ e ≤ 1	175 to 290	340 to 390	34			
		1 < e ≤ 2.3			35			
SPFC390	JIS G3135	0.6 ≤ e ≤ 1	235 to 320	390 to 440	30			
		1 < e ≤ 2.3			31			
DP450	PSA B53 3250		290 to 340	460 to 560	27	0.9	0.17	40
DP600			360 to 420	610 to 710	21	0.8	0.15	40

Producible Grades in CBASCO

Classification	Designation	Standard	Grade	Application And Main Properties
LC	Low Carbon Steels for Cold Forming	BS EN10346:2015	DX51D+Z	Bending and Profiling Quality
			DX52D+Z (C) ¹	Drawing Quality(DQ)
			DX53D+Z (E)	Deep Drawing Quality(DDQ)
ULC	Ultra Low Carbon Non-Ageing Mild Steel	BS EN10346:2015	DX54D+Z (ES)	Special Deep Drawing Quality(EDDQ)
			DX56D+Z (SES)	Extra Deep Drawing Quality(EDDQ)
YD	High strength interstitial free (IF) steel	BS EN10346:2015	HX220YD+Z	These steels have both, a high mechanical strength and an excellent suitability for cold forming, due to their solid solution hardening and interstitial free microstructure
			HX260YD+Z	
		JIS G 3135	SPFC340	
			SPFC390	
HSLA	High Strength Steels for Cold Forming	BS EN10346:2015	HX260LAD+Z	HSLA is used for reinforcing structures, which require high strength. It is with a good formability and improved weldability. It is mainly used in automotive and its supplier industry
			HX300LAD+Z (E275D)	
			HX340LAD+Z (E335D)	
			HX380LAD+Z (E390D)	
S	Structural Steel	BS EN10346:2015	S220GD+Z	Hot-dip coated steel strip and sheet for use in construction
			S250GD+Z	
			S280GD+Z	
			S320GD+Z	
			S350GD+Z	
BH	Bake Hardening Steel	BS EN10346:2015	HX180BD+Z (E180BH) *	This steel is widely used for auto body panels which require good dent resistance and high formability
			HX220BD+Z (E220BH) *	
P	Rephosphorised Cold Rolled Steel	PSA PEUGEOT CITROËN (B53 3130)	P220	They must be suitable for pressing, welding, bonding and painting
			P260	
DP	Dual-Phase Steel	BS EN10346:2015	HCT450X+Z (DP450)	DP steel can easily be deformed , it has low yield ratio, and shows a high level of total elongation close to that of TRIP steel
			HCT590X+Z (DP600)	

CBASCO HOT DIP GALVANIZING LINE

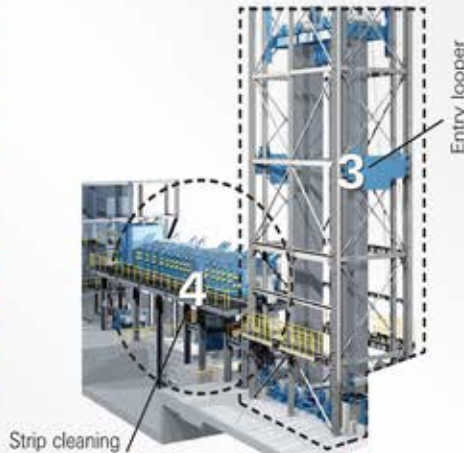
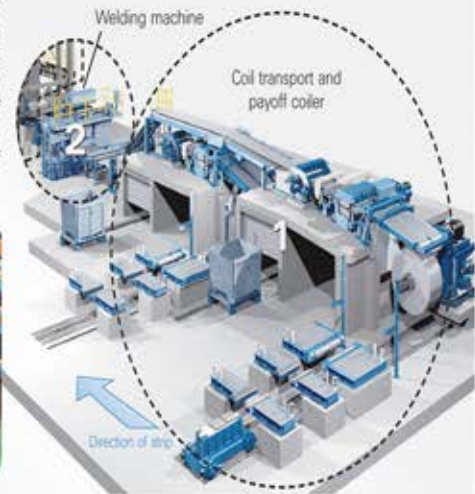


1 Entry section

The full hard coils are introduced to the payoff reels based on the sequences and arrangements of the production plan. Then the thickness of the strip is measured automatically by the Gamma Ray (γ) Instrument and the out of range thickness sections are removed from the head and tail of the coil.

2 Welding Machine

The automatic resistance welding machine joins the tail of the coil to the head of the next coil. To perform the tracing of the weld seam in the line at all times, an integrated hole puncher marks it.



3 Entry looper

The entry looper fills up as the strip is charged, making sure of continuous strip feeding into the line even though the strip has to stop for the welding process. The effective capacity of the looper is 400 m, so even if there is an interruption, it can supply the process with strip for more than 2 minutes.



4 Pre degreasing & Degreasing section

After welding, the full hard strip goes under primary degreasing to reduce grease and oil residues. Then after passing through dryer and vertical accumulator. It enters the secondary or main degreasing section. In this process by passing through cleaning rolls and chemical solution, using electrolytic process, the strip surface cleanliness level will be acceptable to enter annealing furnace.

CBASCO HOT DIP GALVANIZING LINE

5 Continuous Annealing Furnace

The Continuous Annealing Furnace is equipped with the Double-P Radiant tubes and different annealing cycles making it possible to produce a range of steel grades with high quality surfaces. The radiant tubes are equipped with the minimum pollutant burners (low NOX); the internal atmosphere of the furnace is a mix of N₂ and H₂ gases. The maximum temperature of the furnace reaches 850° C.

Burners: WS - Germany

Centering device: EMG - Germany

N₂ supply unit: Linde - Germany

H₂ supply unit: IDRO energy - Italy

6 Zinc Pot

After annealing, the strip enters the molten zinc bath; the molten zinc with the purity of 99.99 and the temperature of 460°C is reserved in this pot. The coating of the strip is performed by hot dip process. In this section a spare pot has been predicted for emergency cases to replace the existing pot.

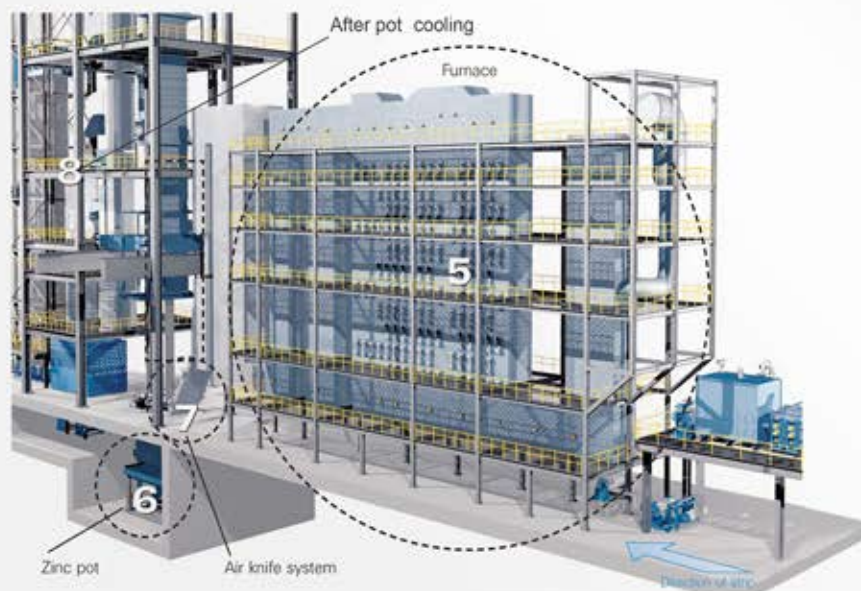
Air knife system

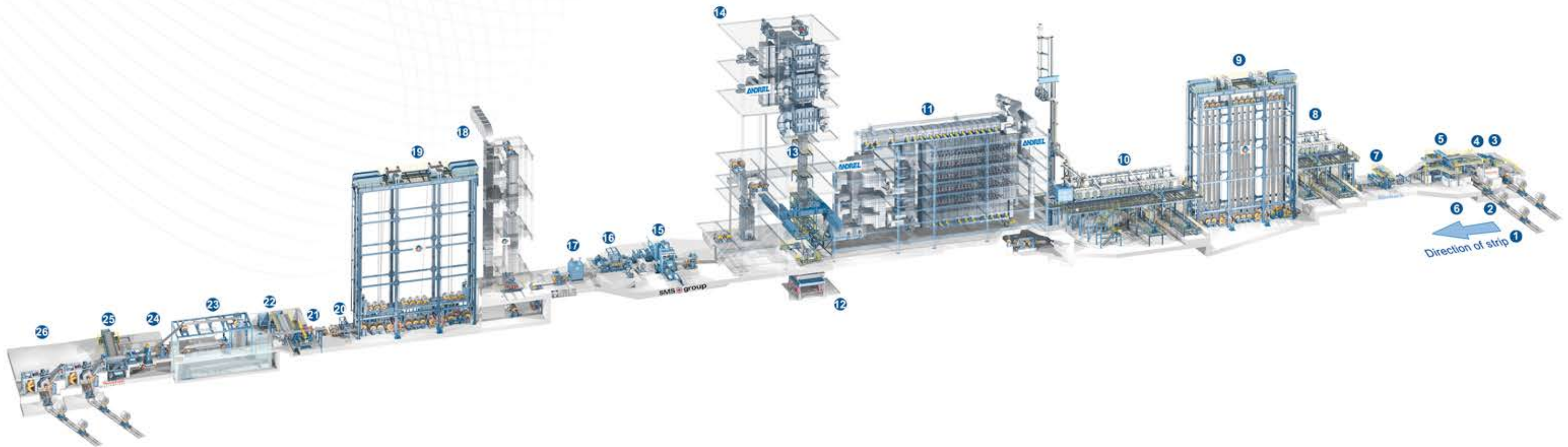
7 An after pot air knife system blows air/nitrogen onto the strip and skims the zinc off to the required thickness.

Air knife nozzles arranged on both sides blast air/nitrogen at a pre-determined pressure onto the strip to blow the zinc off uniformly. Control systems ensure the nozzles are always aligned centrally and in a desired preset angle over the strip.

8 After pot cooling

The cooling process is accomplished in this section, by exiting the strip from the molten zinc bath, by blowing the cold air, water spray and immersion in the water, the strip temperature reduces to less than 40°C.





➤ Producer of Automotive and Industrial Galvanized Steel Strips

Num	Equipment	Supplier/ manufacture
14	After pot cooling	ANDRITZ / French
15	Skin pass mill	SMS Group / Italy
16	Tension leveler	SMS Group / Italy
17	Coating gauge	IMS / Germany
18	Chemical coating	CMI / Belgium
19	Exit looper	CMI / Belgium
20	Surface inspection system	Isravision / Germany
21	Side trimmer	CMI(M+W) / Belgium
22	Tensiometer	ABB / Switzerland
23	Quality control room	CMI / Belgium
24	Thickness gauge	Thermo Fisher / Germany
25	Electrostatic oiler	Ravarini / Italy
26	Tension reel	CMI / Belgium

➤ Producer of Automotive and Industrial Galvanized Steel Strips

Num	Equipment	Supplier/ manufacture
1	Coil car	CMI / Belgium
2	Pay- off reel	CMI / Belgium
3	Pinch roll	CMI / Belgium
4	Thickness gauge	ThermoFisher / Germany
5	Center position control	FIFE / Germany
6	Shear	CMI / Belgium
7	Welding	Miebach / Germany
8	Predegreasing	BEUGIN / French
9	Entry looper	CMI / Belgium
10	Degreasing	BEUGIN / French
11	Furnace	ANDRITZ / French
12	Zinc pot	Inductotherm / Germany
13	Jet wiping	CMI / Belgium

CBASCO HOT DIP GALVANIZING LINE



9 Skin Pass mill

The philosophy of this equipment is to improve mechanical properties and uniform coating, produce roughness on both sides to have better paint penetration and remove strip surface distortion.

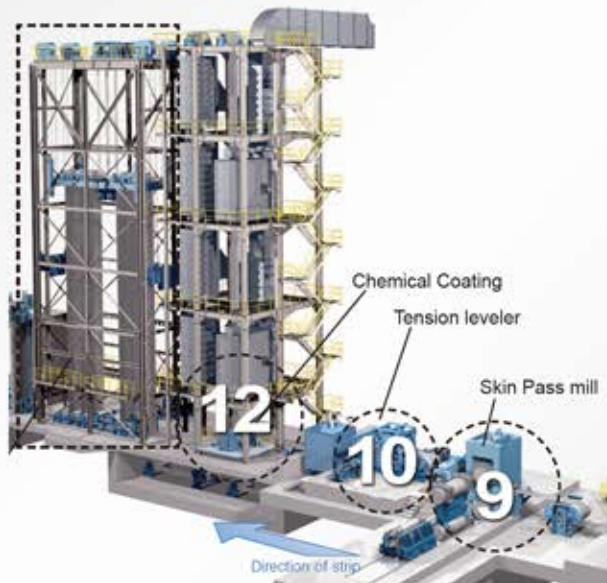


10 Tension leveler

Through applying tension to the strip, the mechanical properties are improved and the surface defects removed. This equipment eliminates the defects like: waviness, bows, width and length curves, lauders band and etc. that ensures the flawless final product.

11 The Coating Thickness Measuring System

This instrument uses X-Ray technology to measure instantly the coating value of the strip. The uniformity of the final coating along the width and length of the strip is controlled and registered.



12 Chemical Coating

In order to protect the galvanized coating of the industrial strips against white rust and to increase the resistance against corrosion, a chemical coating is applied on both sides of the strip. Coating films are applied to the strip by means of a pick-up roll and an application roll. In this way, the strip can be passivated chromium and chromium free coating. Subsequently, it is dried vertically upwards, with hot air then re-cooled.

CBASCO HOT DIP GALVANIZING LINE

13 Side Trimmer

This equipment has been installed in the exit section after the looper; two trimmer circular blades of this equipment trim and straighten the edges of the strip to the right strip width based on the customer request; a scrap winder winds the resulting scrap into balls and removes them.



14 Automatic Surface Inspection System

The surface inspection of the product is fulfilled through an automatic surface inspection system (Parsytec) by which the strip defects are controlled and registered online. After evaluation and classification of the registered defects by the quality control unit, the feedback is reported to the production unit to trace the cause of the defects and to remove them. Furthermore, if the customers request, the detail report on the produced coils is available to be send to the customers. In case of serious repeating and lasting of the defects which reduce the quality of the strip, the line will be stopped for the problem shooting.

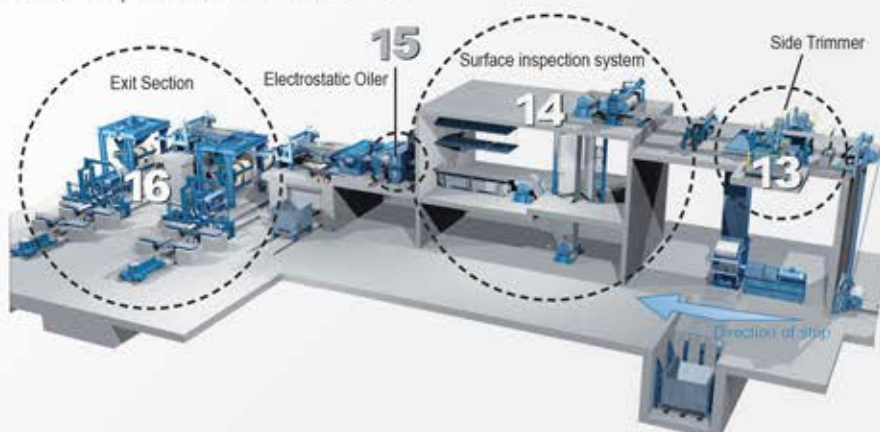
15 Electrostatic Oiler

Using the electrostatic spraying mechanism, the oiler equipment applies a thin film of the protective oil onto the strip. Based on the client order, the Automotive strips are oiled to protect the galvanized coating against rusting phenomena.



16 Exit Section

After completion of oil coating process and in order to do the laboratory tests, the sample is provided from the strip. The mother coil is usually divided into two or three partial coils, this division is done by exit shear. The discharging, weighting, strapping and finally the identification labeling of the produced coils are operational in this section.



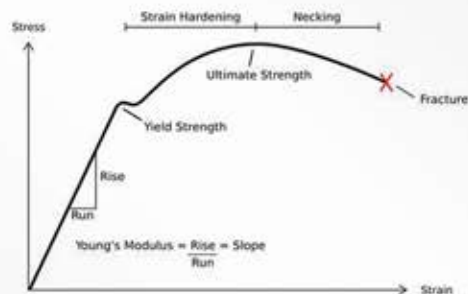
17 Quality control and laboratory ➤

The sample prepared from the final product is referred to the laboratory for mechanical and coating tests like: tensile, adhesiveness of coating, salt spray, measuring of coating weight and strip roughness. In case of conformity to the related standards or/and customer demand, it is reported to the packing station but in case of discrepancy, it is referred to be warehoused based on the product classification guidelines then is hold to be decided.



Tensile Testing Machine (zwick100 KN):

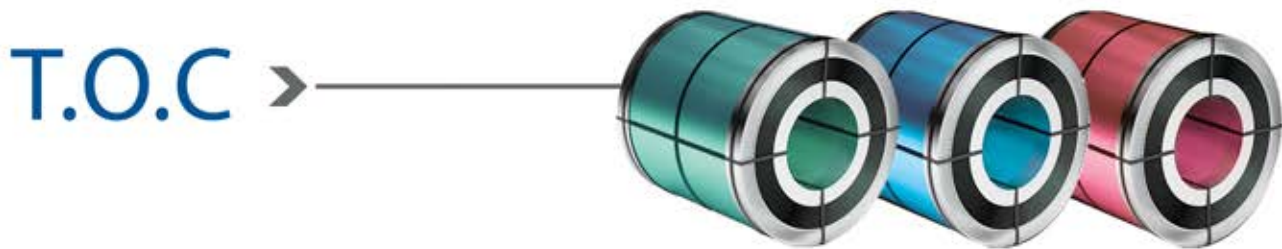
CBASCO Lab equipped tensile test machine with two width and length extensometer devices measure mechanical characteristics, yield strength, tensile strength, elongation value n-value and r-value of the product.



Atomic Absorption Spectrometer Instrument: ➤

In CBASCO Lab. Atomic Absorption Spectrometer Instruments (NOVAA) are used by means of which the chemical elements of the steel like: Carbon (C), Aluminum (AL), Phosphor(P), Manganese (Mn), Sulfur(S), Silicium (Si), and etc are analyzed with the minimum PPM.





The first and the only producer of Galvanized Strip with the colored T.O.C. coating in IRAN

The High quality of the Galvanized product specially its corrosion resistance and in regard to the preservation of the environment, is one of the general; cornerstones in Company.

Be benefiting the foreign knowledge and relying on the local competences and by taking the clients demands into account, this company has had an enterprising move to produce very thin strips with the T.O.C color coating;

The Company is the first and the only producer of this novel and innovative product.

The unique specifications of T.O.C. coils are as bellow:

- **The possibility of manufacturing in different colors:**

The colored aesthetics of these coils are among their unique characteristics. Furthermore, these coils offer a significant more affordable price compared to colored steel coils and can be manufactured in various colors based on the customers' orders.

- **White Rust Resistance**

Resistance against white rust is one of the main problems in galvanized coils. White rust resistance is often measured using Salt Spray test which simulates extreme environments by spraying the samples with a solution of salt and water to grade the samples based on hours before onset of white rust. Usually, galvanized coils with chromium coating offer between 48 to 96 hours of white rust resistance depending on the chromium content. However, TOC coating shows approximately 250 hours of white rust resistance which results in higher added value for the final user. The galvanized coils using TOC (Thin Organic Coating) are approximately 5 times more resistant against white rust compared to normal galvanized coils which can result in excellent customer satisfaction.

- **Self-lubrication Characteristic**

The self-lubricating characteristics of this product results in the decrease in production costs for downstream industries requiring forming of galvanized coils, such as house appliance manufacturing, by reducing the need for use of lubricants during hydraulic compression of the sheet.

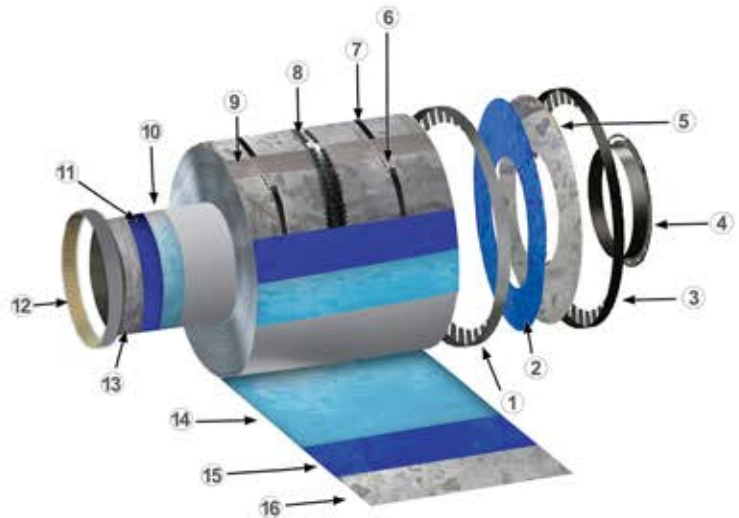
- **Anti Finger Print property**

Due to the existence of Polymer in T.O.C. compound, this product has the specification of Anti Finger Print. This property makes it possible to be used extensively in home appliance.

Packing

Export Schematic

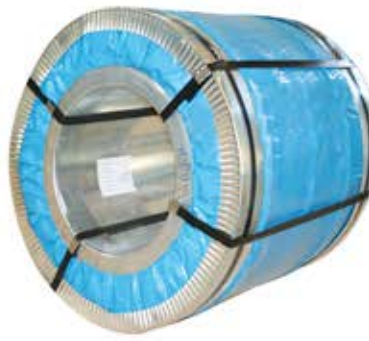
No	Name	Material
1	Outer corrugated edge protector	Metalized
2	Side protective disc	Carton plast
3	Corrugated edge protector	Galvanized
4	Inner ring protective	Galvanized
5	Side protective disc	Galvanized
6	Clamp	Steel
7	Strap	Steel
8	Bumper	Plastic
9	Adhesive tape	Carton plast
10	Inner water proof protective wrapper	Paper & plastic
11	Inner protective sheet	Carton plast
12	Inner protective sheet	Galvanized
13	Inner ring protective	Metalized
14	Outer water proof protective wrapper	Paper & plastic
15	Outer protective sheet	Carton plast
16	Outer protective sheet	Galvanized



Simple



Wrapping paper



Metal box



Export with Wooden saddle



Export with bumper



CBASCO

Chaharmahal & Bakhtiari Automotive Sheet Co.



► Factory No.1:

Chahar Mahal & Bakhtiari Automotive Sheet Company (CBASCO),
Sefid Dasht District, KM 33 Boroujen - Shahrekord Road
Tel: +98 38 - 3130
P.O.Box: 8751- 49311

► Factory No.2 (Taraz):

Phase 3 of Industrial town, Shahrekord
Tel: +98 38 - 3100
P.O.Box: 88136 - 50536

► Tehran Principal Office:

No.55, Nahid Alley (Takhte Tavoos), Valiye Asr Street, Tehran
Tel: +98 21 - 88706576-77
P.O.Box: 15957- 57613

► Esfahan Office:

No.15, 5 TH Floor, Almas BLD, Between Azar Bridge and Nazar
Intersection, North Tohid Street, Esfahan
Tel: +98 31- 36258775
P.O.Box: 81736 - 41986

www.cbasco.ir

E-mail: info@cbasco.ir

