

# Production process of **HOT ROLLED COILS**

# AND **SHEETS**



Mobarakeh Steel Company produces hot rolled coils through thermo-mechanical process for sale or consumption by downstream lines in the hot rolling plant. This plant includes four main units of preheating furnaces, hot rolling production lines, roll shop and hot rolling finishing unit. The production capacity of this plant is about 5.2 million tons, about 60 percent of which is marketed and the rest is transferred to the downstream lines of the company. This plant rolls slabs received from the steelmaking plant into hot rolled coils according to the specifications requested by the customer or the downstream lines. The hot rolling production line, which is the central part of this plant, includes vertical descaling stand, roughing stand, finishing stands, coiler and cooling unit. Slabs are transferred to hot rolling plant and after being heated to about 1250 ° C in preheating furnaces and de-scaled in the initial and final rolling sections, turn into the coils with the thickness of 1.5 to 16 mm.

Width changes within the range of 650 to 1850 mm and coils weights are between 5 and 30 tons. If the produced coils need additional operations such as cutting, skin passing or deviding, they are transferred to the hot rolling finishing unit.

## Product qualities as per national and international standards | Hot Rolled Products

Application	Quality	Standard	
Structural, general, and construction applications	St 33, St 37-2, St 37-3, St 44-2, St 44-3, St 52-3	DIN 17100/80	DIN
Corrosion resistant construction application	St 52-3 cu3, St37 - 2 Cu3	DIN 17100/80	
Re-rolling	St 24, PRSt 23, St 22	DIN 1614/86	
Drawing and forming applications	Stw 24, PRStw 23, Stw 22	DIN 1614/86	
Pressure Vessels	17Mn4 , 19Mn6	DIN 17155/83	
Car chassis	STE 380 TM, QSTE 380 TM, STE 420 TM	DIN 17155/83	
Pressure Vessels	9cr Ni cuP 324	DIN 1614	
Drawing and forming applications	SPHC, SPHD, SPHE, SPHC-B	JIS 3131-90	
General and structural applications and bridge construction	SS 400, SS 330, SS 400 B	JIS 3101-87	
Tube, pipe manufacturing	SPHT1, SPHT2, SPHT3, SPHT4	JIS 3132-90	
Drawing and forming application	SAPH 310, SAPH 370, SAPH 400, SAPH 440	JIS 3132-90	
Auto parts	SNCM 220	JIS 4103	
Car rims	SNCM 220	JIS 3134	
Structural, Drawing applications, re-rolling	1006 - 1008	SAE/AISI	SAE
General construction application	1030,1020,1018,1017,1016,1015,1012,101,1050 ,1022	SAE/AISI	
Ship building, marine structures	GR.A	RINA	RINA
Fluid transfer tubes	GRB, X42, X46, X52, X60, X52MS	API5L2004	API

## Product qualities as per national and international standards | Hot Rolled Products

Application	Quality	Standard	
Drawing, construction	A 569, A 621, A 622	ASTM	ASTM
General application and construction	(A 572 GR.42,50),(A283 GR.A,B,C,D),(A573 GR.58,65,70)	ASTM	
Pressure vessels and containers	(A285 GR. C),A 414, A 515, A 516, A 204 GRA	ASTM	
General, construction, structural application	40, 43, 50 (A,B,C,D,EE)	BS 4360-86	BS
Drawing and deep drawing	HR 1, HR2, HR 3, HR 4	BS 1449 PART 1/83	
Pressure vessels	161 (360 A, 400 A, 430 A)	BS 1501	
Drawing - general applications	DD11 , DD12 , DD13 , DD 14	EN 10111/96	EN
General, construction, structural applications	(S235, S275, S355) (JR, JO, J2, K2)	EN 10025/93	
Structural applications and trailer chassis	S315 MC, S355 MC, S420 MC, S500 MC, S460 MC, S550 MC	EN 10149 - 96	
Petroleum gas storage tanks	P275NL2, P355NL2, P460NL2, P460NJ2	EN 10028 - 3	
Corrosion resistant construction applications	S355J2W, S355JOWP	EN 10025 - 5	
Pressure vessels	P235 GH, P265GH	EN 10028 - 2	
General and construction applications	K235-3 / K275-3 / K355-3	3694	
General applications, construction profiles	Hot Rolled 1	3693	Iran national Standard
Building profiles, drawing	Hot Rolled 2	3693	
Deep drawing	Hot Rolled 2	3693	

# Applications of **HOT ROLLED**

## Products


Structural, general, and construction  
Corrosion resistant construction  
Re-rolling  
Drawing and deep drawing  
Pressure Vessels  
Car chassis  
Bridge construction  
Pipe manufacturing  
Chassis, traction wheels  
Oil and gas pipes  
Shipbuilding, marine structures  
Qualities according to MSC and PSA standards

## Product qualities as per national and international standards | Hot Rolled Products

Application	Quality	Standard
Resistant to atmospheric corrosion	IRACOR - 1, IRACORTEN A-HOT	MSC - STD
Chassis and car interior parts	IRAFORM - 275	MSC - STD
Chassis and car interior parts	IRAFORM - 330	MSC - STD
Chassis and car interior parts	IRAFORM - 360	MSC - STD
Chassis and car interior parts	IRAFORM - 420	MSC - STD
Chassis and car interior parts	IRAFORM - 490	MSC - STD

## Minimum and maximum weights of Mobarakeh Steel Company products | Hot Rolled Products

Width (mm)	Mother Coils (ton)	One cut (ton)	Two cuts (ton)
600-740	3-12	3-6	1/5-4
741/840	4/5-13/5	4-6/5	2-4/5
841-940	5-15	4/5-7/5	5-5/2
941-1040	6-16/5	5-8	3-5/5
1041-1140	6/5-18	4-9	3/5-6
1141-1240	7-19/5	6-9	4-6/5
1241-1335	7/5-21	6/5-9/5	4/5-7
1336-1435	8-22/5	8-11	4/5-7/5
1436-1535	8/5-24	8/5-12	5-8
1536-1630	9/5-25/5	9-12/5	8/5-5/5
1631-1730	10-27	10-13/5	6/9
1731-1850	10/5-29/5	10/5-14/5	10-5/6



Production process of  
**HOT ROLLED  
PICKLED COILS**  
in Mobarakeh steel company

Hot rolled pickled coils are produced either for sale or consumption in downstream lines (tandem mill or two-stand reversing mill) in pickling lines number 1 and 2. Hot rolled steel coils normally have an oxide scale layer due to the high temperature of the hot rolling process, which should be removed for specific applications. In order to remove these oxides ( $FeO$ ,  $Fe_2O_3$ ), hydrochloric acid is used as a solvent in the process. In pickling lines, strip is guided to the acid pools by conveyors after uncoiling the coil by pay-off reel machine, and the oxide scales are removed from the surface in several stages. These coils are rinsed by water after leaving acid pools. They are dried by passing through hot air tunnels and after applying protective oil, they are coiled again and stored in warehouses.

## Product qualities as per national and international standards | Hot Rolled Pickled coils


Application	Quality	Standard	
Structural, general and construction application	St 33, St 37-2, St 37-3, St 44-2, St 44-3	DIN 17100	ASTM
Drawing	Stw 22, RRs tw 23, Stw 24	DIN 1614	
Car chassis, auto structure (heavy)	M 22	DIN 2395	
Re-rolling	St 22, St 23, St 24	DIN 1614	
Drawing, drawing- enamelable	SPHC, SPHD, SPHE	JIS G 3131	JIS
General application	SS 330, SS 400	JIS G 3101	
Gas tank	SG 255	JIS G 3116	
General application. Pipes	SPHT 1, SPHT 2, SPHT 3, SPHT 4	JIS G 3132	
Car chassis, rims	SAPH 310, SAPH 370, SAPH 400, SAPH 440	JIS G 3113	
General application, stretch, re-rolling	1008 ,1006	SAE/AISI	SAE AISI
General application, construction	1010 - 1012 - 1015 - 1010 - 1017	SAE/AISI	
Car chassis, rims	HR 37/23, HR1, HR2, HR3, HR4	BS 1449	BS
General application	A 283 Grade (A,B,C,D)	ASTM	ASTM
Drawing	A 621, A 622	ASTM	
Gas tank, pressure vessels	A 414 Grade (D,E)	ASTM	
Petroleum gas tanks	INS 343	MSC/STD	MSC
General application, suitable for galvanized coating.	S 235 JR, S 275 JR, S355 JR	EN 10025/93	EN
General stretching application	DD11, DD12, DD13	EN 10025/93	
Car reinforcement parts	HE275, HE335D, HE390D, HE420	B 53 3316	PSA



## Minimum and maximum weights of Mobarakeh Steel Company products | Hot Rolled Pickled coils

Width (mm)	Mother Coils (ton)	One cut (ton)	Two cuts (ton)
600-690	6/7-13/1	3/3-8/1	2/2-4/4
691-790	8/1-14/6	4/1-7/3	2/7-4/9
791-890	9/6-16	4/8-8	3/2-5/4
891-990	11-17/5	5/5-8/8	3/7-5/8
991-1090	12/5-19	6/3-9/5	4/1-6/3
1091-1190	14-20/5	7-10/3	4/7-6/8
1191-1290	15/5-21/9	7/7-10/9	5/2-7/3
1291-1390	17-23/4	8/5-7/11	5/6-7/8
1391-1490	18/4-25	9/2-12/5	6/1-8/4
1491-1590	20-26/7	10-13/4	6/6-8/9
1591-1680	21/4-28	10/7-14	7/1-9/5

# COLD ROLLING MILL



Some of Hot rolled coils are pickled to produce cold rolled coils and coated products in the downstream lines. Hot rolled coils are passed through pickling lines for removing their oxide scales. After that they are passed through continuous tandem mill and two-stand reversing mill to reduce their thickness. In the next stage for recovering the metallurgical structure of the strip, removing waves and creating a surface hardness, coils pass through annealing and continuous rolling processes respectively. At the final stage, they are converted in cold rolled sheets and coils. Some of the products of tandem mill and two-stand reversing mill are converted into galvanized, color coated, and tin-plated products and sent to the customers.



Production process of

# COLD ROLLED COILS

in Mobarakeh steel company

Low thickness or accuracy of the dimensional and shape tolerances of some sheets ordered by the customer or subsequent production processes requires that the pickled sheets be reduced in thickness once again through the cold rolling process (five-stand tandem or two-stand reversing mill). Coils or sheets that are marketed as cold rolled products have a thickness between 0.35 to 3 mm. The product produced in the five-stand tandem mill has a high hardness that cannot be consumed. Therefore, to soften steel strip and reduce the heterogeneity of the crystal structure and their internal stresses, an annealing process is used. In the annealing process, Coils are placed in box ovens and are heated for the required time and at the appropriate temperature according to the desired grade. After this stage and cooling to ambient temperature, Coils enter the skin-pass rolling unit for creating a better surface smoothness, reaching the required roughness and making the stress-strain profile on the strip more uniform. The output of the skin-pass line enters the corrective or cut to length lines for additional operations and supply to the market. In the corrective lines, while inspecting the surface of the sheet, it is possible to remove the waves of the strip and trim the edges. In the cut to length lines, coils are inspected and trimmed and cross-cut into sheets in accordance with the customer's request.



## Product qualities as per national and international standards | Cold rolled products

Application	Quality	Standard	
General application, normal drawing	St 12	1623.1/72	DIN
Deep drawing	RRST 13	1623.2/86	
Ultra deep drawing	St 14	1623.1/72	
General application, construction	St 37-3 G, St 44 3-G	1623.2/86	
Suitable for enamelling	EK 2, EK 4	1623.3/87	
General application, normal drawing	SPCC	JIS G 3141/90	JIS
General application. Deep drawing	SPCD	JIS G 3141/90	
General application, ultra deep drawing	SPCE	JIS G 3141/90	
Packing straps	TASMEH 650, TASMEH 850	MSC/STD	MSC STD
Deep drawing	DC04-K01	MSC/STD	
General application, ultra deep drawing	CRSP 1	BS 1449-1	BS 1449-1
General application, deep drawing	CRSP 3	BS 1449-1	
General application, normal drawing	CRSP 4		
General application, normal drawing	DC01	EN 10130/96	EN
Deep drawing	DC03	EN 10130/96	
Ultra deep drawing	DC04, DC05, DC06	EN 10130/96	
Electrical application	M800-65D, M1000-65D, M1200-65D	EN 10126-95	
Suitable for vehicle body	HC180B-HC220B	EN 10268	
Car reinforcement parts	E275D, E335D, E390D	B 53 3316	B53
Normal drawing	1008, 1006	SAE / AISI	SAE

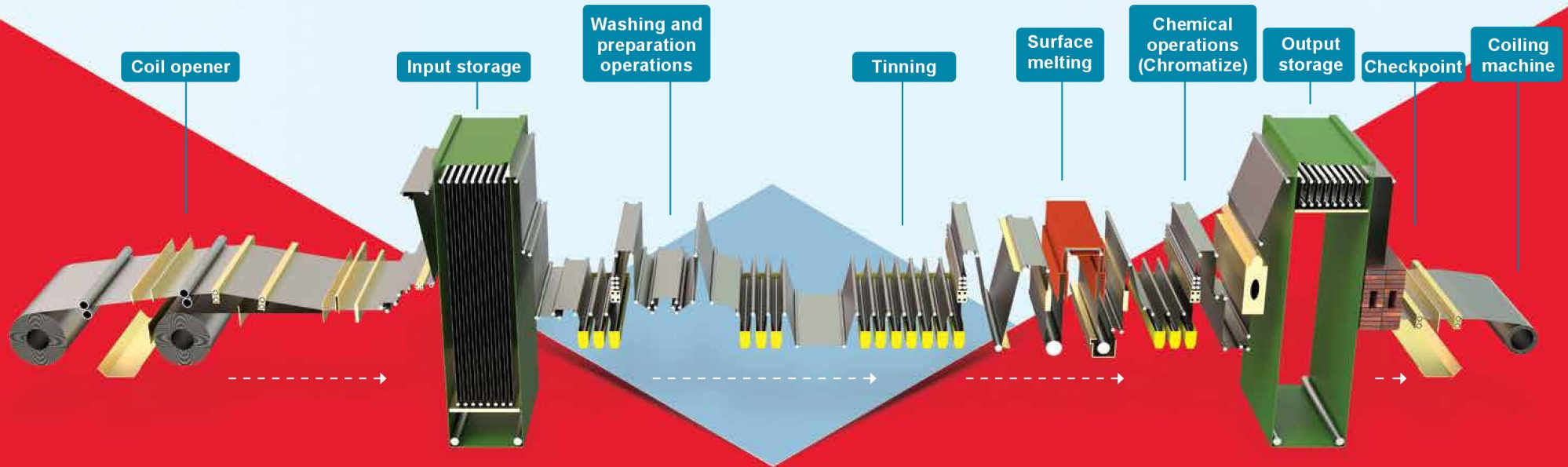


## Minimum and maximum weights of Mobarakeh Steel Company products | Cold rolled products

Width (mm)	Mother Coils (ton)	One cut (ton)	Two cuts (ton)
600-690	4-11/5	3/5-5/6	2/3-4/8
691-790	4/6-12/8	4-6/5	2/7-5/5
791-890	5/3-14/5	4/6-7/3	3-5/8
891-990	5/9-16	5/1-8	3/3-6/1
991-1090	6/6-17/5	5/6-8/7	3/5-6/3
1091-1190	7/3-19	6/2-9/6	3/6-4/4
1191-1290	7/9-20/6	6/7-10/4	4-6/9
1291-1390	8/6-22/4	7/2-11/2	4/3-7/4
1391-1490	9/3-24	7/8-12	4/6-8
1491-1590	9/9-24/8	8/3-12/4	5-8/2
1591-1680	14-25	8/8-13	5/9-9/1

# TIN-PLATING

production line  
in Mobarakeh steel company



Tin Plating Production Line in Mobarakeh Steel Company is designed based on acidic electrolyte method using ferrosan solution. In this method, coils enter the electrolyte solution bath after passing through electrolytic washing bath and rinsing with water. While the tin bar is connected to the positively charged anode electrode and the metal part is connected to the negatively charged cathode electrode, tin is dissolved into the electrolyte solution and deposit to the cathode which is both surfaces of the steel strip. In this line, it is possible to coat products in different thicknesses on both surfaces of the strip. After tin coating operation, sheet is heated in muffle furnaces to a temperature above the melting point of tin ( $232^{\circ}\text{C}$ ) and then cooled immediately in a bath, which in addition to increasing the adhesion

of tin, causes the brightness of the surface. To prevent further oxidation and discoloration of the strip surface during the time stored in warehouse, tin-plate strip is passed through a chemical operation line to be covered with a layer of Chrome (cr). It also increases the adhesion of paint and soldering quality. At the end of this stage and after rinsing the steel strip with water and drying with the hot air, electrostatic oiling is performed to protect the sheet from any damage during packaging and transportation. The protective oil is applied in a very thin layer on both surfaces of the strip. For continuous operation, two looping towers are provided at the entry and exit sections of the line. Products of this line are offered to the market in forms of coils or sheets.

## Product qualities as per national and international standards | Tin-Plated sheets

Application	Quality	Standard	
Battery cover, oil filter, general application	T2	ASTM A 623 M/92	ASTM
Body, top and bottom of the can, paint containers, oil can, spray can, general application	T3	ASTM A 623 M/92	
Body, top and bottom of the can, spray can, general application	T4, T5, DR8, DR9	ASTM A 623 M/92	
Oil filter, general application, Battery cover	SPTE(T2)	JIS G 3303/87	JIS
Body, top and bottom of the can, paint containers, oil can, spray can, general application	SPTE(T3)	JIS G 3303/87	
Body, top and bottom of the can, spray can, general application	SPTE(T4), T5, DR8, DR9	JIS G 3303/87	
Oil filter, general application	T52	EN 10203/91	EN
Oil filter, general application	T57	EN 10203/91	
Body, top and bottom of the can, paint containers, oil can, spray can, general application	T61, T65, DR550, DR620	EN 10203/91	

## Specifications of tin-plating line in Mobarakeh steel company

Production Capacity (Mt)	103000
Thickness of the sheet (mm)	0/16 - 0/4 mm
Width of the sheet (coil) (mm)	600 - 1050 mm
Width of the sheet (pack) (mm)	600-1000mm
Inner diameter of the coil (mm)	420 mm
Outer diameter of the coil (mt)	2000 mm
Weight of the coil (mt)	7/2-8
Weight of the package(mm)	1-2
Tin coating weight (one sheet surface) (g/m <sup>2</sup> )	15/2-8 gr/m <sup>2</sup>
Oil layer (g/m <sup>2</sup> )	3/9-2/5 gr/m <sup>2</sup>
Surface passivation (g/m <sup>2</sup> )	1-3 gr/m <sup>2</sup>

## Equivalent qualities of tin-plated sheets produced in different standards | Tin-Plated sheets

Application	Quality		Standard
	EN 10203/91	JIS G 3303/87	ASTM A 623 M/92
Battery body, top of spray can	T52	SPTE(T2)	T2
Different types of tin cans, body of two-piece can	T57	SPTE(T3)	T3
Body, top and bottom of three piece can	T61	SPTE(T4)	T4
Body, top and bottom of three piece can, head of easy open can	T65	SPTE(T5)	T5
Body, top and bottom of three piece can, head of easy open can	DR550	DR8	DR8
Body, top and bottom of three piece can, head of easy open can	DR620	DR9	DR9

SR

DR

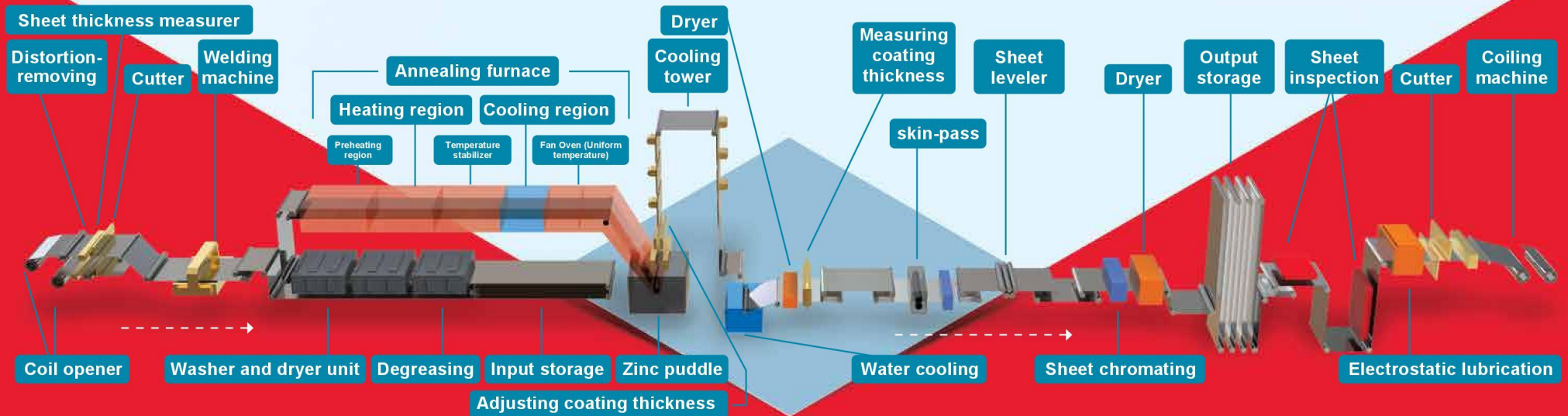
## Minimum and maximum weights of Mobarakeh Steel Company products | Tin-Plated sheets

Width (mm)	One cut (ton)	Two cuts (ton)
600-690	2/7-5	1/8-3/6
691-790	3/2-6	2/1-4
791-890	3/5-6/7	2/4-4/6
891-990	4-7/5	2/7-5/1
991-1100	4/5-8/4	3-5/6

Mobarakeh Steel Co.

# Production GALVANIZED

Products in Mobarakeh steel company



Galvanized coils are produced at Mobarakeh Steel Company using hot immersion method. The advantage of this method over other methods is cost-effectiveness, the possibility of creating high thickness of coating, high strength and good adhesion of zinc coating to steel strip. Coils of the cold rolling line (Tandem Mill) are welded together at the beginning of the galvanized line and charged as a continuous strip. Then, the surface of the strip is degreased with alkaline substance, brushed and rinsed with water, and finally dried with hot air. The cleaned coil enters the annealing furnaces with a protective atmosphere. The strip is annealed in three stages of preheating, heating and soaking, according to the application of the annealed product. Then cooling system adjusts strip temperature for entering molten zinc bath in which a thin layer of zinc is applied on both surfaces of the strip. Immediately after leaving the zinc bath, the air jet strikes the surface of the strip and adjusts the thickness

of coating. In the next stage, size of the spangles on the surface is controlled by adjusting the cooling cycle. Temperature of the strip is reduced by the air stream and then water sprayed. Steel strip enters the cold water tank, and then is dried through air blowing. Finally, the thickness of coating is controlled by the thickness gauge equipment, and the surface smoothness and the desired roughness are applied on the sheet by skin pass rolling and correcting equipment. In order to prevent white rusting on galvanized strip, during its storage, chromate treatment is performed on it, i.e. a thin layer of chromium-containing solution (CR) is deposited on the surface of the strip and then it is dried. After inspecting the strip, if the customer demands, the protective oil is sprayed on the surface of the strip by electrostatic oiling machine. To prevent line stoppage, at the entry and exit sections two strip accumulators are designed. Galvanized coil is shipped to the customers after packaging

## Product qualities as per national and international standards | Galvanized coil

Application	Quality	Standard	
General application	Fe P02 G	EN 10142/91	EN
Drawing	Fe P03 G	EN 10142/91	
General application	DX 51 D	EN 10346(09)	
Drawing	DX 52 D	EN 10346(09)	
Construction	S 280 GD	EN 10147	
General application	SGCC	JIS G 3303/94	JIS
Drawing	SGCDPTE	JIS G 3303/94	
Construction	SGC 4001	JIS G 3302	
General application	A 526	ASTM	ASTM
Lock forming	A 527	ASTM	
Drawing	A 528	ASTM	

## Specifications of hot-dip galvanized line in Mobarakeh steel company

Production method	
Type of input strip (mm)	Hot Dip galvanized
Thickness of the strip (mm)	2 - 0/3 mm
Width of the strip (mm)	750 - 1350 mm
Inner diameter of the output coil (mm)	508 - 610 mm
Outer diameter of the output coil (mm)	900 - 2000 mm
Weight of output coil (Mt)	3 - 8/23
Galvanized coating weight (g/m2)	100-350 for Bothside
Oil layer (g/m2)	2 - 0/5
Output product	CQ, DQ
Annual Capacity (Mt)	200 .000
Surface appearance quality	commercial, ImPraVed

## Minimum and maximum weights of

Mobarakeh Steel Company products

Galvanized coil

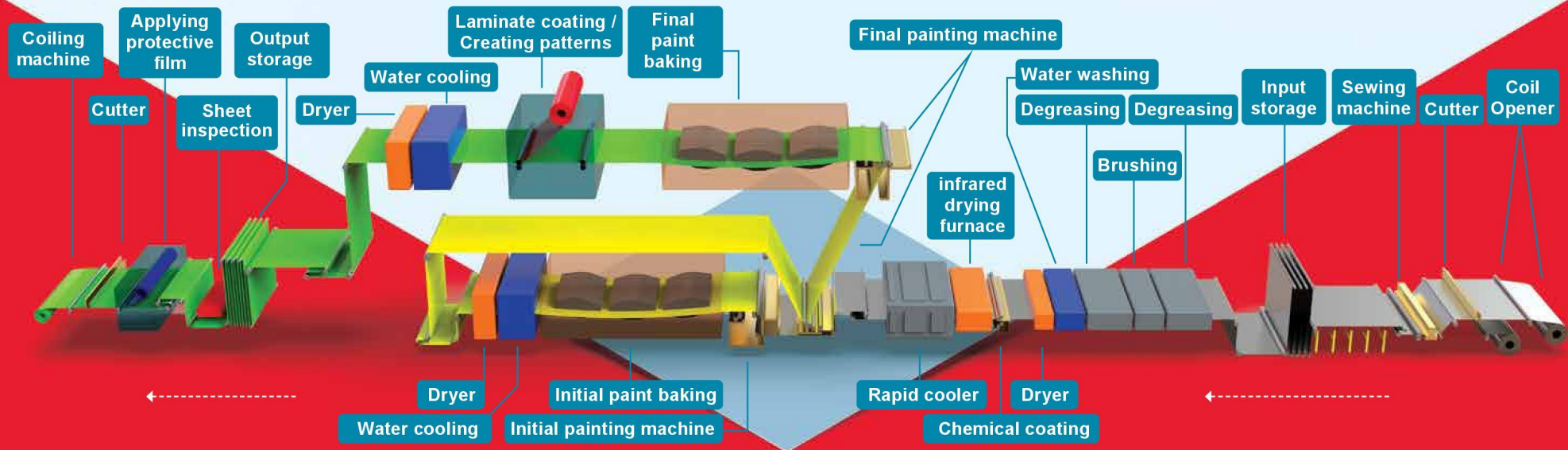
Width (mm)	One cut (ton)	Two cuts (ton)
750-790	4-6/3	2/7-4/1
791-890	4/6-7	3-4/6
891-990	5/1-7/7	3/4-5/1
991-1090	5/6-8/4	3/7-5/6
1091-1190	6/2-9/2	4/1-6/1
1191-1290	6/7-10	4/4-6/6
1291-1350	7/2-10/7	4/8-7/1

## Standards and qualities of Galvanized Products

Application	Quality			Standard
Standard/ Quality	ASTM	JIS-G3302	EN10147	EN10142
Commercial	A526(90)	SGCC	-	DX51D
Lock forming	A527(90)	-	-	-
Drawing	A528(90)	SGCC	-	DX52D
Construction	-	-	S280GD	-
	-	SGC400	-	-

# COLOR COATING LINE

in Mobarakeh steel company



Color coating line in Mobarakeh Steel Company is located along the galvanizing line and is designed as a coating line in which application of paint is done by rubber rolls. Advantages of this kind of line are high speed, low paint consumption and environmental compatibility. In this method, galvanized coil or skin-passed cold rolled coil continuously enter into the preparation section. At this stage, at first the degreasing solution in appropriate temperature is sprayed on the upper and lower surface of the sheet. Then the special roller brushes surfaces of the strip and washes them with warm water. This process is done twice and the strip is dried through blowing hot air. At the end of this stage, to improve the corrosion resistance and increase the adhesion of the paint to the surface of the strip, a suitable chemical substance is applied on both surfaces of the strip and dried at the appropriate temperature. Performing this step prevents the coated paint from scaling during subsequent forming processes. The strip is then sent to the paint coating section.

In this part, the primary paint (primer), made of polyester or epoxy, is applied on both surfaces of the strip by rubber rolls. After drying the applied paint in the oven, the strip is cooled, and the final paint, made of polyester, polyvinylidene fluoride, epoxy, poly Vinyl chloride and polyurethane are applied on strip surfaces by rubber rolls, and the final drying operation is performed in finishing oven. In the next step, the product is carefully inspected by quality control team. In order to prevent any damage to the paint, polyethylene or polypropylene layers are applied on the surface of the strip and the final product is supplied to the market after packaging. Using an equipment called embosser laminator, it is possible to apply PET and PVC film on the sheet surface as the final surface of the product (instead of the final paint layer). Using other equipment called strippable film applicator, it is possible to apply protective layers on the surface of paint products, which can be removed while using the strip.

## Product qualities as per national and international standards | Color coated coil

Application	Quality	Standard	
Construction application in normal and humid conditions	CGCC	JIS G 3312/94	JIS
Drawing application in normal and wet conditions	CGCD	JIS G 3312/94	
Construction application in normal and humid conditions	DX51D	EN 10346(09)	EN
Drawing application in normal and wet conditions	DX52D	EN 10346(09)	

## Minimum and maximum weights of Mobarakeh Steel Company products | Color coated coil

Width (mm)	Mother Coils (ton)	One cut (ton)	Two cuts (ton)
750-790	3/3-6/2	2/2-4/1	1/7-3/2
790-890	3/8-7	2/5-4/6	1/8-3/5
891-990	4/1-7/7	2/7-5/1	2/2-3/8
991-1090	4/7-8/4	3/1-5/6	2/5-4/1
1091-1190	5/1-9/2	3/4-6/1	2/8-4/5
1191-1290	5/5/-10	3/7-6/6	3/2-4/8
1391-1300	6-10/7	4-6/7	3/5-5/1

## Specifications of color-coated steel sheet production line of Mobarakeh Steel Company

Capacity	100,000 Ton/year
Production method	Galvanized coil, skinned cold-rolled coil
Type of input sheet	03.5 to 1.5
Sheet thickness	750 to 1300 mm
Sheet width	508 to 610 mm
Inner diameter of output coil	900 to 2000 mm
Outer diameter of output coil	915 to 1900 mm
Coil weight	3 to 10 Ton

<b>A</b> Coated Sheet	Primer thickness	5 microns
	Thickness of final paint	20 microns
	Primer material	Polyester
	Final paint material	Polyester (high durability)
Polyvinylidene fluoride Epoxy, polyvinyl chloride, polyurethane		

<b>B</b> Laminated	Film material	PET film or patterned PVC
	PET film thickness	30 microns

# Quality of color-coated steel sheet

products based on EN10142 standard

Application		Quality
Sheet quality	Application	Sublayer sheet quality (hot dip galvanized steel sheet)
DX51D	Commercial	DX51D
DX51D	Tensile	DXS2D

# Quality of color-coated steel sheet

products based on JISG3312 standard

Application		Quality
Sheet quality	Application	Sublayer sheet quality (hot dip galvanized steel sheet)
CGCC	Commercial	SGCC
CGCD	Tensile	SGCD



## Manufacturable sizes at Mobarakeh Steel Company | Color coated coil

Product	Thickness (mm)	Width (mm)	Length (mm)
Hot Rolled coil	1/5-16	600-1850	-
Hot sheet	1/5-16	600-1850	1000-12000
Pickled Coil	1/5-5/3	600-1680	-
Cold coil	0/35-3	600-1650	-
Cold sheet	0/35-3	600-1540	750-4000
Tin Plate Coil	0/16-0/4	600-1050	-
Tin Plate sheet	0/16-0/4	600-1000	457-1206
galvanized Coil	0/3-2	750-1350	-
Painted Coil	0/35-1/5	750-1300	-