

KAAVIAN STEEL COMPANY

GENERAL CATALOGUE 2017

www.kaaviansteel.com email: commercial@kaaviansteel.com



2017



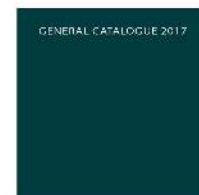
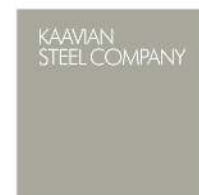
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 IN THE NAME OF GOD

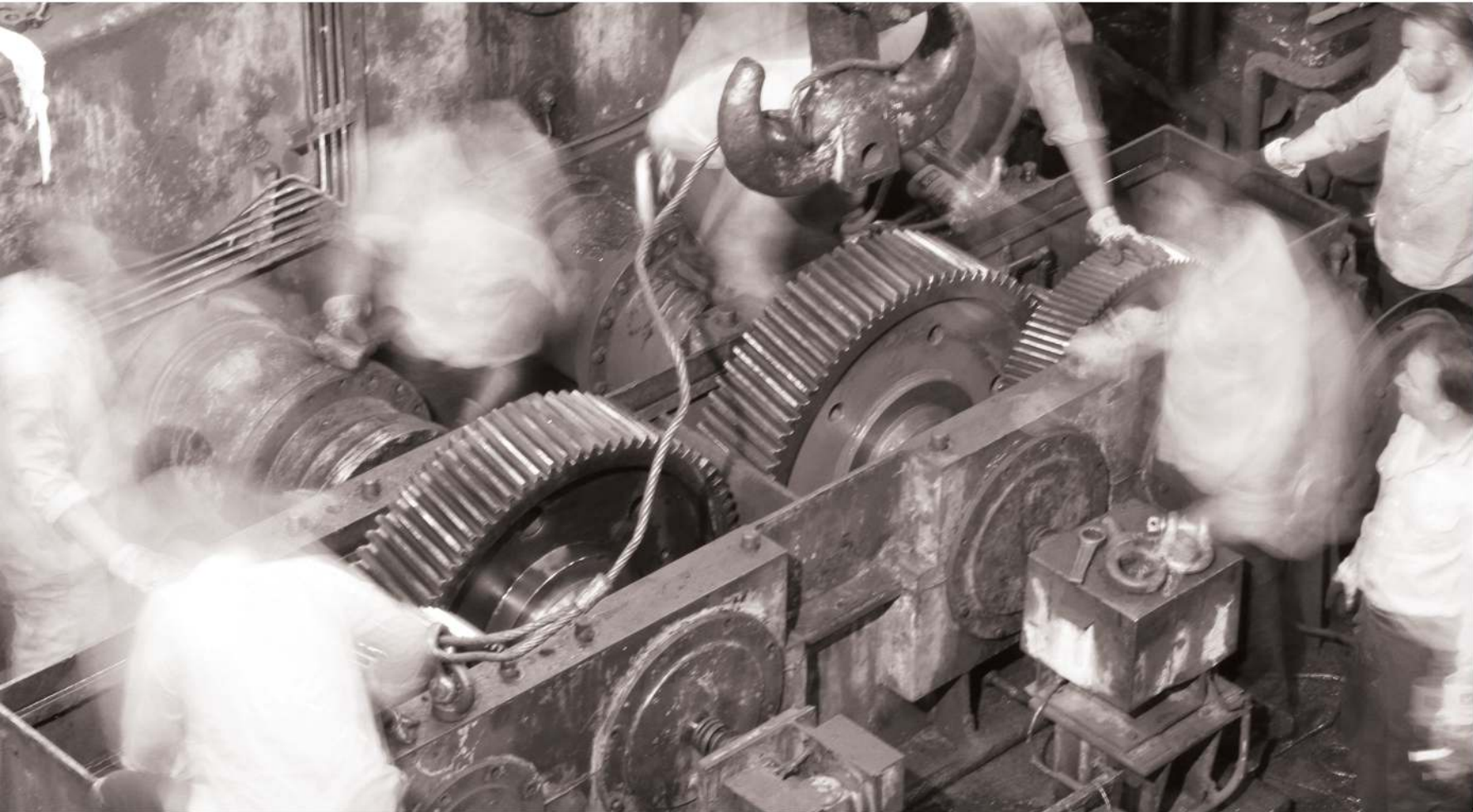


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KAAVIAN steel company is the first producer of heavy steel plates in IRAN with more than two decade experience.



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KAAVIAN steel company as the first producer of heavy steel plates in IRAN with more than two decade experience and brilliant presence in the field of economy and industry, by reliance on technical knowledge and laudable experiences of its personnel, could produce the products, according to international standards, and by the usage of modern facilities and technology is able to produce and satisfy steel demands and needs of consumers in the farther parts of the world.



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Vision and mission

Kavvian Steel Company current vision and missions for a better future are as follows:

- 1) To Seize the opportunities of tomorrow and to create a future that will make us an economical value added positive company.
- 2) To continue to improve the quality of life of our employees and the community we serve.
- 3) To revitalize the core business for a sustainable future.
- 4) To ensure quality along with safety and environmental sustainability.





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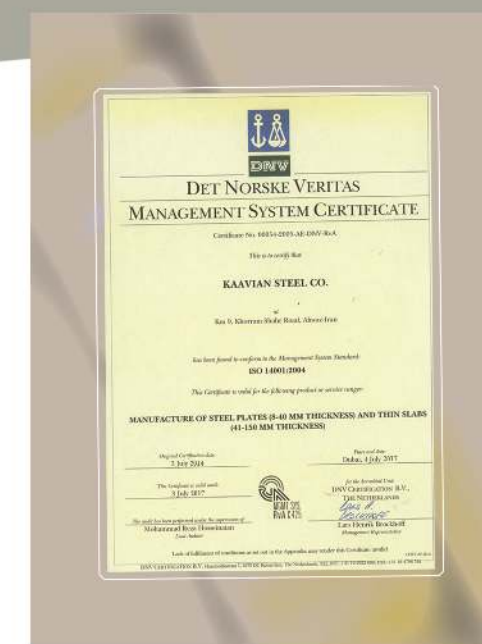




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Product Standards:

- Product's surface standard.
Visual quality and surface flatness are based on EN10163 standard, parts 1&2.
- Mechanical test Tensile test: EN10002 standard.
Impact test: EN10045 standard.
 - Other mechanical tests are carried out based on customer's requirements.
 - Non destructive test:
These are conducted as per customer requirements
 - Chemical analysis.
These are conducted as per customer requirements





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Human Resource Policy

Our approach to business involves providing international class service to our customers. As part of the Kaavian Steel Company, we have a corporate image of quality and integrity. We shall strive for excellence by nurturing, developing and empowering our employees, by encouraging an open atmosphere conducive to learning and teamwork. Hence we have developed the policy below:

- 1) Kaavian steel Company recognizes that its people are the primary of its competitiveness.
- 2) It is committed to equal employment opportunities for attracting the best available talent and ensuring a cosmopolitan workforce.
- 3) It will pursue management practices designed to enrich the quality of life of its employees, develop their potential and maximize their productivity.
- 4) It will aim at ensuring transparency, fairness and equity in all its dealings with its employees.
- 5) Kaavian Steel Company will strive continuously to foster a climate of openness, mutual trust and teamwork.





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Kaavian Steel Company, producer of "steel plates and thin slab" according to international standards (DIN, EN, ASTM, JIS...) has chosen ISO 9001:2000 quality management system standard with the aim of improving its condition among domestic and foreign customers.





Production Procedure

The raw material (slab) are purchased from both domestic suppliers and overseas producers; they are then transported to factory and stored in slab stock yard.

As per the arranged production plan slabs are taken from the yard and then transferred to the preheating furnaces. When slabs have reached the required temperature (1200°C) they are taken out and are sent to the descaling unit via roller tables. Slabs are then descaled by water jets with a pressure of 180 bar. Then it is sent to the horizontal and vertical (Edger) rolling mill, in this phase the basic thickness reduction is performed with reversing operation.

This factory is equipped with PLC and automation process. The thickness of manufactured product will be measured after the final pass via gamma ray.

Now slab is changed into desired plate and transported to the leveler machine for final flatness. After leveler machine plates are sent to the shear for cutting to desired lengths, they are finally transported to the cooling beds.

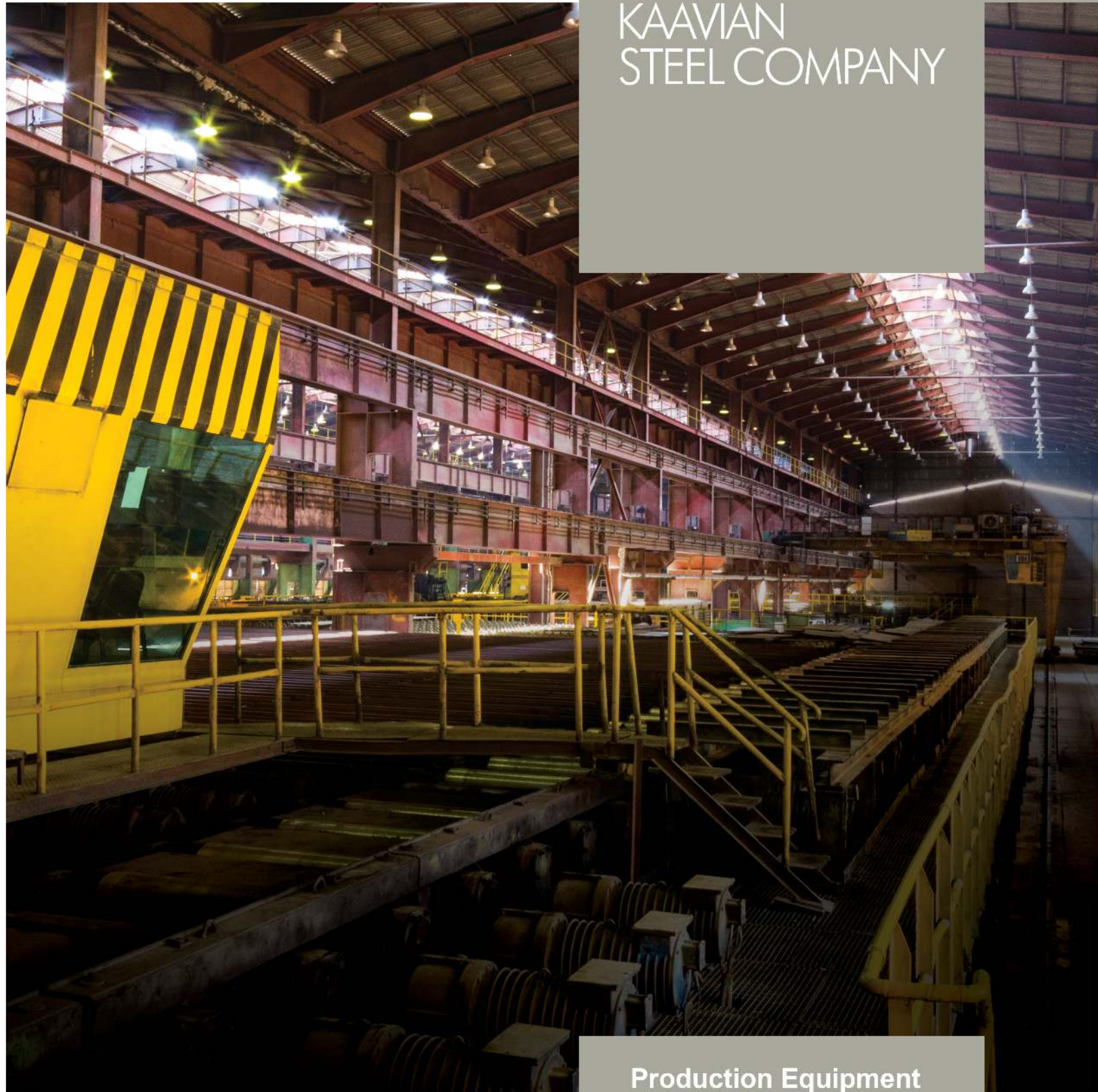
During production, the quality is controlled by measuring the necessary parameters for surface quality and dimensional accuracy. A trace number and quality degree are recorded on each plate, and then it will be sent for piling.

The piling machine sorts the plates based on their dimensions and they are transported to the plate stock yard.



There are two pre heat furnaces that heat slabs up to 1200°C with 300 t/h capacity, which is made by "OFU" an Austrian Company.

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Production Equipment

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Production Equipments

All the production equipments are manufactured by "SMS" of Germany which were designed and installed under supervision of "SMS" and include the following items:

- Horizontal rolling stand with a rolling load up to 3000 T.
- Vertical rolling (Edger) stand, in order to equalize and control the edges of product.
- Hot slab shear.
- Leveler to control the flatness of products.
- Hot plate shear.
- Four cooling beds. which cool the products by air blowing.





Preheating furnace

The furnace used is a 6- zone walking beam furnace with top and bottom firing serving to heat steel slabs.

On the inside it is lined with refractory material, on the outside is covered with sheeting. The roof is designed as a suspended arch.

Walking beam No.1 is furnace top fired 100t/h

Walking beam furnace No.2 is top fired and bottom fired 200t/h

Furnace dimension

Width	13580mm
Length	20180mm
Charge slabs furnace	200t/h
Width:Min=200mm,	Max=1500mm
Length:Min=3000mm,	Max=4000mm
Thickness:Min=130mm,	Max=300mm
Charge slabs furnace	100t/h
Width:Min=200mm,	Max=1500mm
Length:Min=3000mm,	Max=4000mm
Thickness:Min=90mm,	Max=300mm



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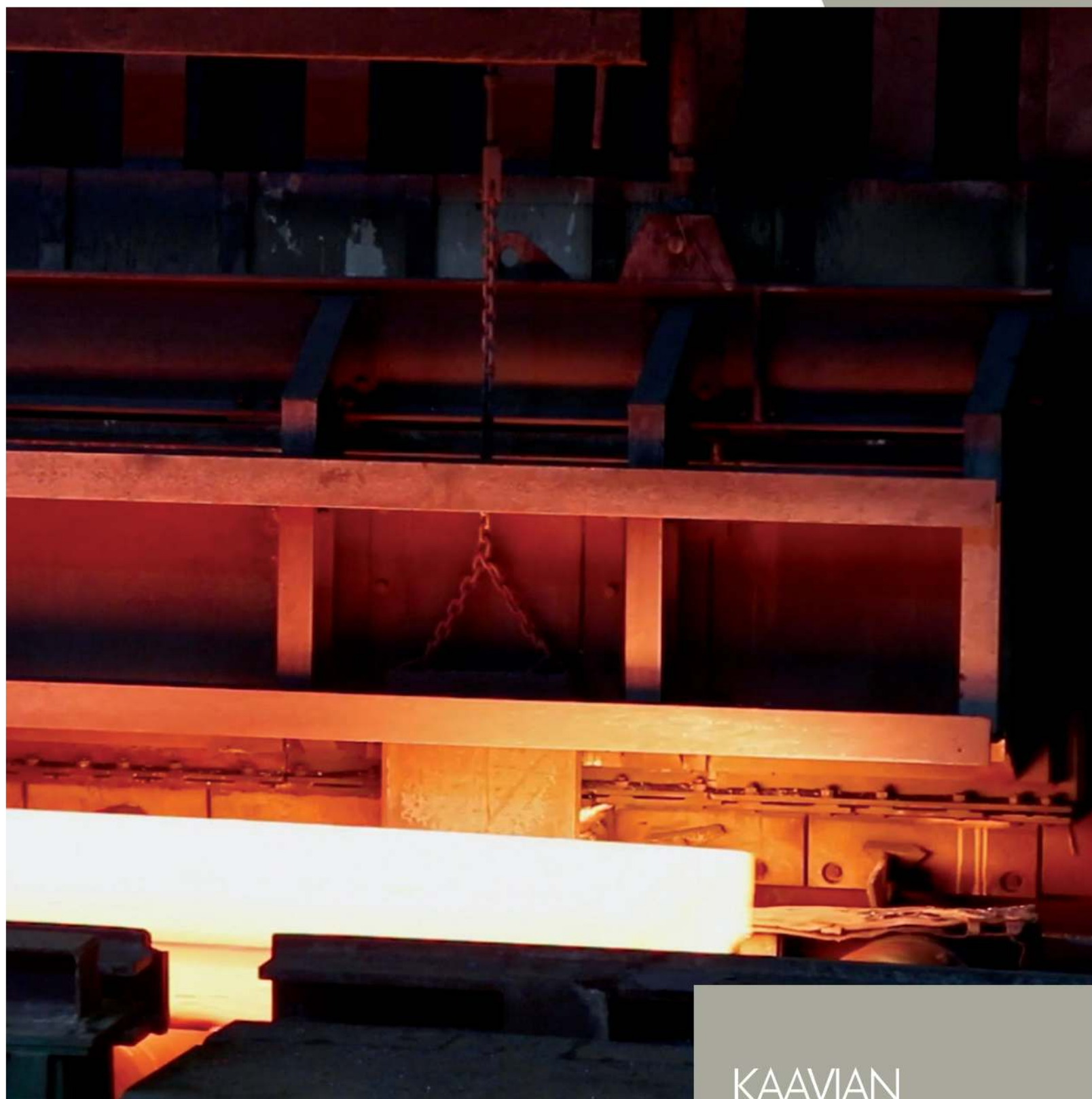
Descaling Unit (High pressure water for spray)

This pressure water station substantially comprises an accumulator bottle with ultra-sonic control column. Five HP pumps and two compressors which the latter will be manually controlled to suit the demands in each case

Technical data:

HP water pumps	5
Working pressure	p=180bar
Delivered volume	Q=each pump 673 ltr/min





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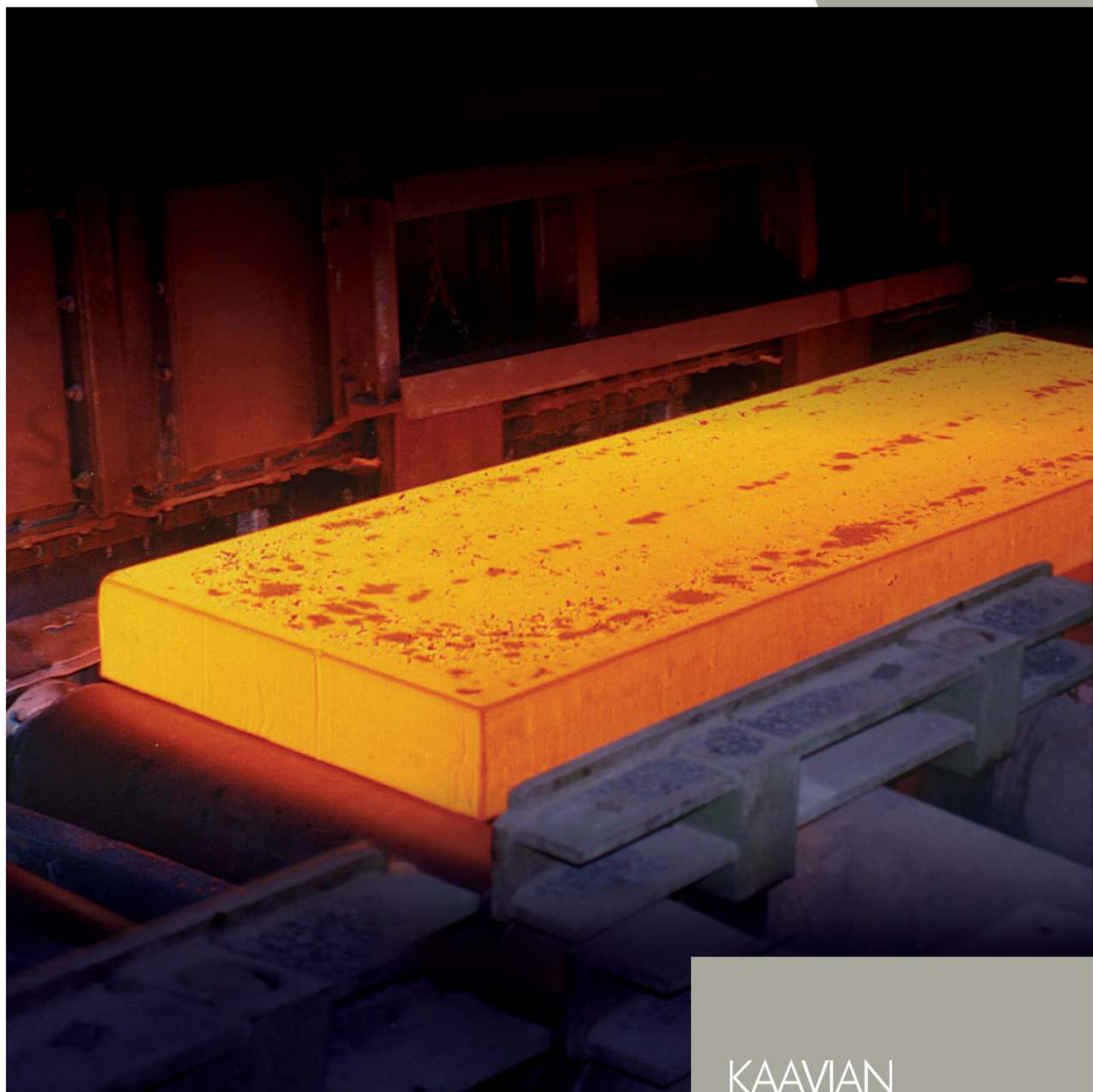
Rolling Mill (Two-high reversung stand)

The mill stand comprises two housing of closed design which are interconnected by means of top and bottom of crossbeam secured to bedplates.

Technical data

Rolling pressure of	1500MP~15MN
Roll motor rating	3700kw/drive spindle 0± 50/100 rpm (made by SIEMENS)
Roll drive through	electric motor (separate drive)
Roll diameter:	Max=1215mm min=1030mm





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Vertical edger stand

The vertical edger is composed of a stationary exterior stand and a moving interior stand. The exterior stand consists of four guide columns which are interconnected by a head traverse and bed plates.

The interior stand consists of two closed type housing interconnected by intermediate.

Material width: Min=600mm, Max=1800mm

Roll pressure: 5MN

Roll diameter: 900mm



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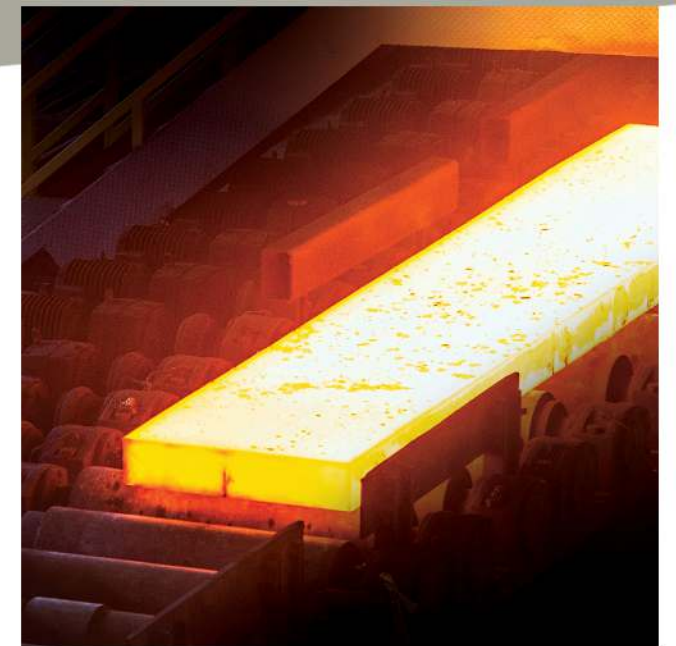
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Hot Plate Leveler

Plate dimensions		
Thickness:	Min=8mm,	Max=40mm
Width:	Min= 600mm,	Max= 1500mm
Speed:	0-120 m/min	
Min. Work temperature:	720 °C	





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Hot plate shear

This shear is for cropping and cutting steel plate at a temperature of 720°C min. It is of dual housing type with both down-cutting and up-cutting knives and operates under start- stop condition

Material to be cut: hot plate

thickness of steel plates: Max=40mm,

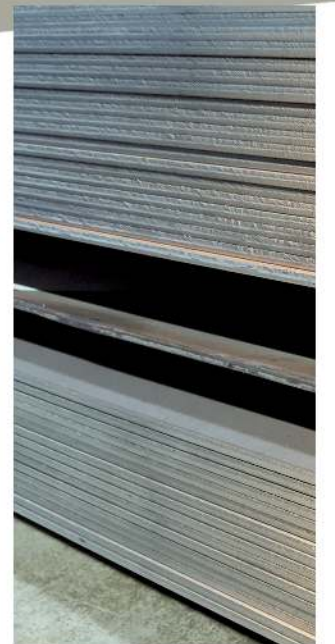
Min= 8mm

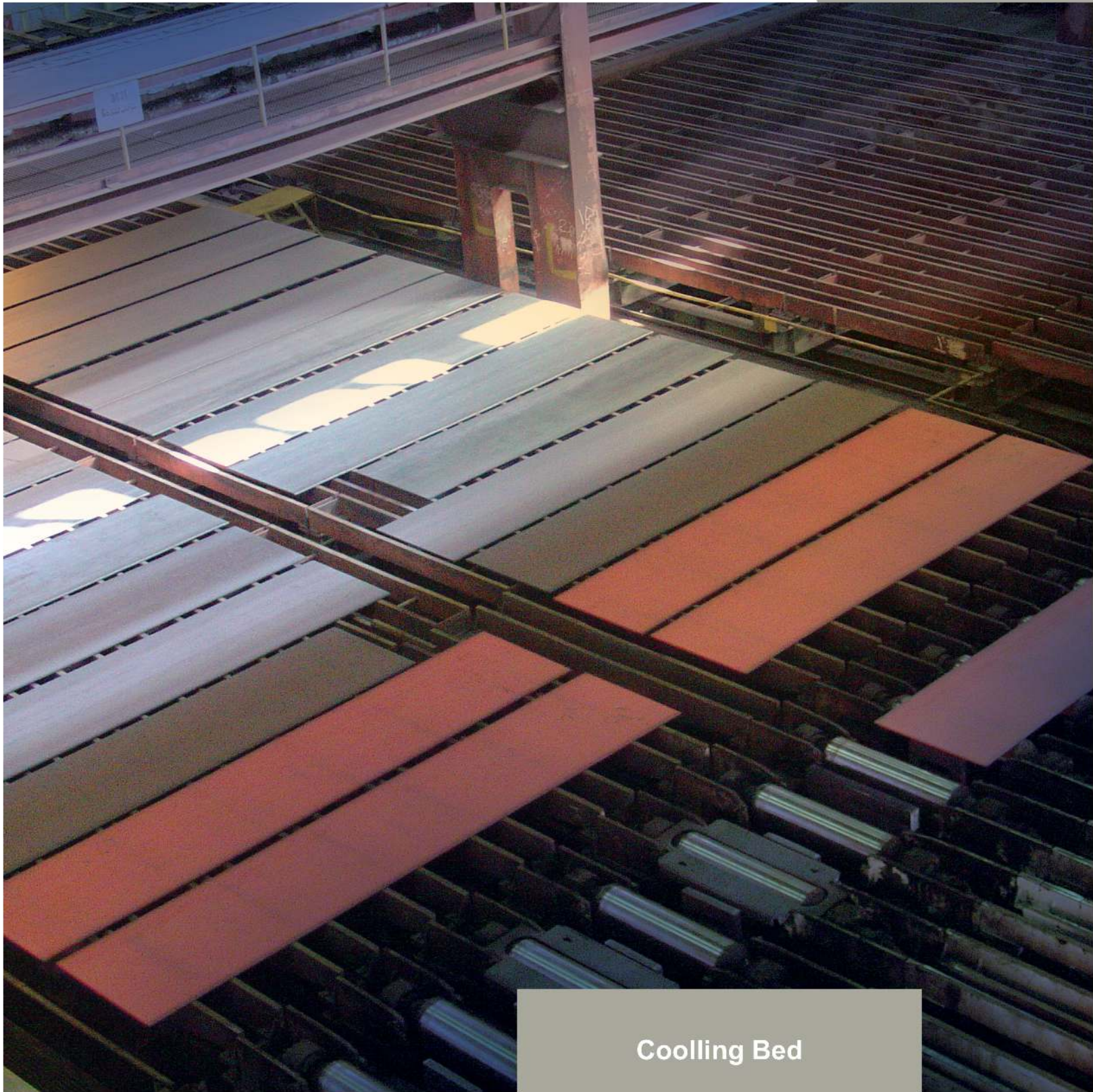
width of steel plate:

Max=1500mm

cold tensile strength max up to 36mm thickness
upto 40mm thickness

100kp/mm²
85kp/mm²





Cooling Bed

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Walking beam cooling bed

The walking beam cooling bed serves the purpose of cooling the rolled material which will then be cross transferred step by step. each bed is designed for a maximum load of 180 tons.





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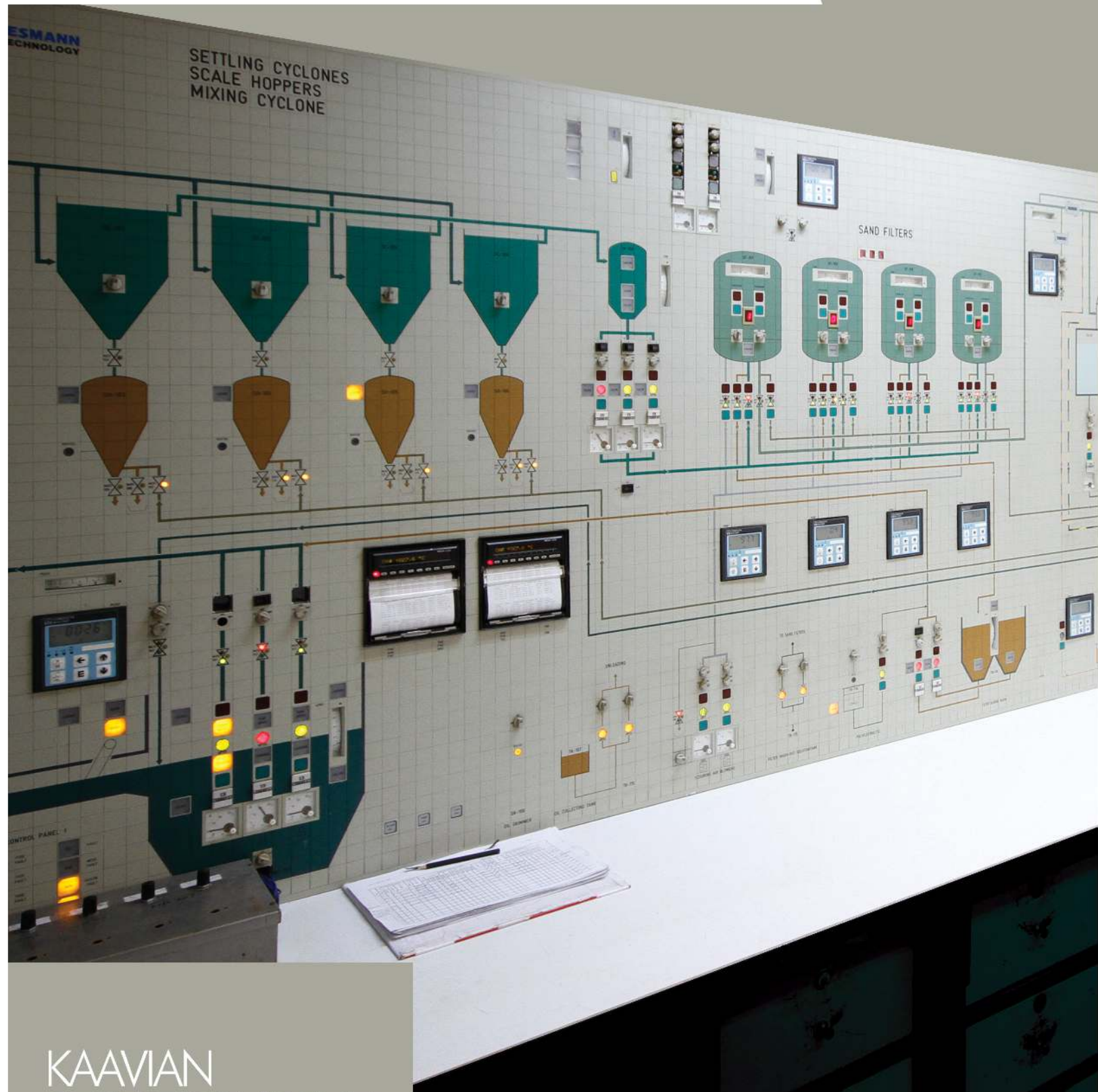
Plate piling device

The two pilers arranged beyond the cooling beds
Each plate arrives on the roller table center by side swinging.
The rollers are deposited on the lifting table which is disposed underneath the piler
and prepared for hydraulic lowering. When a pile is complete the lifting table will
be forwarded entirely or lifting table will raise to the same level.

Plate dimensions

Thickness:	Min=8mm,	Max=40mm
Width:	Min=600mm,	Max=1500mm
Length:	Min=3000mm,	Max= 6000mm





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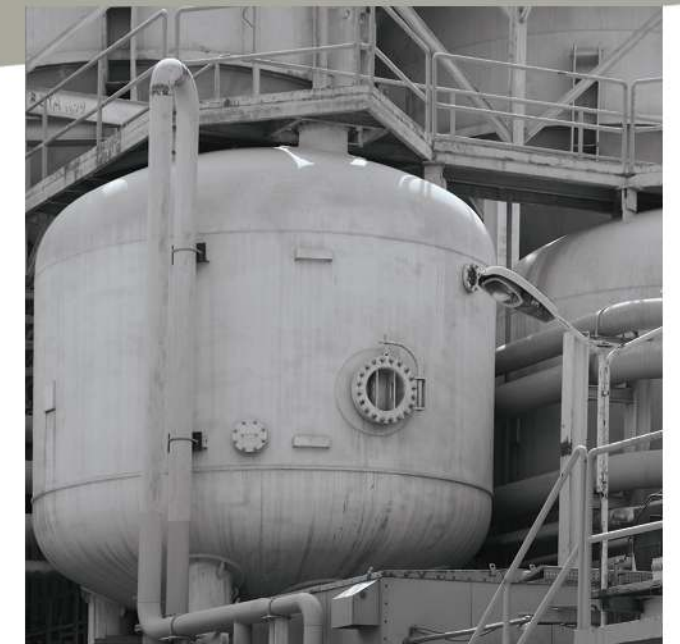
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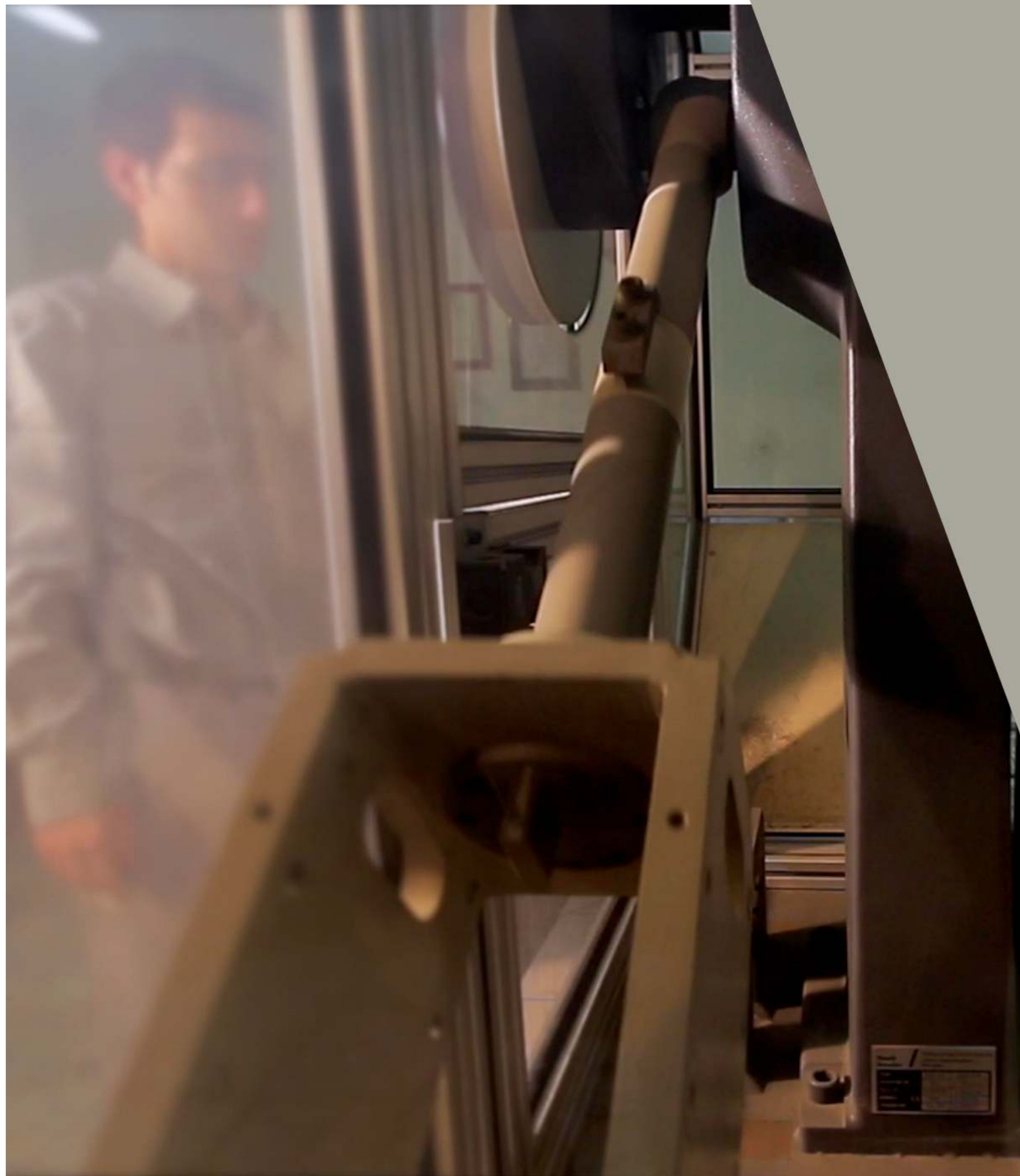
Water Treatment Plant

For cooling the equipments and products of the rolling mill, two cooling water circulation systems are required.
System 1 serves for cooling the rolling products by open spray cooling.

Water analysis
PH = 7-8.5
Total hardness = 300-600 ppm (as CaCo3)
Ca-H = 200-300
Chloride 400-600ppm as Cl

System 2 for internal cooling of closed circuit machines and equipments.
Water analysis
PH = 8.5-9.5
Total hardness = 5 ppm (as CaCo3)



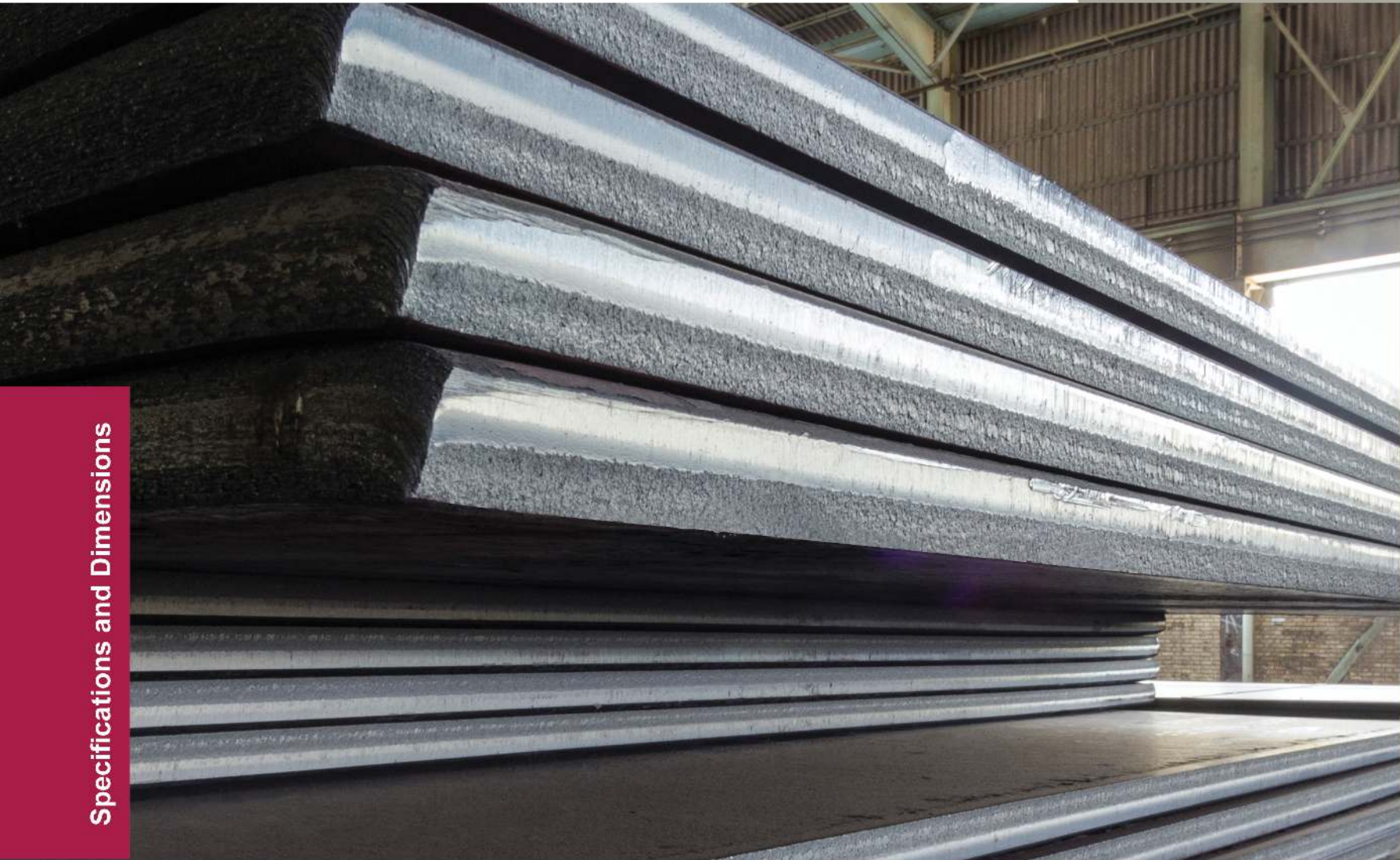


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Inspection and Test

Every plate undergoes quality inspection before leaving kaavian steel co.
Non-destructive test.
Such as surface inspection. Shape and gauging.
Ultrasonic testing are carried out on the plate during production (mentioned in order).
Mechanical and technological properties
Yield strength. Notched bar impact strength. Etc are carried out at different stages during production.
The chemical composition of the slabs are at the steel making stage and the results are presented in the test certificate.





Specifications and Dimensions

Applications of Kaavian's plates:

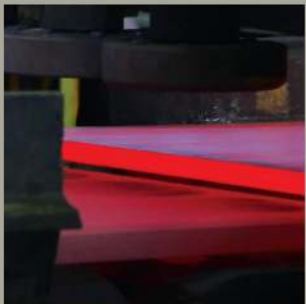
Hot rolled plates can be used for vessels, metal structured d bridge, tank, wagon and etc.
thin steel slab: making coupling seals and different kinds of flanges, chain, and gear and etc.

Specifications and Dimensions

Tolerances		Nominal Length	Plate
Upper	Lower		
+20	0	≥3000<4000	
+20	0	≥4000<6000	
+40	0	6000	
+100	0	>6000	

St52 – St44 – St37 – St33	Structural Steel
JIS-ASTM A285 -ASTM A283-ASTM A36	Structural Steel According to Following Standard
11MnSi6 – 58CrV4 – 42CrMo4 – 31CrV3	Heat Treatable Low Alloy Steel

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Mechanical Property & Chemical Composition Of Hot Rolled Plate

		According to the Agreement		According to the Request		Mechanical Properties										Chemical composition on ladle analysis																			
						Bending	ImpactTest	Tensile Test																											
						Test Standard	Temp.Test 20°C	Test Standard	Thickness		Elongation (%)	Yield point (min) N/mm2		Tensile Strength N/mm2		Test Standard																			
				40-16	16-8				40-16	16-8	40-16	16-8																							
				25 23	26 24				225	235	470 - 340																								
				21 19	22 20				265	275	540 - 410																								
				27		27		DIN EN10045										DIN EN10002																	
DIN50111										21 19		26 24		345		355		630 - 490		0.009		0.045		0.045		0.3 0.6		0.20 0.50		0.17		ST 2-37			
										21 19		26 24		270		300		480-670		0.007		0.045		0.045		0.3 0.6		0.20 0.50		0.17		UST 2-37			
										21 19		270		300		480-670		480-670		0.009		0.045		0.045		0.3 0.6		0.20 0.50		0.17		RST 2-37			
										21 19		270		300		480-670		480-670		0.009		0.045		0.045		0.6 0.9		0.20 0.50		0.21		ST 2-44			
										21 19		270		300		480-670		480-670		0.009		0.035		0.035		0.6 0.9		0.20 0.50		0.18		ST 44-3			
										21 19		270		300		480-670		480-670		0.009		0.040		0.040		0.6 0.9		0.20 0.50		0.20		RRST 3-52			
DIN EN10002										21 19		270		300		480-670		480-670		0.32 0.39		0.32 0.39		0.32 0.39		0.32 0.39		0.32 0.39		0.32 0.39		C 35			
										21 19		270		300		480-670		480-670		0.32 0.39		0.32 0.39		0.32 0.39		0.32 0.39		0.32 0.39		0.32 0.39		CK 35			
										21 19		270		300		480-670		480-670		0.42 0.50		0.42 0.50		0.42 0.50		0.42 0.50		0.42 0.50		0.42 0.50		C45			
										21 19		270		300		480-670		480-670		0.42 0.50		0.42 0.50		0.42 0.50		0.42 0.50		0.42 0.50		0.42 0.50		CK 45			
										21 19		270		300		480-670		480-670																	
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Specifications And Dimensions

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Specifications and Dimensions

(Dimesions in mm)

Dimensions			Product Description
Length	Width	Thickness	
3000-12000	600-1500	8-40	H.R Steel Plate
3000-12000	600-1500	40-150	Steel thin slab

Maximum Thickness difference Within Width	Tolerances on the nominal Thickness								Nominal Thickness	
	CLASS D		CLASS C		CLASS B		CLASS A			
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper		
0.9	-0.85	+0.85	0	+1.7	-0.3	+1.4	-0.5	+1.2	≥8<15	Plate
1.0	-0.95	+0.95	0	+1.9	-0.3	+1.6	-0.6	+1.3	≥15<25	
1.1	-1.1	+1.1	0	+2.2	-0.3	+1.9	-0.8	+1.4	≥25≤40	
1.2	-1.4	+1.4	0	+2.8	-0.3	+2.5	-1.0	+1.8	≥40<80	Slab
1.3	-1.6	+1.6	0	+3.2	-0.3	+2.9	-1.0	+2.2	≥80<150	
1.4	-1.8	+1.8	0	+3.6	-0.3	+3.3	-1.2	+2.4	≥150<200	

(Dimesions in mm)

Tolerances		Nominal Width
Upper	Lower	
+20	0	600-1500





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The operational Capabilities of Kaavian's rolled Products:

Weld ability: due to excellent metallurgical properties the rolled products have exceptionally good welding properties.

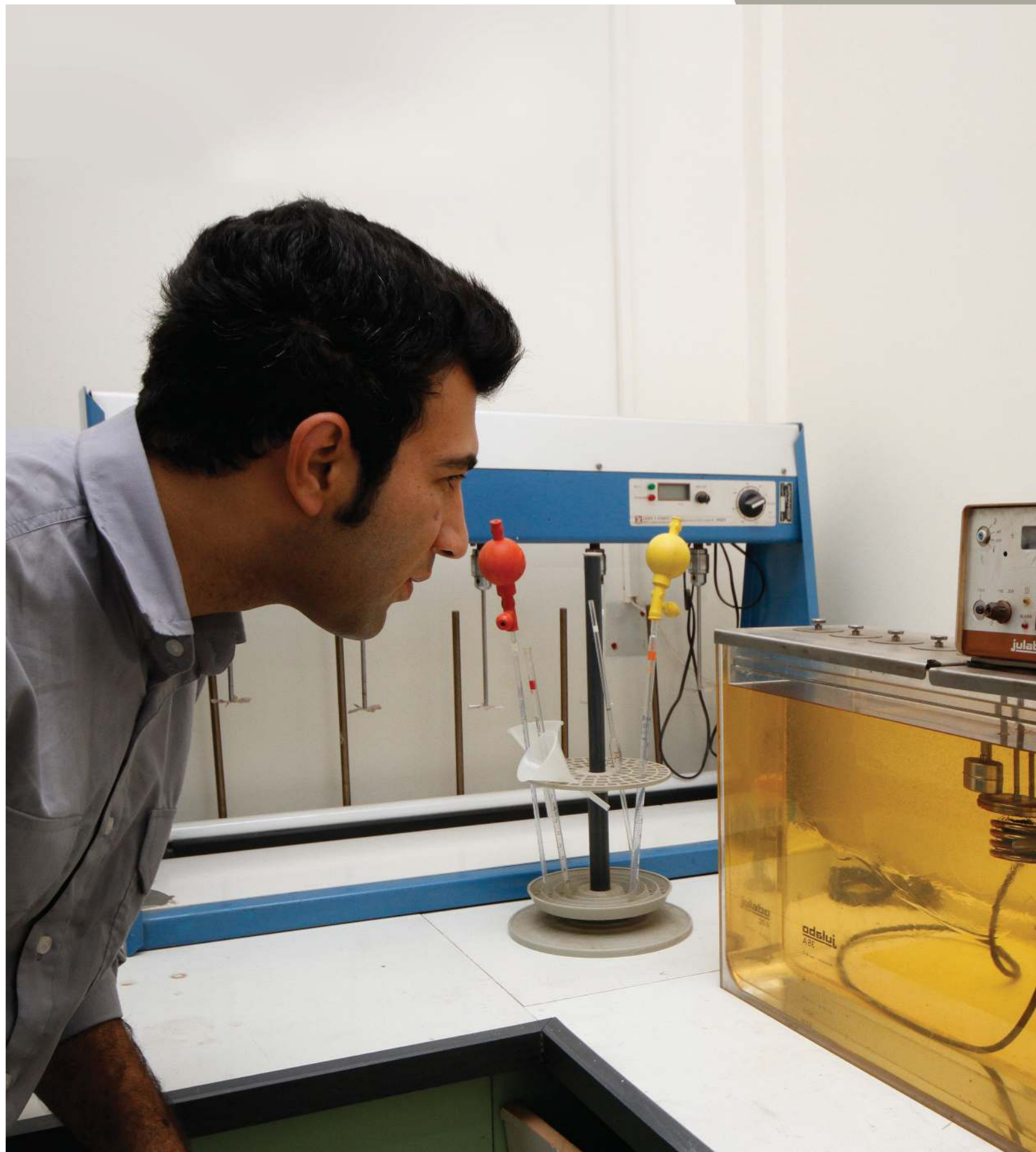
Machine ability: the rolled products are sustainable for all machining operations, e.g Grinding.

Bending: rolled plates with less than 20 mm thickness could be bended and edged or cornered, without any crack or other defects, (EN 10025)

Stress relief: based on available instruction and technical specifications, the rolled products could be normalized and stress relieved for different purposes.

Hardening this operation is not recommended for structural steel, but for other products which are made by special steel for this operation, hardening based on the standard instructions is possible.





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Quality

As the largest private sector steel rolling company in Iran Kaavian Steel Company has based its strategy on establishing sustainable customer communication lines and setting high standards in order to achieve customer satisfaction. With this in mind, Kaavian Steel Company not only controls quality throughout productions by inspections, but has taken steps in creating one of the most modern and well-equipped laboratories in the country, capable of carrying out all required tests to ensure that products are delivered as per customer's specifications. Kaavian Steel Company is also certified to ISO 9001:2000.



Process R&D IS indispensable for the implementation of new steel products and solutions but also to meet the objectives.

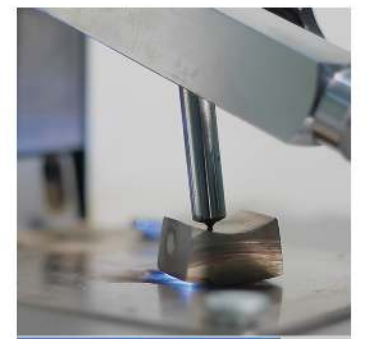


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Human Resource Policy

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Health, Safety & Environment

At Kaavian Steel Company, Health, Safety and Environmental (HSE) responsibilities are integral to the way we do business. Successfully managing HSE issues is an essential component of our business strategy. Through observance and encouragement of this policy, we assist in protecting the environment and the overall well-being of all of our stakeholders, specifically, our employees, clients, subcontractors, and communities. In order to achieve these objectives, we will identify HSE risks arising from our activities and reduce them to the lowest practical levels. Our goal is to minimize impact to the environment and to prevent harm to our employees, our clients, our communities, and all others who could be affected by those activities.

