

CHEMISTRY THAT MATTERS™

سابك  
sabic

# QUALITY+ SUSTAINABILITY

LONG PRODUCT CATALOG



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# OUR VISION AND MISSION

SABIC ranks among the world's top chemical companies. The company is among the world's market leaders in the production of polyethylene, polypropylene and advanced thermoplastics, glycols, methanol, and fertilizers – and one of the largest producers of steel in the Middle East.

Our **VISION** is to be the preferred world leader in chemicals.

Our **MISSION** is to responsibly provide quality products and services through innovation, learning, and operational excellence while sustaining maximum value for our stakeholders.

# OUR BRAND

The essence of our brand is about Powering Ambition. Through what we do and how we do it, we power the ambitions of our customers, the societies in which we operate, our employees, our partners, all our businesses and shareholders.

The promise of Powering Ambition is built upon a solid foundation of:

- A commitment to creating long-term success
- A spirit of ingenuity and material sustainability
- Delivery of innovative solutions
- Actions and not just words
- Strong relationships not transactions

We call this "CHEMISTRY THAT MATTERS™"

## OUR VALUES



**INSPIRE**  
Generating excitement & Commitment



**ENGAGE**  
Connecting with others to achieve more



**CREATE**  
Finding and embracing new ways of doing this



**DELIVER**  
Taking responsibility And making things happen

# COMPANY OVERVIEW

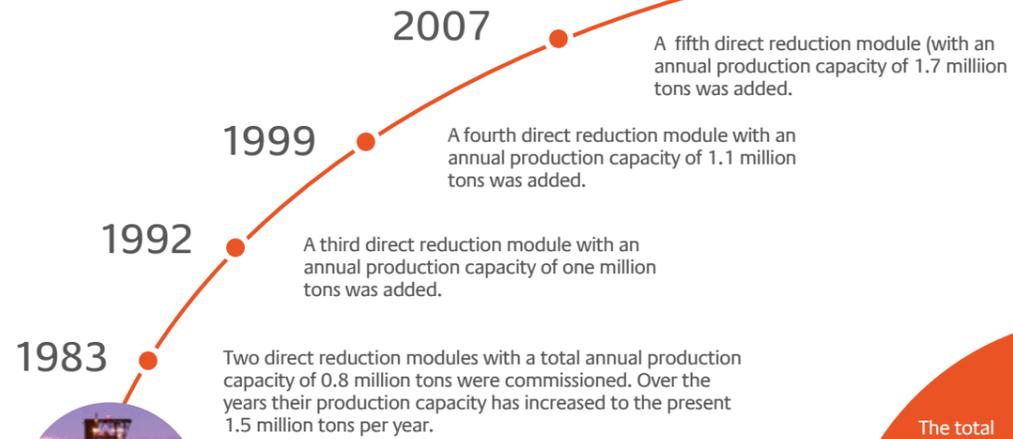
SABIC is a global leader in diversified chemicals headquartered in Riyadh, Saudi Arabia. We manufacture on a global scale in the Americas, Europe, the Middle East, and Asia, making distinctly different kinds of products: chemicals, commodity and high performance plastics, agri-nutrients, and metals. SABIC has more than 35,000 employees worldwide and operates in more than 50 countries. Fostering innovation and a spirit of ingenuity, we have significant research resources with innovation hubs in five key geographies: the USA, Europe, the Middle East, South East Asia, and North East Asia.

SABIC's affiliate focused on metals, Hadeed (Saudi Iron and Steel Co.), is the first fully integrated iron- and steel-making complex in the Kingdom of Saudi Arabia. Hadeed plays a major role in building and developing the Kingdom and leads the Gulf in the production of high-quality long and flat steel products. It plays a vital role in the construction and industrialization of some of the world's fastest-growing economies. Long products are mainly used in the construction industry, while flat steel products are ideal for making oil drums, car parts, household appliances, and pipelines.

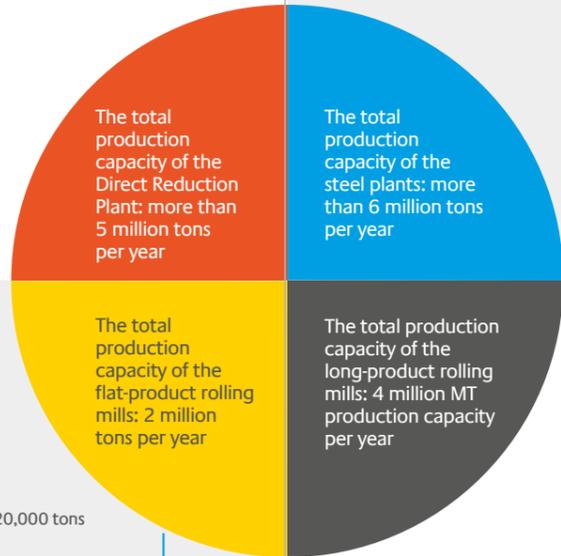
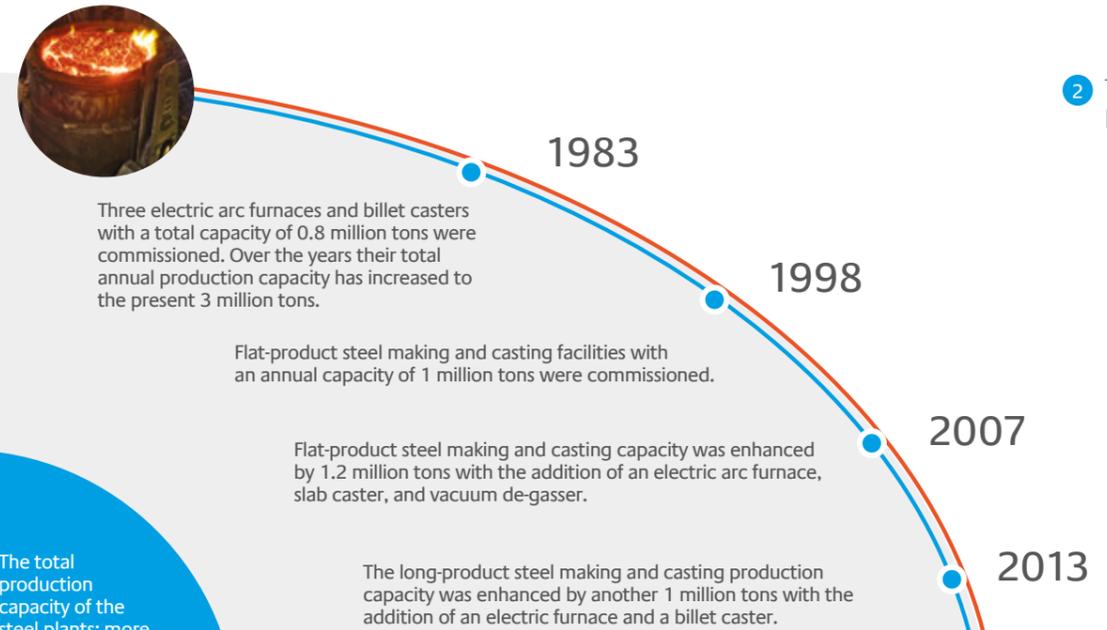


# DATES THAT CHANGED THE STEEL INDUSTRY AT SABIC

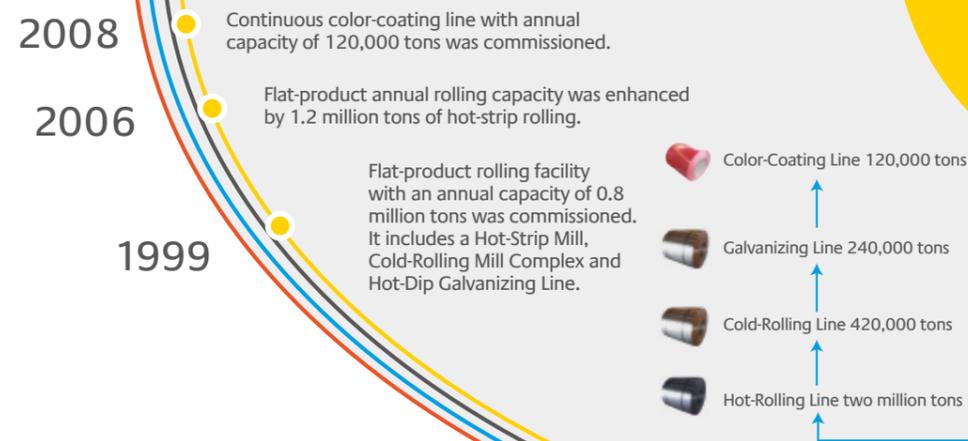
## 1 The Direct Reduction Plant



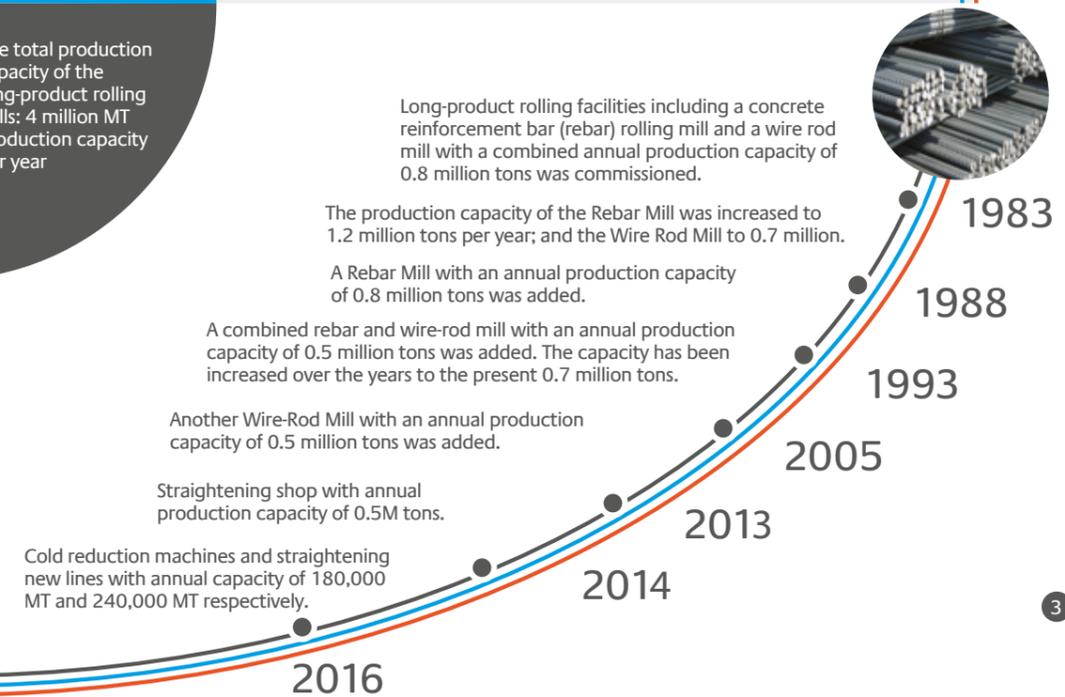
## 2 The Steel Plant



## 4 The Flat Product Rolling Mills



## 3 The Long Product Rolling Mills

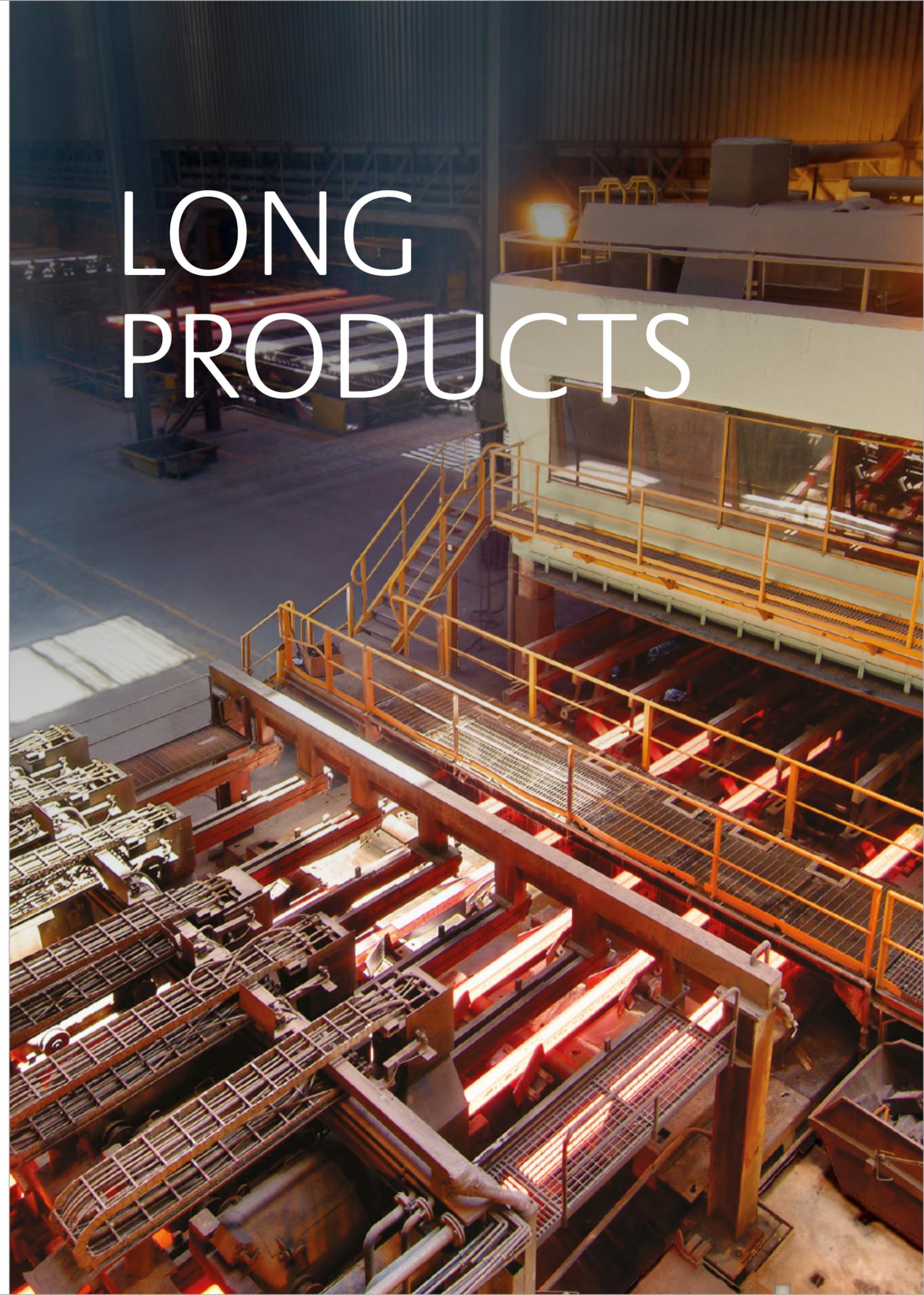


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# ENVIRONMENTAL HEALTH IS TOP PRIORITY

SABIC, an environmentally conscious company, is committed to minimizing the ecological impact of its steel-production operations.

The cleanliness of our environment is as important to us as the quality of our steel products. SABIC continuously monitors emissions and implements an effective environment-management program to ensure that we comply with – and exceed – global standards. Through sustainability programs, we contribute to the conservation of our environment and provide a better life for future generations.



# LONG PRODUCTS



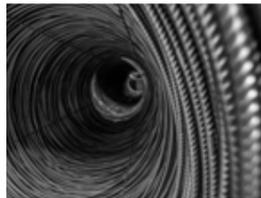
Billet

Billets are the raw material for producing long-steel products. They are produced in various grades and standards based on customer requirements.



Rebar

Concrete reinforcing bars (rebars) represent the majority of SABIC'S production. They are made according to international standards.



Rebar in coil

Rebar in coil is further processed by downstream cut and bend operations and straightening lines to produce shapes and straight bars for construction. Plain coils are used for reinforcing concrete pipes by cut and bend facilities.



Wire rod

Drawing grade wire rods are used by downstream industries to produce mesh, nails, hangers, screws, barbed wires, fencing mesh, binding wires, etc. Mesh grade wire rods are used for downstream cold indentation process to make cold deformed bars for construction.



Compact Coil

Cold deformed compact coil is processed by downstream cut and bend operations and straightening lines to produce straight bars and welded fabric. Weight range is from three to five tons.

# BILLET SPECIFICATIONS

SABIC manufactures steel billets in accordance with international standards to provide steel products that meet specific customer requirements.

## Chemical Composition % (max)

Billet Size (mm)	C	Si	Mn	P	S
130x130	0.40	0.45	1.50	0.05	0.05
150x150	0.93	0.60	1.50	0.05	0.05

## Dimension / Appearance

Length	Section Tolerance	Corner Radius	Rhomboidity	Twist	Straightness
12-14 m ± 50 mm	± 3 mm	4 mm	10 mm	0.5 degrees/m	5 mm/m

Other chemical compositions are possible. Please contact Sales and Marketing for details.



# REINFORCING BARS

SABIC's steel strengthens structures and reinforces the foundations of prosperity in Saudi Arabia and the region.

## Mechanical Properties of SABIC Steel Rebars

Standard	Grade	Nominal Diameter mm	Yield Strength MPa (min.)	Tensile Strength MPa (min.)	Tensile to Yield Ratio (min.)	Elongation in 200mm (min.)	Elongation (A5) (min.)	A <sub>gt</sub> % (min.)
SASO ASTM A615M	280(40)	12	280	420	N/A	12	N/A	N/A
		14 - 18						
	420(60)	12 - 20	420	620	N/A	9	N/A	N/A
		25				8		
32 - 40		7						
520(75)	12 - 25	520	690	N/A	7	N/A	N/A	
	32 - 40				6			
SASO ASTM A706M	420(60)	12 - 20	420-540	550	1.25	14	N/A	N/A
		25 - 36				12		
		40				10		
BS 4449	460 B	12 - 40	460	N/A	1.08	N/A	14	5
BS 4449	B500B	12 - 32	500	N/A	1.08	N/A	N/A	5
GCC Standard GS06/ISO 6935-2	B400BR / B400BWR	12 - 40	400	N/A	1.08	N/A	14	5
	B500BR / B500BWR	12 - 32	500	N/A	1.08	N/A	14	5

\*Saudi standards adopted from SASO ASTM (A615M and A706M)

## Chemical Composition of SABIC Steel Rebars

Standard	Grade	Chemical composition % (maximum)							
		C	Si	Mn	S	P	N	Cu	C.E.V
SASO ASTM A615M	280/420/520 (40/60/75)	...	...	...	...	0.06	...	...	...
SASO ASTM A706M	420(60)	0.3	0.50	1.5	0.045	0.035	...	...	0.55
BS 4449	460 B	0.25	...	...	0.05	0.05	0.012	...	0.51
BS 4449	B500B	0.22	...	...	0.05	0.05	...	0.80	0.50
GCC Standard GS06/ISO 6935-2	B400BR / B500BR	...	...	...	0.06	0.06	...	...	...
	B400BWR / B500BWR	0.22	0.60	1.60	0.05	0.05	0.012	...	0.50

### NOTE:

1. Other elements like, Ni, Cr, Mo, V, Nb, Ti ... etc. may be added if required.
2. Higher nitrogen contents are permissible if sufficient quantities of nitrogen binding elements are present.
3. Product analysis may differ. Standard tolerances will apply.

# REINFORCING BARS

## Linear Mass and Number of Bars In Bundles

Diameter (mm)	Nominal linear mass Kg/m	Tolerance in linear mass (maximum)			Number of 12 m long bars in a bundle of nominal weight of 2 tons.
		ASTM A615	BS 4449:2005	GCC Standard GS06/ISO 6935-2/2007	
12	0.888	- 6 %	± 4.5 %	± 6 %	188
14	1.210	- 6 %	± 4.5 %	± 5 %	138
16	1.580	- 6 %	± 4.5 %	± 5 %	105
18	2.000	- 6 %	± 4.5 %	± 5 %	84
20	2.470	- 6 %	± 4.5 %	± 5 %	68
22	2.980	- 6 %	± 4.5 %	± 4 %	56
25	3.850	- 6 %	± 4.5 %	± 4 %	44
28	4.830	- 6 %	± 4.5 %	± 4 %	34
32	6.310	- 6 %	± 4.5 %	± 4 %	26
36	7.990	- 6 %	± 4.5 %	± 4 %	21
40	9.870	- 6 %	± 4.5 %	± 4 %	17

Other specifications are possible. Please contact Sales & Marketing for details.



# WIRE ROD AND REBAR IN COILS

SABIC produces a range of low, medium and high carbon steel-wire rods according to international standards for various applications. Concrete-reinforcing bars in coil meeting SASO ASTM A615, BS 4449 and GCC standard GSO6 requirements are also available.

## 1- WIRE ROD

### 1-1 Drawing-grade wire rods

Wire rods used for drawing wires for various applications.

Chemical Composition and Mechanical Properties of Drawing Grade Wire Rods

#### Chemical Composition and Mechanical Properties of Drawing Grade Wire Rods

Grade Properties	Chemical Composition %					Mechanical Properties		
	C	Si	Mn	P	S	Yield Strength MPa	Tensile Strength MPa	Elongation %
AISI 1005	0.06 max.	0.05 max.	0.35 max.	0.03 max.	0.03 max.	220 - 280	300 - 380	20 Min
AISI 1006	0.08 max.	0.07 - 0.10	0.25 - 0.40	0.04 max.	0.05 max.	210 - 270	350 - 400	28 - 38
AISI 1008	0.06 - 0.09	0.08 - 0.13	0.35 - 0.45	0.03 max.	0.03 max.	220 - 280	360 - 420	28 - 35
AISI 1010	0.09 - 0.12	0.10 - 0.15	0.40 - 0.50	0.03 max.	0.03 max.	260 - 290	400 - 430	29 - 32
AISI 1012	0.11 - 0.14	0.10 - 0.15	0.40 - 0.50	0.03 max.	0.03 max.	260 - 300	400 - 440	25 - 30
AISI 1015	0.14 - 0.17	0.10 - 0.15	0.44 - 0.55	0.03 max.	0.03 max.	260 - 310	430 - 470	24 - 29
AISI 1018	0.16 - 0.19	0.18 - 0.30	0.70 - 0.80	0.03 max.	0.03 max.	300 - 350	470 - 520	22 - 28
AISI 1021	0.19 - 0.23	0.18 - 0.30	0.70 - 0.80	0.03 max.	0.03 max.	330 - 360	500 - 540	20 - 25
AISI 1030	0.29 - 0.33	0.18 - 0.30	0.70 - 0.80	0.03 max.	0.03 max.	360 - 390	580 - 640	18 - 23



## 1-2 Mesh grade wire rods

Wire rods are used for making cold-drawn/cold-indented concrete reinforcement bars and welded mesh.

Grade	Chemical Composition %					Tensile Strength MPa
	C	Si	Mn	P	S	
Mesh-1	N/A	N/A	N/A	0.05	0.05	360 - 450
Mesh-2	N/A	N/A	N/A	0.05	0.05	440 - 500

## 1-3 Wire rod for welding electrodes

Welding quality wire rods with restricted Si content of 0.05% Max. are used for making wires for welding electrodes.

Grade	Chemical Composition %					Mechanical Properties		
	C	Si	Mn	P	S	Yield Strength MPa	Tensile Strength MPa	Elongation %
0510	0.05 - 0.07	0.00 - 0.05	0.50 - 0.60	0.025 max.	0.025 max.	240 - 290	370 - 490	25 - 35

## 1-4 Wire Rod for Cable Armoring:

This steel is used to protect the electric cables from mechanical damage which is buried and used in external or underground projects.

Plain wire rod size range: 5.5mm to 12mm.

Grade	Chemical Composition %					Mechanical Properties		
	C	Si	Mn	P	S	Yield Strength MPa	Tensile Strength MPa	Elongation %
AISI 1005	0.06	0.05	0.35	0.03	0.03	220 - 280	300 - 380	20 Min

## 1-5 High-Carbon Plain Wire Rod:

These steel-wire rods are used as an input material in wire drawing process for high-tensile strength application wires for concrete reinforcement, such as pre-stressed concrete, spring wires, wire ropes, fencing wires, concrete nails, high tensile bailing wires, etc.

Plain wire rod size range: 5.5mm to 12mm.

Grade	Chemical Composition %					Mechanical Properties
	C	Si	Mn	P	S	
AISI 1040	0.37 - 0.44	0.15 - 0.30	0.60 - 0.90	0.04 max.	0.05 max.	As per customers' specific requirements
AISI 1045	0.43 - 0.50	0.15 - 0.30	0.60 - 0.90	0.04 max.	0.05 max.	
AISI 1050	0.48 - 0.55	0.15 - 0.30	0.60 - 0.90	0.04 max.	0.05 max.	
AISI 1060	0.55 - 0.65	0.15 - 0.30	0.60 - 0.90	0.04 max.	0.05 max.	
AISI 1065	0.60 - 0.70	0.15 - 0.30	0.60 - 0.90	0.04 max.	0.05 max.	
AISI 1070	0.65 - 0.75	0.15 - 0.30	0.60 - 0.90	0.04 max.	0.05 max.	
AISI 1075	0.70 - 0.80	0.15 - 0.30	0.60 - 0.90	0.04 max.	0.05 max.	
AISI 1080	0.75 - 0.88	0.15 - 0.30	0.60 - 0.90	0.04 max.	0.05 max.	
AISI 1085	0.80 - 0.93	0.15 - 0.30	0.70 - 1.0	0.04 max.	0.05 max.	

Other specifications are possible. Please contact Sales & Marketing for details.

# TOLERANCES AND COIL DIMENSIONS

## Size Tolerances for Coiled Products

Type	Size Range (mm)	Size Tolerance (mm)	Ovality (mm) max.
Plain Drawing Grades	5.5 and 6.5	±0.25	0.40
	7 - 16	±0.30	0.48
Plain Mesh Grades	5.5 - 6.5	±0.30	0.48
	7 - 16	±0.40	0.64
Deformed	6, 8, 10, 12, 14 and 16	Mass tolerance as per applicable standard.	

## Coil Dimensions (indicative)

Outside Diameter	1250 mm
Inside Diameter	800 mm
Compacted Length	1650 mm
Mass (indicative)	1800 kg
Packing	Four equidistant straps with 6 mm diameter binding wire.

Other specifications are possible. Please contact Sales & Marketing for details.



## 2- REBAR IN COILS AND STRAIGHTENED REBAR

Deformed concrete reinforcement rebar is supplied in coil form (RIC) or as straightened rebar (STR). It is produced as per SASO ASTM A615 Grade 40 and Grade 60, BS 4449:1997, Grade 250 and Grade 460B, BS 4449:2005 Grade B500B.

### Sizes and Tolerances

Diameter (mm)	Nominal linear mass (kg/m)	Tolerance in linear mass (max.)	
		SASO ASTM A615	BS4449
6	0.222	-6%	-/+6
8	0.395	-6%	-/+6
10	0.617	-6%	-/+4.5
12	0.888	-6%	-/+4.5
14	1.210	-6%	-/+4.5
16	1.580	-6%	-/+4.5

## 3- COLD ROLLED

Cold-rolled steel compact coils are produced as per ASTM 1064

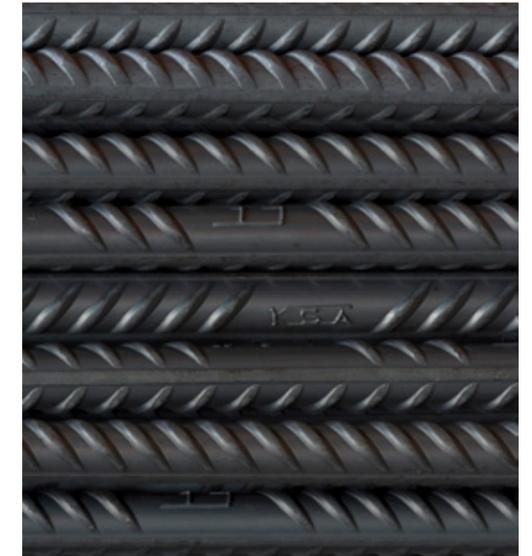
Grade	Yield Strength MPa (Min)	Tensile Strength MPa (Min)
485 (70)	485	550
515 (75)	515	585
550 (80)	550	620

### Sizes and Tolerances

Diameter (mm)	Nominal linear mass (kg/m)	Tolerance in linear mass (max.)
8	0.395	-/+6%
10	0.617	-/+6%
12	0.888	-/+6%
14	1.210	-/+6%

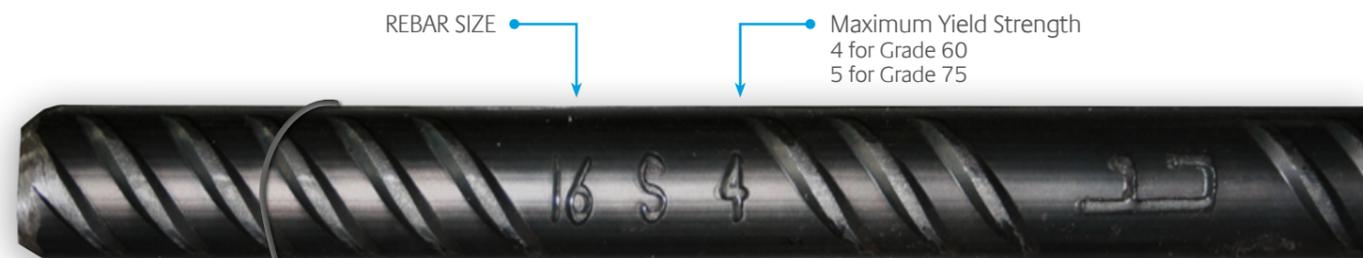
### Weight and Coil Dimension

Weight (Mt)	Internal Diameter (mm)	External Diameter (mm)	Height (mm)
3	630	1200	800
4	630	1200	1000
5	630	1300	1000



# REBAR MARKING AND PACKING

Bars can be identified by marks inscribed on to the surface of one side of rebar as per SASO ASTM 615 M and SASO ASTM 706M standards.



REBAR SIZE

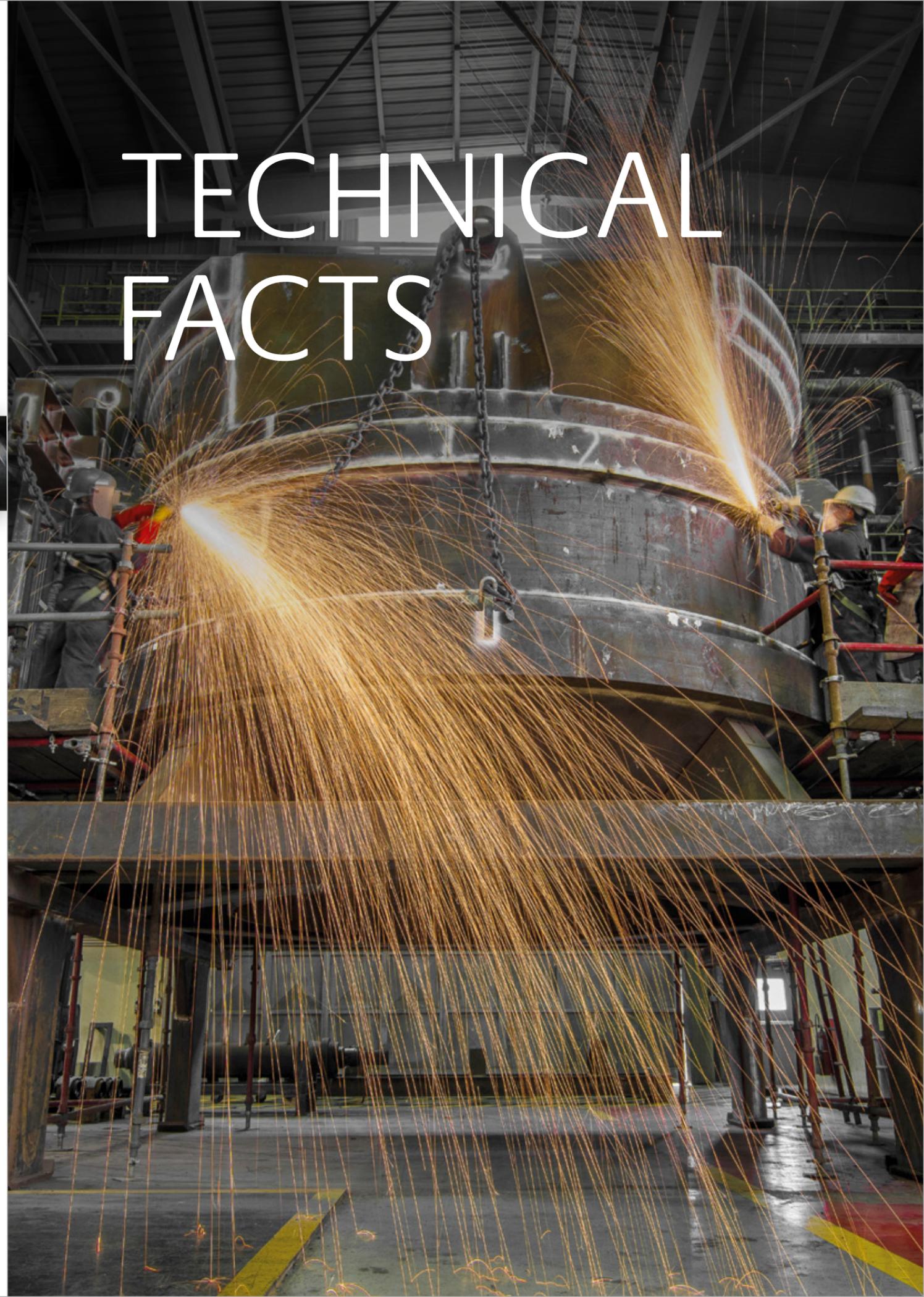
Maximum Yield Strength  
4 for Grade 60  
5 for Grade 75

TYPE OF STEEL  
S for SASO ASTM 615M  
W for SASO ASTM 706M

Point of Origin



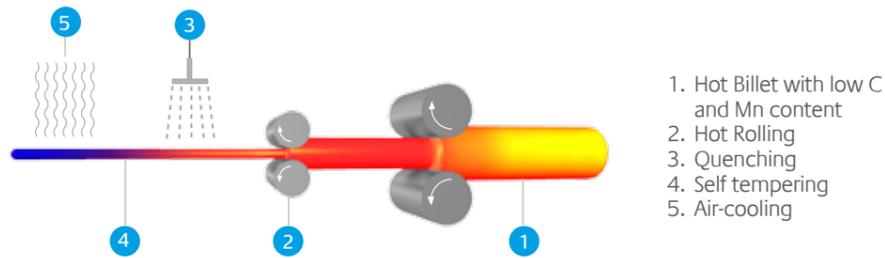
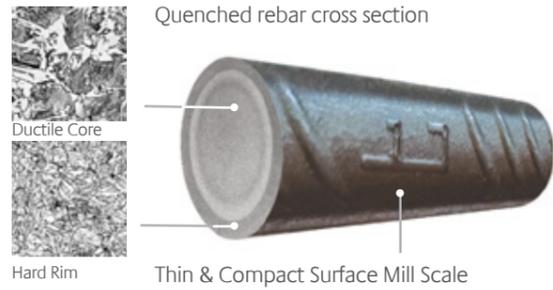
# TECHNICAL FACTS



# THE QUENCHING PROCESS

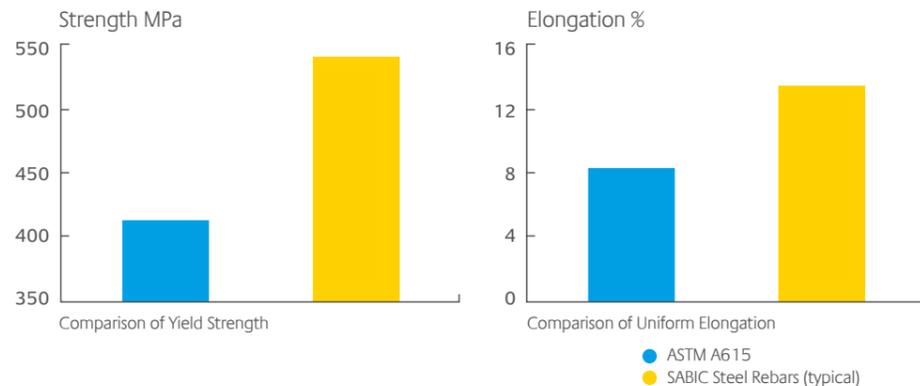
SABIC steel rebars are produced through a bar quenching process, where the properties are attained by regulating the microstructure of the steel giving better rebar ductility and good weldability.

## Bar Quenching Process



## SABIC steel properties

The precise process control adopted at HADEED results in clean steel with very low content of undesirable residual elements, higher yield strength, good ductility and better bending properties of the steel bar. The lower carbon equivalent values used in SABIC Quenched Steel Rebars also make them readily weldable, particularly for the applications requiring low heat input like tack welding.



# REBAR DISCOLORATION -FACTS AND EFFECTS

The quenched steel rebars inherently change their surface color during open air storage in humid environments. This discoloration is superficial and is associated with the thin mill scale present on the rebar surface and does not extend to the base metal or affect the mechanical properties of the rebars. Rust on the other hand involves the corrosion of the base metal and adversely affects the material properties.



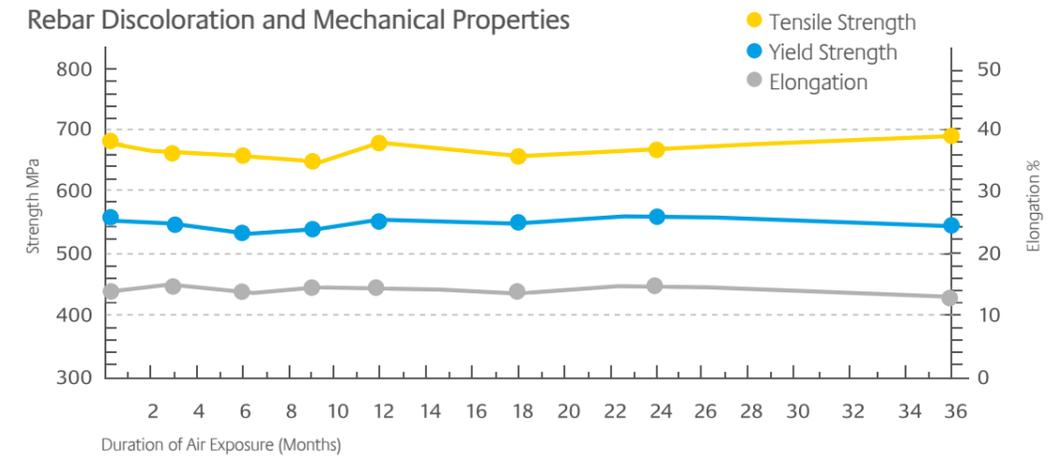
Discoloration



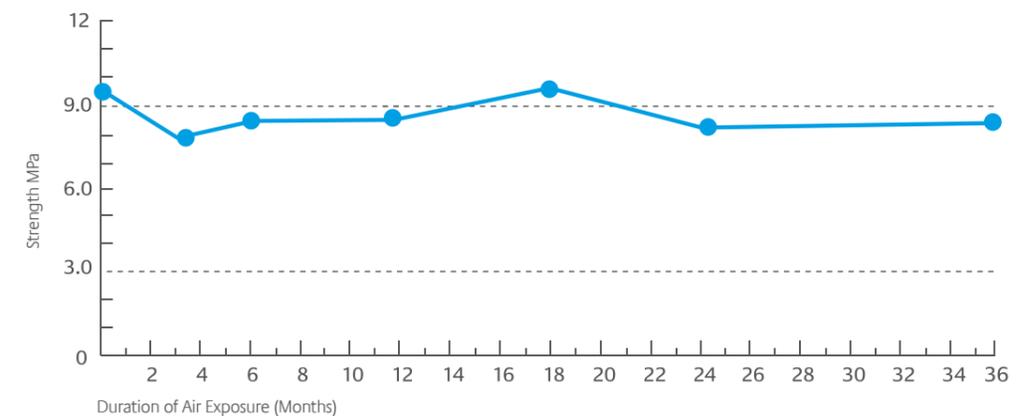
Rust

Long-term studies conducted at SABIC technology centers and other universities have concluded that rebar discoloration is a surface phenomenon and does not affect the rebar strength, ductility, bending, or bond with concrete.

## Rebar Discoloration and Mechanical Properties



## Rebar Discoloration and Concrete Bond Strength

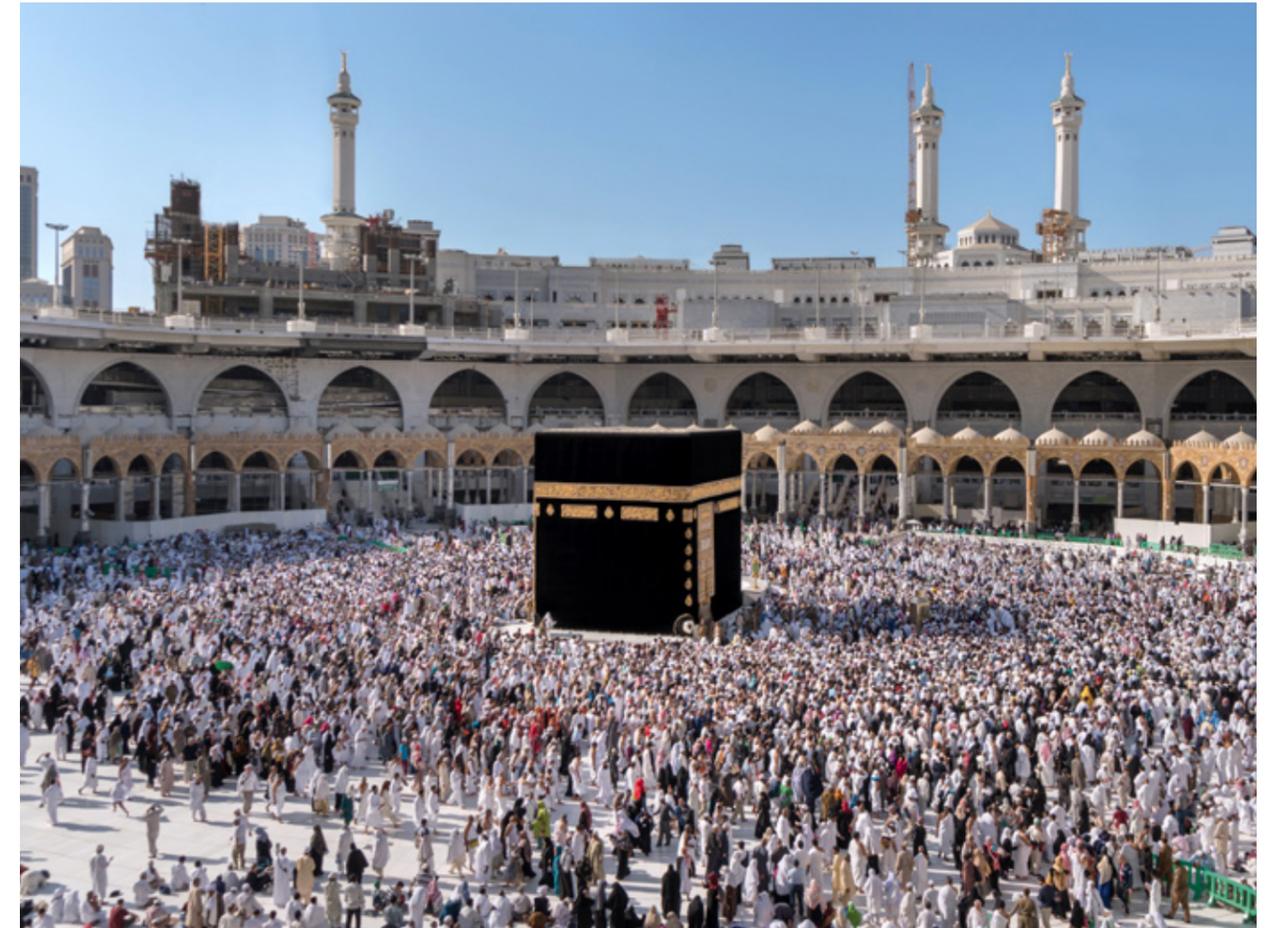


# REBAR CORROSION IN CONCRETE

LONG PRODUCTS

## DESIGNS LIFTING OUR PORTFOLIO

SABIC is known for a wide range of products with incredible quality. Many famous projects were constructed with SABIC's trusted steel.



### [Holy Mosque, Makkah](#)

More than 3.5 million pilgrims journey to the ancient city of Mecca every year. SABIC materials were at the heart of its multi-billion dollar construction and modernization program, which has been the most important expansion to the Holy Mosque in recent times, providing new buildings and facilities for visitors and spectacular minarets.



#### The Kingdom Tower, Riyadh

The Kingdom Tower is one of the best-known landmarks of modern Saudi Arabia. Built with SABIC steel, the tower stands 367 meters high and forms part of a \$510 million complex that includes a five-star hotel, luxury apartments, and a shopping mall.



#### Burj Al-Arab, Dubai

The Burj Al-Arab, or Arab Tower, is one of the Middle East's most easily-recognized landmarks and a high-profile resort in Dubai. Built on a man-made island a quarter of a kilometer from the shore, its stunning sail-shaped structure soars 321 meters above the Arabian Gulf.



#### Chek Lap Kok Airport, Hong Kong

SABIC steel was essential to the \$20 billion construction program to build an airport capable of accommodating the dramatic increase in passengers flowing through the gateway to the Far East.

## TECHNOLOGY & INNOVATION: A MUST TO STAY AHEAD

SABIC maintains a market-leading position by keeping up-to-date with global advances in technology. To keep high standards, we regularly carry out independent studies to inspect and maintain the excellence of our products, evaluate the manufacturing processes, and develop new products according to market requirements.



SABIC Technology Center in Al Jubail has dedicated research facilities for steel product development, process optimization, product quality improvement, energy conservation, sustainability and by-product utilization.

Using the latest physical and computer-based simulation tools, it carries out studies for metallurgical process mapping, developing microstructure-property relationships and process improvement.



## WE INVEST IN YOUR TRUST

The Supreme Committee, chaired by his Excellency the Minister of Industry and Commerce, awarded Hadeed the "King Abdulaziz Quality Award," one of three large-production establishments recognized in Saudi Arabia in 2016.

The King of Saudi Arabia approved this award under decree (# 7/B/18670 on 27-11-1420H) to recognize enterprises with the highest achievement of excellence and quality in their products and services.

In addition, the King Khalid Foundation awarded Hadeed second place in the 2016 King Khalid Award for Responsible Competitiveness. The award honours companies for delivering positive benefits to communities, ecosystems, employees, and stakeholders while strategically achieving a competitive business advantage.





We do what others said can't be done.  
We know that our success depends on your success. When you grow, we grow. We know that in the end what matters most is the strength of our relationships, the positive impact that we make, and the science we work with. Our work benefits our stakeholders, and we're here to change the world for good. This is what we do.

We call this...

**CHEMISTRY THAT MATTERS™**

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## CONTACT US

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[Brochure Soft Copy](#)



[HADEED location map](#)