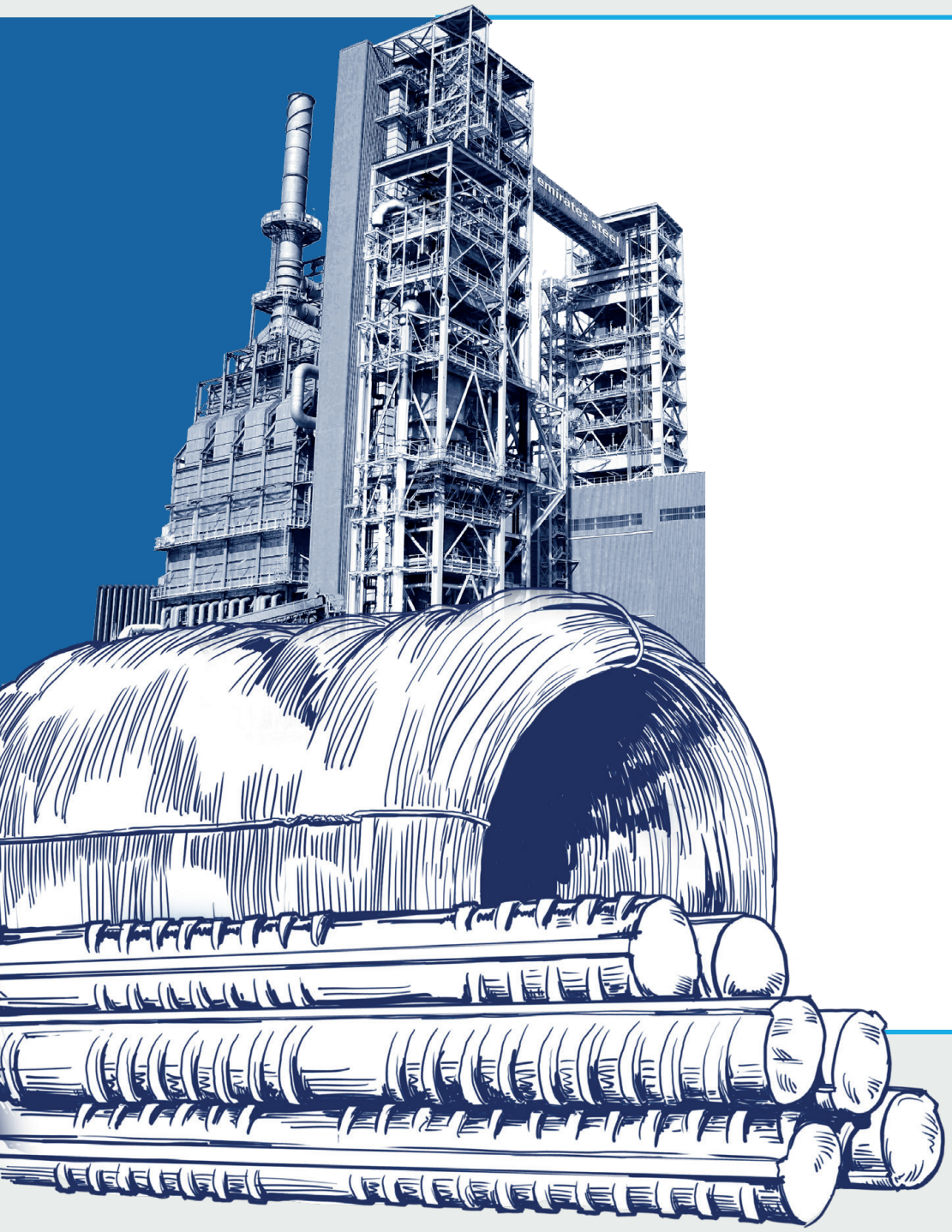

حديد الإمارات
emirates steel

PRODUCT CATALOGUE

REINFORCING BARS and WIRE RODS

www.emiratessteel.com

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ABOUT EMIRATES STEEL

Established in 1998, Emirates Steel is UAE's first and only integrated steel plant and a regional industry leader. Equipped with the latest technology, we produce a wide range of heavy sections, wire rods, rebar and sheet piles of the highest quality. Our customers span a range of sectors including energy, construction and transportation, and we export to more than 40 markets across the Middle East, Africa, Europe, North America, Asia and Australia.

Emirates Steel expanded in a relatively short period of time from a simple re-roller of imported steel billets to a complex integrated manufacturing plant. Emirates Steel utilizes the latest rolling mill technology to deliver tailored products, services and solutions that meet the unique needs of its customers.

OUR VISION

To be a world class steel manufacturer providing the highest quality products, services and solutions to our customers and maximizing returns to our shareholders.

OUR MISSION

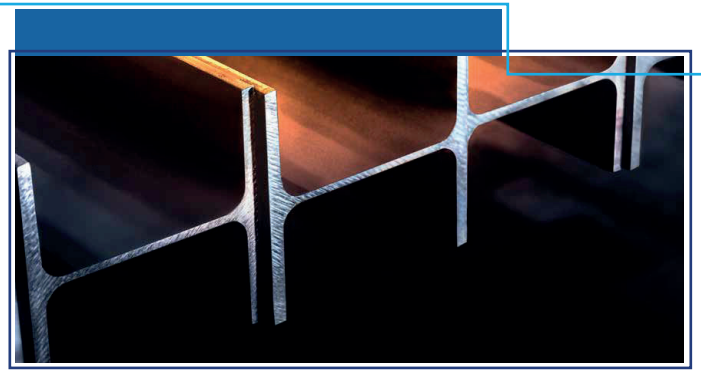
- To provide the construction, manufacturing and industrial sectors with their requirements of high quality steel products.
- Maintain safe and environmentally friendly work practices across our operations.
- Create employment opportunities and inspire our workforce to excel.
- Contribute to the industrialization and diversification of the UAE economy in line with Abu Dhabi's Vision 2030.

REINFORCING BARS

Used exclusively in Civil Engineering, rebars are designed to provide tensile strength to concrete. We have an annual rebar production capacity of 2.5 million tones, making us the leading producer of rebars in the region and are also available in the Far East.

WIRE RODS

Wire rods are designed for a host of product applications such as fasteners, screws, automotive, welding & electrode, construction, engineering, springs, fences, nails, pins, etc.. We are recognized as one of the leading wire rod producers in the GCC, with strong presence in Europe as well as Far East with an annual production capacity of 500,000 metric tons.



HEAVY SECTIONS

Heavy sections are long steel products used as structures and foundations for buildings. We produce a wide range of heavy sections from 200 to 1,036 millimeters in depth, making us the largest manufacturer of this product in the Middle East.

Sections are used in the construction sector and in the production of structures for industrial and engineering applications. Emirates Steel has the capacity to produce a wide range of structural sections and is the largest producer of jumbo and heavy sections in the Middle East.

STEEL BILLETS

Continuous casting is used to manufacture uniform billets quickly and efficiently. Billets are processed into rebar, rebar in coil, wire rod and heavy section in the Company's rolling mills.

PRODUCT	STANDARD	GRADE	CHEMICAL COMPOSITION FOR HEAT ANALYSIS (Maximum)**							
			C%	SI%	Mn%	P%	S%	N%	Cu%	Cev%
Rebar Rebar In Coil*	CS2:20112 BS 4449: 2005	B500B	0.22	-	-	0.05	0.05	0.012	0.8	0.50
Rebar	SASO ASTM A615/A615M ASTM A615/A615M	60 / 80	-	-	-	0.06	-	-	-	-
Rebar	ASTM A706/A706M	60	0.30	0.50	1.50	0.035	0.045	-	-	0.55
Rebar	GSO ISO 6935-2	B500BWR	0.22	0.60	1.60	0.050	0.050	0.012	-	0.50

NOTE:
* Rebar in coil for BS 4449:2005 specification only
** Other alloying elements like Ni, Cr, Mo, V, Nb, Ti, etc. may be added if required.

PROPERTIES AND TOLERANCE					
SPECIFICATIONS	**CS2:20112 / BS 4449: 2005**		**ASTM A615/A615M / SASO ASTM A615/A615M**	**ASTM A706/706M**	**GSO ISO 6935-2**
GRADE	**B500B**	**B500B**	**60**	**60**	**B500BWR**
TOLERANCE Weight	Size ≤ 8mm = ± 6% Size > 8mm : ± 4.5%	Size ≤ 8mm = ± 6% Size > 8mm : ± 4.5%	All Sizes = - 6%, min.	All Sizes = - 6%, min.	Size ≤ 8mm = ± 8%; Size 10 & 12mm= ± 6%; Size 14, 16 & 20mm= ± 5%; Size 25 to 40mm= ± 4%
MECHANICAL PROPERTIES	Y.S. Min = 500 MPa Y.S. Max = 650 Mpa T.S. min. = Y.S. x 1.08 Agt min = 5%	Y.S. Min = 500 MPa Y.S. Max = 650 Mpa T.S. min. = Y.S. x 1.08 Agt min = 5%	Y.S. min. = 420 MPa T.S. min. = 620 MPa % Elongation (200 mm), min. ≤20mm = 9; 22mm - 25mm = 8; ≥28mm = 7	Y.S. min. = 420 Mpa Y.S. Max. = 540 Mpa T.S. min. = 620 Mpa T.S/Y.S. Ratio min = 1.25 % Elongation (200 mm), min. ≤20mm = 14; 22mm - 25mm = 12; ≥28mm = 10	Y.S. min = 500 Mpa T.S. min. = Y.S. x 1.08 Agt min. = 5%

WIRE ROD - AISI / SAE GRADE

SPECIFICATION	CHEMICAL COMPOSITION FOR HEAT ANALYSIS					TYPICAL MECHANICAL PROPERTIES		
	C%	SI%	Mn%	P%	S%	Tensile Strength (N/mm2)	Elongation %	Reduction Area %
AISI / SAE 1005	0.06 max	0.05 - 0.10	0.35 max	0.030 max	0.030 max	400 max	28 min	-
AISI / SAE 1006	0.08 max	0.06 - 0.12	0.35 max	0.030 max	0.030 max	430 max	28 min	-
AISI / SAE 1008	0.06 – 0.08	0.06 - 0.12	0.30 - 0.50	0.030 max	0.030 max	450 max	28 min	-
AISI / SAE 1010	0.08 - 0.13	0.10 - 0.20	0.30 - 0.60	0.030 max	0.030 max	460 max	26 min	-
AISI / SAE 1012	0.10 - 0.15	0.10 - 0.20	0.30 - 0.60	0.030 max	0.030 max	490 max	26 min	-
AISI / SAE 1015*	0.13 - 0.18	0.10 - 0.20	0.30 - 0.60	0.030 max	0.030 max	540 max	26 min	-
AISI / SAE 1018	0.15 - 0.20	0.10 - 0.30	0.60 - 0.90	0.030 max	0.030 max	550 max	25 min	-
AISI / SAE 1020	0.18 - 0.23	0.10 - 0.30	0.30 - 0.60	0.030 max	0.030 max	570 max	25 min	70 min
AISI / SAE 1021	0.18 - 0.23	0.10 - 0.30	0.60 - 0.90	0.030 max	0.030 max	580 max	23 min	70 min
AISI / SAE 1022	0.18 - 0.23	0.10 - 0.30	0.70 - 1.00	0.030 max	0.030 max	600 max	23 min	70 min
AISI / SAE 1030	0.28 - 0.34	0.10 - 0.30	0.60 - 0.90	0.030 max	0.030 max	580 - 630	20 min	60 min
AISI / SAE 1038	0.35 - 0.42	0.10 - 0.20	0.60 - 0.90	0.030 max	0.025 max	600 - 730	17 min	60 min
AISI / SAE 1040	0.40 - 0.43	0.15 - 0.30	0.70 - 0.80	0.025 max	0.025 max	720 – 820	14 min	40 min
AISI / SAE 1045	0.45 - 0.50	0.15 - 0.30	0.60 - 0.90	0.030 max	0.025 max	750 – 850	14 min	40 min
AISI / SAE 1065	0.64 - 0.69	0.15 - 0.30	0.60 - 0.90	0.025 max	0.025 max	950 – 1050	11 min	30 min
AISI / SAE 1070	0.67 - 0.72	0.15 - 0.30	0.60 - 0.90	0.025 max	0.025 max	980 – 1100	11 min	30 min

*Special order Tensile Strength up to 500 MPA

COLD HEADING AND AUTOMOBILE PART GRADE

SPECIFICATION	CHEMICAL COMPOSITION FOR HEAT ANALYSIS					TYPICAL MECHANICAL PROPERTIES		
	C%	SI%	Mn%	P%	S%	Tensile Strength (N/mm2)	Elongation %	Reduction Area %
AISI / SAE 1045 CHQ	0.45 - 0.48	0.15-0.30	0.70-0.80	0.025	0.025	750-850	14 min	40 min
AISI 10B21	0.18 - 0.22	0.15-0.25	0.83-0.95	0.008	0.008	550 max	25 min	-
AISI / SAE 1008	0.32 - 0.36	0.15-0.25	0.80-0.90	0.15	0.15	650 approx	28 min	-

JIS GRADE

ALUMINIUM KILLED GRADE (COLD HEADING APPLICATION)

SPECIFICATION JIS G 3507	CHEMICAL COMPOSITION FOR HEAT ANALYSIS					TYPICAL MECHANICAL PROPERTIES		
	C%	SI%	Mn%	P%	S%	Tensile Strength (N/mm2)	Elongation %	Reduction Area %
SWRCH 6A	0.06 - 0.08	0.10 max	0.25 - 0.40	0.025 max	0.025 max	450 max	30 min	75 min
SWRCH 8A	0.07 - 0.10	0.10 max	0.30 - 0.50	0.025 max	0.025 max	480 max	28 min	70 min
SWRCH 10A	0.08 - 0.13	0.10 max	0.30 - 0.50	0.025 max	0.025 max	500 max	28 min	70 min
SWRCH 12A	0.10 - 0.15	0.10 max	0.30 - 0.50	0.025 max	0.025 max	530 max	28 min	70 min
SWRCH 18A	0.16 - 0.20	0.10 max	0.70 - 0.90	0.025 max	0.025 max	550 max	28 min	70 min
SWRCH 22A	0.10 max	0.10 max	0.70 - 1.00	0.025 max	0.025 max	580 max	25 min	70 min

MEDIUM AND HIGH CARBON GRADE

SPECIFICATION JIS G 3507	CHEMICAL COMPOSITION FOR HEAT ANALYSIS					TYPICAL MECHANICAL PROPERTIES		
	C%	SI%	Mn%	P%	S%	Tensile Strength (N/mm2)	Elongation %	Reduction Area %
SWRH 47A	0.47 - 0.50	0.10 - 0.25	0.35 - 0.55	0.030 max	0.025 max	750 – 870	15 min	45 min
SWRH 47B	0.47 - 0.50	0.15 - 0.30	0.70 - 0.80	0.030 max	0.025 max	770 - 890	15 min	45 min
SWRH 52A	0.52 - 0.55	0.10 - 0.25	0.35 - 0.55	0.030 max	0.025 max	780 – 900	15 min	45 min
SWRH 52B	0.52 - 0.55	0.15 - 0.30	0.70 - 0.80	0.030 max	0.025 max	820 – 950	14 min	40 min
SWRH 57A	0.56 - 0.60	0.10 - 0.25	0.35 - 0.55	0.030 max	0.025 max	800 – 950	14 min	40 min
SWRH 57B	0.56 - 0.60	0.15 - 0.30	0.70 - 0.80	0.030 max	0.025 max	830 - 980	14 min	40 min
SWRH 62A	0.62 - 0.65	0.10 - 0.25	0.35 - 0.55	0.025 max	0.025 max	820 – 920	12 min	35 min
SWRH 62B	0.62 - 0.65	0.15 - 0.30	0.70 - 0.80	0.025 max	0.025 max	870 – 970	12 min	35 min
SWRH 67A	0.65 - 0.69	0.15 - 0.30	0.35 - 0.55	0.025 max	0.025 max	850 - 950	11 min	35 min
SWRH 67B	0.67 - 0.71	0.15 - 0.30	0.70 - 0.90	0.025 max	0.025 max	850 - 950	11 min	35 min
SWRH 72A	0.70 - 0.76	0.15 - 0.30	0.30 - 0.60	0.025 max	0.025 max	850 - 950	11 min	35 min
SWRH 72B	0.71 - 0.75	0.15 - 0.30	0.60 - 0.90	0.025 max	0.025 max	980 - 1100	11 min	35 min
SWRH 77B	0.75 - 0.80	0.15 - 0.30	0.60 - 0.90	0.025 max	0.025 max	1050 - 1150	10 min	30 min
SWRH 82B	0.80 - 0.86	0.15 - 0.30	0.60 - 0.90	0.025 max	0.025 max	1150 - 1250	10 min	30 min

CABBLE ARMORED GRADE (ELECTRICAL INDUSTRY)

SPECIFICATION	CHEMICAL COMPOSITION FOR HEAT ANALYSIS						MECHANICAL PROPERTIES		
	C%	SI%	Mn%	P%	S%	%Al	Tensile Strength (N/mm2)	Elongation %	Reduction Area %
Grade AISI / SAE 1006 CAQ	0.06 Max	0.05 Max	0.30-0.45	0.025	0.025	0.020 min	400	30	70 min

WELDING ELECTRODE GRADE*

SPECIFICATION	CHEMICAL COMPOSITION FOR HEAT ANALYSIS						MECHANICAL PROPERTIES		
	C%	SI%	Mn%	P%	S%	%Al	Tensile Strength (N/mm2)	Elongation %	Reduction Area %
Grade ER70S-3	0.065 - 0.090	0.65 - 0.75	1.05 - 1.40	0.02 max	0.020 max	-	520 max	28 min	75 min
Grade ER70S-6	0.06 - 0.08	0.80 - 0.90	1.40 - 1.50	0.02 max	0.020 max	-	550 max	22 min	75 min
EM 12K	0.07 - 0.10	0.15 - 0.30	0.85 - 1.00	0.025 max	0.025 max	-	450 max	25 min	65 min
XE400P	0.04 - 0.10	0.12 max	0.35 - 0.60	0.025 max	0.025 max	-	450 Approx	25 min	65 min

*Including for direct drawn 1.0/0.8mm.

MALAYSIA GRADE (MS ISO)

SPECIFICATION	CHEMICAL COMPOSITION FOR HEAT ANALYSIS					MECHANICAL PROPERTIES		
	C%	SI%	Mn%	P%	S%	Tensile Strength (N/mm2)	Elongation %	Reduction Area %
MS ISO 16120-2-2008- C4D	0.06 Max	0.06 - 0.12	0.35 - 0.45	0.030 max	0.030 max	400 max	28 min	-
MS ISO 16120-2-2008- C7D	0.05 - 0.09	0.06 - 0.13	0.35 - 0.45	0.030 max	0.030 max	430 max	28 min	-
MS ISO 16120-2-2008- C9D	0.10 Max	0.06 - 0.14	0.35 - 0.45	0.030 max	0.030 max	450 max	28 min	-
MS ISO 16120-2-2008- C10D	0.08 - 0.13	0.06 - 0.15	0.35 - 0.45	0.030 max	0.030 max	460 max	26 min	-
MS ISO 16120-2-2008- C12D	0.10 - 0.15	0.06 - 0.15	0.35 - 0.45	0.030 max	0.030 max	470 max	26 min	-
MS ISO 16120-2-2008- C15D	0.12 - 0.17	0.10 - 0.20	0.35 - 0.45	0.030 max	0.030 max	540 max	26 min	-
MS ISO 16120-2-2008- C18D	0.15 - 0.20	0.10 - 0.20	0.35 - 0.45	0.030 max	0.030 max	550 max	25 min	-
MS ISO 16120-2-2008- C20D	0.18 - 0.23	0.15 - 0.25	0.35 - 0.45	0.030 max	0.030 max	570 max	23 min	-
MS ISO 16120-2-2008- C26D	0.24 - 0.29	0.15 - 0.25	0.55 - 0.65	0.030 max	0.030 max	590 min	23 min	70 min
MS ISO 16120-2-2008- C32D	0.30 - 0.35	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	580 – 630	20 min	60 min
MS ISO 16120-2-2008- C38D	0.35 - 0.40	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	600 – 730	17 min	60 min
MS ISO 16120-2-2008- C42D	0.40 - 0.45	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	720 – 820	17 min	45 min
MS ISO 16120-2-2008- C48D	0.45 - 0.50	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	740 – 840	14 min	45 min
MS ISO 16120-2-2008- C50D	0.48 - 0.53	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	760 – 860	14 min	45 min
MS ISO 16120-2-2008- C52D	0.50 - 0.55	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	770 – 870	14 min	45 min
MS ISO 16120-2-2008- C56D	0.53 - 0.58	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	780 - 900	14 min	40 min
MS ISO 16120-2-2008- C58D	0.55 - 0.60	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	800 - 950	14 min	40 min
MS ISO 16120-2-2008- C60D	0.58 - 0.63	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	810 - 910	12 min	35 min
MS ISO 16120-2-2008- C62D	0.60 - 0.65	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	820 - 920	12 min	35 min
MS ISO 16120-2-2008- C66D	0.63 - 0.68	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	830 - 940	11 min	35 min
MS ISO 16120-2-2008- C68D	0.65 - 0.70	0.15 - 0.25	0.55 - 0.65	0.025 max	0.025 max	850 - 950	11 min	35 min

MALAYSIA GRADE (MS ISO)

SPECIFICATION	CHEMICAL COMPOSITION FOR HEAT ANALYSIS		
	C%	SI%	
MS ISO 16120-2-2008- C70D	0.68-0.73	0.15-0.25	0.55-0.65
MS ISO 16120-2-2008- C72D	0.70-0.75	0.15-0.25	0.55-0.65
MS ISO 16120-2-2008- C76D	0.73-0.78	0.15-0.25	0.55-0.65
MS ISO 16120-2-2008- C78D	0.75-0.80	0.15-0.25	0.55-0.65
MS ISO 16120-2-2008- C82D	0.78-0.83	0.15-0.25	0.55-0.65

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