



焊接材料

Welding Consumables



上海焊接器材有限公司

上海焊接器材有限公司（原上海电焊条总厂）创立于1951年，是焊接产业集团——上海通用重工集团所属的核心子公司，具有60多年的焊接材料专业制造历史，是集焊接材料研发、生产、销售、及服务为一体的上海市高新技术企业。

“东风牌”焊接材料拥有符合客户需求的全系列、高效率焊接产品。材质上主要分为碳钢、不锈钢、低合金钢、铸铁、镍基合金及硬面耐磨用系列产品，并包含全系列的电焊条、药芯焊丝、实心焊丝、氩弧焊丝及埋弧焊丝。产品广泛应用于航天军工、船舶制造、桥梁建筑、压力容器、机械加工、轨道交通、石油化工、国防及核工业等领域。公司凭借专业研发经验、自主创新能力和服务意识以及品牌优势，66年以来，为中国气象通信卫星、核电站、潜水艇、磁悬浮轨道等提供了可靠的焊接材料，同时也是上海南浦大桥、卢浦大桥、东方明珠电视塔、浦东国际机场、香港青马大桥、秦山核电站、航天载人飞船“神五”、“神六”、“神七”、“探月”、“神十”、南极科考站、海洋钻井平台、5000吨级海监船等国家重点工程的供应商。

公司通过自主创新，研究开发了一系列拥有自主知识产权的焊接材料产品。公司于1999年率先通过ISO9001质量管理体系认证，船用产品通过中国（CCS）、英国（LR）、美国（ABS）、法国（BV）、挪威（DNV）、德国（GL）、日本（NK）、韩国（KR）、意大利（RINA）等国家的船级社认证。产品曾荣获国家发明奖及部、市优秀科技奖，E5018产品荣获国家优质产品金奖。“东风牌”焊材历史悠久，享誉市场几十载，连续十四年蝉联“上海名牌”荣誉。

公司始终坚持以“诚信、创新”为企业核心价值，致力于缔造国内一流、国际知名的焊接材料制造公司。公司积极开发海外市场，产品通过自营出口，远销欧洲、美国、澳洲、东南亚等多个国家和地区。为全球客户创造价值。

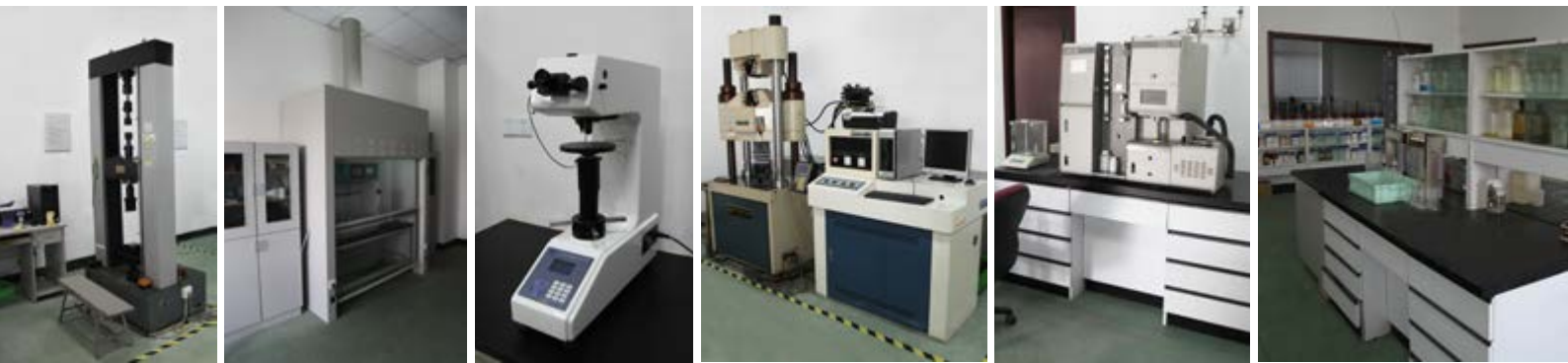
Introduction of SWEC

Shanghai Welding Equipment & Consumables Co., Ltd. (SWEC, the predecessor is Shanghai Welding Electrode General Factory) was established in 1951, which is the core subsidiary of Shanghai Teyor Heavy Industry Group. It has more than 60 years' experience in professional production of welding materials. We are the manufacturer dedicated in R&D, production, sales and service for welding materials, honored as "Shanghai High-tech Innovative Enterprise".

"Dongfeng" series welding materials can meet all the demands and requirements of customers with high-efficient products, including all kinds of welding electrodes, flux-cored wires, solid wires, argon arc welding wires and sub-merged arc wires, produced with carbon steel, stainless steel, low alloy, cast iron, nickel base alloy and hard-wear resistant materials. "Dongfeng" products are widely applied in aerospace military industry, ship manufacturing, bridge construction, pressure vessel, machinery, rail transit, petrochemical industry, national defense and nuclear industry. With professional R&D experience, strong innovation capability, excellent service and famous brand advantage, SWEC has provided reliable and consistent products for China's Meteorology communication satellite, Nuclear power plant, Submarine, Maglev track and so on. Meanwhile we are the national key projects supplier for Shanghai Nanpu Bridge, Shanghai Lupu Bridge, Oriental Pearl TV Tower, Pudong International Airport, Hongkong Tsing Ma Bridge, Qinshan Nuclear Power Station, Shenzhou V Manned Spaceship, Shenzhou VI Manned Spaceship, Shenzhou VII Manned Spaceship, Shenzhou X Manned Spaceship, China's Lunar Probe Program, Research Station in Antarctica, Marine Drilling Platform, 5000-tons patrol boats, etc.

Relying on independent R&D and innovation, the company owns series of welding material products with independent intellectual property rights and advanced international level. As early in 1999, SWEC has taken the lead to get approval of ISO9001 quality assurance system. The main products have been approved by classification society such as CCS, LR, ABS, BV, DNV, GL, NK, KR, RINA. The products have won numerous honors including national prize for invention as well as provincial and ministerial prize for technology progress. The product E5018 has been rewarded golden prize of the national excellent quality products. In addition, "Dongfeng" brand has been crowned as "Shanghai famous brand product" for the 14th straight year with good market reputation for several decades.

SWEC insists "Honesty and Innovation" as the enterprise core value. We work to be nationally first-class, internationally renowned welding material company, to create value for customers all over the world. Our products have been exported to Europe, USA, Australia, South-east Asia and so on.



检测设备

直读光谱仪
力可红外碳硫仪
电脑式伺服控制材料试验机
冲击机
化学分析室
维氏硬度计
电子万能试验机
水银法扩散氢测定仪
溶样室

Testing Equipment

Direct reading spectrometer
Infrared carbon sulfur analyzer
Digital type main servo control material testing machine
Impact machine
Chemical analysis room
Vickers hardness tester
Electronic universal testing machine
Mercury method for diffusion hydrogen meter
Sample room



产品广泛应用于船舶制造、钢结构、压力容器机械加工、金属加工、桥梁制造、石油管道、航空航天、电力行业等领域，典型案例：

1. 亚洲第一、世界第三电视塔——上海东方明珠电视塔
2. 建筑与艺术的完美结晶——上海大剧院
3. 世界第四、亚洲第二、中国大陆第二高——金茂大厦
4. 中国航天盛事——神五、神六、神七
5. 世界级枢纽，人性化机场——上海浦东国际机场
6. 世界第一条磁浮商业示范运营线——上海磁浮列车
7. 世界第一钢拱桥——上海卢浦大桥
8. 管线钢配套——西气东输工程
9. 大型压力容器设备——战略石油储备库
10. 石油化工容器——丙烯储备球罐
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Our products are widely applied in shipbuilding, steel structure, pressure vessels, mechanical manufacturing, metal processing, bridge manufacturing, petroleum pipeline, aerospace, aviation, electric power industry and etc. The key projects provided:

1. Asia's first, world's third TV Tower--Shanghai Oriental Pearl TV Tower
2. Architecture and art perfect crystal--Shanghai Grand Theatre
3. World's fourth, Asia's second, Mainland China's second high-rise--Jinmao Building
4. China's space event--Shenzhou V, Shenzhou VI and Shenzhou VII manned spaceship
5. Globally-connected, people-oriented--Shanghai Pudong International Airport
6. World's first maglev demonstration operation line--Shanghai Maglev
7. World's first steel arch bridge--Shanghai Lupu Bridge
8. A complete set of pipeline steel--West-East Gas Transmission Project
9. Large pressure vessel equipment--Strategic Petroleum Reserve
10. Petroleum and chemical container--Propylene Reserve Spherical Tank
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1978年, 公司碱性电焊条烘焙半自动线荣获历年来重点科技成果表扬项目
In 1978, Alkaline electrode for baking semi-automatic line have been won the praise for the key scientific and technological achievements projects over the years.

1979年, 公司生产的J507电焊条被评为在全国电焊条质量检查评比中优等品
In 1979, the company produced the J507 welding electrodes have been crowned as superior quality product in the comparison of national quality inspection for welding electrodes.

1990年, 公司生产的E5018低氢铁粉焊条荣获金质奖章
In 1990, the company produced the E5018 low hydrogen iron powder electrodes have been awarded "Gold medal".

1995年, 公司获得上海市科学技术进步奖
In 1995, the company have been won "Shanghai Science and Technology Progress Award".

1996-2005年, 公司生产的不锈钢焊条, 碱性碳钢焊条, 酸性碳钢焊条被评为上海名牌产品十连冠
In 1996-2005, the stainless steel welding electrodes, basic carbon steel electrodes, acidic carbon steel welding rods have been crowned Shanghai famous brand for the 10th time.

2007、2009、2011年, 公司被评为上海市焊接行业诚信企业
In 2007, 2009 and 2011, the company have been won the honesty enterprise for Shanghai Welding industry.

2008年, 公司被认定为高新技术企业
In 2008, the company have been evaluated New and High technology enterprise.

2012年, 公司通过ISO9001: 2000国际质量管理体系认证
In 2012, the company has passed the authentication of ISO 9001:2000 international quality assurance system.

2013年, 公司生产的不锈钢焊条, 碱性碳钢焊条, 酸性碳钢焊条被评为上海焊接行业名优产品
In 2013, the stainless steel welding electrodes, basic carbon steel electrodes, acidic carbon steel welding rods have awarded Shanghai famous and high-quality product in welding industry.

2014年, 公司通过ISO9001: 2008国际质量管理体系认证
In 2014, the company has passed the authentication of ISO 9001:2008 international quality assurance system.

2016年, 公司通过ISO9001: 2015国际质量管理体系认证
In 2016, the company has passed the authentication of ISO 9001:2015 international quality assurance system.

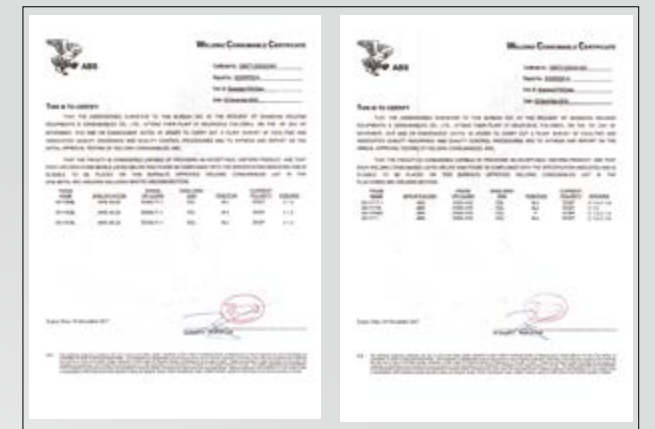




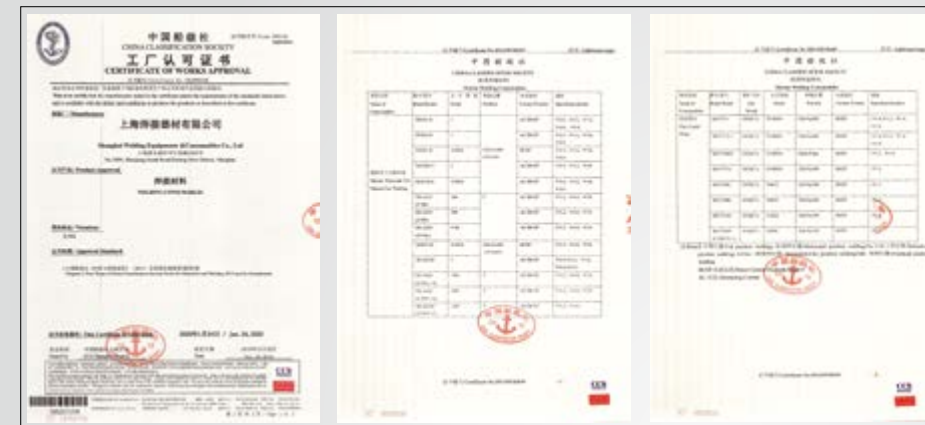
品名 BRAND	ABS 美国验船局	BV 法国验船协会	CCS 中国船级社	DNV+GL 挪威+德意志 埃德船级社	KR 韩国船级社	LR 英国劳氏协会	NK 日本海事协会	RINA 意大利船级社
SH421.01	2	2	2	2	—	2m	—	—
SH422.01	3	3	3	3	—	3m	—	—
SH507.01	3Y	3YHH	3YH10	3YH10	—	3YmH10	—	—
SH507.02	4YH10	—	4YH10	4YH10	—	—	—	—
SH.E6013	2	2	2	2	—	2m	—	—
SH.E7016	3Y	—	—	—	—	—	—	—
SH.E7018	3Y	3YHH	3YH10	3YH10	—	3YmH15	—	—
SH.J422D	3	3	3	3	—	3m	—	—
SH.A102	—	—	304	308	—	—	—	—
SH.A302	—	—	309	309	—	—	—	—
SH.A002	—	—	304L	VL308L	—	—	—	—
SH.A062	—	—	309L	VL309L	—	—	—	—
SH.A022	—	—	316L	316L	—	—	—	—
SH.E2209	—	—	2205	UNS 31803	—	—	—	—
SH.Y71T-1	3YSAH10	SA3YM	3YSH10	III YMS(H10)	3YSMG(C1)H10	3YSH10	KSW53(C)H10	3YS(C)H10
SH.Y711	3YSAH10	—	3YSH10	III YMS(H10)	—	3YSH15	—	—
SH.Y70MC	3YSAH10	—	3YSH10	III YMS(H10)	—	—	—	—
SH.Y71Ni	4YSAH10	—	4YSH1	IV YMS(H10)	—	—	—	—
SH.Y308L	A5.22 E308LT1-1	—	304LS	—	—	—	—	—
SH.Y309L	A5.22 E309LT1-1	—	309LS	—	—	—	—	—
SH.Y316L	A5.22 E316LT1-1	—	316LS	—	—	—	—	—
SH.Y2209	—	—	2205S	—	—	—	—	—



▲ ISO



▲ ABS



▲ CCS



▲ BV



▲ LR



▲ DNV-GL



▲ NK



▲ KR



▲ RINA

手焊条 MANUAL ELECTRODE	非合金钢及细晶粒钢焊条 NON ALLOY STEEL AND FINE GRAIN STEEL ELECTRODE
	高强度钢焊条 HIGH TENSILE STRENGTH STEEL ELECTRODE
	耐热钢焊条 HEAT RESISTING STEEL ELECTRODE
	低温钢焊条 LOW TEMPERATURE STEEL ELECTRODE
	不锈钢焊条 STAINLESS STEEL ELECTRODE
	铸铁焊条 CAST IRON ELECTRODE
	镍及镍合金钢焊条 NICKEL AND NICKEL-BASED ALLOY STEEL ELECTRODE
	硬面焊条 HARDFACING ELECTRODE
药芯焊丝 FLUX CORED WIRE	碳钢药芯焊丝 CARBON STEEL FLUX-CORED WIRE
	低温钢药芯焊丝 LOW TEMPERATURE STEEL FLUX-CORED WIRE
	耐热钢药芯焊丝 HEAT RESISTING STEEL FLUX-CORED WIRE
	不锈钢药芯焊丝 STAINLESS STEEL FLUX-CORED WIRE
	硬面堆焊药芯焊丝 HARDFACING CLADDING FLUX-CORED WIRE
	碱性药芯焊丝 BASIC FLUX-CORED WIRE
	气电立焊药芯焊丝 GAS ELECTRIC VERTICAL-UP WELDING FLUX-CORED WIRE
实心焊丝 SOLID WIRE	碳钢实心焊丝 CARBON STEEL SOLID WIRE
	碳钢埋弧焊丝 CARBON STEEL SUBMERGED ARC WIRE
	不锈钢实心焊丝 (MIG) STAINLESS STEEL SOLID WIRE (MIG)
	不锈钢实心焊丝 (TIG) STAINLESS STEEL SOLID WIRE (TIG)

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非合金钢及细晶粒钢焊条

NON ALLOY STEEL AND FINE GRAIN STEEL ELECTRODE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.J350	2.5-5.0	—		DC(+)	C: 0.018 Si: 0.25 Mn: 0.35 P: 0.009 S: 0.013
SH.J421	2.5-5.0	GB/T E4313 AWS E6013		AC/DC(+)	C: 0.08 Si: 0.30 Mn: 0.49 P: 0.023 S: 0.012
SH421.01	2.5-5.0	GB/T E4313 AWS E6013		AC/DC(+)	C: 0.08 Si: 0.30 Mn: 0.49 P: 0.023 S: 0.012
SH.J421Fe15	2.5-5.0	GB/T E4324 AWS E6024		AC/DC(+)	C: 0.07 Si: 0.27 Mn: 0.58 P: 0.022 S: 0.015
SH.E6013	2.5-5.0	GB/T E4313 AWS E6013		AC/DC(+)	C: 0.08 Si: 0.25 Mn: 0.51 P: 0.023 S: 0.013
SH.J422	2.5-5.0	GB/T E4303		AC/DC(+)	C: 0.08 Si: 0.24 Mn: 0.48 P: 0.023 S: 0.018
YSH.J422	2.5-5.0	GB/T E4303 NB/T E4303		AC/DC(+)	C: 0.08 Si: 0.24 Mn: 0.47 P: 0.018 S: 0.019
SH.J422D	2.5-5.0	GB/T E4303		AC/DC(+)	C: 0.08 Si: 0.30 Mn: 0.48 P: 0.023 S: 0.019
SH422.01	2.5-5.0	GB/T E4303		AC/DC(+)	C: 0.07 Si: 0.22 Mn: 0.48 P: 0.027 S: 0.011
SH.J423	2.5-5.0	GB/T E4319 AWS E6019		AC/DC(+)	C: 0.06 Si: 0.11 Mn: 0.45 P: 0.017 S: 0.012
SH.E6010	2.5-5.0	GB/T E4310 AWS E6010		DC(+)	C: 0.11 Si: 0.18 Mn: 0.65 P: 0.012 S: 0.007
SH.J426	2.5-5.0	GB/T E4316 AWS E6016		AC/DC(+)	C: 0.07 Si: 0.45 Mn: 0.88 P: 0.019 S: 0.008
YSH.J426	2.5-5.0	NB/T E4316 GB/T E4316 AWS E6016		AC/DC(+)	C: 0.07 Si: 0.45 Mn: 0.88 P: 0.019 S: 0.008

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
—	360	31	93 (20℃)	用于微碳纯铁的焊接。 For welding pure iron.
415	515	33	90 (0℃)	焊接一般低碳钢薄板结构。 For welding normal carbon steel sheet structure.
415	515	33	90 (0℃)	焊接低碳船舶用钢建造的各种船舶的薄板结构和非受压管系。 For welding sheet structure of low carbon steel (shipyard) and non-pressure pipe.
360	460	30	55 (常温)	焊接船体结构碳钢及相应等级的普低钢平焊、平角焊，效率150%。 For welding normal carbon steel structure, on flat, f-fillet welding position, deposition efficiency 150%.
390	495	32	75 (-20℃)	用于各种碳钢焊接，全位置焊接，包括立向下焊。 For welding carbon steel, welding on all position including V-down.
405	475	28	85 (-20℃)	用于低碳钢结构的焊接。 For welding low carbon steel structure.
410	505	30	90 (0℃)	用于承压设备中的低碳钢结构的焊接。 For welding low carbon steel structure of pressure equipment.
400	490	31	73 (-20℃)	属J422改进提高型产品，力学性能稳定，焊接工艺更被广大用户所欢迎。 J422's improved product, stable mechanical properties, welding technology is welcomed by the majority of users.
375	480	35	80 (-20℃)	用于焊接低碳船舶用钢建造的各种船舶的一般结构。 For welding normal structure of low carbon steel (shipyard).
330	430	30	80 (-20℃)	可焊接较重要的低碳钢结构。 For welding important low carbon steel structure.
390	510	28	82 (-30℃)	用于根焊钢管，立向下焊接。 For root welding of carbon tube steel, on V-down welding position.
395	495	33	130 (-30℃)	焊接重要的低碳钢和相应的低合金钢结构。 For welding important carbon steel and low alloy steel structure.
395	495	33	130 (-30℃)	焊接承压设备中的低碳钢和相应的低合金钢结构。 For welding carbon steel and low alloy steel structure of pressure equipment.

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.J427	2.5-5.0	GB/T E4315 AWS E6015		DC(+)	C: 0.08 Si: 0.40 Mn: 0.87 P: 0.02 S: 0.01
YSH.J427	2.5-5.0	GB/T E4315 NB/T E4315		DC(+)	C: 0.08 S: 0.40 Mn: 0.87 P: 0.02 S: 0.01
SH427.01	2.5-5.0	GB/T E4315		DC(+)	C: 0.08 Si: 0.40 Mn: 0.87 P: 0.02 S: 0.01
SH.J427Ni	3.2-5.0	—		DC(+)	C: 0.06 Si: 0.40 Mn: 0.80 P: 0.020 S: 0.010 Ni: 0.30
SH.J427CrCu	2.5-5.0	—		DC(+)	C: 0.05 Si: 0.35 Mn: 0.80 P: 0.008 S: 0.017 Cr: 0.51 Cu: 0.26
SH.J501Fe15	3.2-5.0	GB/T E5024 AWS E7024		AC/DC(+)	C: 0.08 Si: 0.48 Mn: 0.90 P: 0.024 S: 0.01
SH.J501Fe18	4.0-5.0	GB/T E5024 AWS E7024		AC/DC(+)	C: 0.08 Si: 0.48 Mn: 0.90 P: 0.023 S: 0.011
SH.J502	2.5-5.0	GB/T E5003		AC/DC(+)	C: 0.08 Si: 0.30 Mn: 0.76 P: 0.022 S: 0.015
SH.J506	2.5-5.0	GB/T E5016 AWS E7016		AC/DC(+)	C: 0.09 Si: 0.38 Mn: 1.13 P: 0.023 S: 0.008
YSH.J506	2.5-5.0	GB/T E5016 NB/T E5016 AWS E7016		AC/DC(+)	C: 0.09 Si: 0.38 Mn: 1.13 P: 0.023 S: 0.008
SH.J506X	2.5-5.0	GB/T E5016 AWS E7016		AC/DC(+)	C: 0.08 Si: 0.42 Mn: 0.97 P: 0.018 S: 0.009
SH.J506Fe	2.5-5.0	GB/T E5018 AWS E7018		AC/DC(+)	C: 0.08 Si: 0.41 Mn: 1.05 P: 0.018 S: 0.011
SH.E7018	2.5-5.0	GB/T E5018 AWS E7018		AC/DC(+)	C: 0.07 Si: 0.52 Mn: 1.28 P: 0.017 S: 0.015

熔敷金属机械性能值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
420	520	33	210 (-20℃)	焊接重要的低碳钢和相应的低合金钢结构。 For welding carbon steel and low alloy steel structure.
420	520	33	210 (-20℃)	焊接承压设备中的低碳钢和相应的低合金钢结构。 For welding carbon steel and low alloy steel structure of pressure equipment.
420	520	33	0 (-20℃)	焊接低碳船舶用钢和其他相应强度等级的低合金钢建造的船舶结构。 For welding carbon steel and low alloy steel structure(shipyard).
360	480	30	110 (-40℃)	适用于低碳钢的焊接结构, 如一般强度船体结构用钢、锅炉、桥梁、压力容器及其他低温下承受动载荷的结构。 For welding low carbon steel, like shipbuilding, boiler, offshore platform, bridge, pressure container and some other structure working on moving board.
420	500	28	180 (-30℃)	适用于耐海水及大气腐蚀用钢的焊接。 For welding anti-seawater corrosion and anti-atmospheric corrosion steel.
465	555	29	75 (0℃)	适用于船用结构, 桥梁普通钢结构等, 平焊, 平角焊, 熔敷率达150%。 For welding ship structures, bridges and general structural steels, on flat, f-fillet welding position, recovery 150%.
450	575	28	70 (0℃)	适用低碳钢及普通船用A级、D级钢平焊、平角焊, 熔敷效率180%。 For welding carbon steel and ship structure steel grade A&D, on flat, f-fillet welding position, recovery 180%.
450	530	26	87 (0℃)	焊接16Mn及相同强度等级低合金钢的一般结构。 For welding 16Mn and low alloy structure with equal strength.
445	565	26	152 (-30℃)	焊接中碳钢及相应重要的低合金钢结构, 如16Mn、09Mn2Si等。 For welding medium carbon steel and important low alloy steel structure, such as 16Mn、09Mn2Si etc.
446	565	26	152 (-30℃)	焊接承压设备中的中碳钢及相应重要的低合金钢结构, 如16Mn等。 For welding medium carbon steel and important low alloy steel structure, such as 16Mn etc.
460	575	27	145 (-30℃)	可用于相应强度等级的碳钢及低合金钢的立向下焊(专用焊条)。 Carbon steel and low alloy steel welding electrode, special for the welding position V-down.
465	570	28	160 (-30℃)	用于焊接相应的低合金钢结构的高效焊条。 High efficiency welding electrode for low alloy structure.
455	550	29	142 (-20℃)	焊接低碳钢及重要低合金钢结构。 For welding carbon steel and low alloy steel structure.

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
YSH.E7018	2.5-5.0	NB/T E5018 GB/T E5018 AWS E7018		AC/DC(+)	C: 0.07 Si: 0.52 Mn: 1.28 P: 0.017 S: 0.015
SH.E7018-1	2.5-5.0	GB/T E5018-1 AWS E7018-1		AC/DC(+)	C: 0.07 Si: 0.41 Mn: 1.42 P: 0.012 S: 0.013
SH.J507	2.5-5.0	GB/T E5015 AWS E7015		DC(+)	C: 0.08 Si: 0.54 Mn: 1.20 P: 0.019 S: 0.009
YSH.J507	2.5-5.0	NB/T E5015 GB/T E5015		DC(+)	C: 0.08 Si: 0.54 Mn: 1.20 P: 0.019 S: 0.009
SH.E7015	2.5-5.0	AWS E7015 GB/T E5015		DC(+)	C: 0.08 Si: 0.54 Mn: 1.05 P: 0.019 S: 0.009
SH.E7015H	2.5-5.0	AWS E7015 GB/T E5015		DC(+)	C: 0.08 Si: 0.54 Mn: 1.05 P: 0.019 S: 0.009
SH507.01	2.5-5.0	GB/T E5015		DC(+)	C: 0.08 Si: 0.54 Mn: 1.20 P: 0.019 S: 0.009
SH.J507X	2.5-5.0	GB/T E5045 AWS E7045		DC(+)	C: 0.07 Si: 0.45 Mn: 1.00 P: 0.013 S: 0.007
SH.J507RH	3.2-5.0	GB/T E5015-G AWS E7015-G		DC(+)	C: 0.07 Si: 0.45 Mn: 1.40 P: 0.012 S: 0.011 Ni: 0.52
YSH.J507RH	2.5-5.0	NB/T E5015-G GB/T E5015-G AWS E7015-G		DC(+)	C: 0.08 Si: 0.42 Mn: 1.15 P: 0.017 S: 0.007 Ni: 0.50
QSH.J507Ni	2.5-5.0	GB/T E5015-G AWS E7015-G		DC(+)	C: 0.08 Si: 0.42 Mn: 1.15 P: 0.017 S: 0.007 Ni: 0.75
海03	2.5-5.0	GB/T E5015-G AWS E7015-G		DC(+)	C: 0.06 Si: 0.23 Mn: 0.46 P: 0.016 S: 0.010 C: 0.55 Mo: 0.42 Cu: 0.31
SH.J507CuP	2.5-5.0	GB/T E5015-G		DC(+)	C: 0.06 Si: 0.35 Mn: 1.05 P: 0.10 S: 0.010 Cu: 0.32

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
455	550	29	142 (-20℃)	焊接承压设备中的低碳钢及重要的低合金钢结构。 For welding low carbon steel and important low alloy steel structure of pressure equipment.
440	560	30	80 (-45℃)	可用于高强钢的焊接, 如桥梁、轧辊和低温条件下使用的钢结构。 For welding the high tensile steel like bridges, mill rolls and the steel structure used in low temperature.
435	540	28	145 (-30℃)	焊接低碳钢及16Mn等重要低合金钢结构。 For welding carbon steel and low alloy steel, such as 16Mn, etc.
425	540	28	145 (-30℃)	焊接承压设备中的低碳钢及16Mn等重要低合金钢结构。 For welding carbon steel and low alloy steel structure of pressure equipment, such as 16Mn, etc.
425	555	30	180 (-30℃)	焊接低碳钢及16Mn等重要低合金钢结构。 For welding carbon steel and low alloy steel, such as 16Mn, etc.
470	580	28	150 (-30℃)	焊接低碳钢及16Mn等重要低合金钢结构, 用于消除应力处理。 For welding low carbon steel and low alloy steel, such as 16Mn, etc., used in stress relieving treatment.
425	540	28	145 (-30℃)	焊接低碳钢、中碳钢和低合金钢建造的船舶结构。 For welding low carbon steel, medium carbon steel and low alloy steel (shipyard).
450	560	30	110 (-30℃)	可用于相应强度等级的低碳钢、低合金钢结构的立向下焊。 Special for carbon steel and low alloy steel on welding position V-down.
440	565	32	135 (-40℃)	用于船舶、桥梁、高压管道、压力容器、锅炉焊接的超低氢高韧性焊条。 Extra low hydrogen, high toughness welding electrode for shipbuilding, bridge, pressure container boiler, etc.
420	565	32	120 (-40℃)	用于船舶、桥梁、高压管道、压力容器、锅炉焊接的超低氢高韧性焊条。 Extra low hydrogen, high toughness welding electrode for shipbuilding, bridge, pressure container boiler, etc.
430	585	30	155 (-40℃)	用于桥梁、船舶、压力容器及海洋工程结构的焊接。 For welding bridges, shipbuilding, pressure vessels and sea engineering steel structure.
410	550	27	145 (常温)	用于10CrMoAl钢耐海水腐蚀的焊接, 也可用于其他相应耐海水腐蚀钢结构的焊接。 For welding 10CrMoAl and other anti-corrosion-against-seawater steel structure.
460	560	30	80 (常温)	用于铜、磷系统的抗大气腐蚀和抗海水腐蚀的低合金钢结构焊接。 For welding the low alloy steel structure belong to Cu-P system, and can be resist to air and sea water corrosion.

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.J557	2.5-5.0	NB/T E5515-G GB/T E5515-G		DC(+)	C: 0.07 Si: 0.62 Mn: 1.42 P: 0.016 S: 0.005
YSH.J557	2.5-5.0	NB/T E5515-G GB/T E5515-G		DC(+)	C: 0.07 Si: 0.62 Mn: 1.42 P: 0.016 S: 0.005
SH.J557RH	2.5-5.0	GB/T E5515-G AWS E8015-G		DC(+)	C: 0.05 Si: 0.50 Mn: 1.32 P: 0.022 S: 0.007 Ni: 0.01 Cr: 0.05 Mo: 0.001 V: 0.006
SH.J557SLA	2.5-5.0	GB/T E5515-G AWS E8015-G		DC(+)	C: 0.08 Si: 0.21 Mn: 0.67 P: 0.020 S: 0.007 Cr: 5.43 Mo: 0.53 V:0.27
SH.E8018-G	2.5-5.0	GB/T E5518-G AWS E8018-G		AC/DC(+)	C: 0.08 Si: 0.28 Mn: 1.15 P: 0.020 S: 0.015

熔敷金属机械性能例值TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
475	585	30	—	用于焊接中碳钢和15MnTi、15MnV等低合金钢。 For welding medium carbon steel and low alloy steel,such as 15MnTi、15MnV.
475	585	30	110 (-30℃)	用于焊接承压设备中的低碳钢及相应强度的低合金钢结构，例如15MnTi,15MnV。 For welding low carbon steel and low alloy steel structure of pressure equipment,such as 15MnTi,15MnV.
490	580	28	119 (-40℃)	适用于压力容器、桥梁及海洋工程焊接。 For welding the pressure vessels,bridges and sea engineering.
470	570	25	180 (20℃)	焊接工作温度在540℃以下，在硫化氢、硫、氨、碳铵及氢、氮腐蚀介质下使用的渗铝钢结构，如锅炉管道、石油精炼设备、化肥设备和蒸气管道等。 For welding the Aluminized steel structure in such corrosive medium as hydrogen sulfide,sulfur,ammonia,ammonium bicarbonate,for example,the oven tube,oil refining equipment,chemical fertilizer equipment,and steam pipe.
485	580	25	100 (-40℃)	用于造船、建筑、车辆、电站、机械结构等角接和搭接焊缝，以及管道对接焊缝。 For corner and overlap seam welding used in bridges,constructions,ships,pressure vessels and pipes.

高强度钢焊条
HIGH TENSILE STRENGTH STEEL ELECTRODE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.J606	2.5-5.0	GB/T E5916-3M2 AWS E9016-G		AC/DC(+)	C: 0.08 Si: 0.57 Mn: 1.55 P: 0.024 S: 0.009 Mo: 0.37
YSH.J606	2.5-5.0	NB/T E6016-D1 GB/T E5916-3M2		AC/DC(+)	C: 0.08 Si: 0.57 Mn: 1.55 P: 0.024 S: 0.009 Mo: 0.37
SH.J607	2.5-5.0	GB/T E5915-3M2 AWS E9015-G		DC(+)	C: 0.08 Si: 0.31 Mn: 1.47 P: 0.021 S: 0.007 Mo: 0.38
YSH.J607	2.5-5.0	NB/T E6015-D1 GB/T E5915-3M2		DC(+)	C: 0.08 Si: 0.31 Mn: 1.47 P: 0.021 S: 0.007 Mo: 0.38
SH.J607Ni	2.5-5.0	GB/T E6015-G AWS E9015-G		DC(+)	C: 0.08 Si: 0.47 Mn: 1.45 P: 0.019 S: 0.011 Ni: 1.49 Mo: 0.35
SH.J607RH	2.5-5.0	GB/T E6015-G AWS E9015-G		DC(+)	C: 0.08 Si: 0.40 Mn: 1.51 P: 0.022 S: 0.009 Ni: 1.01 Mo: 0.28
SH.J707	2.5-5.0	GB/T E7015-D2 AWS E10015-D2		DC(+)	C: 0.08 Si: 0.32 Mn: 1.80 P: 0.022 S: 0.011 Mo: 0.43
SH.J707Ni	2.5-5.0	GB/T E7015-G AWS E10015-G		DC(+)	C: 0.07 Si: 0.34 Mn: 1.45 P: 0.020 S: 0.010 Ni: 1.72 Mo: 0.38
SH.J807	2.5-5.0	GB/T E8015-G AWS E11015-G		DC(+)	C: 0.05 Si: 0.27 Mn: 1.50 P: 0.015 S: 0.010 Ni: 1.80
SH.J857	2.5-5.0	GB/T E8515-G AWS E12015-G		DC(+)	C: 0.11 Si: 0.53 Mn: 1.67 P: 0.017 S: 0.005 Mo: 0.86
SH.J857Cr	2.5-5.0	GB/T E8515-G AWS E12015-G		DC(+)	C: 0.10 Si: 0.37 Mn: 1.85 P: 0.015 S: 0.008 Cr: 0.85 Mo: 0.55 V:0.06
SH.J857CrNi	3.2-5.0	GB/T E8515-G AWS E12015-G		DC(+)	C: 0.06 Si: 0.35 Mn: 1.60 P: 0.014 S: 0.009 Ni: 2.02 Cr: 0.75 V:0.01
SH.J107	2.5-5.0	GB/T E10015-G		DC(+)	C: 0.07 Si: 0.31 Mn: 1.92 P: 0.015 S: 0.009 Ni: 2.19 Cr: 0.98 Mo: 0.84 V:0.07

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
545	645	25	140 (-30℃)	用于中碳钢及相应强度等级的低合金钢结构的焊接,如15MnVN等。 For welding medium carbon steel and low alloy steel structure,such as 15MnVN etc.
545	645	35	140 (-30℃)	用于承压设备中的中碳钢及相应强度等级的低合金钢结构的焊接,如15MnVN等。 For welding medium carbon steel and low alloy steel structure of pressure equipment,such as 15MnVN etc.
540	625	26	127 (-30℃)	用于中碳钢及相应强度等级的低合金钢结构的焊接,如15MnVN等。 For welding medium carbon steel and low alloy steel structure,such as 15MnVN etc.
540	625	26	127 (-30℃)	用于承压设备中的中碳钢及相应强度等级的低合金钢结构的焊接,如15MnVN等。 For welding medium carbon steel and medium alloy steel structure of pressure equipment,such as 15MnVN etc.
580	680	25	65 (-40℃)	用于相应强度等级的低合金钢结构。 For welding same tensile strength low alloy steel structure.
575	660	25	87 (-40℃)	是压力容器用590MPa无裂纹钢的超低氢高韧性焊条。 Extra low hydrogen,high toughness welding electrodes,for 590Mpa crackless steel for pressure vessels.
610	710	24	75 (-30℃)	焊接相应强度等级的低合金钢结构。 For welding same tensile strength low alloy steel structure.
680	770	20	82 (-50℃)	适用于相应强度等级的低合金高强度钢结构。 For welding the same level of high tensile low alloy steel.
760	860	19	60 (常温)	主要用于14MnMoNbB钢及相应的其它低合金钢焊接。 For welding 14MnMoNbB steel and other low alloy steel.
840	910	19	—	用于相应强度等级的低合金钢结构的焊接。 For welding the same level tensile strength low alloy steel structure.
860	950	18	—	用于相应强度等级的低合金钢构件的焊接。 For welding the same level tensile strength low alloy steel structure.
845	950	19	63 (-50℃)	用于E级钢制造的列车车钩缺陷的焊补,亦可用于相应强度等级的高强钢结构。 For welding train coupler made of E level steel, and also welding same level of high tensile strength steel structure.
940	1080	14	45 (-20℃)	用于相应强度等级的低合金高强度钢的焊接。 For welding same tensile strength low alloy steel structure.

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.J107Cr	3.2-5.0	GB/T E10015-G		DC(+)	C: 0.09 Si: 0.55 Mn: 1.80 P: 0.018 S: 0.011 Cr: 1.75 Mo: 0.61 V:0.10

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
970	1100	15	—	用于相应强度等级的低合金高强度钢的焊接。 For welding same tensile strength low alloy steel structure.

耐热钢焊条 HEAT RESISTING STEEL ELECTRODE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.E7018-A1	2.5-5.0	GB/T E5018-A1 AWS E7018-A1		AC/DC(+)	C: 0.068 Si: 0.31 Mn: 0.69 P: 0.016 S: 0.009 Ni: 0.49
YSH.R107	2.5-5.0	NB/T E5015-1M3 GB/T E5015-1M3 AWS E7015-A1		DC(+)	C: 0.06 Si: 0.20 Mn: 0.80 P: 0.016 S: 0.014 Mo: 0.56
YSH.R207	2.5-5.0	NB/T E5515-CM GB/T E5515-CM AWS E8015-B1		DC(+)	C: 0.06 Si: 0.12 Mn: 0.78 P: 0.021 S: 0.012 Mo: 0.56 Cr: 0.55
YSH.R307	2.5-5.0	NB/T E5515-1CM GB/T E5515-1CM AWS E8015-B2		DC(+)	C: 0.06 Si: 0.32 Mn: 0.67 P: 0.023 S: 0.01 Mo: 0.53 Cr: 1.09
SH.E8018-B2	2.5-5.0	GB/T E5518-1CM AWS E8018-B2		AC/DC(+)	C: 0.07 Si: 0.35 Mn: 0.75 P: 0.014 S: 0.009 Ni: 0.49 Cr: 1.25
YSH.R317	2.5-5.0	NB/T E5515-1CMV GB/T E5515-1CMV		DC(+)	C: 0.06 Si: 0.23 Mn: 0.68 P: 0.018 S: 0.010 Mo: 0.52 Cr: 1.06 V: 0.26
YSH.R327	2.5-5.0	NB/T E5515-1CMWV GB/T E5515-1CMWV		DC(+)	C: 0.07 Si: 0.17 Mn: 0.89 P: 0.023 S: 0.012 Mo: 0.79 Cr: 1.13 V: 0.26 W: 0.31
YSH.R337	3.2-5.0	NB/T E5515-1CMVnb GB/T E5515-1CMVnb		DC(+)	C: 0.06 Si: 0.35 Mn: 0.70 P: 0.016 S: 0.012 Mo: 0.86 Cr: 1.10 V: 0.26 Nb: 0.15
YSH.R347	2.5-5.0	NB/T E5515-2CWBMV GB/T E5515-2CWBMV		DC(+)	C: 0.06 Si: 0.13 Mn: 0.90 P: 0.014 S: 0.010 Mo: 0.48 Cr: 1.83 V: 0.36 W: 0.37 B: 0.003

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
450	530	29	220 (0℃)	用于工作温度在510℃以下的珠光体耐热钢的焊接(如15Mo等)。 For welding pearlite heat-resistant steel working temperature below 510℃, such as 15Mo,etc.
475	560	29	174 (20℃)	用于工作温度在510℃以下的珠光体耐热钢的焊接(如15Mo等)。 For welding pearlite heat-resistant steel working temperature below 510℃, such as 15Mo,etc.
505	585	24	157 (20℃)	用于工作温度在510℃以下的珠光体耐热钢的焊接(如12CrMo等)。 For welding pearlite heat-resistant steel working temperature below 510℃, such as 12CrMo,etc.
540	620	23	179 (20℃)	用于工作温度在540℃以下的珠光体耐热钢的焊接(如15CrMo等)。 For welding pearlite heat-resistant steel working temperature below 540℃, such as 15CrMo,etc.
465	590	21	162 (20℃)	用于工作温度在540℃以下的珠光体耐热钢的焊接(如15Mo等)。 For welding pearlite heat-resistant steel working temperature below 510℃, such as 15Mo,etc.
530	645	23	173 (20℃)	用于工作温度在540℃以下的珠光体耐热钢的焊接(如12CrMoV等)。 For welding pearlite heat-resistant steel working temperature below 540℃, such as 12CrMoV,etc.
530	635	20	161 (20℃)	用于工作温度在570℃以下的珠光体耐热钢的焊接(如15CrMoV等)。 For welding pearlite heat-resistant steel working temperature below 570℃, such as 15CrMoV,etc.
540	655	21	180 (20℃)	用于工作温度在570℃以下的珠光体耐热钢的焊接(如15CrMoV等)。 For welding pearlite heat-resistant steel working temperature below 570℃, such as 15CrMo V, etc.
530	630	23	180 (20℃)	用于工作温度在620℃以下的相应的珠光体耐热钢的焊接。 For welding pearlite heat-resistant steel working temperature below 620℃.

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
YSH.R407	2.5-5.0	NB/T E6215-2C1M GB/T E6215-2C1M AWS E9015-B3		DC(+)	C: 0.06 Si: 0.23 Mn: 0.72 P: 0.016 S: 0.011 Mo: 0.95 Cr: 2.19
SH.E9018-B3	2.5-5.0	GB/T E6018-2C1M AWS E6216-2C1M		AC/DC(+)	C: 0.07 Si: 0.35 Mn: 0.75 P: 0.013 S: 0.011 Ni: 1.05 Cr: 2.26 Al: 0.004
YSH.R417	2.5-5.0	NB/T E5515-2CMVnb GB/T E5515-2CMVnb		C(+)	C: 0.06 Si: 0.32 Mn: 0.83 P: 0.013 S: 0.012 Mo: 0.92 Cr: 2.72 V: 0.35 Nb: 0.51
YSH.R507	2.5-5.0	NB/T E5515-5CMV GB/T E5515-5CMV		C(+)	C: 0.08 Si: 0.26 Mn: 0.72 P: 0.018 S: 0.009 Mo: 0.58 Cr: 5.71 V: 0.20 Cu: 0.06
SH.R707	2.5-5.0	GB/T E6215-9C1M		DC(+)	C: 0.065 Si: 0.40 Mn: 0.85 P: 0.018 S: 0.010 Mo: 0.85 Cr: 9.20
SH.R717	2.5-5.0	GB/T E6215-9C1MV AWS E9015-B9		DC(+)	C: 0.09 Si: 0.22 Mn: 0.60 P: 0.009 S: 0.006 Mo: 0.95 Cr: 9.20 V: 0.20 Nb: 0.04 Cu: 0.02 Al: 0.004 N: 0.03 Mn+Ni:1.26

低温钢焊条
LOW TEMPERATURE STEEL ELECTRODE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.W707	2.5-5.0	AWS E5015-N7		DC(+)	C: 0.07 Si: 0.22 Mn: 0.95 P: 0.013 S: 0.008 Ni: 2.41
SH.W707Ni	2.5-5.0	AWS E5515-C1		DC(+)	C: 0.07 Si: 0.30 Mn: 1.11 P: 0.012 S: 0.010 Ni: 2.65
SH.W107	2.5-5.0	AWS E5015-N7		DC(+)	C: 0.040 Si: 0.25 Mn: 0.85 P: 0.013 S: 0.006 Ni: 3.52
SH.W107Ni	2.5-5.0	—		DC(+)	C: 0.06 Si: 0.25 Mn: 0.50 P: 0.012 S: 0.008 Ni: 5.12

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
605	690	19	184 (20℃)	用于Cr2.5Mo类珠光体耐热钢的焊接。 For welding Cr2.5Mo type of pearlite heat-resistant steel.
575	675	20	167 (20℃)	用于Cr5Mo等珠光体耐热钢的焊接。 For welding pearlite heat-resistant steel, such as Cr5Mo.
560	645	19	150 (20℃)	用于Cr2.5Mo类珠光体耐热钢的焊接。 For welding Cr2.5Mo type of pearlite heat-resistant steel.
520	610	25	—	用于工作温度在620℃以下的相应的珠光体耐热钢的焊接。如12Cr3MoVSiTIB。 For welding pearlite heat-resistant steel working temperature below 620℃. such as 12Cr3MoVSiTIB steel.
550	680	20	—	用于焊接Cr9Mo耐热钢结构及过热器管道等。 For welding the Cr9Mo heat-resistant steel structure and Superheater tubes.
620	720	20	60 (20℃)	可在耐热钢1Cr10MoVNbN及热强钢T91/P91焊接。 For welding of supercritical steam turbine ZG1Cr10MoVNbN and heat resistant steel T91/P91.

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
450	560	23	67 (-70℃)	焊接-70℃工作的09Mn2V、09MnTiCuRe钢。 For welding 09Mn2V, 09MnTiCuRe steel working temperature in -70℃.
495	585	24	55 (-70℃)	焊接-70℃工作的09Mn2V、06MnVAI和3.5Ni钢。 For welding 09Mn2V, 06MnVAI and 3.5Ni steel working in -70℃.
450	550	31	60 (-100℃)	焊接-100℃工作的3.5Ni等低合金钢结构。 For welding 3.5Ni low alloy steel under temperature -100℃.
455	560	19	68 (-100℃)	焊接06AlNbCuN、06MnNb和3.5Ni钢。 For welding 06AlNbCuN, 06MnNb and 3.5Ni steel.

不锈钢焊条
STAINLESS STEEL ELECTRODE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.A002	2.0-5.0	GB/T E308L-16 AWS E308L-16		AC/DC(+)	C: 0.03 Mn: 1.59 S: 0.011 P: 0.029 Si: 0.26 Cr: 20.38 Ni: 9.34 Mo: 0.04 Cu: 0.15
YSH.A002	2.5-5.0	NB/T E308L-16 GB/T E308L-16 AWS E308L-16		AC/DC(+)	C: 0.03 Mn: 1.59 S: 0.011 P: 0.029 Si: 0.26 Cr: 20.38 Ni: 9.34 Mo: 0.04 Cu: 0.15
YSH.A002A	2.5-5.0	NB/T E308L-16 GB/T E308L-16 AWS E308L-16		AC/DC(+)	C: 0.038 Mn: 1.47 S: 0.009 P: 0.030 Si: 0.64 Cr: 19.59 Ni: 9.45 Mo: 0.04 Cu: 0.27
YSH.A002LT	2.5-5.0	NB/T E308L-16 GB/T E308L-16 AWS E308L-16		AC/DC(+)	C: 0.034 Mn: 2.01 S: 0.009 P: 0.024 Si: 0.57 Cr: 18.60 Ni: 9.85 Mo: 0.04 Cu: 0.04
SH.A002Nb	2.5-5.0	GB/T E347-16 AWS E347-16		AC/DC(+)	C: 0.05 Mn: 1.49 S: 0.01 P: 0.027 Si: 0.67 Cr: 19.92 Ni: 9.72 Mo: 0.04 Cu: 0.1 Nb+Ta: 0.43
SH.A022	2.5-5.0	GB/T E316L-16 AWS E316L-16		AC/DC(+)	C: 0.034 Mn: 1.36 S: 0.009 P: 0.023 Si: 0.27 Cr: 18.23 Ni: 11.75 Mo: 2.45 Cu: 0.06
YSH.A022	2.5-5.0	NB/T E316L-16 GB/T E316L-16 AWS E316L-16		AC/DC(+)	C: 0.034 Mn: 1.36 S: 0.009 P: 0.023 Si: 0.27 Cr: 18.23 Ni: 11.75 Mo: 2.45 Cu: 0.06
YSH.A022A	2.5-5.0	NB/T E316L-16 GB/T E316L-16 AWS E316L-16		AC/DC(+)	C: 0.032 Mn: 1.52 S: 0.008 P: 0.027 Si: 0.68 Cr: 18.84 Ni: 12.03 Mo: 2.38 Cu: 0.06
YSH.A022LT	2.5-5.0	NB/T E316L-16 GB/T E316L-16 AWS E316L-16		AC/DC(+)	C: 0.028 Mn: 1.98 S: 0.008 P: 0.024 Si: 0.54 Cr: 18.02 Ni: 13.20 Mo: 2.18 Cu: 0.06
YSH.A042A	2.5-5.0	NB/T E309MoL-16 GB/T E309MoL-16 AWS E309MoL-16		AC/DC(+)	C: 0.04 Mn: 1.77 S: 0.011 P: 0.018 Si: 0.65 Cr: 22.89 Ni: 13.33 Mo: 2.55 Cu: 0.06
SH.A062	2.0-5.0	GB/T E309L-16 AWS E309L-16		AC/DC(+)	C: 0.04 Mn: 1.53 S: 0.010 P: 0.025 Si: 0.31 Cr: 24.10 Ni: 12.46 Mo: 0.01 Cu: 0.07
YSH.A062A	2.5-5.0	NB/T E309L-16 GB/T E309L-16 AWS E309L-16		AC/DC(+)	C: 0.04 Mn: 1.53 S: 0.010 P: 0.028 Si: 0.71 Cr: 24.10 Ni: 12.46 Mo: 0.01 Cu: 0.07

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL			应用 APPLICATION
抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
570	47	—	焊接00Cr19Ni9, 0Cr19Ni11Ti不锈钢。 For welding stainless such as 00Cr19Ni9,00Cr19Ni11Ti.
570	47	—	焊接00Cr19Ni9, 0Cr19Ni11Ti不锈钢。 For welding stainless such as 00Cr19Ni9,00Cr19Ni11Ti.
540	49	—	耐发红不锈钢焊条, 焊接00Cr19Ni9, 0Cr19Ni11Ti不锈钢。 Red resist stainless steel electrode,for welding stainless steel such as 00Cr19Ni9,00Cr19Ni11Ti.
555	40	33 (-196℃)	焊接00Cr19Ni9, 0Cr19Ni11Ti不锈钢, 在-196℃下游良好的韧性, 适用于LNG储罐及管道。 For welding 00Cr19Ni9,0Cr19Ni11Ti stainless steel,it has good toughness under -196℃,suitable for LNG tanks and pipes.
630	48	—	焊接重要的超低碳耐腐蚀含钛稳定的0Cr19Ni11Ti型不锈钢。 For welding the 0Cr19Ni11Ti stainless steel with super low carbon,corrosion-resistant and stable Ti.
550	51	—	焊接相同类型的不锈钢、复合钢和异种钢等。 For welding same type of stainless steel ,combined steel,and dissimilar steel.
550	51	—	焊接相同类型的不锈钢、复合钢和异种钢等。 For welding same type of stainless steel ,combined steel,and dissimilar steell.
540	45	—	耐发红不锈钢焊条,焊接相同类型的不锈钢、复合钢和异种钢等。 Red resist stainless steel electrode,for welding the same type of stainless steel,combined steel,and dissimilar steel.
540	45	33 (-196℃)	可焊接-196℃超低温下服役的316L类奥氏体不锈钢管道系统。 For welding 316L stainless steel pipe system under -196℃ extra low temperature service.
615	35	—	焊接相同类型的超低碳不锈钢及异种钢。 For welding same type of extra carbon stainless steel and dissimilar steel.
535	47	—	用于相同类型的不锈钢、复合钢及异种钢焊接。 For welding same type of stainless steel ,combined steel,and dissimilar steel.
—	—	—	比SH.A062有更好的焊接工艺性能。用于相同类型的不锈钢、复合钢及异种钢焊接。 Better welding process performance,for welding the same type of stainless steel,combined steel and dissimilar steel.

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.A102	2.0-5.0	GB/T E308-16 AWS E308-16		AC/DC(+)	C: 0.05 Mn: 1.51 S: 0.009 P: 0.022 Si: 0.43 Cr: 19.61 Ni: 9.52 Mo: 0.07 Cu: 0.14
YSH.A102	2.5-5.0	NB/T E308-16 GB/T E308-16 AWS E308-16		AC/DC(+)	C: 0.05 Mn: 1.51 S: 0.009 P: 0.022 Si: 0.43 Cr: 19.61 Ni: 9.52 Mo: 0.07 Cu: 0.14
YSH.A102A	2.5-5.0	NB/T E308-16 GB/T E308-16 AWS E308-16		AC/DC(+)	C: 0.05 Mn: 1.43 S: 0.008 P: 0.028 Si: 0.64 Cr: 19.79 Ni: 9.48 Mo: 0.02 Cu: 0.08
YSH.A107	2.5-5.0	NB/T E308-15 GB/T E308-15 AWS E308-15		DC(+)	C: 0.07 Mn: 1.72 S: 0.010 P: 0.028 Si: 0.33 Cr: 19.68 Ni: 9.30 Mo: 0.03 Cu: 0.15
YSH.A132	2.5-5.0	NB/T E347-16 GB/T E347-16 AWS E347-16		AC/DC(+)	C: 0.06 Mn: 1.78 S: 0.008 P: 0.026 Si: 0.34 Cr: 19.72 Ni: 9.70 Mo: 0.01 Cu: 0.07 Nb+Ta: 0.54
YSH.A132A	2.5-5.0	NB/T E347-16 GB/T E347-16 AWS E347-16		AC/DC(+)	C: 0.05 Mn: 1.49 S: 0.010 P: 0.027 Si: 0.67 Cr: 19.92 Ni: 9.72 Mo: 0.04 Cu: 0.10 Nb+Ta: 0.43
YSH.A137	2.5-5.0	NB/T E347-15 GB/T E347-15 AWS E347-15		DC(+)	C: 0.06 Mn: 1.77 S: 0.009 P: 0.025 Si: 0.23 Cr: 19.87 Ni: 9.84 Mo: 0.07 Cu: 0.23 Nb+Ta: 0.54
YSH.A202	2.5-5.0	NB/T E316-16 GB/T E316-16 AWS E316-16		AC/DC(+)	C: 0.05 Mn: 1.49 S: 0.012 P: 0.028 Si: 0.47 Cr: 18.77 Ni: 11.74 Mo: 2.31 Cu: 0.11
YSH.A207	2.5-5.0	NB/T E316-15 GB/T E316-15 AWS E316-15		DC(+)	C: 0.05 Mn: 1.71 S: 0.01 P: 0.03 Si: 0.25 Cr: 18.32 Ni: 11.82 Mo: 2.2 Cu: 0.35
YSH.A212	2.5-5.0	NB/T E318-16 GB/T E318-16 AWS E318-16		AC/DC(+)	C: 0.06 Mn: 1.8 S: 0.01 P: 0.024 Si: 0.4 Cr: 18.36 Ni: 11.82 Mo: 2.34 Cu: 0.13 Nb+Ta: 0.58
SH.A222	2.0-5.0	GB/T E317MoCu-16		AC/DC(+)	C: 0.05 Mn: 1.7 S: 0.011 P: 0.028 Si: 0.47 Cr: 19.87 Ni: 13.35 Mo: 2.15 Cu: 1.4
SH.A232	2.5-5.0	GB/T E318V-16		AC/DC(+)	C: 0.06 Mn: 1.82 S: 0.008 P: 0.029 Si: 0.49 Cr: 18.88 Ni: 13.24 Mo: 2.1 Cu: 0.05 V: 0.41

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL			应用 APPLICATION
抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
595	47	—	焊接工作温度低于300℃耐腐蚀的Cr19Ni9、0Cr19Ni11Ti不锈钢。 For welding stainless steel 0Cr19Ni11Ti working temperature below 300℃.
595	47	—	焊接工作温度低于300℃耐腐蚀的Cr19Ni9、0Cr19Ni11Ti不锈钢。 For welding stainless steel 0Cr19Ni11Ti working temperature below 300℃.
605	45	—	耐发红不锈钢焊条, 焊接工作温度低于300℃耐腐蚀的Cr19Ni9、0Cr19Ni11Ti不锈钢。 Red resist stainless steel electrode, for welding stainless steel Cr19Ni9、0Cr19Ni11Ti stainless steel.
600	44	—	焊接工作温度低于300℃耐腐蚀的0Cr19Ni9不锈钢。 For welding stainless steel 0Cr19Ni9 working temperature below 300℃.
620	39	—	焊接重要的耐腐蚀含钛稳定剂的0Cr19Ni11Ti不锈钢。 For welding stainless steel 0Cr19Ni11Ti.
630	48	—	耐发红不锈钢焊条, 焊接重要的耐腐蚀含钛稳定剂的0Cr19NiTi不锈钢。 Red resist stainless steel electrode, for welding important corrosion resist stainless steel 0Cr19NiTi.
605	38	—	焊接重要的耐腐蚀含钛稳定剂的0Cr19Ni11Ti不锈钢。 For welding stainless steel 0Cr19Ni11Ti.
560	49	—	焊接在有机和无机酸介质中工作的0Cr18Ni12Mo2不锈钢。 For welding stainless steel 0Cr18Ni12Mo2 working in organic medium and inorganic medium.
550	43	—	焊接低碳0Cr18Ni12Mo2不锈钢, Cr13、Cr17及异种钢。 For welding stainless steel 0Cr18Ni12Mo2, Cr13, Cr17 and dissimilar steel.
610	42	—	焊接重要的0Cr18Ni12Mo2、00Cr17Ni14Mo2不锈钢。 For welding stainless steel 0Cr18Ni12Mo2, 00Cr17Ni14Mo2.
605	41	—	焊接相同类型的含铜不锈钢。 For welding same type of stainless steel containing copper.
610	38	—	焊接一般耐热耐蚀的Cr19Ni10、0Cr18Ni12Mo2不锈钢。 For welding stainless Cr19Ni10, 0Cr18Ni12Mo2.

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.A237	2.5-5.0	GB/T E318V-15		DC(+)	C: 0.06 Mn: 2 S: 0.008 P: 0.023 Si: 0.28 Cr: 18.16 Ni: 11.63 Mo: 2.26 Cu: 0.11 V: 0.47
SH.A242	2.5-5.0	GB/T E317-16 AWS E317-16		AC/DC(+)	C: 0.05 Mn: 1.80 S: 0.008 P: 0.028 Si: 0.32 Cr: 19.98 Ni: 13.10 Mo: 3.50 Cu: 0.04
SH.A302	2.5-5.0	GB/T E309-16 AWS E309-16		AC/DC(+)	C: 0.08 Mn: 1.60 S: 0.011 P: 0.027 Si: 0.41 Cr: 23.48 Ni: 12.87 Mo: 0.07 Cu: 0.18
YSH.A302	2.5-5.0	NB/T E309-16 GB/T E309-16 AWS E309-16		AC/DC(+)	C: 0.08 Mn: 1.60 S: 0.011 P: 0.027 Si: 0.41 Cr: 23.48 Ni: 12.87 Mo: 0.07 Cu: 0.18
YSH.A302A	2.5-5.0	NB/T E309-16 GB/T E309-16 AWS E309-16		AC/DC(+)	C: 0.07 Mn: 1.89 S: 0.010 P: 0.030 Si: 0.71 Cr: 23.53 Ni: 12.41 Mo: 0.33 Cu: 0.1
YSH.A307	2.5-5.0	NB/T E309-15 GB/T E309-15 AWS E309-15		AC/DC(+)	C: 0.09 Mn: 1.85 S: 0.007 P: 0.030 Si: 0.44 Cr: 24.20 Ni: 12.86 Mo: 0.04 Cu: 0.21
YSH.A312	2.5-5.0	NB/T E309Mo-16 GB/T E309Mo-16 AWS E309Mo-16		AC/DC(+)	C: 0.08 Mn: 1.75 S: 0.012 P: 0.030 Si: 0.29 Cr: 22.93 Ni: 12.60 Mo: 2.24 Cu: 0.14
YSH.A312A	2.5-5.0	NB/T E309Mo-16 GB/T E309Mo-16 AWS E309Mo-16		AC/DC(+)	C: 0.08 Mn: 1.75 S: 0.012 P: 0.030 Si: 0.69 Cr: 23.10 Ni: 12.60 Mo: 2.24 Cu: 0.14
SH.A402	2.5-5.0	GB/T E310-16 AWS E310-16		AC/DC(+)	C: 0.15 Mn: 1.82 S: 0.011 P: 0.027 Si: 0.39 Cr: 25.87 Ni: 21.54 Mo: 0.01 Cu: 0.19
SH.A407	2.5-5.0	GB/T E310-15 AWS E310-15		DC(+)	C: 0.15 Mn: 2.20 S: 0.008 P: 0.028 Si: 0.44 Cr: 26.36 Ni: 21.41 Mo: 0.07 Cu: 0.22
SH.A412	2.5-5.0	GB/T E310Mo-16 AWS E310Mo-16		AC/DC(+)	C: 0.08 Mn: 1.89 S: 0.012 P: 0.027 Si: 0.36 Cr: 25.96 Ni: 21.2 Mo: 2.28 Cu: 0.17
SH.A422	3.2-4.0	—		AC/DC(+)	C: 0.08 Mn: 7.20 S: 0.009 P: 0.025 Si: 0.50 Cr: 25.56 Ni: 18.2

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL			应用 APPLICATION
抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
565	42	—	焊接一般耐热耐蚀Cr19Ni10、0Cr18Ni12Mo2多层焊不锈钢。 For welding stainless Cr19Ni10, 0Cr18Ni12Mo2, and multi-layer welding.
595	35	—	焊接相同类型的不锈钢、复合钢及异种钢。 For welding same type of stainless steel, combined steel and dissimilar steel.
585	39	—	焊接相同类型的不锈钢、异种钢及高铬钢、高锰钢。 For welding same type of stainless steel, dissimilar steel, high Cr-steel, high Mn-steel.
585	39	—	焊接相同类型的不锈钢、异种钢及高铬钢、高锰钢。 For welding same type of stainless steel, dissimilar steel, high Cr-steel, high Mn-steel.
585	39	—	焊接相同类型的不锈钢、异种钢及高铬钢、高锰钢。 For welding same type of stainless steel, dissimilar steel, high Cr-steel, high Mn-steel.
605	39	—	焊接相同类型的不锈钢、异种钢及高铬钢、高锰钢。 For welding same type of stainless steel, dissimilar steel, high Cr-steel, high Mn-steel.
600	42	—	焊接耐硫酸介质腐蚀的同类型不锈钢、复合钢板、异种钢。 For welding same type of stainless steel, working in H2SO4 medium, combined steel, dissimilar steel.
615	40	—	比SH.A312有更好的焊接工艺性能。焊接耐硫酸介质腐蚀的同类型不锈钢、复合钢板、异种钢。 Better welding process performance, for welding the same type of stainless steel, working in H2SO4 medium, combined steel.
590	36	—	焊接高温条件下工作的同类型不锈钢、Cr5Mo、Cr9Mo及异种钢。 For welding same type of stainless steel, Cr5Mo, Cr9Mo working in high temperature and dissimilar steel.
615	38	—	用于同类型对的不锈钢焊接、异种钢, 以及Cr5Mo、Cr9Mo、Cr13Mo等结构。 For welding same type of stainless steel, dissimilar steel, Cr5Mo, Cr9Mo, Cr13.
605	39	—	焊接高温条件下工作耐热不锈钢、异种钢等。 For welding heat-resistant stainless steel, and dissimilar steel, working in high temperature.
590	38	—	焊补炉卷轨机上的Cr25Ni20Si2奥氏体耐热钢卷筒, 也可用于焊接异种钢等。 For welding Cr25Ni20Si2 austenitic heat-resistant steel drum, and dissimilar steel.

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.A432	3.2-5.0	GB/T E310H-16 AWS E310H-16		AC/DC(+)	C: 0.38 Mn: 1.81 S: 0.009 P: 0.022 Si: 0.42 Cr: 26.30 Ni: 21.1 Mo: 0.15 Cu: 0.18
SH.A462	3.2-5.0	—		AC/DC(+)	C: 0.24 Mn: 2.21 S: 0.005 P: 0.023 Si: 1.01 Cr: 26.55 Ni: 33.20 Mo: 0.48
SH.A502	2.5-5.0	GB/T E16-25MoN-16		AC/DC(+)	C: 0.08 Mn: 1.70 S: 0.012 P: 0.030 Si: 0.46 Cr: 15.89 Ni: 23.85 Mo: 6.01 Cu: 0.1 N: 0.14
SH.A507	2.5-5.0	GB/T E16-25MoN-15		DC(+)	C: 0.08 Mn: 2.30 S: 0.009 P: 0.022 Si: 0.22 Cr: 16.14 Ni: 23.66 Mo: 5.71 Cu: 0.1 V: 0.14
SH.A607	3.2-5.0	GB/T E330MoMn WNb-15		DC(+)	C: 0.12 Mn: 2.25 S: 0.009 P: 0.023 Si: 0.26 Cr: 16.11 Ni: 35.20 Mo: 2.22 Cu: 0.12 W: 2.5 Nb: 1.23
SH.A707	3.2-5.0	GB/T E240-15		DC(+)	C: 0.09 Mn: 12.30 S: 0.008 P: 0.025 Si: 0.24 Cr: 16.75 Mo: 1.25 N: 0.21
SH.A902	2.5-4.0	GB/T E320-16 AWS E320-16		AC/DC(+)	C: 0.04 Mn: 1.08 S: 0.019 P: 0.021 Si: 0.51 Cr: 19.60 Ni: 32.59 Mo: 2.35 Cu: 3.11 Nb: 0.37
SH.E2209	2.5-5.0	GB/T E2209-16 AWS E2209-16		AC/DC(+)	C: 0.025 Mn: 0.85 S: 0.01 P: 0.022 Si: 0.7 Cr: 22.2 Ni: 9.15 Mo: 3.1 Cu: 0.1 N: 0.18
YSH.G202	2.5-5.0	NB/T E410-16 GB/T E410-16 AWS E410-16		AC/DC(+)	C: 0.06 Mn: 0.34 S: 0.01 P: 0.025 Si: 0.50 Cr: 12.40 Ni: 0.20 Mo: 0.01 Cu: 0.02
YSH.G207	2.5-5.0	NB/T E410-15 GB/T E410-15 AWS E410-15		DC(+)	C: 0.06 Mn: 0.60 S: 0.01 P: 0.025 Si: 0.50 Cr: 17.50 Ni: 0.10 Mo: 0.01 Cu: 0.02
SH.G307	2.5-5.0	NB/T E430-15 GB/T E430-15 AWS E430-15		DC(+)	C: 0.06 Mn: 0.50 S: 0.01 P: 0.026 Si: 0.50 Cr: 12.50 Ni: 0.10 Mo: 0.01 Cu: 0.02

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL			应用 APPLICATION
抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
705	15	—	专用于焊接HK-40耐热钢。 Special for welding HK-40 steel.
670	20	—	焊接高温条件下工作的炉管HK-40、HP-40、RC-1、RS-1、IN-80。 For welding HK-40,HP-40,RC-1,RS-1,IN-80 working in high temperature.
640	45	—	焊接淬火状态下30CrMnSi以及不锈钢、碳钢、铬钢及异种钢。 For welding quenching 30CrMnSi, and stainless steel, carbon steel, Cr-steel and dissimilar steel.
630	40	—	焊接淬火状态下30CrMnSi, 不锈钢和碳钢。 For welding quenching 30CrMnSi, stainless steel and carbon steel.
630	30	—	焊接在850℃ - 900℃高温条件下工作的同类型不锈钢。 For welding same type of stainless steel working 850~900℃.
730	38	—	焊接Cr17Mn13MoN、Q255钢。 For welding Cr17MoN, Q255 steel.
585	35	—	用于硫酸、硝酸、磷酸和氧化性酸腐蚀介质中Carpenter20Cb镍合金的焊接等。 For welding Carpenter20Cb Nickel alloy in corrosive medium as sulfuric acid, nitric acid, phosphate and oxidizing acid.
750	24	480	焊接含有约22%Cr的双相不锈钢。 For welding of two phase stainless steel which contains about 22% Cr.
490	30	—	用于焊接0铬13及1铬13不锈钢结构。 For welding stainless steel structure, such as 0Cr13, 1Cr13.
520	25	—	用于焊接0铬13及1铬13不锈钢结构。 For welding stainless steel structure, such as 0Cr13, 1Cr13.
530	26	—	用于焊接耐蚀、耐热的1铬17不锈钢结构。 For welding corrosion-resisted, heat-resisted 1Cr17 stainless structure.

铸铁焊条
CAST IRON ELECTRODE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.Z208	2.5-5.0	GB/T EZC AWS EC1		AC/DC(+)	C: 2.61 Mn: 0.34 S: 0.012 P: 0.025 Si: 3.67
SH.Z308	2.5-4.0	GB/T EZNi-1 AWS ENi-CI		AC/DC(+)	C: 0.93 Mn: 0.32 S: 0.005 Si: 0.30 Ni: 93.71 Fe: 4.23
SH.Z408	3.2-5.0	GB/T EZNiFe-1 AWS ENiFe-CI		AC/DC(+)	C: 0.77 Mn: 0.30 S: 0.003 Si: 0.31 Ni: 55.77 Cu: 0.025 Fe: 42.68 Al: 0.19
SH.Z508	3.2-5.0	GB/T EZNiCu-1 AWS ENiCu-B		AC/DC(+)	C: 0.4 Mn: 1.80 S: 0.012 Si: 0.45 Ni: 63.5 Fe: 4.7 Cu: 28.7

熔敷金属机械性能例值TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL			应用 APPLICATION
抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
—	—	—	用于焊补灰口铸铁件的缺陷。 For welding the defects of grey casting iron pieces.
—	—	—	适用于铸铁薄件及加工面的补焊。如汽缸盖、发动机座、齿轮箱以及机床导轨等重要灰口铸铁件。 For welding the thin piece of casting iron and machined surface. Such as the some important grey casting iron piece in junk head, engine bearer, gear case and parallels.
—	—	—	适用于重要高强度灰口铸铁及球墨铸铁的焊补。如汽缸、发动机座、齿轮等。 For welding the important high tensile grey casting iron and ductile cast iron as in junk head, engine bearer, gears, etc.
—	—	—	用于强度要求不高的灰口铸铁件加工面和非加工面的补焊。 For welding the machined surface and non-processing surface of grey casting iron without high requirements.

镍及镍合金钢焊条
NICKEL AND NICKEL-BASED ALLOY STEEL ELECTRODE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.Ni112	2.5-4.0	GB/T ENi2061A AWS ENi-1		AC/DC(+)	C: 0.03 Mn: 2.1 S: 0.009 P: 0.008 Si: 0.9 Ni: 93.1 Nb+Ta: 2.3 Fe: 3.5
SH.Ni307	3.2-4.0	GB/T ENi6062 AWS ENiCrFe-1		DC(+)	C: 0.03 Mn: 3.15 S: 0.008 P: 0.009 Si: 0.34 Cr: 15.5 Ni: 70.1 Nb+Ta: 2.01 Fe: 8.95
SH.Ni307B	2.5-4.0	GB/T ENi6182 AWS ENiCrFe-3		DC(+)	C: 0.05 Mn: 8.1 S: 0.005 P: 0.004 Si: 0.45 Cr: 15.8 Ni: 70.2 Nb+Ta: 1.78 Fe: 3.66

熔敷金属机械性能例值TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL			应用 APPLICATION
抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
475	30	—	焊接镍基合金、双金属、堆焊过渡层。 For welding Ni-base alloy, metal, and transition layer of cladding.
575	40	—	焊接耐热耐蚀的镍基合金、异种钢及堆焊。 For welding Ni-base alloy, dissimilar steel and hardfacing.
590	40	—	焊接耐热耐蚀的镍基合金、异种钢、耐蚀堆焊。 For welding Ni-base alloy, dissimilar steel and cladding.

硬面焊条
HARDFACING ELECTRODE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.D007	3.2-5.0	GB/T EDTV-15		DC(+)	—
SH.D107	3.2-5.0	GB/T EDMn2-15		DC(+)	C: 0.11 Mn: 2.91
SH.D127	3.2-5.0	GB/T EDMn4-15		DC(+)	C: 0.15 Mn: 3.55 Si: 0.75
SH.D132	3.2-5.0	GB/T EDPCrMo-A2-03		AC/DC(+)	C: 0.34 Cr: 1.63 Mo: 0.35
SH.D172	3.2-5.0	GB/T EDPCrMo-A3-03		AC/DC(+)	C: 0.33 Cr: 1.90 Mo: 0.90
SH.D212	3.2-5.0	GB/T EDPCrMo-A4-03		AC/DC(+)	C: 0.54 Cr: 3.20 Mo: 2.51
SH.D256	3.2-5.0	GB/T EDMn-A-16 AWS EFeMn-A		AC/DC(+)	C: 1.05 Mn: 12.93 Si: 0.17
SH.D266	3.2-5.0	GB/T EDMn-B-16 AWS EFeMn-B		AC/DC(+)	C: 1.07 Mn: 14.16 Si: 0.13 Mo: 1.33
SH.D276	3.2-5.0	GB/T EDCrMn-B-16		AC/DC(+)	Mn: 11.4 Si: 1.0 Cr: 14
SH.D322	3.2-5.0	GB/T EDRCrMoWV- A1-03		AC/DC(+)	C: 0.46 S: 0.016 P: 0.020 Cr: 1.63 Mo: 0.54 Mn: 1.82 Si: 0.68
SH.D337	3.2-5.0	GB/T EDRCrW-15		DC(+)	C: 0.45 S: 0.006 P: 0.033 Cr: 2.42 W: 9.32
SH.D397	3.2-5.0	GB/T EDRCrMnMo-15		DC(+)	C: 0.37 S: 0.009 P: 0.022 Cr: 1.18 Mo: 0.53 Mn: 1.82 Si: 0.67

熔敷金属硬度 HARDNESS OF DEPOSITED METAL	应用 APPLICATION
HB≥180	用于灰口铸铁、球墨铸铁、合金铸铁的焊接或焊补。 For welding grey cast iron, nodular cast iron and alloy cast iron mand padding.
HB≥220	常温低硬度堆焊用。 For hardfacing, in normal temperature.
HRC=43	常温中硬度堆焊用。 For hardfacing, in normal temperature.
HRC≥30	常温中硬度堆焊用。 For hardfacing, in normal temperature.
HRC≥40	常温中高硬度堆焊用。 For hardfacing, in normal temperature.
HRC≥50	常温中高硬度堆焊用。 For hardfacing, in normal temperature.
HB≥170	高锰钢堆焊用。 For hardfacing, high Mn-steel.
HB≥170	高锰钢堆焊用。 For hardfacing, high Mn-steel.
HB≥210	耐气蚀及耐磨的高锰钢堆焊用。 For hardfacing, high Mn-steel.
HRC≥55	冷冲模及切削刀具堆焊用。 For hardfacing cool-punching die and cutter.
HRC≥48	热锻模堆焊用。 For hardfacing heat-forging die.
HRC≥40	热锻模堆焊用。 For hardfacing heat-forging die.

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	熔敷金属化学成分值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.D507	3.2-5.0	GB/T EDCr-A1-15		DC(+)	C: 0.15 S: 0.013 P: 0.029 Cr: 14.35
SH.D507Mo	4.0-5.0	GB/T EDCr-A2-15		DC(+)	C: 0.20 Cr: 14.30 Ni: 1.09
SH.D517	3.2-5.0	GB/T EDCr-B-15		DC(+)	C: 0.24 Cr: 12.96
SH.D577	4.0-5.0	GB/T EDCrMn-C-15		DC(+)	C: 1.06 Cr: 14.67 Ni: 0.25 Mn: 15.34 Si: 1.60 Mo: 0.61

熔敷金属硬度 HARDNESS OF DEPOSITED METAL	应用 APPLICATION
HRC≥40	1Cr13 阀门堆焊用。 For hardfacing valve, as 1Cr13.
HRC≥37	1Cr13 阀门堆焊用。 For hardfacing valve, as 1Cr13.
HRC≥45	2Cr13 阀门堆焊用。 For hardfacing valve, as 2Cr13.
HRC≥28	510℃ 以下中温高压阀门堆焊用。 For hardfacing valve working in high pressure, temperature below 510℃.

碳钢药芯焊丝
CARBON STEEL FLUX-CORED WIRE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	保护气体 SHIELDED GAS	电流类型 TYPE OF CURRENT	熔敷金属化学成分值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.Y71T-1	1.0-1.6	GB/T E501T-1 AWS E71T-1C		CO ₂	DC(+)	C: 0.05 Si: 0.36 Mn: 1.28 S: 0.008 P: 0.015
SH.Y711	1.2	GB/T E501T-1 AWS E71T-1C		CO ₂	DC(+)	C: 0.050 Mn: 1.32 S: 0.009 P: 0.013 Si: 0.33
SH.Y71Ni	1.2-1.6	GB/T E501T-1L AWS E71T-1C-J		CO ₂	DC(+)	C: 0.05 Si: 0.36 Mn: 1.32 S: 0.008 P: 0.016 Ni: 0.45
SH.Y70MC	1.2-1.6	GB/T E500T-1 AWS E70T-1C		CO ₂	DC(+)	C: 0.05 Si: 0.38 Mn: 1.5 S: 0.01 P: 0.015 Cr: 0.03 Ni: 0.02 Mo: 0.05
SH.Y71T-11	0.8-1.2	GB/T E501T-11 AWS E71T-11		—	DC(-)	C: 0.18 Mn: 0.64 S: 0.003 P: 0.014 Si: 0.26 Al: 1.23
SH.Y71T-GS	0.8-1.2	GB/T E501T-GS AWS E71T-GS		—	DC(-)	C: 0.20 Mn: 0.56 S: 0.006 P: 0.011 Si: 0.43 Al: 1.3

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
525	450	32	145(-20℃)	用于低碳钢和490MPa级高强度钢的焊接, 焊接工艺优良, 全位置操作性佳。 For the welding of low carbon steel and 490Mpa high tensile strength steel, with good weldability and suitable for all position welding.
440	530	31	160(-20℃)	用于造船、建筑、桥梁、采油平台、低温容器和车辆等低碳钢及490MPa级高强度钢焊接。 For welding of shipyard, bulidings, bridges, oil platforms, cryogenic vessels, vehicles and low carbon steel and 490Mpa high tensile strength steel.
530	445	30	110(-40℃)	用于低碳钢和490Mpa级高强度钢的焊接, 焊接工艺优良, 全位置操作佳, 且焊缝金属具有良好低温冲击韧性, 抗裂性好。 Applied for low carbon steel and 490Mpa high-strength steel welding, excellent welding technology, wonderful performance of all-position operation, the weld joint metal has good crack resistance and impact toughness at low temperature.
525	435	30	100(-20℃)	系金属粉型药芯焊丝, 具有熔敷效率高, 飞溅少, 熔渣少, 电弧稳定好特点, X射线探伤合格率高及具有良好的抗气孔性。 Metallic powder type of flux cored wire has features of low spatter, few slag, good arc stability and good porosity resistance, with high deposition efficiency and high percent of X-ray inspection pass.
425	585	22	—	工艺性能优异, 适合全位置焊接, 尤其立向下工艺优异, 用于轻结构、支架等焊接。 All position welding technical technology performance, especially vertical downward welding, mainly used for welding light construction, holder and etc.
—	500	—	—	工艺性能优异, 适合全位置焊接, 尤其立向下工艺优异, 主要用于薄板的单道焊、搭接、角接、对接焊、镀锌板、搭接焊缝、轻型结构的焊接。 E71T-GS is an all-position, especially vertical downward welding, self-shielded flux-cored wire designed for single pass fillet and lap welding on galvanized or welding light construction with wonderful welding technology.

低温钢药芯焊丝

LOW TEMPERATURE STEEL FLUX-CORED WIRE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	保护气体 SHIELDED GAS	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.Y81W2	1.2-1.6	GB/T E551T1-W2C AWS E81T1-W2C		CO ₂	DC(+)	C: 0.05 Si: 0.38 Mn: 1.2 S: 0.011 P: 0.014 Cr: 0.48 Ni: 0.5 Cu: 0.38
SH.Y81Ni1	1.2-1.6	GB/T E551T1-Ni1C AWS E81T1-Ni1C		CO ₂	DC(+)	C: 0.05 Si: 0.35 Mn: 1.33 S: 0.009 P: 0.012 Ni: 0.92 Mo: 0.15
SH.Y81Ni2	1.2-1.6	GB/T E551T1-Ni2C AWS E81T1-Ni2C		CO ₂	DC(+)	C: 0.06 Si: 0.45 Mn: 1.2 S: 0.009 P: 0.016 Ni: 2.05
SH.Y91Ni2	1.2-1.6	GB/T E621T1-Ni2C AWS E91T1-Ni2C		CO ₂	DC(+)	C: 0.05 Si: 0.4 Mn: 1.05 S: 0.012 P: 0.018 Ni: 2.12
SH.Y81K2	1.2-1.6	GB/T E551T1-K2C AWS E81T1-K2C		CO ₂	DC(+)	C: 0.042 Mn: 1.21 S: 0.01 P: 0.011 Si: 0.31 Ni: 1.59
SH.Y91K2	1.2-1.6	GB/T E621T1-K2C AWS E91T1-K2C		CO ₂	DC(+)	C: 0.05 Si: 0.35 Mn: 1.05 S: 0.012 P: 0.016 Ni: 1.86 Mo: 0.15
SH.Y110K3	1.2-1.6	GB/T E761T1-K3C AWS E111T1-K3C		CO ₂	DC(+)	C: 0.05 Mn: 1.5 S: 0.01 P: 0.013 Si: 0.26 Cr: 0.03 Ni: 2.29 Mo: 0.49

熔敷金属机械性能例值TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
615	550	27	105(-30℃)	用于550MPa级耐候钢焊接。 For welding 550Mpa weather resistance steel.
605	540	26	140(-40℃)	用于550MPa级低温钢焊接。 For welding 550Mpa low temperature steel.
635	560	25	108(-40℃)	用于550MPa级低温钢焊接。 For welding 550Mpa low temperature steel.
660	575	24	87(-40℃)	用于含Ni2~3%钢及620MPa级低温钢焊接。 For welding 2~3% Ni steel and 620Mpa low temperature steel.
485	596	29	109(-60℃)	550MPa级1.5Ni钢焊接用, -60℃冲击性能优良, 多用于港口、造船、海洋平台等。 For welding 550MPa 1.5 Ni Steel, good impact property below -600℃, widely used in the field of port, shipbuilding, ocean platform and etc.
675	605	24	97(-20℃)	用于620MPa级低温钢焊接。 For welding 620Mpa low temperature steel.
720	790	18	54(-40℃)	760MPa级高强度钢, 如HY-100、A514、Q690, 桥梁机械、港口设备等焊接用。 For welding 760MPa high-strength Steel, such as HY-100,A524,Q690, bridge machinery, port equipment and etc.

耐热钢药芯焊丝

HEAT RESISTING STEEL FLUX-CORED WIRE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	保护气体 SHIELDED GAS	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.Y81B2	1.2-1.6	GB/T E551T1-B2C AWS E81T1-B2C		CO ₂	DC(+)	C: 0.062 Mn: 0.95 S: 0.01 P: 0.013 Si: 0.40 Cr: 1.22 Mo: 0.54
SH.Y81B2V	1.2-1.6	GB/T E551T1-B2C AWS E81T1-B2C		CO ₂	DC(+)	C: 0.06 Mn: 0.87 S: 0.008 P: 0.013 Si: 0.34 Cr: 1.23 Mo: 0.57 V: 0.20
SH.Y81B6	1.2	GB/T E551T1-B6C AWS E81T1-B6C		CO ₂	DC(+)	C: 0.060 Mn: 0.92 S: 0.009 P: 0.014 Si: 0.32 Cr: 4.85 Ni: 0.16 Mo: 0.55

熔敷金属机械性能例值TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
560	650	21	75(常温)	520℃以下工作的1%Cr-0.5%Mo低合金耐热钢焊接用。 For welding 1%Cr-0.5%Mo low alloy heat-resistance steel below working temperature 5200C.
535	610	22	69(常温)	540℃以下工作的珠光体耐热钢焊接用。 For welding pearlitter heat-resistance steel below working temperature 5400C.
505	610	22	73(常温)	适用于工作在550℃以下高温高压管道、合成化工机械、石油裂化设备等用钢(如Cr5Mo)的焊接。 For welding high temperature and pressure pipes,chemical machinery,petroleum cracking equipment(Cr5Mo)..

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	保护气体 SHIELDED GAS	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.Y91B3	1.2-1.6	GB/T E621T1-B3C AWS E91T1-B3C		CO ₂	DC(+)	C: 0.056 Mn: 0.94 S: 0.009 P: 0.011 Si: 0.35 Cr: 2.13 Mo: 1.06

不锈钢药芯焊丝 STAINLESS STEEL FLUX-CORED WIRE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	保护气体 SHIELDED GAS	电流类型 TYPE OF CURRENT	熔敷金属化学成分例值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.Y308L	1.2-1.6	GB/T E308LT1-1 AWS E308LT1-1		CO ₂	DC(+)	C: 0.02 Si: 0.44 Mn: 1.7 S: 0.01 P: 0.012 Cr: 19.6 Ni: 9.9 Mo: 0.01 Cu: 0.2
SH.Y309L	1.2-1.6	GB/T E309LT1-1 AWS E309LT1-1		CO ₂	DC(+)	C: 0.02 Si: 0.70 Mn: 1.47 S: 0.005 P: 0.014 Cr: 23.88 Ni: 12.80 Mo: 0.10 Cu: 0.03
SH.Y316L	1.2-1.6	GB/T E316LT1-1 AWS E316LT1-1		CO ₂	DC(+)	C: 0.03 Si: 0.5 Mn: 1.55 S: 0.01 P: 0.015 Cr: 18.8 Ni: 12.83 Mo: 2.55 Cu: 0.2
SH.Y309LMo	1.2-1.6	GB/T E309LMoT1-1 AWS E309LMoT1-1		CO ₂	DC(+)	C: 0.024 Mn: 1.34 S: 0.008 P: 0.021 Si: 0.62 Cr: 22.86 Ni: 12.25 Mo: 2.31
SH.Y347L	1.2-1.6	GB/T E347T1-1 AWS E347T1-1		CO ₂	DC(+)	C: 0.022 Mn: 1.38 S: 0.004 P: 0.017 Si: 0.43 Cr: 20.01 Ni: 10.01 Nb: 0.35
SH.Y2209	1.2-1.6	GB/T E2209T1-1 AWS E2209T1-1		CO ₂	DC(+)	C: 0.03 Si: 0.4 Mn: 1.3 S: 0.008 P: 0.015 Cr: 23.1 Ni: 8.9 Mo: 3.5 Cu: 0.21 N: 0.1
SH.Y2594	1.2	AWS E2594T1-1		CO ₂	DC(+)	C: 0.023 Mn: 1.24 S: 0.003 P: 0.014 Si: 0.54 Cr: 24.33 Ni: 8.99 Mo: 4.33 Cu: 0.03 N: 0.22
SH.Y409Ti	1.0-1.2	AWS EC409		80% Ar + 20%CO ₂	DC(+)	C: 0.04 Mn: 0.36 S: 0.004 P: 0.005 Si: 0.6 Cr: 11.15 Ti: 0.99
SH.Y439Ti	1.2	AWS EC439		80% Ar + 20%CO ₂	DC(+)	C: 0.03 Mn: 0.57 S: 0.014 P: 0.011 Si: 0.61 Cr: 17.87 Ti: 0.34

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
545	635	21	55(常温)	550℃以下工作耐热钢, 如高压管道、化工机械、石油裂化设备等焊接用。 For welding heat-resistance steel below working temperature 5500C, such as high pressure pipes, chemical machinery, petroleum cracking equipment and etc.

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
—	575	40	—	焊道金属的含碳量低, 且于奥氏体组织中含有适量的铁素体, 故有优越的焊接性能及抗裂性与高度的耐蚀性, 焊后不须热处理, 适用于耐蚀容器的焊接。 Low carbon content, and with proper amount of ferrite in the austenite organization, it has fairly good weldability, anti-cracking and high corrosion-resistant ability. Post weld heat treatment is not necessary. It is applied to the welding of corrosion-resistant containers.
—	565	42	—	因焊道金属在奥氏体组织中含有适量的铁素体, 所以焊接性、焊道完整性及抗裂性优, 常使用于异种母材低合金钢、耐热钢、耐蚀钢及覆面钢低道覆层的焊接。 With proper amount of ferrite in the austenite organization. It has fairly good weldability complete bead and good anti-cracking ability. It is applied to the welding of dissimilar base metals as welding between low alloy steel, heat resistant steel, corrosion resistant steel, the bottom layer of clad steel.
—	535	40	—	焊道金属在奥氏体组织中含有适量的铁素体, 故其焊道完整性及抗裂性优, 又含碳低可防晶间腐蚀, 并具有优越的低温冲击性能及良好的耐蚀性。常用于有低温冲击且耐蚀性优要求的压力容器场合。 With proper amount of ferrite in the austenite organization, it has complete bead and good anti-cracking ability. It also has low carbon content, so the resistant to intercrystalline corrosion is relatively higher, and has good low temperature impact and good anti-corrosion ability. Mostly used in the pressure containers with such requirements.
—	690	32	—	碳钢与不锈钢, 韧性较差马氏体、铁素体与不锈钢焊接, 如石油化工、火力电站等。 For welding carbon steel and stainless steel, martensitic and ferritic stainless steel, such as petrochemical industry, energy power station and etc.
—	640	31	—	20%Cr-10%Ni-Nb不锈钢药芯焊丝, 抗晶间腐蚀能力好, 裂纹敏感性低, 多用于SUS 321、SUS 347等的焊接。 20%Cr-10%Ni-Nb stainless steel flux-cored-wire, good intercrystalline corrosion resistance, crack low crack sensitivity, mainly used for welding SUS 321, SUS 347 and etc.
—	785	25	—	用于含有约22%Cr的双相不锈钢焊接。 For welding of duplex stainless steel which contains about 22%Cr.
—	850	23	—	适用于海洋石油、天然气、石化行业同类型双相不锈钢(如00Cr25Ni7Mo4N)等的焊接。 For welding offshore oil, natural gas, petrochemical industry the same type of duplex(00Cr25Ni7Mo4N). APPLICATION
—	—	—	—	汽车排气系统和消音器等结构冷端焊接用。 For welding cold junction of vehicle exhaust system and silencer construction.
—	—	—	—	汽车排气系统和消音器等结构热端焊接用。 For welding hot junction of vehicle exhaust system and silencer construction.

硬面堆焊药芯焊丝

HARDFACING CLADDING FLUX-CORED WIRE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	保护气体 SHIELDED GAS	电流类型 TYPE OF CURRENT	熔敷金属化学成分值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH-YD507	1.2	—		CO ₂	DC(+)	(C+Mn+Cr)合金含量-15%
SH-YD507Mo	1.2	—		CO ₂	DC(+)	(C+ Cr+Ni+Mo+W)合金含量-15%
SH.YD517	1.2	—		CO ₂	DC(+)	(C+Mn+Cr)合金含量-20%
SH.YD132	1.2	—		CO ₂	DC(+)	(C+Cr+Mo)合金含量-6%
SH.YD256	1.2	—		CO ₂	DC(+)	(C+Mn+Si)合金含量-16%

熔敷金属硬度 HARDNESS OF DEPOSITED HRC	应用 APPLICATION
HRC≥40	用于焊接轴和过热蒸汽阀表面。 Surfacing for axis and superheated steam valve.
HRC≥36	用于工作温度在510℃以下的轴和阀门表面焊接。 Surfacing for axis and valve that the temperature of word is below 510℃.
HRC≥45	用于堆焊碳钢或低合金钢的轴、过热蒸汽用阀件、搅拌机桨、螺旋输送机叶片等。 Used to weld carbon or low-alloy steel shafts, superheated steam valves, mixers, screw conveyors, blades, etc.
HRC≥30	用于受磨损的中、低碳钢或低合金钢结构件表面，特别适宜于矿山机械与农业机械磨损件的堆焊与修补之用。 Used for the surface of worn medium or low carbon steel or low alloy steel structures, especially suitable for surfacing and repairing of mining machinery and agricultural.
HRC≥170	用于破碎机、高锰钢轨、斗、堆土机等受冲击易磨损件的堆焊。 Used for surfacing welding of impact, easy wearing parts of crusher, high manganese rail and bulldozer.

碱性药芯焊丝

BASIC FLUX-CORED WIRE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	保护气体 SHIELDED GAS	电流类型 TYPE OF CURRENT	熔敷金属化学成分值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.YJ507	1.2-1.6	GB/T E500T-5C/M AWS E70T-5C/M		CO ₂	DC(+)	C: 0.042 Mn: 1.5 S: 0.008 P: 0.012 Si: 0.52
SH.YJ607	1.2-1.6	GB/T E620T5-K2C AWS E90T5-K2C		CO ₂	DC(+)	C: 0.04 Mn: 1.35 S: 0.01 P: 0.014 Si: 0.53 Cr: 0.11 Ni: 1.75 Mo: 0.3
SH.YJ707	1.2-1.6	GB/T E690T5-K3C AWS E100T5-K3C		CO ₂	DC(+)	C: 0.039 Mn: 1.36 S: 0.009 P: 0.011 Si: 0.37 Cr: 0.1 Ni: 2.47 Mo: 0.39
SH.YJ857	1.2	GB/T E830T5-K4C AWS E120T5-K4C		CO ₂	DC(+)	C: 0.05 Mn: 1.75 S: 0.009 P: 0.014 Si: 0.45 Cr: 0.45 Ni: 2.43 Mo: 0.50
SH.YR307	1.2	GB/T E551T5-B2C AWS E81T5-B2C		CO ₂	DC(+)	C: 0.052 Mn: 1.10 S: 0.008 P: 0.013 Si: 0.32 Cr: 1.29 Mo: 0.60

熔敷金属机械性能例值TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
430	525	25	158(-30℃)	490MPa高塑韧性和抗裂性钢焊接用。 For welding 490MPa high-ductility and crack resistance steel.
535	610	22	69(常温)	540℃以下工作的珠光体耐热钢焊接用。 For welding pearlite heat-resistance steel below working temperature 5400C.
640	730	21	63(-50℃)	690MPa级低合金高强结构钢，重型矿山运输车辆、军用战车、煤炭机械等焊接用。 For welding 690MPa low alloy high-strength steel, heavy-mine vehicle, transportation vehicle, military vehicle, coal machinery and etc.
750	830	17	66(-50℃)	用于塑韧性、抗裂性要求高的830MPa级的低合金高强度钢的焊接。 For welding of 830MPa low alloy and high strength steel where needs high toughness and cracking-resist.
515	630	25	195(常温)	用于塑韧性有较高要求、工作温度在520℃以下的低合金耐热钢(如15CrMo)的焊接。 For welding of low alloy and heat-resist(15CrMo)steel where needs high toughness and its working temperature under 520℃.

气电立焊药芯焊丝

GAS ELECTRIC VERTICAL-UP WELDING FLUX-CORED WIRE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	保护气体 SHIELDED GAS	电流类型 TYPE OF CURRENT	熔敷金属化学成分值 TYPICAL CHEMICAL COMPOSITION OF DEPOSITED METAL(%)
SH.Y702	1.6	AWS EG70T-2		CO ₂	DC(+)	C: 0.057 Mn: 1.78 S: 0.008 P: 0.011 Si: 0.40 Ni: 0.04 Mo: 0.02
SH.Y802	1.6	AWS EG80T-G		CO ₂	DC(+)	C: 0.060 Mn: 1.70 S: 0.006 P: 0.010 Si: 0.30 Ni: 0.80 Mo: 0.25
SH.Y802G	1.6	AWS EG82T-G		CO ₂	DC(+)	C: 0.060 Mn: 1.67 S: 0.008 P: 0.012 Si: 0.25 Ni: 1.40 Mo: 0.15

熔敷金属机械性能例值TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
530	610	24	154(-20℃)	适用于船舶的外壳板及各种内部构件、储罐侧板和桥梁的箱式梁腹板等立焊。 It is suitable for the vertical welding of the hull plate and various internal components, the box side plate and the box girder web of the bridge.
515	640	24	112(-20℃)	适用于船舶的外壳隔板和载货仓及内部构件、桥梁结构的箱形梁腹板及工字梁腹板。 Applicable to hull panels and interior components of cargo houses, box girders, webs, and webs of bridges.
495	605	25	93(-60℃)	适用于船舶、储罐及桥梁等的相应强度结构立焊, -60℃低温冲击性良好。 For vertical-up welding of shipyard,tank and bridge,excellect toughness under -60℃.

碳钢实心焊丝

CARBON STEEL SOLID WIRE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	保护气体 SHIELDED GAS	电流类型 TYPE OF CURRENT	焊丝化学成分例值 TYPICAL CHEMICAL COMPOSITION OF WIRE (%)
SH.S49-1	0.8-1.6	GB/T ER49-1		CO ₂	DC(+)	C: 0.071 Mn: 1.91 Si: 0.79 S: 0.012 P: 0.018
SH.S50-6	0.8-1.6	GB/T ER50-6 AWS ER70S-6		CO ₂	DC(+)	C: 0.071 Mn: 1.49 Si: 0.88 S: 0.011 P: 0.01
YSH.S50-6	0.8-1.6	NB/T ER50-6 GB/T ER50-6 AWS ER70S-6		CO ₂	DC(+)	C: 0.071 Mn: 1.49 Si: 0.88 S: 0.010 P: 0.014

熔敷金属机械性能例值TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
460	560	26	110(0℃)	适用于普通钢结构焊接。 For the welding of general structure steel.
440	545	27	114(-30℃)	适用于碳钢及500MPa及低合金钢的单道及多道焊(如车辆、桥梁、建筑、机械结构等的焊接)。 Welding of carbon steel, low alloy steel and 500Mpa grade low alloy high intensity steel s tructures, etc. Such as vehicle, building, bridge, ship building, pressure vessel industry a nd pipeline etc.
440	545	27	114(-30℃)	适用于碳钢及500MPa及低合金钢的单道及多道焊(如车辆、桥梁、建筑、机械结构等的焊接)。 Welding of carbon steel, low alloy steel and 500Mpa grade low alloy high intensity steel s tructures, etc. Such as vehicle, building, bridge, ship building, pressure vessel industry a nd pipeline etc.

碳钢埋弧焊丝

CARBON STEEL SUBMERGED ARC WIRE

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	焊丝化学成分例值 TYPICAL CHEMICAL COMPOSITION OF WIRE (%)
SH.M08A	2.0-5.0	AWS EL8 GB/T H08A		AC/DC(+)	C: 0.06 Si: 0.02 Mn: 0.42 S: 0.008 P: 0.009 Cu: 0.04

熔敷金属机械性能例值TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
—	—	—	—	用于船舶、桥梁、钢结构和一般制造的单层或多层焊接。 Single-layer welding of ship buildings, bridges, structural steels and general fabricatins.

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	焊丝化学成分例值 TYPICAL CHEMICAL COMPOSITION OF WIRE (%)
SH.M08MnA	2.0-5.0	AWS EM12 GB/T H08MnA		AC/DC(+)	C: 0.06 Si: 0.03 Mn: 0.92 S: 0.008 P: 0.010 Cu: 0.04
SH.M10Mn2	2.0-5.0	AWS EH14 GB/T H10Mn2		AC/DC(+)	C: 0.07 Si: 0.06 Mn: 1.82 S: 0.006 P: 0.014 Cu: 0.04

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
—	—	—	—	用于碳钢及相应强度较低的合金钢(如16Mn等)结构。 For welding carbon steel and low alloy steel(16Mn).
—	—	—	—	用于H型钢单层或多层焊接, 螺旋管道和机械设备。 Single and multi-layer welding of H-Beams, spiral pipes, machinery.

不锈钢实心焊丝(MIG) STAINLESS STEEL SOLID WIRE (MIG)

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	焊丝化学成分例值 TYPICAL CHEMICAL COMPOSITION OF WIRE (%)
SH.S304	0.8-1.6	—		DC(+)	C: 0.03 Mn: 1.81 Si: 0.45 Ni: 8.12 Cr: 18.1 Mo: 0.013
SH.S308	0.8-1.6	GB/T S308 AWS ER308		DC(+)	C: 0.027 Si: 1.85 Mn: 0.49 Ni: 10.3 Cr: 19.9 Mo: 0.014
SH.S308L	0.8-1.6	GB/T S308L AWS ER308L		DC(+)	C: 0.02 Si: 2.1 Mn: 0.5 Ni: 9.7 Cr: 19.9 Mo: 0.03
SH.S309	0.8-1.6	GB/T S309 AWS ER309		DC(+)	C: 0.027 Si: 2.28 Mn: 0.53 Ni: 13.75 Cr: 23.62 Mo: 0.026
SH.S309L	0.8-1.6	GB/T S309L AWS ER309L		DC(+)	C: 0.011 Si: 2.31 Mn: 0.588 Ni: 13.96 Cr: 23.32 Mo: 0.026
SH.S316L	0.8-1.6	GB/T S316L AWS ER316L		DC(+)	C: 0.028 Si: 2.12 Mn: 0.54 Ni: 12 Cr: 18.9 Mo: 2.16
SH.S321	0.8-1.6	GB/T S321 AWS ER321		DC(+)	C: 0.06 Si: 1.64 Mn: 0.56 Cr: 19.38 Ni: 9.33 Mo: 0.15
SH.S347	0.8-1.6	GB/T S347 AWS ER347		DC(+)	C: 0.04 Mn: 1.74 Si: 0.54 Cr: 19.56 Ni: 9.63 Mo: 0.15 Nb: 0.55

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
—	640	36	—	焊接18Cr-8Ni(304)不锈钢, 电弧稳定、焊道美观、抗裂性佳。 For the welding of 18%Cr-8%Ni stainless steel(304),with stable arc, good-looking welding bead and excellent corrosion-resistant property.
—	620	38	—	焊接18Cr-8Ni(304)不锈钢, 电弧稳定、焊道美观、抗裂性佳。 For the welding of 18%Cr-8%Ni stainless steel(304),with stable arc, good-looking welding bead and excellent corrosion-resistant property.
—	640	36.5	—	焊接18Cr-8Ni(304或304L)不锈钢, 电弧稳定、焊道美观、抗裂性佳。 For the welding of 18%Cr-8%Ni stainless steel(304 or 304L),with stable arc, good-looking welding bead and excellent corrosion-resistant property.
—	630	38	—	异种金属焊接, 如碳钢和铬钼钢焊接合用, 焊接SUS309, SCS17等, 耐热, 耐腐蚀性优, 电弧稳定, 作业性良。 For the welding of dissimilar steels(such as mild steel and Chromium-molybdenum steel) or SUS309S, SCS17, good heat-resistant and corrosion-resistant property. Stable arc and easy to operate.
—	650	39.5	—	异种金属焊接, 如碳钢和铬钼钢焊接合用, 焊接SUS309, SCS17等, 耐热, 耐腐蚀性优, 电弧稳定, 作业性良。 For the welding of dissimilar steels(such as mild steel and Chromium-molybdenum steel) or SUS309S, SCS17, good heat-resistant and corrosion-resistant property. Stable arc and easy to operate.
—	585	45.5	—	8Cr-12Ni-2Mo钢(316或316L) 焊接用, 电弧稳定, 焊道美观, 抗裂性佳。 For the welding of 18Cr-12Ni-2Mo steel(316 or 316L) with stable arc, good welding bead and excellent corrosion resistance property.
—	640	37	—	用于Cr19Ni9Ti型不锈钢结构的焊接。 For the welding of Cr19Ni9Ti stainless steel structure.
—	630	35	—	用于Cr19Ni9Ti或Cr18Ni11Nb类不锈钢结构的焊接。 For welding of Cr19Ni9Ti or Cr18Ni11Nb stainless steel structure.

不锈钢实心焊丝(TIG)
STAINLESS STEEL SOLID WIRE (TIG)

品名 BRAND	直径 SIZE(mm)	符合标准 EQUIVALENT SPECIFICATION	焊接位置 WELDING POSITION	电流类型 TYPE OF CURRENT	焊丝化学成分例值 TYPICAL CHEMICAL COMPOSITION OF WIRE (%)
SH.S304	1.0-3.2	—		DC(-)	C: 0.03 Mn: 1.84 Si: 0.44 Ni: 8.11 Cr: 18.2 Mo: 0.012
ER308	1.0-3.2	GB/T S308 AWS ER308		DC(-)	C: 0.027 Si: 1.85 Mn: 0.49 Ni: 10.3 Cr: 19.9 Mo: 0.014
ER308L	1.0-3.2	GB/T S308L AWS ER308L		DC(-)	C: 0.02 Si: 2.1 Mn: 0.5 Ni: 9.7 Cr: 19.9 Mo: 0.03
ER309	1.0-3.2	GB/T S309 AWS ER309		DC(-)	C: 0.027 Si: 2.28 Mn: 0.53 Ni: 13.75 Cr: 23.62 Mo: 0.026
ER309L	1.0-3.2	GB/T S309L AWS ER309L		DC(-)	C: 0.011 Si: 2.31 Mn: 0.588 Ni: 13.96 Cr: 23.32 Mo: 0.026
ER316L	1.0-3.2	GB/T S316L AWS ER316L		DC(-)	C: 0.028 Si: 2.12 Mn: 0.54 Ni: 12 Cr: 18.9 Mo: 2.16
ER321	1.0-3.2	GB/T S321 AWS ER321		DC(-)	C: 0.04 Mn: 1.64 Si: 0.56 Cr: 19.38 Ni: 9.33 Mo: 0.15 Ti: 0.45
ER347	1.0-3.2	GB/T S347 AWS ER347		DC(-)	C: 0.04 Mn: 1.74 Si: 0.54 Cr: 19.56 Ni: 9.63 Mo: 0.15 Nb: 0.5

熔敷金属机械性能例值 TYPICAL MECHANICAL PROPERTIES OF DEPOSITED METAL				应用 APPLICATION
屈服强度 Y.P.(MPa)	抗拉强度 T.S.(MPa)	延伸率 E.L. (%)	冲击值 I.V.(J)	
—	640	36	—	焊接18Cr-8Ni(304)不锈钢, 电弧稳定、焊道美观、抗裂性佳。 For the welding of 18%Cr-8%Ni stainless steel(304),with stable arc, good-looking welding bead and excellent corrosion-resistant property.
—	620	38	—	焊接18Cr-8Ni(304)不锈钢, 电弧稳定、焊道美观、抗裂性佳。 For the welding of 18%Cr-8%Ni stainless steel(304),with stable arc, good-looking welding bead and excellent corrosion-resistant property.
—	640	36.5	—	焊接18Cr-8Ni(304或304L)不锈钢, 电弧稳定、焊道美观、抗裂性佳。 For the welding of 18%Cr-8%Ni stainless steel(304 or 304L),with stable arc, good-looking welding bead and excellent corrosion-resistant property.
—	630	38	—	异种金属焊接, 如软钢和铬钼钢焊接合用, 焊接SUS309, SCS17等, 耐热, 耐腐蚀性优, 电弧稳定, 作业性良。 For the welding of dissimilar steels(such as mild steel and Chromium-molybdenum steel) or SUS309S\SCS17,good heat-resistant and corrosion-resistant property. Stable arc and easy to operate.
—	650	39.5	—	异种金属焊接, 如软钢和铬钼钢焊接合用, 焊接SUS309, SCS17等, 耐热, 耐腐蚀性优, 电弧稳定, 作业性良。 For the welding of dissimilar steels(such as mild steel and Chromium-molybdenum steel) or SUS309S\SCS17,good heat-resistant and corrosion-resistant property. Stable arc and easy to operate.
—	585	45.5	—	8Cr-12Ni-2Mo钢(316或316L) 焊接用, 电弧稳定, 焊道美观, 抗裂性佳。 For the welding of 18Cr-12Ni-2Mo steel(316 or 316L) with stable arc,good welding bead and excellent corrosion resistance property.
—	640	37	—	用于Cr19Ni9Ti型不锈钢结构的焊接。 For welding of Cr19Ni9Ti stainless steel structure.
—	620	35	—	用于Cr19Ni19Ti或Cr18Ni11Nb型不锈钢结构的焊接。 For welding of Cr19Ni9Ti or Cr18Ni11Nb stainless structure.

上海焊接器材有限公司(原上海电焊条总厂)

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