

Welding Consumables for Crude Oil and Refrigerated Storage Tanks

Nippon Steel Welding & Engineering Co., Ltd. has a proven track record in supplying welding consumables and welding equipment for crude oil and petrochemical storage tanks. This brochure introduces welding consumables selected for storage tanks handling various types of media and provides the chemical compositions and mechanical properties of representative products. In addition, for welding-related technical issues arising in specific applications, we offer technical solutions, recommendations, and engineering support.

Welding Consumables Lineup for Various Types of Storage Tanks

Stored Media	Boiling Point °C	Tank type	Steel Grade		Brand Name					
				°C	SMAW	SAW		GMAW	EGW	GTAW
Crude oil	30–350	Cylindrical	Q235B Q345R 16MnR	0 –20	S-16 (E7016) L-55 (E7016)	Flat	YF-15A/Y-D (F7A4-EH14)	YM-26 (CO ₂ , ER70S-G) YM-28 (Ar-CO ₂ , ER70S-G)	EG-1 (EG70T-G) EG-3 (EG72T-G)	—
						Horizontal	NF-11H/Y-D (F7A4-EH14)			
						Horizontal Fillet	NF-820/Y-D (F7A2-EH14)			
			12MnNiVR 12MnNiVR-SR	–20	L-62CF (E9016-G)	Flat	YF-15B/Y-DM (F9A6-EA3-A3)	YM-60C (CO ₂ , ER80S-G) YM-60A (Ar-CO ₂ , ER80S-G)	EG-60 (EG72T-G)	—
						Horizontal	NF-11H/Y-E (F8A4-EG-G)			
						Horizontal Fillet	NF-820/Y-DM (F8A0-EA3-A3)			
Butane	–1	Cylindrical	SLA325A A516Gr.60 07MnMoVR	–20	L-55 (E7016)	Flat	YF-15/Y-D (F7A4-EH14)	YM-28E (Ar-CO ₂ , ER70S-G)	EG-3 (EG72T-G)	YT-28 (ER70S-G)
						Horizontal	NF-11H/Y-D (F7A4-EH14)			
						Horizontal Fillet	NF-820/Y-DM (F8A0-EA3-A3)			
		Spherical	SPV490 A537CL2 07MnMoVR		L-62CF (E9016-G)	—	—	YM-60A (Ar-CO ₂ , ER80S-G)	—	YT-60 (ER80S-G)
Ammonia	–33	Cylindrical	SLA325B A516Gr.60 07MnNiMoDR	–50	L-55SN (E7016-G)	Flat	YF-15B/Y-DM3 (F7A4-EG-G)	YM-36E (Ar-CO ₂ , ER70S-G)	EG-3 (EG72T-G)	YT-28 (ER70S-G)
						Horizontal	NF-11H/Y-DM3 (F7A6-EG-G)			
						Horizontal Fillet	NF-310/Y-D (F7A4-EH14)			
		Spherical	SPV490 A537CL2 07MnNiMoDR		L-62CF (E9016-G)	—	—	YM-36E (Ar-CO ₂ , ER70S-G)	—	YT-60 (ER80S-G)
Propane	–42	Cylindrical	SLA365 A537CL2 07MnNiMoDR	–50	L-60LT (E9016-G)	Flat	NF-310/Y-E (F8A8-EG-G)	YM-1N (Ar-CO ₂ , ER80S-G)	EG-3 (EG72T-G)	YT-60 (ER80S-G)
						Horizontal	NF-310/Y-E (F8A8-EG-G)			
						Horizontal Fillet	NF-310/Y-E (F8A8-EG-G)			
		Spherical	SPV490 A537CL2 07MnNiMoDR		N-12M (E8016-C1)	—	—	—	—	YT-60 (ER80S-G)
Propylene	–48	Cylindrical	SLA365 A527CL3 07MnNiMoDR	–50	L-60LT (E9016-G)	Flat	NF-310/Y-E (F8A8-EG-G)	YM-1N (Ar-CO ₂ , ER80S-G)	—	YT-60 (ER80S-G)
						Horizontal	NF-310/Y-E (F8A8-EG-G)			
						Horizontal Fillet	NF-310/Y-E (F8A8-EG-G)			
		Spherical	SPV490 A537CL3 07MnNiMoDR		N-12M (E8016-C1)	—	—	—	—	YT-60 (ER80S-G)

Welding Consumables for Crude Oil and Refrigerated Storage Tanks

WELDREAM™



Welding Process	Welding Consumables			Typical Mechanical Properties				Typical Chemical Composition %							PWHT
	Brand Name	AWS Specification	Size mm	YS MPa	TS MPa	El %	vE J (Temp.)	C	Si	Mn	P	S	Ni	Mo	
SMAW (DCEP/AC)	S-16	E7016	4.0	460	540	32	180 (-30°C)	0.07	0.58	1.10	0.011	0.008	—	—	
	L-55	E7016	4.0	480	550	30	160 (-30°C)	0.07	0.62	1.18	0.011	0.008	—	—	
	L-62CF	E9016-G	4.0	590	660	28	100 (-40°C)	0.07	0.45	1.36	0.011	0.008	0.70	0.35	
	L-55SN	E7016-G	4.0	530	580	28	130 (-60°C)	0.07	0.42	1.41	0.012	0.007	0.57	—	
	L-60LT	E9016-G	4.0	600	680	26	180 (-50°C)	0.07	0.41	1.51	0.010	0.007	0.67	0.18	
	N-12M	E8016-C1	4.0	580	660	25	160 (-50°C)	0.07	0.36	1.15	0.011	0.002	2.59	0.12	580°C 4.5hr
SAW (DCEP/AC)	YF-15A/Y-D	F7A4-EH14	4.8	450	530	32	110 (0°C)	0.06	0.49	1.56	0.019	0.011	—	—	
	NF-11H/Y-D	F7A4-EH14	3.2	430	520	32	190 (0°C)	0.05	0.24	1.63	0.015	0.003	—	—	
	NF-820/Y-D	F7A2-EH14	2.4	490	560	30	90 (0°C)	0.05	0.61	1.76	0.018	0.01	—	—	
	YF-15B/Y-DM	F9A6-EA3-A3	4.8	540	630	25	80 (-20°C)	0.09	0.38	1.33	0.014	0.011	—	0.49	
	NF-11H/Y-E	F8A4-EG-G	3.2	530	630	29	140 (-20°C)	0.06	0.32	2.02	0.016	0.002	—	—	
	NF-820/Y-DM	F8A0-EA3-A3	2.4	530	610	26	100 (-20°C)	0.04	0.75	1.77	0.017	0.009	—	0.47	
	YF-15/Y-D	F7A4-EH14	4.8	470	560	30	70 (-20°C)	0.14	0.45	1.56	0.019	0.016	—	—	
	YF-15B/Y-DM3	F7A4-EG-G	4.8	550	610	27	80 (-30°C)	0.08	0.43	1.57	0.017	0.010	—	0.25	
	NF-11H/Y-DM3	F7A6-EG-G	3.2	440	560	30	80 (-40°C)	0.07	0.24	1.31	0.015	0.005	—	0.13	
	NF-310/Y-D	F7A4-EH14	2.4	460	540	32	130 (-40°C)	0.10	0.20	1.00	0.021	0.012	—	—	
	NF-310/Y-E	F8A8-EG-G	3.2	520	590	30	140 (-60°C)	0.09	0.27	1.36	0.016	0.009	—	—	
GMAW	YM-26	ER70S-G	1.2	460	560	28	130 (0°C)	0.07	0.52	1.11	0.017	0.011	—	—	
	YM-28	ER-70S-6	1.2	480	590	27	130 (0°C)	0.08	0.70	1.25	0.015	0.011	—	—	
	YM-60C	ER80S-G	1.2	590	660	28	120 (-5°C)	0.07	0.38	1.38	0.011	0.012	—	0.35	
	YM-60A	ER80S-G	1.2	580	650	28	200 (-5°C)	0.06	0.35	1.45	0.008	0.003	—	0.38	
	YM-28E	ER70S-G	1.2	460	570	30	140 (-30°C)	0.07	0.61	1.21	0.008	0.005	—	—	
	YM-1N	ER80S-G	1.2	530	590	28	100 (-60°C)	0.05	0.39	1.10	0.007	0.005	0.98	0.22	
EGW	EG-1	EG70T-G	1.6	470	640	28	90 (0°C)	0.08	0.29	1.49	0.014	0.011	—	0.24	
	EG-3	EG72T-G	1.6	500	620	31	90 (-50°C)	0.07	0.30	1.48	0.014	0.010	—	0.21	
	EG-60	EG72T-G	1.6	495	650	29	90 (-20°C)	0.10	0.34	1.68	0.014	0.012	—	0.11	
GTAW	YT-28	ER70S-6	2.4	450	560	35	120 (-40°C)	0.07	0.85	1.50	0.006	0.003	—	—	
	YT-60	ER80S-G	2.4	580	630	30	260 (-40°C)	0.09	0.72	1.89	0.004	0.004	—	0.35	625°C ,1hr

WELDREAM is a trademark or registered trademark of NIPPON STEEL WELDING & ENGINEERING CO.,LTD.



Warning!

Fumes and gas may be hazardous to your health. Please take appropriate preventive measures such as the implementation of ventilation as well as wearing a protector for breathing. Arc light is harmful to the eyes and skin. Please use appropriate shielding measures. Please do not touch anything where electricity is activated. It may cause death.

Request to Customers

- 1 Various data of distinctive features such as welding consumables, all-weld metal, weld metal, etc. shown in this catalog are provided for general information only and represent typical values. They do not constitute any representation or guarantee of performance, quality, or suitability for any specific application unless expressly agreed as specifications.
- 2 The properties and performance of welded structures, which cannot be determined by welding consumables alone, may vary depending on various factors such as structural design, chemical composition of base materials, fabrication method, welding conditions, environment, and operator skill. Users are solely responsible for evaluating and determining the suitability of the products for their intended applications, and appropriate verification and testing are recommended prior to use.
- 3 All information provided herein is based on available data at the time of publication and is subject to change without notice. We shall not be liable for any direct or indirect damages arising from the use of or any reliance upon the technical information contained in this catalog.

NIPPON STEEL WELDING & ENGINEERING CO.,LTD.

<https://www.weld.nipponsteel.com>

© 2024, 2026 NIPPON STEEL WELDING & ENGINEERING CO., LTD.

2609 (Y)