

B : 溶接材料AWS規格

AWS Standard of Welding Materials

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資料 B 1 ステンレス鋼被覆アーク溶接棒

AWSクラス	UNS No	溶 着 金 属 の 化 学								
		C	Cr	Ni	Mo	Nb+Ta	Mn	Si	P	S
E209	W32210	≤0.06	20.5~24.0	9.5~12.0	1.5~3.0	—	4.0~7.0	≤1.00	≤0.04	≤0.03
E219	W32310	≤0.06	19.0~21.5	5.5~7.0	≤0.75	—	8.0~10.0	≤1.00	≤0.04	≤0.03
E240	W32410	≤0.06	17.0~19.0	4.0~6.0	≤0.75	—	10.5~13.5	≤1.00	≤0.04	≤0.03
E307	W30710	0.04~0.14	18.0~21.5	9.0~10.7	0.5~1.5	—	3.30~4.75	≤1.00	≤0.04	≤0.03
E308	W30810	≤0.08	18.0~21.0	9.0~11.0	≤0.75	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E308H	W30810	0.04~0.08	18.0~21.0	9.0~11.0	≤0.75	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E308L	W30813	≤0.04	18.0~21.0	9.0~11.0	≤0.75	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E308Mo	W30820	≤0.08	18.0~21.0	9.0~12.0	2.0~3.0	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E308LMo	W30823	≤0.04	18.0~21.0	9.0~12.0	2.0~3.0	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E309	W30910	≤0.15	22.0~25.0	12.0~14.0	≤0.75	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E309H	W30910	0.04~0.15	22.0~25.0	12.0~14.0	≤0.75	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E309L	W30913	≤0.04	22.0~25.0	12.0~14.0	≤0.75	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E309Nb	W30917	≤0.12	22.0~25.0	12.0~14.0	≤0.75	0.70~1.00	0.5~2.5	≤1.00	≤0.04	≤0.03
E309Mo	W30920	≤0.12	22.0~25.0	12.0~14.0	2.0~3.0	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E309LMo	W30923	≤0.04	22.0~25.0	12.0~14.0	2.0~3.0	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E310	W31010	0.08~0.20	25.0~28.0	20.0~22.5	≤0.75	—	1.0~2.5	≤0.75	≤0.03	≤0.03
E310H	W31015	0.35~0.45	25.0~28.0	20.0~22.5	≤0.75	—	1.0~2.5	≤0.75	≤0.03	≤0.03
E310Nb	W31017	≤0.12	25.0~28.0	20.0~22.0	≤0.75	0.70~1.00	1.0~2.5	≤0.75	≤0.03	≤0.03
E310Mo	W31020	≤0.12	25.0~28.0	20.0~22.0	2.0~3.0	—	1.0~2.5	≤0.75	≤0.03	≤0.03
E312	W31310	≤0.15	28.0~32.0	8.0~10.5	≤0.75	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E316	W31610	≤0.08	17.0~20.0	11.0~14.0	2.0~3.0	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E316H	W31610	0.04~0.08	17.0~20.0	11.0~14.0	2.0~3.0	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E316L	W31613	≤0.04	17.0~20.0	11.0~14.0	2.0~3.0	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E316LMn	W31622	≤0.04	18.0~21.0	15.0~18.0	2.5~3.5	—	5.0~8.0	≤0.90	≤0.04	≤0.03
E317	W31710	≤0.08	18.0~21.0	12.0~14.0	3.0~4.0	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E317L	W31713	≤0.04	18.0~21.0	12.0~14.0	3.0~4.0	—	0.5~2.5	≤1.00	≤0.04	≤0.03
E318	W31910	≤0.08	17.0~20.0	11.0~14.0	2.0~3.0	6XC~1.00	0.5~2.5	≤1.00	≤0.04	≤0.03
E320	W88021	≤0.07	19.0~21.0	32.0~36.0	2.0~3.0	8XC~1.00	0.5~2.5	≤1.00	≤0.04	≤0.03
E320LR	W88022	≤0.03	19.0~21.0	32.0~36.0	2.0~3.0	8XC~0.40	1.50~2.50	≤0.30	≤0.020	≤0.015
E330	W88331	0.18~0.25	14.0~17.0	33.0~37.0	≤0.75	—	1.0~2.5	≤1.00	≤0.04	≤0.03
E330H	W88335	0.35~0.45	14.0~17.0	33.0~37.0	≤0.75	—	1.0~2.5	≤1.00	≤0.04	≤0.03

(AWS A5.4 : 2012)

成分%					引張強さ		4D伸び%	溶接後 熱処理	タセト溶接材料
N	Cu	V	Ti	W	MPa	ksi			
0.10~0.30	≤0.75	0.10~0.30	—	—	690≤	100≤	15≤	None	
0.10~0.30	≤0.75	—	—	—	620≤	90≤	15≤	None	
	≤0.75	—	—	—	690≤	100≤	15≤	None	
—	≤0.75	—	—	—	590≤	85≤	30≤	None	
—	≤0.75	—	—	—	550≤	80≤	30≤	None	RNY308
—	≤0.75	—	—	—	550≤	80≤	30≤	None	RNY308HT
—	≤0.75	—	—	—	520≤	75≤	30≤	None	RNY308L, RNY308L3, RNY308LA
—	≤0.75	—	—	—	550≤	80≤	30≤	None	
—	≤0.75	—	—	—	520≤	75≤	30≤	None	
—	≤0.75	—	—	—	550≤	80≤	30≤	None	RNY309
—	≤0.75	—	—	—	550≤	80≤	30≤	None	
—	≤0.75	—	—	—	520≤	75≤	30≤	None	RNY309L
—	≤0.75	—	—	—	550≤	80≤	30≤	None	
—	≤0.75	—	—	—	550≤	80≤	30≤	None	RNY309Mo
—	≤0.75	—	—	—	520≤	75≤	30≤	None	RNY309MoL
—	≤0.75	—	—	—	550≤	80≤	30≤	None	RNY310
—	≤0.75	—	—	—	620≤	90≤	10≤	None	RNYHK
—	≥0.75	—	—	—	550≤	80≤	25≤	None	
—	≤0.75	—	—	—	550≤	80≤	30≤	None	
—	≤0.75	—	—	—	660≤	95≤	22≤	None	RNY312
—	≤0.75	—	—	—	520≤	75≤	30≤	None	RNY316
—	≤0.75	—	—	—	520≤	75≤	30≤	None	
—	≤0.75	—	—	—	490≤	70≤	30≤	None	RNY316L, RNY316LA
0.10~0.25	≤0.75	—	—	—	550≤	80≤	20≤	None	
—	≤0.75	—	—	—	550≤	80≤	30≤	None	
—	≤0.75	—	—	—	520≤	75≤	30≤	None	RNY317L
—	≤0.75	—	—	—	550≤	80≤	25≤	None	
—	3.0~4.0	—	—	—	550≤	80≤	30≤	None	
—	3.0~4.0	—	—	—	520≤	75≤	30≤	None	
—	≤0.75	—	—	—	520≤	75≤	25≤	None	RNY330
—	≤0.75	—	—	—	620≤	90≤	10≤	None	

AWSクラス	UNS No	溶 着 金 属 の 化 学								
		C	Cr	Ni	Mo	Nb+Ta	Mn	Si	P	S
E347	W34710	≤0.08	18.0~21.0	9.0~11.0	≤0.75	8XC~1.00	0.5~2.5	≤1.00	≤0.04	≤0.03
E349	W34910	≤0.13	18.0~21.0	8.0~10.0	0.35~0.65	0.75~1.20	0.5~2.5	≤1.00	≤0.04	≤0.03
E383	W88028	≤0.03	26.5~29.0	30.0~33.0	3.2~4.2	—	0.5~2.5	≤0.90	≤0.02	≤0.02
E385	W88904	≤0.03	19.5~21.5	24.0~26.0	4.2~5.2	—	1.0~2.5	≤0.90	≤0.03	≤0.02
E409Nb	W40910	≤0.12	11.0~14.0	≤0.6	≤0.75	0.50~1.50	≤1.0	≤1.00	≤0.04	≤0.03
E410	W41010	≤0.12	11.0~13.5	≤0.7	≤0.75	—	≤1.0	≤0.90	≤0.04	≤0.03
E410NiMo	W41016	≤0.06	11.0~12.5	4.0~5.0	0.40~0.70	—	≤1.0	≤0.90	≤0.04	≤0.03
E430	W43010	≤0.10	15.0~18.0	≤0.6	≤0.75	—	≤1.0	≤0.90	≤0.04	≤0.03
E430Nb	W43011	≤0.10	15.0~18.0	≤0.6	≤0.75	0.50~1.50	≤1.0	≤1.00	≤0.04	≤0.03
E630	W37410	≤0.05	16.0~16.75	4.5~5.0	≤0.75	0.15~0.30	0.25~0.75	≤0.75	≤0.04	≤0.03
E16-8-2	W36810	≤0.10	14.5~16.5	7.5~9.5	1.0~2.0	—	0.5~2.5	≤0.60	≤0.03	≤0.03
E2209	W39209	≤0.04	21.5~23.5	8.5~10.5	2.5~3.5	—	0.5~2.0	≤1.00	≤0.04	≤0.03
E2307	S82371	≤0.04	22.5~25.5	6.5~10.0	≤0.8	—	0.4~1.5	≤1.0	≤0.030	≤0.020
E2553	W39553	≤0.06	24.0~27.0	6.5~8.5	2.9~3.9	—	0.5~1.5	≤1.00	≤0.04	≤0.03
E2593	W39593	≤0.04	24.0~27.0	8.5~10.5	2.9~3.9	—	0.5~1.5	≤1.00	≤0.04	≤0.03
E2594	W39594	≤0.04	24.0~27.0	8.5~10.5	3.5~4.5	—	0.5~2.0	≤1.00	≤0.04	≤0.03
E2595	W39595	≤0.04	24.0~27.0	8.5~10.5	2.5~4.5	—	≤2.5	≤1.2	≤0.03	≤0.025
E3155	W73155	≤0.10	20.0~22.5	19.0~21.0	2.5~3.5	0.75~1.25	1.0~2.5	≤1.00	≤0.04	≤0.03
E33-31	W33310	≤0.03	31.0~35.0	30.0~32.0	1.0~2.0	—	2.5~4.0	≤0.9	≤0.02	≤0.01

- ・上記以外の元素を分析中に検出した場合には、それら元素（Fe以外）の合計が0.50%以下でなければならない。
- ・Biを添加した場合、あるいは0.002%以上の存在が認められる場合には、Biの分析値を報告しなければならない。

備 考 熱処理記号は以下による。

- ①730~760℃の温度で1時間加熱した後、1時間当たり110℃以下の冷却速度で315℃まで炉冷し、その後空冷する。
- ②595~620℃の温度で1時間加熱した後、空冷する。
- ③760~790℃の温度で2時間加熱した後、1時間当たり55℃以内の冷却速度で595℃まで炉冷し、その後空冷する。
- ④1,025~1,050℃の温度で1時間加熱し、その後室温まで空冷する。続いて析出硬化のために610~630℃で4時間加熱して空冷する。

成分 %					引張強さ		4D伸び %	溶接後 熱処理	タセト溶接材料
N	Cu	V	Ti	W	MPa	ksi			
—	≤0.75	—	—	—	520≤	75≤	30≤	None	RNY347, RNY347L
—	≤0.75	0.10~0.30	≤0.15	1.25~1.75	690≤	100≤	25≤	None	
—	0.6~1.5	—	—	—	520≤	75≤	30≤	None	
—	1.2~2.0	—	—	—	520≤	75≤	30≤	None	
—	≤0.75	—	—	—	450≤	65≤	20≤	③	
—	≤0.75	—	—	—	520≤	75≤	20≤	①	RNY410
—	≤0.75	—	—	—	760≤	110≤	15≤	②	
—	≤0.75	—	—	—	450≤	65≤	20≤	③	RNY430
—	≤0.75	—	—	—	450≤	65≤	20≤	③	
—	3.25 ~4.00	—	—	—	930≤	135≤	7≤	④	RNY630
—	≤0.75	—	—	—	550≤	80≤	35≤	None	RNY16-8-2
0.08~0.20	≤0.75	—	—	—	690≤	100≤	20≤	None	RNY329J3L
0.10~0.20	≤0.50	—	—	—	690≤	100≤	20≤	None	
0.10~0.25	1.5~2.5	—	—	—	760≤	110≤	15≤	None	
0.08~0.25	1.5~3.0	—	—	—	760≤	110≤	15≤	None	
0.20~0.30	≤0.75	—	—	—	760≤	110≤	15≤	None	RNY329J4L
0.20~0.30	0.4~1.5	—	—	0.4~1.0	760≤	110≤	15≤	None	RNY2595
—	≤0.75	Co=18.5 ~21.0	—	2.0~3.0	690≤	100≤	20≤	None	
0.3~0.5	0.4~0.8	—	—	—	720≤	105≤	25≤	None	

資料 B 2 ステンレス鋼溶加棒及びワイヤ

Traditional AWS	Nominal Composition	UNS No.	溶 加 材 の 化					
			C	Cr	Ni	Mo	Mn	Si
209	—	S20980	≤0.05	20.5~24.0	9.5~12.0	1.5~3.0	4.0~7.0	≤0.90
218	—	S21880	≤0.10	16.0~18.0	8.0~9.0	≤0.75	7.0~9.0	3.5~4.5
219	—	S21980	≤0.05	19.0~21.5	5.5~7.0	≤0.75	8.0~10.0	≤1.00
240	—	S24080	≤0.05	17.0~19.0	4.0~6.0	≤0.75	10.5~13.5	≤1.00
307	—	S30780	0.04~0.14	19.5~22.0	8.0~10.7	0.5~1.5	3.30~4.75	0.30~0.65
—	18 8 Mn	—	≤0.20	17.0~20.0	7.0~10.0	≤0.5	5.0~8.0	≤1.2
308	—	S30880	≤0.08	19.5~22.0	9.0~11.0	≤0.75	1.0~2.5	0.30~0.65
308Si	—	S30881	≤0.08	19.5~22.0	9.0~11.0	≤0.75	1.0~2.5	0.65~1.00
308H	—	S30880	0.04~0.08	19.5~22.0	9.0~11.0	≤0.50	1.0~2.5	0.30~0.65
308L	—	S30883	≤0.03	19.5~22.0	9.0~11.0	≤0.75	1.0~2.5	0.30~0.65
—	19 9 L	—	≤0.03	19.0~21.0	9.0~11.0	≤0.5	1.0~2.5	≤0.65
308LSi	—	S30888	≤0.03	19.5~22.0	9.0~11.0	≤0.75	1.0~2.5	0.65~1.00
—	19 9 L Si	—	≤0.03	19.0~21.0	9.0~11.0	≤0.5	1.0~2.5	0.65~1.25
308Mo	—	S30882	≤0.08	18.0~21.0	9.0~12.0	2.0~3.0	1.0~2.5	0.30~0.65
—	20 10 3	—	≤0.12	18.0~21.0	8.0~12.0	1.5~3.5	1.0~2.5	≤1.0
308LMo	—	S30886	≤0.04	18.0~21.0	9.0~12.0	2.0~3.0	1.0~2.5	0.30~0.65
—	20 10 N	—	0.06~0.09	20.5~22.5	9.5~11.0	≤0.5	0.3~1.0	1.0~2.0
309	—	S30980	≤0.12	23.0~25.0	12.0~14.0	≤0.75	1.0~2.5	0.30~0.65
—	22 12 H	—	0.04~0.15	21.0~24.0	11.0~14.0	≤0.5	1.0~2.5	≤2.0
309Si	—	S30981	≤0.12	23.0~25.0	12.0~14.0	≤0.75	1.0~2.5	0.65~1.00
309L	—	S30983	≤0.03	23.0~25.0	12.0~14.0	≤0.75	1.0~2.5	0.30~0.65
—	23 12 L	—	≤0.03	22.0~25.0	11.0~14.0	≤0.5	1.0~2.5	≤0.65
309LD	22 12 L	—	≤0.03	21.0~24.0	10.0~12.0	≤0.75	1.0~2.5	≤0.65
309LSi	—	S30988	≤0.03	23.0~25.0	12.0~14.0	≤0.75	1.0~2.5	0.65~1.00
—	23 12 L Si	—	≤0.03	22.0~25.0	11.0~14.0	≤0.5	1.0~2.5	0.65~1.25
309Mo	—	S30983	≤0.12	23.0~25.0	12.0~14.0	2.0~3.0	1.0~2.5	0.30~0.65
309LMo	—	S30986	≤0.03	23.0~25.0	12.0~14.0	2.0~3.0	1.0~2.5	0.30~0.65
—	23 12 2 L	—	≤0.03	21.0~25.0	11.0~15.5	2.0~3.5	1.0~2.5	≤1.0
309LMoD	—	—	≤0.03	19.0~22.0	12.0~14.0	2.3~3.3	1.0~2.5	≤0.65
—	21 13 3 L	—	≤0.03	19.0~22.0	12.0~14.0	2.8~3.3	1.0~2.5	≤0.65
309LNb	—	—	≤0.03	23.0~25.0	12.0~14.0	≤0.75	1.0~2.5	≤0.65
—	23 12 Nb	—	≤0.08	22.0~25.0	11.0~14.0	≤0.5	1.0~2.5	≤1.0
309LNbD	—	—	≤0.03	20.0~23.0	11.0~13.0	≤0.75	1.0~2.5	≤0.65
310	—	S31800	0.08~0.15	25.0~28.0	20.0~22.5	≤0.75	1.0~2.5	0.30~0.65
—	25 20	—	0.08~0.15	24.0~27.0	18.0~22.0	≤0.5	1.0~2.5	≤2.0
—	25 20 Mn	—	0.08~0.15	24.0~27.0	18.0~22.0	≤0.5	2.5~5.0	≤2.0
—	25 20 H	—	0.35~0.45	24.0~27.0	18.0~22.0	≤0.5	1.0~2.5	≤2.0
310L	—	—	≤0.03	25.0~28.0	20.0~22.5	≤0.75	1.0~2.5	≤0.65
310S	—	—	≤0.08	25.0~28.0	20.0~22.5	≤0.75	1.0~2.5	≤0.65
—	25 22 2 N L	—	≤0.03	24.0~27.0	21.0~24.0	1.5~3.0	3.5~6.5	≤1.0
—	26 23 5 N	—	≤0.02	25.0~27.0	21.0~25.0	4.0~6.0	1.5~5.5	≤1.0

Traditional AWS	Nominal Composition	UNS No.	溶 加 材 の 化					
			C	Cr	Ni	Mo	Mn	Si
312	—	S31380	≤0.15	28.0~32.0	8.0~10.5	≤0.75	1.0~2.5	0.30~0.65
—	29 9	—	≤0.15	28.0~32.0	8.0~12.0	≤0.5	1.0~2.5	≤1.0
316	—	S31680	≤0.08	18.0~20.0	11.0~14.0	2.0~3.0	1.0~2.5	0.30~0.65
316Si	—	S31681	≤0.08	18.0~20.0	11.0~14.0	2.0~3.0	1.0~2.5	0.65~1.00
316H	—	S31680	0.04~0.08	18.0~20.0	11.0~14.0	2.0~3.0	1.0~2.5	0.30~0.65
—	19 12 3 H	—	0.04~0.08	18.0~20.0	11.0~14.0	2.0~3.0	1.0~2.5	≤1.0
316L	—	S31683	≤0.03	18.0~20.0	11.0~14.0	2.0~3.0	1.0~2.5	0.30~0.65
—	19 12 3 L	—	≤0.03	18.0~20.0	11.0~14.0	2.5~3.0	1.0~2.5	≤0.65
316LCu	—	—	≤0.03	18.0~20.0	11.0~14.0	2.0~3.0	1.0~2.5	≤0.65
316LSi	—	S31688	≤0.03	18.0~20.0	11.0~14.0	2.0~3.0	1.0~2.5	0.65~1.00
—	19 12 3 L Si	—	≤0.03	18.0~20.0	11.0~14.0	2.5~3.0	1.0~2.5	0.65~1.25
316LMn	—	S31682	≤0.03	19.0~22.0	15.0~18.0	2.5~3.5	5.0~9.0	0.30~0.65
—	20 16 3 Mn N L	—	≤0.03	19.0~22.0	15.0~18.0	2.5~4.5	5.0~9.0	≤1.0
—	20 16 3 Mn L	—	≤0.03	19.0~22.0	15.0~18.0	2.5~4.5	5.0~9.0	≤1.0
317	—	S31780	≤0.08	18.5~20.5	13.0~15.0	3.0~4.0	1.0~2.5	0.30~0.65
317L	—	S31783	≤0.03	18.5~20.5	13.0~15.0	3.0~4.0	1.0~2.5	0.30~0.65
—	18 15 3 L	—	≤0.03	17.0~20.0	13.0~16.0	2.5~4.0	1.0~4.0	≤1.0
—	19 13 4 L	—	≤0.03	17.0~20.0	12.0~15.0	3.0~4.5	1.0~5.0	≤1.0
—	19 13 4 N L	—	≤0.03	17.0~20.0	12.0~15.0	3.0~4.5	1.0~5.0	≤1.0
—	18 16 5 N L	—	≤0.03	17.0~20.0	16.0~19.0	3.5~5.0	1.0~4.0	≤1.0
318	—	S31980	≤0.08	18.0~20.0	11.0~14.0	2.0~3.0	1.0~2.5	0.30~0.65
—	19 12 3 Nb	—	≤0.08	18.0~20.0	11.0~14.0	2.5~3.0	1.0~2.5	≤0.65
—	19 12 3 Nb Si	—	≤0.08	18.0~20.0	11.0~14.0	2.5~3.0	1.0~2.5	0.65~1.25
318L	—	—	≤0.03	18.0~20.0	11.0~14.0	2.0~3.0	1.0~2.5	≤0.65
320	—	N08021	≤0.07	19.0~21.0	32.0~36.0	2.0~3.0	≤2.5	≤0.60
320LR	—	N08022	≤0.025	19.0~21.0	32.0~36.0	2.0~3.0	1.5~2.0	≤0.15
321	—	S32180	≤0.08	18.5~20.5	9.0~10.5	≤0.75	1.0~2.5	0.30~0.65
330	—	N08331	0.18~0.25	15.0~17.0	34.0~37.0	≤0.75	1.0~2.5	0.30~0.65
—	18 36 H	—	0.18~0.25	15.0~19.0	33.0~37.0	≤0.5	1.0~2.5	0.4~2.0
—	28 35 N	—	0.03~0.09	26.5~29.0	33.0~36.0	≤0.5	1.0~2.0	0.5~1.0
347	—	S34780	≤0.08	19.0~21.5	9.0~11.0	≤0.75	1.0~2.5	0.30~0.65
—	19 9 Nb	—	≤0.08	19.0~21.0	9.0~11.0	≤0.5	1.0~2.5	≤0.65
347Si	—	S34788	≤0.08	19.0~21.5	9.0~11.0	≤0.75	1.0~2.5	0.65~1.00
—	19 9 Nb Si	—	≤0.08	19.0~21.0	9.0~11.0	≤0.5	1.0~2.5	0.65~1.25
347L	—	—	≤0.03	19.0~21.5	9.0~11.0	≤0.75	1.0~2.5	≤0.65
383	—	N08028	≤0.025	26.5~28.5	30.0~33.0	3.2~4.2	1.0~2.5	≤0.50
—	27 31 4 Cu L	—	≤0.03	26.0~29.0	30.0~33.0	3.0~4.5	1.0~3.0	≤1.0
385	—	N08904	≤0.025	19.5~21.5	24.0~26.0	4.2~5.2	1.0~2.5	≤0.50
—	20 25 5 Cu L	—	≤0.03	19.0~22.0	24.0~27.0	4.0~6.0	1.0~4.0	≤1.0
—	20 25 5 Cu N L	—	≤0.03	19.0~22.0	24.0~27.0	4.0~6.0	1.0~4.0	≤1.0

学 成 分 %								タセト溶接材料
P	S	N	Cu	Nb ^①	V	Ti	W	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.03	—	1.0~2.5	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.03	0.10~0.20	≤0.75	—	—	—	—	
≤0.03	≤0.02	0.10~0.20	≤0.5	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.02	0.10~0.20	≤0.5	—	—	—	—	
≤0.03	≤0.02	0.10~0.20	≤0.5	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	8xC~2.0 かつ≤0.2	—	—	—	
≤0.03	≤0.02	—	≤0.5	10xC~1.0	—	—	—	
≤0.03	≤0.02	—	≤0.5	10xC~1.0	—	—	—	
≤0.03	≤0.03	—	≤0.75	8xC~1.0 かつ≤0.2	—	—	—	
≤0.03	≤0.03	—	3.0~4.0	8xC~1.0	—	—	—	
≤0.015	≤0.02	—	3.0~4.0	8xC~0.40	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	9xC~1.0 かつ≤0.2	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.02	≤0.02	0.10~0.20	≤0.5	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	10xC~1.0 かつ≤0.2	—	—	—	
≤0.03	≤0.02	—	≤0.5	10xC~1.0	—	—	—	
≤0.03	≤0.03	—	≤0.75	10xC~1.0 かつ≤0.2	—	—	—	
≤0.03	≤0.02	—	≤0.5	10xC~1.0	—	—	—	
≤0.03	≤0.03	—	≤0.75	10xC~1.0 かつ≤0.2	—	—	—	
≤0.02	≤0.03	—	0.70~1.50	—	—	—	—	
≤0.03	≤0.02	—	0.7~1.5	—	—	—	—	
≤0.02	≤0.03	—	1.2~2.0	—	—	—	—	
≤0.03	≤0.02	—	1.0~2.0	—	—	—	—	
≤0.03	≤0.02	0.10~0.20	1.0~2.0	—	—	—	—	

Traditional AWS	Nominal Composition	UNS No.	溶 加 材 の 化					
			C	Cr	Ni	Mo	Mn	Si
409	—	S40900	≤0.08	10.5~13.5	≤0.6	≤0.50	≤0.8	≤0.8
409Nb	—	S40940	≤0.08	10.5~13.5	≤0.6	≤0.50	≤0.8	≤1.0
410	—	S41080	≤0.12	11.5~13.5	≤0.6	≤0.75	≤0.6	≤0.5
—	13	—	≤0.15	12.0~15.0	≤0.5	≤0.5	≤1.0	≤1.0
—	13 L	—	≤0.05	12.0~15.0	≤0.5	≤0.5	≤1.0	≤1.0
410NiMo	—	S41086	≤0.06	11.0~12.5	4.0~5.0	0.4~0.7	≤0.6	≤0.5
—	13 4	—	≤0.05	11.0~14.0	3.0~5.0	0.4~1.0	≤1.0	≤1.0
—	16 5 1	—	≤0.04	15.0~17.0	4.5~6.5	0.9~1.5	1.2~3.5	0.2~0.7
420	—	S42080	0.25~0.40	12.0~14.0	≤0.6	≤0.75	≤0.6	≤0.5
430	—	S43080	≤0.10	15.5~17.0	≤0.6	≤0.75	≤0.6	≤0.5
—	17	—	≤0.12	16.0~19.0	≤0.5	≤0.5	≤1.0	≤1.0
430Nb	—	—	≤0.10	15.5~17.0	≤0.6	≤0.75	≤0.6	≤0.5
430LNb	—	—	≤0.03	15.5~17.0	≤0.6	≤0.75	≤0.6	≤0.5
—	18 L Nb	—	≤0.02	17.8~18.8	≤0.5	≤0.5	≤0.8	≤0.5
439	—	S43035	≤0.04	17.0~19.0	≤0.6	≤0.5	≤0.8	≤0.8
—	25 4	—	≤0.15	24.0~27.0	4.0~6.0	≤0.5	1.0~2.5	≤2.0
446LMo	—	S44687	≤0.015	25.0~27.5	②	0.75~1.50	≤0.4	≤0.4
630	—	S17480	≤0.05	$\frac{16.00}{16.75}$	4.5~5.0	≤0.75	0.25~0.75	≤0.75
19-10H	—	S30480	0.04~0.08	18.5~20.0	9.0~11.0	≤0.25	1.0~2.0	0.30~0.65
—	19 9 H	—	0.04~0.08	18.0~21.0	9.0~11.0	≤0.5	1.0~2.5	≤1.0
16-8-2	—	S16880	≤0.10	14.5~16.5	7.5~9.5	1.0~2.0	1.0~2.0	0.30~0.65
—	16 8 2	—	≤0.10	14.5~16.5	7.5~9.5	1.0~2.5	1.0~2.5	≤1.0
2209	—	S39209	≤0.03	21.5~23.5	7.5~9.5	2.5~3.5	0.50~2.00	≤0.90
—	22 9 3 N L	—	≤0.03	21.0~24.0	7.0~10.0	2.5~4.0	≤2.5	≤1.0
2307	23 7 N L	S82371	≤0.03	22.5~25.5	6.5~9.5	≤0.8	≤2.5	≤1.0
—	25 7 2 L	—	≤0.03	24.0~27.0	6.0~8.0	1.5~2.5	≤2.5	≤1.0
2553	—	S39553	≤0.04	24.0~27.0	4.5~6.5	2.9~3.9	≤1.5	≤1.0
—	25 9 3 Cu N L	—	≤0.03	24.0~27.0	8.0~11.0	2.5~4.0	≤2.5	≤1.0
2594	25 9 4 N L	S32750	≤0.03	24.0~27.0	8.0~10.5	2.5~4.5	≤2.5	≤1.0
33-31	—	R20033	≤0.015	31.0~35.0	30.0~33.0	0.5~2.0	≤2.00	≤0.50
3556	—	R30556	0.05~0.15	21.0~23.0	19.0~22.5	2.5~4.0	0.50~2.00	0.20~0.80

上記以外の元素を分析中に検出した場合には、それら元素(Fe以外)の合計が0.50%以下でなければならない。

① Nbの20%まではTaと置き換えてもよい。

② Ni+Cu≤0.5%

③ Co:16.0%~21.0%, W:2.0%~3.5%, Ta:0.30%~1.25%, Al:0.10%~0.50%, Zr:0.001%~0.100%, La:0.005%~0.100%, B: ≤0.02%

Traditional AWS適用の場合は、Traditional AWSの前に、“ER”または“SS”を付ける（ストランドワイヤの場合は“ERS”）Nominal Composition適用の場合は、Nominal Compositionの前に、適用する溶接方法に応じて、以下の符号を付ける。

G：ミグ溶接

W：ティグ溶接

P：プラズマ溶接

S：サブマージアーク溶接

B：帯状電極（サブマージアーク溶接及びエレクトロスラグ溶接）

L：レーザビーム溶接

学 成 分 %								タセト溶接材料
P	S	N	Cu	Nb ^①	V	Ti	W	
≤0.03	≤0.03	—	≤0.75	—	—	10xC~1.5	—	
≤0.04	≤0.03	—	≤0.75	10xC~ 0.75	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.02	≤0.01	—	≤0.5	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	8xC~1.2	—	—	—	
≤0.03	≤0.03	—	≤0.75	8xC~1.2	—	—	—	
≤0.03	≤0.02	≤0.02	≤0.5	0.05+7(C+N) ~0.5	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	10xC~1.1	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.02	≤0.02	≤0.015	②	—	—	—	—	
≤0.03	≤0.03	—	3.25~4.00	0.15~0.30	—	—	—	
≤0.03	≤0.03	—	≤0.75	≤0.05	—	≤0.05	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.03	—	≤0.75	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.03	≤0.03	0.08~0.20	≤0.75	—	—	—	—	
≤0.03	≤0.02	0.10~0.20	≤0.5	—	—	—	—	
≤0.03	≤0.02	0.10~0.20	≤0.5	—	—	—	—	
≤0.03	≤0.02	—	≤0.5	—	—	—	—	
≤0.04	≤0.03	0.10~0.25	1.5~2.5	—	—	—	—	
≤0.03	≤0.02	0.10~0.20	1.5~2.5	—	—	—	—	
≤0.03	≤0.02	0.20~0.30	≤1.5	—	—	—	≤1.0	
≤0.02	≤0.01	0.35~0.60	0.3~1.2	—	—	—	—	
≤0.04	≤0.015	0.10~0.30	—	≤0.30	③			

資料 B 3 ステンレス鋼アーク溶接フラック

AWSクラス	UNS No	溶 着 金 属 の 化 学							
		C	Cr	Ni	Mo	Nb+Ta	Mn	Si	P
E307TX-X	W30731	≤0.13	18.0~20.5	9.0~10.5	0.5~1.5	—	3.30~4.75	≤1.0	≤0.04
E308TX-X	W30831	≤0.08	18.0~21.0	9.0~11.0	≤0.75	—	0.5~2.5	≤1.0	≤0.04
E308HTX-X	W30831	0.04~0.08	18.0~21.0	9.0~11.0	≤0.75	—	0.5~2.5	≤1.0	≤0.04
E308LTX-X	W30835	≤0.04	18.0~21.0	9.0~11.0	≤0.75	—	0.5~2.5	≤1.0	≤0.04
E308MoTX-X	W30832	≤0.08	18.0~21.0	9.0~11.0	2.0~3.0	—	0.5~2.5	≤1.0	≤0.04
E308LMoTX-X	W30838	≤0.04	18.0~21.0	9.0~12.0	2.0~3.0	—	0.5~2.5	≤1.0	≤0.04
E309TX-X	W30931	≤0.10	22.0~25.0	12.0~14.0	≤0.75	—	0.5~2.5	≤1.0	≤0.04
E309HTX-X	W30931	0.04~0.10	22.0~25.0	12.0~14.0	≤0.75	—	0.5~2.5	≤1.0	≤0.04
E309LTX-X	W30935	≤0.04	22.0~25.0	12.0~14.0	≤0.75	—	0.5~2.5	≤1.0	≤0.04
E309MoTX-X	W30939	≤0.12	21.0~25.0	12.0~16.0	2.0~3.0	—	0.5~2.5	≤1.0	≤0.04
E309LMoTX-X	W30938	≤0.04	21.0~25.0	12.0~16.0	2.0~3.0	—	0.5~2.5	≤1.0	≤0.04
E309LNiMoTX-X	W30936	≤0.04	20.5~23.5	15.0~17.0	2.5~3.5	—	0.5~2.5		≤0.04
E309LNbTX-X	W30932	≤0.04	22.0~25.0	12.0~14.0	≤0.75	0.70~1.00	0.5~2.5	≤1.0	≤0.04
E310TX-X	W31031	≤0.20	25.0~28.0	20.0~22.5	≤0.75	—	1.0~2.5	≤1.0	≤0.03
E312TX-X	W31331	≤0.15	28.0~32.0	8.0~10.5	≤0.75	—	0.5~2.5	≤1.0	≤0.04
E316TX-X	W31631	≤0.08	17.0~20.0	11.0~14.0	2.0~3.0	—	0.5~2.5	≤1.0	≤0.04
E316HTX-X	W31631	0.04~0.08	17.0~20.0	11.0~14.0	2.0~3.0	—	0.5~2.5	≤1.0	≤0.04
E316LTX-X	W31635	≤0.04	17.0~20.0	11.0~14.0	2.0~3.0	—	0.5~2.5	≤1.0	≤0.04
E317LTX-X	W31735	≤0.04	18.0~21.0	12.0~14.0	3.0~4.0	—	0.5~2.5	≤1.0	≤0.04
E347TX-X	W34731	≤0.08	18.0~21.0	9.0~11.0	≤0.75	8XC~1.0	0.5~2.5	≤1.0	≤0.04
E347HTX-X	W34731	0.04~0.08	18.0~21.0	9.0~11.0	≤0.75	8XC~1.0	0.5~2.5	≤1.0	≤0.04
E409TX-X	W40931	≤0.10	10.5~13.5	≤0.60	≤0.75	—	≤0.80	≤1.0	≤0.04
E409NbTX-X	W40957	≤0.10	10.5~13.5	≤0.6	≤0.5	8XC~1.5	≤1.2	≤1.0	≤0.04
E410TX-X	W41031	≤0.12	11.0~13.5	≤0.60	≤0.75	—	≤1.2	≤1.0	≤0.04
E410NiMoTX-X	W41036	≤0.06	11.0~12.5	4.0~5.0	0.40~0.70	—	≤1.0	≤1.0	≤0.04
E430TX-X	W43031	≤0.10	15.0~18.0	≤0.60	≤0.75	—	≤1.2	≤1.0	≤0.04
E430NbTX-X	W43057	≤0.10	15.0~18.0	≤0.6	≤0.5	0.5~1.5	≤1.2	≤1.0	≤0.04
E2209TX-X	W39239	≤0.04	21.0~24.0	7.5~10.0	2.5~4.0	—	0.5~2.0	≤1.0	≤0.04
E2307TX-X	W82371	≤0.04	22.5~25.5	6.5~10.0	≤0.8	—	≤2.0	≤1.0	≤0.03
E2553TX-X	W39533	≤0.04	24.0~27.0	8.5~10.5	2.9~3.9	—	0.5~1.5	≤0.75	≤0.04
E2594TX-X	W39594	≤0.04	24.0~27.0	8.0~10.5	2.5~4.5	—	0.5~2.5	≤1.0	≤0.04

- 備 考 (1) 上記以外の元素を分析中に検出した場合には、それら元素 (Fe以外) の合計が0.50%以下でなければならない。
- (2) 400℃以上で使用する場合、又は500℃以上で後熱処理を施す場合には、Bi≤0.002 (20ppm) でなければならない。
- (3) 溶接姿勢とシールドガスの記号は下記による
- E***T0-X：下向／水平 E***TX-1：CO2シールド
- E***T1-X：全姿勢 E***TX-3：セルフシールド
- E***TX-4：75~80% Ar+CO2
- E***TX-G：規定せず

クス入りワイヤ (AWS A5.22-2012)

成 分 %				引張強さ		4D伸び %	溶接後 熱処理	タセト溶接材料
S	N	Cu	Ti	MPa	ksi			
≤0.03	—	≤0.75	—	590≤	85≤	30≤	None	
≤0.03	—	≤0.75	—	550≤	80≤	30≤	None	GFW308
≤0.03	—	≤0.75	—	550≤	80≤	30≤	None	GFW308H
≤0.03	—	≤0.75	—	520≤	75≤	30≤	None	GFW308L, GFW308L3, GFW308LAP
≤0.03	—	≤0.75	—	550≤	80≤	30≤	None	
≤0.03	—	≤0.75	—	520≤	75≤	30≤	None	
≤0.03	—	≤0.75	—	550≤	80≤	30≤	None	GFW309
≤0.03	—	≤0.75	—	550≤	80≤	30≤	None	GFW309
≤0.03	—	≤0.75	—	520≤	75≤	30≤	None	GFW309L, GFW309LAP
≤0.03	—	≤0.75	—	550≤	80≤	25≤	None	GFW309Mo
≤0.03	—	≤0.75	—	520≤	75≤	25≤	None	GFW309MoL, GFW309MoLAP
≤0.03	—	≤0.75	—	520≤	75≤	25≤	None	
≤0.03	—	≤0.75	—	520≤	75≤	30≤	None	
≤0.03	—	≤0.75	—	550≤	80≤	30≤	None	GFW310E
≤0.03	—	≤0.75	—	660≤	95≤	22≤	None	GFW312
≤0.03	—	≤0.75	—	520≤	75≤	30≤	None	GFW316
≤0.03	—	≤0.75	—	520≤	75≤	30≤	None	GFW316
≤0.03	—	≤0.75	—	485≤	70≤	30≤	None	GFW316L, GFW316L3, GFW316LAP
≤0.03	—	≤0.75	—	520≤	75≤	20≤	None	GFW317L
≤0.03	—	≤0.75	—	520≤	75≤	30≤	None	GFW347, GFW347L
≤0.03	—	≤0.75	—	520≤	75≤	30≤	None	GFW347H
≤0.03	—	≤0.75	10XC~1.5	450≤	65≤	15≤	None	
≤0.03	—	≤0.5	—	450≤	65≤	15≤	③	GFW410Cb
≤0.03	—	≤0.75	—	520≤	75≤	20≤	①	
≤0.03	—	≤0.75	—	760≤	110≤	15≤	②	
≤0.03	—	≤0.75	—	450≤	65≤	20≤	③	
≤0.03	—	≤0.5	—	450≤	65≤	13≤	③	GFW430Cb
≤0.03	0.08~0.20	≤0.75	—	690≤	100≤	20≤	None	GFW329J3L
≤0.02	0.10~0.20	≤0.50	—	690≤	100≤	20≤	None	GFW2307
≤0.03	0.10~0.25	1.5~2.5	—	760≤	110≤	15≤	None	
≤0.03	0.20~0.30	≤1.5	W≤1.0	760≤	110≤	15≤	None	GFW2594

(4) セルフシールドタイプ (E***TX-3), フラックス入り溶加棒 (R***T1-5), 並びにメタルコアードタイプ (EC***) は省略した。

(5) 熱処理記号は以下による

- ① : 730~760°Cの温度で1時間加熱し, 1時間当たり110°C以下の冷却速度で315°Cまで炉冷し, その後空冷する。
- ② : 595~620°Cの温度で1時間加熱し, 空冷する。
- ③ : 760~790°Cの温度で2時間加熱し, 1時間当たり55°C以下の冷却速度で595°Cまで炉冷し, その後空冷する。

資料 B 4 ニッケル及びニッケル合金被覆

AWSクラス	UNS No.	溶 着 金 属 の 化 学 成 分 %									
		C	Mn	Fe	P	S	Si	Cu	Ni a	Co	Al
ENi-1	W82141	≤0.10	≤0.75	≤0.75	≤0.03	≤0.02	≤1.25	≤0.25	92.0≤	—	≤1.0
ENiCr-4	W86172	≤0.10	≤1.5	≤1.0	≤0.02	≤0.02	≤1.0	≤0.25	Rem	—	—
ENiCu-7	W84190	≤0.15	≤4.0	≤2.5	≤0.02	≤0.015	≤1.5	Rem	62.0 ~69.0	—	≤0.75
ENiCrFe-1	W86132	≤0.08	≤3.5	≤11.0	≤0.03	≤0.015	≤0.75	≤0.50	62.0≤	—	—
ENiCrFe-2	W86133	≤0.10	1.0~3.5	≤12.0	≤0.03	≤0.02	≤0.75	≤0.50	62.0≤	b	—
ENiCrFe-3	W86182	≤0.10	5.0~9.5	≤10.0	≤0.03	≤0.015	≤1.0	≤0.50	59.0≤	b	—
ENiCrFe-4	W86134	≤0.20	1.0~3.5	≤12.0	≤0.03	≤0.02	≤1.0	≤0.50	60.0≤	—	—
ENiCrFe-7	W86152	≤0.05	≤5.0	7.0~12.0	≤0.03	≤0.015	≤0.75	≤0.50	Rem	b	≤0.50
ENiCrFe-9	W86094	≤0.15	1.0~4.5	≤12.0	≤0.02	≤0.015	≤0.75	≤0.50	55.0≤	—	—
ENiCrFe-10	W86095	≤0.20	1.0~3.5	≤12.0	≤0.02	≤0.015	≤0.75	≤0.50	55.0≤	—	—
ENiCrFe-12	W86025	0.10 ~0.25	≤1.0	8.0~11.0	≤0.04	≤0.02	≤1.0	≤0.20	Rem	≤1.0	1.5~2.2
ENiCrFe-13	W86155	≤0.05	≤1.0	Rem	≤0.020	≤0.015	≤0.75	≤0.30	52.0 ~62.0	≤0.10	≤0.50
ENiCrFe-15	W86056	≤0.05	2.5~4.5	2.0~3.0	≤0.02	≤0.015	≤0.50	≤0.3	Rem	≤0.10	≤0.6
ENiCrFeSi-1	W86045	0.05 ~0.20	≤2.5	21.0 ~25.0	≤0.04	≤0.03	2.5~3.0	≤0.30	Rem	≤1.0	≤0.30
ENiMo-1	W80001	≤0.07	≤1.0	4.0~7.0	≤0.04	≤0.03	≤1.0	≤0.50	Rem	≤2.5	—
ENiMo-3	W80004	≤0.12	≤1.0	4.0~7.0	≤0.04	≤0.03	≤1.0	≤0.50	Rem	≤2.5	—
ENiMo-7	W80665	≤0.02	≤1.75	≤2.25	≤0.04	≤0.03	≤0.2	≤0.50	Rem	≤1.0	—
ENiMo-8	W80008	≤0.10	≤1.5	≤10.0	≤0.02	≤0.015	≤0.75	≤0.50	60.0≤	—	—
ENiMo-9	W80009	≤0.10	≤1.5	≤7.0	≤0.02	≤0.015	≤0.75	0.3~1.3	62.0≤	—	—
ENiMo-10	W80675	≤0.02	≤2.0	1.0~3.0	≤0.04	≤0.03	≤0.2	≤0.50	Rem	≤3.0	—
ENiMo-11	W80629	≤0.02	≤2.5	2.0~5.0	≤0.04	≤0.03	≤0.2	≤0.5	Rem	≤1.0	0.1~0.5
ENiMoCr-1	N10362	≤0.02	≤0.60	≤1.25	≤0.030	≤0.015	≤0.20	—	Rem	—	≤0.50
ENiCrMo-1	W86007	≤0.05	1.0~2.0	18.0 ~21.0	≤0.04	≤0.03	≤1.0	1.5~2.5	Rem	≤2.5	—
ENiCrMo-2	W86002	0.05 ~0.15	≤1.0	17.0 ~20.0	≤0.04	≤0.03	≤1.0	≤0.50	Rem	0.50 ~2.50	—
ENiCrMo-3	W86112	≤0.10	≤1.0	≤7.0	≤0.03	≤0.02	≤0.75	≤0.50	55.0≤	b	—
ENiCrMo-4	W80276	≤0.02	≤1.0	4.0~7.0	≤0.04	≤0.03	≤0.2	≤0.50	Rem	≤2.5	—
ENiCrMo-5	W80002	≤0.10	≤1.0	4.0~7.0	≤0.04	≤0.03	≤1.0	≤0.50	Rem	≤2.5	—
ENiCrMo-6	W86620	≤0.10	2.0~4.0	≤10.0	≤0.03	≤0.02	≤1.0	≤0.50	55.0≤	—	—
ENiCrMo-7	W86455	≤0.015	≤1.5	≤3.0	≤0.04	≤0.03	≤0.2	≤0.50	Rem	≤2.0	—
ENiCrMo-9	W86985	≤0.02	≤1.0	18.0 ~21.0	≤0.04	≤0.03	≤1.0	1.5~2.5	Rem	≤5.0	—

アーク溶接棒 (AWS A5.11 : 2018)

							引張強さ		4D 伸び %	タセット溶接材料
Ti	Cr	Nb+Ta	Mo	V	W	その他合計	MPa	ksi		
1.0~4.0	—	—	—	—	—	≤0.50	410≤	60≤	20≤	Ni99, Ni99DC
—	48.0~52.0	1.0~2.5	—	—	—	≤0.50	760≤	110≤	—	
≤1.0	—	—	—	—	—	≤0.50	480≤	70≤	30≤	ML7D
—	13.0~17.0	1.5~4.0 c	—	—	—	≤0.50	550≤	80≤	30≤	
—	13.0~17.0	0.5~3.0 c	0.5~2.5	—	—	≤0.50	550≤	80≤	30≤	NiA
≤1.0	13.0~17.0	1.0~2.5 c	—	—	—	≤0.50	550≤	80≤	30≤	NA182
—	13.0~17.0	1.0~3.5	1.0~3.5	—	—	≤0.50	650≤	95≤	20≤	
≤0.50	28.0~31.5	1.0~2.5	≤0.5	—	—	≤0.50 d	550≤	80≤	30≤	
—	12.0~17.0	0.5~3.0	2.5~5.5	—	≤1.5	≤0.50	650≤	95≤	25≤	
—	13.0~17.0	1.0~3.5	1.0~3.5	—	1.5~3.5	≤0.50	650≤	95≤	25≤	
0.10 ~0.40	24.0~26.0	—	—	—	—	≤0.50	650≤	95≤	20≤	
≤0.50	28.5~31.0	2.1~4.0	3.0~5.0	—	—	≤0.50 e	550≤	80≤	30≤	
≤0.40	26.0~28.0	2.0~3.6	—	—	—	≤0.50	620≤	90≤	30≤	
—	26.0~29.0	—	—	—	—	≤0.50	620≤	90≤	20≤	
—	≤1.0	—	26.0~30.0	≤0.60	≤1.0	≤0.50	690≤	100≤	25≤	
—	2.5~5.5	—	23.0~27.0	≤0.60	≤1.0	≤0.50	690≤	100≤	25≤	
—	≤1.0	—	26.0~30.0	—	≤1.0	≤0.50	690≤	100≤	25≤	
—	0.5~3.5	—	17.0~20.0	—	2.0~4.0	≤0.50	650≤	95≤	25≤	
—	—	—	18.0~22.0	—	2.0~4.0	≤0.50	650≤	95≤	25≤	
—	1.0~3.0	—	27.0~32.0	—	≤3.0	≤0.50	690≤	100≤	25≤	
≤0.3	0.5~1.5	≤0.5	26.0~30.0	—	—	≤0.50	690≤	100≤	25≤	
—	13.8~15.6	—	21.5~23.0	—	—	≤0.50	720≤	105≤	25≤	
—	21.0~23.5	1.75 ~2.50	5.5~7.5	—	≤1.0	≤0.50	620≤	90≤	20≤	
—	20.5~23.0	—	8.0~10.0	—	0.2 ~1.0	≤0.50	650≤	95≤	20≤	
—	20.0~23.0	3.15 ~4.15	8.0~10.0	—	—	≤0.50	760≤	110≤	30≤	NA112
—	14.5~16.5	—	15.0~17.0	≤0.35	3.0~4.5	≤0.50	690≤	100≤	25≤	HsC-276
—	14.5~16.5	—	15.0~17.0	≤0.35	3.0~4.5	≤0.50	690≤	100≤	25≤	
—	12.0~17.0	0.5~2.0	5.0~9.0	—	1.0~2.0	≤0.50	620≤	90≤	35≤	
≤0.70	14.0~18.0	—	14.0~17.0	—	≤0.5	≤0.50	690≤	100≤	25≤	
—	21.0~23.5	≤0.5	6.0~8.0	—	≤1.5	≤0.50	620≤	90≤	25≤	

AWSクラス	UNS No.	溶 着 金 属 の 化 学 成 分 %									
		C	Mn	Fe	P	S	Si	Cu	Ni a	Co	Al
ENiCrMo-10	W86022	≤0.02	≤1.0	2.0~6.0	≤0.03	≤0.015	≤0.2	≤0.50	Rem	≤2.5	—
ENiCrMo-11	W86030	≤0.03	≤1.5	13.0 ~17.0	≤0.04	≤0.02	≤1.0	1.0~2.4	Rem	≤5.0	—
ENiCrMo-12	W86032	≤0.03	≤2.2	≤5.0	≤0.03	≤0.02	≤0.7	≤0.50	Rem	—	—
ENiCrMo-13	W86059	≤0.02	≤1.0	≤1.5	≤0.015	≤0.01	≤0.2	≤0.50	Rem	—	—
ENiCrMo-14	W86686	≤0.02	≤1.0	≤5.0	≤0.02	≤0.02	≤0.25	≤0.50	Rem	—	—
ENiCrMo-17	W86200	≤0.020	≤0.5	≤3.0	≤0.030	≤0.015	≤0.2	1.3~1.9	Rem	≤2.0	—
ENiCrMo-18	W86650	≤0.03	≤0.7	12.0 ~15.0	≤0.03	≤0.02	≤0.6	≤0.3	Rem	≤1.0	≤0.5
ENiCrMo-19	W86058	≤0.02	≤1.5	≤1.5	≤0.03	≤0.02	≤0.2	≤0.5	Rem	≤0.3	≤0.4
ENiCrMo-22	W86035	≤0.05	≤0.50	≤2.00	≤0.030	≤0.015	≤0.60	≤0.30	Rem	≤1.00	≤0.40
ENiCrCoMo-1	W86117	0.05 ~0.15	0.3~2.5	≤5.0	≤0.03	≤0.015	≤0.75	≤0.50	Rem	9.0~15.0	—
ENiCrWMo-1	W86231	0.05 ~0.10	0.3~1.0	≤3.0	≤0.02	≤0.015	0.25 ~0.75	≤0.50	Rem	≤5.0	≤0.50

備 考 a : Niの中には、不純物として入ってくるCoを含む。

b : 規定される場合には、 $\text{Co} \leq 0.12\%$ とする。

c : 規定される場合には、 $\text{Ta} \leq 0.30\%$ とする。

d : 規定される場合には、 $\text{B} \leq 0.005\%$, $\text{Zr} \leq 0.020\%$ とする。

e : $\text{B} \leq 0.003\%$, $\text{Zr} \leq 0.020\%$ とする。

f : N : 0.02%~0.15%

							引張強さ		4D 伸び %	タセト溶接材料
Ti	Cr	Nb+Ta	Mo	V	W	その他合計	MPa	ksi		
—	20.0~22.5	—	12.5~14.5	≤0.35	2.5~3.5	≤0.50	690≤	100≤	25≤	HsC-22
—	28.0~31.5	0.3~1.5	4.0~6.0	—	1.5~4.0	≤0.50	590≤	85≤	25≤	
—	20.5~22.5	1.0~2.8	8.8~10.0	—	—	≤0.50	650≤	95≤	35≤	
—	22.0~24.0	—	15.0~16.5	—	—	≤0.50	690≤	100≤	25≤	
≤0.25	19.0~23.0	—	15.0~17.0	—	3.0~4.4	≤0.50	690≤	100≤	30≤	
—	22.0~24.0	—	15.0~17.0	—	—	≤0.50	690≤	100≤	25≤	
—	19.0~22.0	≤0.3	10.0~13.0	≤0.15	1.0~2.0	≤0.50	650≤	95≤	30≤	
—	20.0~23.0	—	18.5~21.0	—	≤0.3	≤0.50 f	830≤	120≤	20≤	
≤0.20	32.25~34.25	≤0.50	7.6~9.0	≤0.20	≤0.60	≤0.50	590≤	85≤	25≤	
—	21.0~26.0	≤1.0	8.0~10.0	—	—	≤0.50	620≤	90≤	25≤	NA117
≤0.10	20.0~24.0	—	1.0~3.0	—	13.0 ~15.0	≤0.50	620≤	90≤	20≤	

資料 B 5 ニッケル及びニッケル合金溶加

AWSクラス	UNS No	化 学							
		C	Mn	Fe	P	S	Si	Cu	Ni a
ERNi-1	N02061	≤0.15	≤1.0	≤1.0	≤0.03	≤0.015	≤0.75	≤0.25	93.0≤
ERNiCu-7	N04060	≤0.15	≤4.0	≤2.5	≤0.02	≤0.015	≤1.25	Rem	62.0~69.0
ERNiCu-8	N05504	≤0.25	≤1.5	≤2.0	≤0.03	≤0.015	≤1.00	Rem	63.0~70.0
ERNiCr-3	N06082	≤0.10	2.5~3.5	≤3.0	≤0.03	≤0.015	≤0.50	≤0.50	67.0≤
ERNiCr-4	N06072	0.01~0.10	≤0.20	≤0.50	≤0.02	≤0.015	≤0.20	≤0.50	Rem
ERNiCr-6	N06076	0.08~0.15	≤1.00	≤2.00	≤0.03	≤0.015	≤0.30	≤0.50	75.0≤
ERNiCr-7	N06073	≤0.03	≤0.50	≤1.0	≤0.02	≤0.015	≤0.30	≤0.30	Rem
ERNiCrCo-1	N07740	0.01~0.06	≤1.0	≤3.0	≤0.03	≤0.015	≤1.0	≤0.50	Rem
ERNiCrFe-5	N06062	≤0.08	≤1.0	6.0~10.0	≤0.03	≤0.015	≤0.35	≤0.50	70.0≤
ERNiCrFe-6	N07092	≤0.08	2.0~2.7	≤8.0	≤0.03	≤0.015	≤0.35	≤0.50	67.0≤
ERNiCrFe-7	N06052	≤0.04	≤1.0	7.0~11.0	≤0.02	≤0.015	≤0.50	≤0.30	Rem
ERNiCrFe-7A	N06054	≤0.04	≤1.0	7.0~11.0	≤0.02	≤0.015	≤0.50	≤0.30	Rem
ERNiCrFe-8	N07069	≤0.08	≤1.0	5.0~9.0	≤0.03	≤0.015	≤0.50	≤0.50	70.0≤
ERNiCrFe-11	N06601	≤0.10	≤1.0	Rem	≤0.03	≤0.015	≤0.50	≤1.0	58.0~63.0
ERNiCrFe-12	N06025	0.15~0.25	≤0.50	8.0~11.0	≤0.020	≤0.010	≤0.5	≤0.1	Rem
ERNiCrFe-13	N06055	≤0.03	≤1.0	Rem	≤0.02	≤0.015	≤0.50	≤0.30	52.0~62.0
ERNiCrFe-14	N06043	≤0.04	≤3.0	7.0~12.0	≤0.020	≤0.015	≤0.50	≤0.30	Rem
ERNiCrFe-15	N06056	0.020~0.055	2.5~3.5	1.0~3.0	≤0.02	≤0.015	≤0.50	≤0.3	Rem
ERNiCrFeSi-1	N06045	0.05~0.12	≤1.0	21.0~25.0	≤0.020	≤0.010	2.5~3.0	≤0.3	Rem
ERNiCrFeAl-1	N06693	≤0.15	≤1.0	2.5~6.0	≤0.03	≤0.01	≤0.5	≤0.5	Rem
ERNiFeCr-1	N08065	≤0.05	≤1.0	22.0≤	≤0.03	≤0.03	≤0.50	1.50~3.0	38.0~46.0
ERNiFeCr-2	N07718	≤0.08	≤0.35	Rem	≤0.015	≤0.015	≤0.35	≤0.30	50.0~55.0
ERNiFeCr-3	N09946	0.005~0.040	≤1.0	Rem	≤0.03	≤0.015	≤0.5	1.5~3.0	45.0~55.0
ERNiMo-1	N10001	≤0.08	≤1.0	4.0~7.0	≤0.025	≤0.03	≤1.0	≤0.50	Rem
ERNiMo-2	N10003	0.04~0.08	≤1.0	≤5.0	≤0.015	≤0.02	≤1.0	≤0.50	Rem
ERNiMo-3	N10004	≤0.12	≤1.0	4.0~7.0	≤0.04	≤0.03	≤1.0	≤0.50	Rem
ERNiMo-7	N10665	≤0.02	≤1.0	≤2.0	≤0.04	≤0.03	≤0.10	≤0.50	Rem
ERNiMo-8	N10008	≤0.10	≤1.0	≤10.0	≤0.015	≤0.015	≤0.50	≤0.50	60.0≤
ERNiMo-9	N10009	≤0.10	≤1.0	≤5.0	≤0.015	≤0.015	≤0.50	0.3~1.3	65.0≤
ERNiMo-10	N10675	≤0.01	≤3.0	1.0~3.0	≤0.03	≤0.01	≤0.10	≤0.20	65.0≤
ERNiMo-11	N10629	≤0.010	≤1.0	2.0~5.0	≤0.020	≤0.010	≤0.10	≤0.5	Rem

棒及びワイヤ (AWS A5.14 : 2018)

成 分 %									タセット 溶接材料	ISO desig.
Co	Al	Ti	Cr	Nb+Ta	Mo	V	W	その他合計		
—	≤1.5	2.0~3.5	—	—	—	—	—	≤0.50 d	TGNi, MGNi	SNi2061
—	≤1.25	1.5~3.0	—	—	—	—	—	≤0.50 d	TGML, MGML	SNi4060
—	2.0~4.0	0.25~1.00	—	—	—	—	—	≤0.50 d		SNi5504
b	—	≤0.75	18.0~22.0	2.0~3.0 c	—	—	—	≤0.50 d	TG82, MG82	SNi6082
—	—	0.3~1.0	42.0~46.0	—	—	—	—	≤0.50		SNi6072
—	≤0.40	0.15~0.50	19.0~21.0	—	—	—	—	≤0.50 d		SNi6076
≤1.0	0.75~1.20	0.25~0.75	36.0~39.0	0.25~1.00	≤0.50	—	—	≤0.50 d		—
15.0 ~22.9	0.5~2.0	0.8~2.5	23.5~25.5	0.5~2.5	≤2.0	—	—	≤0.50		—
b	—	—	14.0~17.0	1.5~3.0 c	—	—	—	≤0.50 d		SNi6062
—	—	2.5~3.5	14.0~17.0	—	—	—	—	≤0.50 d	TG92, MG92	SNi7092
—	≤1.10	≤1.0	28.0~31.5	≤0.10	≤0.50	—	—	≤0.50 d		SNi6052
≤0.12	≤1.10	≤1.0	28.0~31.5	0.5~1.0	≤0.50	—	—	≤0.50 d		—
—	0.4~1.0	2.00~2.75	14.0~17.0	0.70~1.20	—	—	—	≤0.50 d		SNi7069
—	1.0~1.7	—	21.0~25.0	—	—	—	—	≤0.50		SNi6601
≤1.0	1.8~2.4	0.10~0.20	24.0~26.0	—	—	—	—	≤0.50		SNi6025
≤0.10	≤0.50	≤0.50	28.5~31.0	2.1~4.0	3.0~5.0	—	—	≤0.50		—
—	≤0.50	≤0.50	28.0~31.5	1.0~2.5	≤0.50	—	—	≤0.50		SNi6043
≤0.10	≤0.60	0.10~0.40	26.0~28.0	2.0~2.8	—	—	—	≤0.50		—
≤1.0	≤0.30	—	26.0~29.0	—	—	—	—	≤0.50		—
—	2.5~4.0	≤1.0	27.0~31.0	0.5~2.5	—	—	—	≤0.50		SNi6693
—	≤0.20	0.6~1.2	19.5~23.5	—	2.5~3.5	—	—	≤0.50 d		SNi8065
—	0.20~0.80	0.65~1.15	17.0~21.0	4.75~5.50	2.80~3.30	—	—	≤0.50 d		SNi7718
—	0.01~0.70	0.5~2.5	19.5~23.0	2.5~4.5	3.0~4.0	—	—	≤0.50		
≤2.5	—	—	≤1.0	—	26.0~30.0	0.20~0.40	≤1.0	≤0.50		SNi1001
≤0.20	—	—	6.0~8.0	—	15.0~18.0	≤0.50	≤0.50	≤0.50		SNi1003
≤2.5	—	—	4.0~6.0	—	23.0~26.0	≤0.60	≤1.0	≤0.50		SNi1004
≤1.0	—	—	≤1.0	—	26.0~30.0	—	≤1.0	≤0.50	TGhsB-2, MGhsB-2	SNi1066
—	—	—	0.5~3.5	—	18.0~21.0	—	2.0~4.0	≤0.50		SNi1008
—	≤1.0	—	—	—	19.0~22.0	—	2.0~4.0	≤0.50		SNi1009
≤3.0	≤0.50	≤0.20	1.0~3.0	≤0.20	27.0~32.0	≤0.20	≤3.0	≤0.50 d		SNi1067
≤1.0	0.1~0.5	≤0.30	0.5~1.5	≤0.50	26.0~30.0	—	—	≤0.50		SNi1069

AWSクラス	UNS No	化 学							
		C	Mn	Fe	P	S	Si	Cu	Ni a
ERNiMo-12	N10242	≤0.03	≤0.80	≤2.0	≤0.030	≤0.015	≤0.80	≤0.50	Rem
ERNiMoCr-1	N10362	≤0.010	≤0.60	≤1.25	≤0.025	≤0.010	≤0.08	—	Rem
ERNiCrMo-1	N06007	≤0.05	1.0~2.0	18.0~21.0	≤0.04	≤0.03	≤1.0	1.5~2.5	Rem
ERNiCrMo-2	N06002	0.05~0.15	≤1.0	17.0~20.0	≤0.04	≤0.03	≤1.0	≤0.50	Rem
ERNiCrMo-3	N06625	≤0.10	≤0.50	≤5.0	≤0.02	≤0.015	≤0.50	≤0.50	58.0≤
ERNiCrMo-4	N10276	≤0.02	≤1.0	4.0~7.0	≤0.04	≤0.03	≤0.08	≤0.50	Rem
ERNiCrMo-7	N06455	≤0.015	≤1.0	≤3.0	≤0.04	≤0.03	≤0.08	≤0.50	Rem
ERNiCrMo-8	N06975	≤0.03	≤1.0	Rem	≤0.03	≤0.03	≤1.0	0.7~1.2	47.0~52.0
ERNiCrMo-9	N06985	≤0.015	≤1.0	18.0~21.0	≤0.04	≤0.03	≤1.0	1.5~2.5	Rem
ERNiCrMo-10	N06022	≤0.015	≤0.50	2.0~6.0	≤0.02	≤0.010	≤0.08	≤0.50	Rem
ERNiCrMo-11	N06030	≤0.03	≤1.5	13.0~17.0	≤0.04	≤0.02	≤0.80	1.0~2.4	Rem
ERNiCrMo-13	N06059	≤0.010	≤0.5	≤1.5	≤0.015	≤0.010	≤0.10	≤0.50	Rem
ERNiCrMo-14	N06686	≤0.01	≤1.0	≤5.0	≤0.02	≤0.02	≤0.08	≤0.5	Rem
ERNiCrMo-15	N07725	≤0.03	≤0.35	Rem	≤0.015	≤0.01	≤0.20	—	55.0~59.0
ERNiCrMo-16	N06057	≤0.02	≤1.0	≤2.0	≤0.04	≤0.03	≤1.0	—	Rem
ERNiCrMo-17	N06200	≤0.010	≤0.5	≤3.0	≤0.025	≤0.010	≤0.08	1.3~1.9	Rem
ERNiCrMo-18	N06650	≤0.03	≤0.5	12.0~16.0	≤0.020	≤0.010	≤0.50	≤0.30	Rem
ERNiCrMo-19	N06058	≤0.01	≤0.5	≤1.5	≤0.015	≤0.010	≤0.10	≤0.50	Rem
ERNiCrMo-20	N06660	≤0.03	≤0.5	≤2.0	≤0.015	≤0.015	≤0.5	≤0.3	Rem
ERNiCrMo-21	N06205	≤0.03	≤0.5	≤1.0	≤0.015	≤0.015	≤0.5	≤0.2	Rem
ERNiCrMo-22	N06035	≤0.050	≤0.50	≤2.00	≤0.030	≤0.015	≤0.60	≤0.30	Rem
ERNiCrCoMo-1	N06617	0.05~0.15	≤1.0	≤3.0	≤0.03	≤0.015	≤1.0	≤0.50	Rem
ERNiCrCoMo-2	N07208	0.04-0.08	≤0.30	≤1.5	≤0.015	≤0.015	≤0.15	≤0.1	Rem
ERNiCrMOWNb-1	N06680	≤0.03	—	≤0.50	≤0.02	≤0.015	≤0.1	—	56.0 ~65.0
ERNiCoCrSi-1	N12160	0.02~0.10	≤1.0	≤3.5	≤0.030	≤0.015	2.4~3.0	≤0.50	Rem
ERNiCrWMo-1	N06231	0.05~0.15	0.3~1.0	≤3.0	≤0.03	≤0.015	0.25~0.75	≤0.50	Rem

備 考 a: Niの中には、不純物として入ってくるCoも含む。

b: 規定される場合には、Co≤0.12%とする。

c: 規定される場合には、Ta≤0.30%とする。

成 分 %									タセト 溶接材料	ISO desig.
Co	Al	Ti	Cr	Nb+Ta	Mo	V	W	その他合計		
≤1.0	≤0.50	—	7.0~9.0	—	24.0~26.0	—	—	—		—
—	≤0.50	—	13.8~15.6	—	21.5~23.0	—	—	≤0.50		—
≤2.5	—	—	21.0~23.5	1.75~2.50	5.5~7.5	—	≤1.0	≤0.50		—
0.5 ~2.5	—	—	20.5~23.0	—	8.0~10.0	—	0.2~1.0	≤0.50		SNi6002
—	≤0.40	≤0.40	20.0~23.0	3.15~4.15	8.0~10.0	—	—	≤0.50 d	TG625, MG625	SNi6625
≤2.5	—	—	14.5~16.5	—	15.0~17.0	≤0.35	3.0~4.5	≤0.50	TGHsC-276, MGHsC-276	SNi6276
≤2.0	—	≤0.70	14.0~18.0	—	14.0~18.0	—	≤0.50	≤0.50		SNi6455
—	—	0.70~1.50	23.0~26.0	—	5.0~7.0	—	—	≤0.50		SNi6975
≤5.0	—	—	21.0~23.5	≤0.50	6.0~8.0	—	≤1.5	≤0.50		SNi6985
≤2.5	—	—	20.0~22.5	—	12.5~14.5	≤0.35	2.5~3.5	≤0.50	TGHsC-22, MGHsC-22	SNi6022
≤5.0	—	—	28.0~31.5	0.30~1.50	4.0~6.0	—	1.5~4.0	≤0.50		SNi6030
≤0.3	0.1~0.4	—	22.0~24.0	—	15.0~16.5	—	—	≤0.50		SNi6059
—	≤0.5	≤0.25	19.0~23.0	—	15.0~17.0	—	3.0~4.4	≤0.50		SNi6686
—	≤0.35	1.0~1.7	19.0~22.5	2.75~4.00	7.0~9.5	—	—	≤0.50		SNi7725
—	—	—	29.0~31.0	—	10.0~12.0	≤0.4	—	≤0.50		SNi6057
≤2.0	≤0.50	—	22.0~24.0	—	15.0~17.0	—	—	≤0.50		SNi6200
≤1.0	0.05 ~0.50	—	19.0~21.0	0.05~0.50	9.5~12.5	≤0.30	0.5~2.5	≤0.50 d		SNi6650
≤0.3	≤0.4	—	20.0~23.0	—	18.5~21.0	—	≤0.3	≤0.50 d		—
≤0.2	≤0.4	≤0.4	21.0~23.0	≤0.2	9.0~11.0	—	2.0~4.0	—		SNi6660
≤0.2	≤0.4	≤0.4	24.0~26.0	—	14.0~16.0	—	≤0.3	—		SNi6205
≤1.00	≤0.40	≤0.2	32.25~34.25	≤0.5	7.60 ~9.00	≤0.20	≤0.60	≤0.50		—
10.0 ~15.0	0.8~1.5	≤0.60	20.0~24.0	—	8.0~10.0	—	—	≤0.50	TG617, MG617	SNi6617
9.0 ~11.0	1.38~1.65	1.90~2.30	18.5~20.5	≤0.3e	8.0~9.0	—	≤0.05	≤0.50		—
≤1.0	≤0.5	1.2~3.0	17.0~23.0	3.0~5.0	5.0~8.0	—	4.0~8.0	≤0.50		
27.0 ~32.0	≤0.40	0.20~0.60	26.0~29.0	≤0.30	≤0.7	—	≤0.5	≤0.50		SNi6160
≤5.0	0.2~0.5	—	20.0~24.0	—	1.0~3.0	—	13.0 ~15.0	≤0.50 d		SNi6231

d : その他 微量元素の詳細は原規格を参照。

e : Nb≤0.2%, Ta≤0.1%とする。

資料 B 6 ニッケル合金フラックス入りワイヤ

AWSクラス		UNS No.	溶 着 金 属 の 化							
ISO Format	Traditional		C	Mn	Fe	P	S	Si	Cu	Ni a
TNi 6082-xy	ENiCr3Tx-y	W86082	≤0.10	2.5~3.5	≤3.0	≤0.03	≤0.015	≤0.50	≤0.50	67.0≤
TNi 6062-xy	ENiCrFe1Tx-y	W86132	≤0.08	≤3.5	≤11.0	≤0.03	≤0.015	≤0.75	≤0.50	62.0≤
TNi 6133-xy	ENiCrFe2Tx-y	W86133	≤0.10	1.0~3.5	≤12.0	≤0.03	≤0.02	≤0.75	≤0.50	62.0≤
TNi 6182-xy	ENiCrFe3Tx-y	W86182	≤0.10	5.0~9.5	≤10.0	≤0.03	≤0.015	≤1.0	≤0.50	59.0≤
TNi 1013-xy	ENiMo13Tx-y	N10300	≤0.10	2.0~3.0	≤10.0	≤0.020	≤0.015	≤0.75	≤0.5	58.0≤
TNi 6002-xy	ENiCrMo2Tx-y	W86002	0.05 ~0.15	≤1.0	17.0 ~20.0	≤0.04	≤0.03	≤1.0	≤0.50	Rem
TNi 6625-xy	ENiCrMo3Tx-y	W86625	≤0.10	≤0.50	≤5.0 d	≤0.02	≤0.015	≤0.50	≤0.50	58.0≤
TNi 6276-xy	ENiCrMo4Tx-y	W80276	≤0.02	≤1.0	4.0~7.0	≤0.03	≤0.03	≤0.2	≤0.50	Rem
TNi 6022-xy	ENiCrMo10Tx-y	W86022	≤0.02	≤1.0	2.0~6.0	≤0.03	≤0.015	≤0.2	≤0.50	Rem
—	ENiCrMo23Tx-y		≤0.10	1.0~3.0	4.0~7.0	≤0.03	≤0.03	≤0.50	≤0.50	Rem
TNi 6117-xy	ENiCrCoMo1Tx-y	W86117	0.05 ~0.15	0.3~2.5	≤5.0	≤0.03	≤0.015	≤0.75	≤0.50	Rem

注 (1) xは、適用される溶接姿勢を示す。

0=下向きと水平すみ肉

1=全姿勢

(2) yは、シールドガスの種類を示す。

1=二酸化炭素

3=セルフシールド (シールドなし)

4=アルゴン(75-80%)と二酸化炭素の混合ガス

(AWS A5.34 : 2018)

学 成 分 %								引張強さ		4D 伸び %	タセト 溶接材料
Co	Ti	Cr	Nb+Ta c	Mo	V	W	その他	MPa	ksi		
b	≦0.75	18.0 ～22.0	2.0～3.0	—	—	—	≦0.50	550≦	80≦	25≦	GFW82
—	—	13.0 ～17.0	1.5～4.0	—	—	—	≦0.50	550≦	80≦	25≦	
b	—	13.0 ～17.0	0.5～3.0	0.5～2.5	—	—	≦0.50	550≦	80≦	25≦	
b	≦1.0	13.0 ～17.0	1.0～2.5	—	—	—	≦0.50	550≦	80≦	25≦	
—	—	4.0～8.0	—	16.0 ～19.0	—	2.0～4.0	≦0.50	690≦	100≦	25≦	
0.50 ～2.50	—	20.5 ～23.0	—	8.0～10.0	—	0.2～1.0	≦0.50	620≦	90≦	25≦	
b	≦0.40	20.0 ～23.0	3.15～4.15	8.0～10.0	—	—	≦0.50	690≦	100≦	25≦	GFW625
≦2.5	—	14.5 ～16.5	—	15.0 ～17.0	≦0.35	3.0～4.5	≦0.50	690≦	100≦	25≦	GFWHsC276
≦2.5	—	20.0 ～22.5	—	12.5 ～14.5	≦0.35	2.5～3.5	≦0.50	690≦	100≦	25≦	GFWHsC-22
≦1.0	—	12.0 ～14.5	≦1.0	12.0 ～14.0	≦0.35	2.0～3.5	≦0.50	690≦	100≦	25≦	
9.0～15.0	—	21.0 ～26.0	≦1.0	8.0～10.0	—	—	≦0.50	620≦	90≦	25≦	

備考 a : Niの中には、不純物として入ってくるCoを含む。

b : 規定される場合には、 $\text{Co} \leq 0.10\%$ とする。

c : 規定される場合には、 $\text{Ta} \leq 0.30\%$ とする。

d : 規定される場合には、 $\text{Fe} \leq 1.0\%$ とする。

資料 B 7 銅及び銅合金被覆アーク溶接棒

AWSクラス	UNS No.	溶 着 金 属 の 化						
		Cu(含Ag)	Zn	Sn	Mn	Fe	Si	Ni(含Co)
ECu	W60189	Rem	*	*	≤0.10	≤0.20	≤0.10	*
ECuSi	W60656	Rem	*	≤1.5	≤1.5	≤0.50	2.4~4.0	*
ECuSn-A	W60518	Rem	*	4.0~6.0	*	≤0.25	*	*
ECuSn-C	W60521	Rem	*	7.0~9.0	*	≤0.25	*	*
ECuNi	W60715	Rem	*	*	1.00~2.50	0.40~0.75	≤0.50	29.0~33.0
ECuAl-A2	W60614	Rem	*	*	*	0.50~5.0	≤1.5	*
ECuAl-B	W60619	Rem	*	*	*	2.5~5.0	≤1.5	*
ECuNiAl	W60632	Rem	*	*	0.50~3.5	3.0~6.0	≤1.5	4.0~6.0
ECuMnNiAl	W60633	Rem	*	*	11.0~14.0	2.0~4.0	≤1.5	1.5~3.0

備 考 *はその他の元素の合計に含まれる。

資料 B 8 銅及び銅合金溶加棒及びワイヤ

AWSクラス	UNS No.	化 学 成 分 %					
		Cu(含Ag)	Zn	Sn	Mn	Fe	Si
ERCu	C18980	98.0≤	—	≤1.0	≤0.50	—	≤0.50
ERCuSi-A	C65600	Rem	≤1.0	≤1.0	≤1.5	≤0.50	2.8~4.0
ERCuSn-A	C51800	Rem	—	4.0~6.0	—	—	—
ERCuSn-C	C52100	Rem	≤0.20	7.0~9.0	—	≤0.10	—
ERCuNi	C71581	Rem	—	—	≤1.0	0.40~0.75	≤0.25
ERCuAl-A1	C61000	Rem	≤0.20	—	≤0.50	—	≤0.10
ERCuAl-A2	C61800	Rem	≤0.02	—	—	0.5~1.5	≤0.10
ERCuAl-A3	C62400	Rem	≤0.10	—	—	2.0~4.5	≤0.10
ERCuNiAl	C63280	Rem	≤0.10	—	0.60~3.50	3.0~5.0	≤0.10
ERCuMnNiAl	C63380	Rem	≤0.15	—	11.0~14.0	2.0~4.0	≤0.10

備 考 規定されていない元素が含まれていることが判明した場合には分析を実施して、それらの合計が0.50%を超えないこと。

(AWS A5.6: 2008[R2017])

学 成 分 %						引張強さ		4D 伸び %	タセト 溶接材料
P	Al	Pb	Ti	S	その他合計	MPa	ksi		
*	≤0.10	≤0.01	—	—	≤0.50	170≤	25≤	20≤	(KC100)
*	≤0.01	≤0.02	—	—	≤0.50	350≤	50≤	20≤	(KE960)
0.05～0.35	≤0.01	≤0.02	—	—	≤0.50	240≤	35≤	20≤	
0.05～0.35	≤0.01	≤0.02	—	—	≤0.50	280≤	40≤	20≤	
≤0.020	—	≤0.02	≤0.50	≤0.015	≤0.50	350≤	50≤	20≤	KN700
—	6.5～9.5	≤0.02	—	—	≤0.50	410≤	60≤	20≤	(KA900)
—	9.5～11.5	≤0.02	—	—	≤0.50	450≤	65≤	20≤	
—	8.0～9.5	≤0.02	—	—	≤0.50	500≤	72≤	10≤	
—	6.0～8.5	≤0.02	—	—	≤0.50	520≤	75≤	15≤	

(AWS A5.7: 2007[R2017])

							タセト溶接材料
Ni(含Co)	P	Al	Pb	Ti	S	その他合計	
—	≤0.15	≤0.01	≤0.02	—	—	≤0.50	TG990, TG991, TG995, MG990, MG991, MG995
—	—	≤0.01	≤0.02	—	—	≤0.50	(TG960B), (MG960B)
—	0.10～0.35	≤0.01	≤0.02	—	—	≤0.50	
—	0.10～0.35	≤0.01	≤0.02	—	—	≤0.50	
29.0～32.0	≤0.02	—	≤0.02	0.20～0.50	≤0.01	≤0.50	TG700, MG700
—	—	6.0～8.5	≤0.02	—	—	≤0.50	
—	—	8.5～11.0	≤0.02	—	—	≤0.50	(TG900), (MG900)
—	—	10.0～11.5	≤0.02	—	—	≤0.50	
4.0～5.5	—	8.50～9.50	≤0.02	—	—	≤0.50	
1.5～3.0	—	7.0～8.5	≤0.02	—	—	≤0.50	

資料 B 9 鋳鉄用被覆アーク溶接棒

AWSクラス	UNS No.	溶 着 金 属 の				
		C	Mn	Si	P	S
ENi-CI	W82001	≤2.0	≤2.5	≤4.0	—	≤0.03
ENi-CI-A	W82003	≤2.0	≤2.5	≤4.0	—	≤0.03
ENiFe-CI	W82002	≤2.0	≤2.5	≤4.0	—	≤0.03
ENiFe-CI-A	W82004	≤2.0	≤2.5	≤4.0	—	≤0.03
ENiFeMn-CI	W82006	≤2.0	10~14	≤1.0	—	≤0.03
ENiCu-A	W84001	0.35~0.55	≤2.3	≤0.75	—	≤0.025
ENiCu-B	W84002	0.35~0.55	≤2.3	≤0.75	—	≤0.025

(AWS A5.15-90 [R2006]) 抜粋

化 学 成 分 %					タセト溶接材料
Fe	Ni(含Co)	Cu(含Ag)	Al	その他合計	
≤8.0	85≤	≤2.5	≤1.0	≤1.0	鋳物特号
≤8.0	85≤	≤2.5	1.0~3.0	≤1.0	
Rem	45~60	≤2.5	≤1.0	≤1.0	(鋳物35号)
Rem	45~60	≤2.5	1.0~3.0	≤1.0	
Rem	35~45	≤2.5	≤1.0	≤1.0	
3.0~6.0	50~60	35~45	—	≤1.0	
3.0~6.0	60~70	25~35	—	≤1.0	

資料 B 10 アルミニウム及びアルミニウム

AWS クラス	ISO18273 成分表示	化 学					
		Si	Fe	Cu	Mn	Mg	Cr
ER1070, R1070	Al99.7	≤0.20	≤0.25	≤0.04	≤0.03	≤0.03	—
ER1080A, R1080A	Al99.8(A)	≤0.15	≤0.15	≤0.03	≤0.02	≤0.02	—
ER1100, R1100	Al99.0Cu	Si+Fe≤0.95		0.05~0.20	≤0.05	—	—
ER1188 R1188	Al99.88	≤0.06	≤0.06	≤0.005	≤0.01	≤0.01	—
ER1200, R1200	Al99.0	Si+Fe≤1.00		≤0.05	≤0.05	—	—
ER1450, R1450	Al99.5Ti	≤0.25	≤0.40	≤0.05	≤0.05	≤0.05	—
R-206.0	—	≤0.10	≤0.15	4.2~5.0	0.20~0.50	0.15~0.35	—
ER2319, R2319	AlCu6MnZrTi	≤0.20	≤0.30	5.8~6.8	0.20~0.40	≤0.02	—
ER3103, R3103	AlMn1	≤0.50	≤0.7	≤0.10	0.9~1.5	≤0.30	≤0.10
R-C355.0	—	4.5~5.5	≤0.20	1.0~1.5	≤0.10	0.40~0.6	—
R-A356.0	—	6.5~7.5	≤0.20	≤0.20	≤0.10	0.25~0.45	—
R-357.0	—	6.5~7.5	≤0.15	≤0.05	≤0.03	0.45~0.6	—
R-A357.0	—	6.5~7.5	≤0.20	≤0.20	≤0.10	0.40~0.7	—
ER4009, R4009	AlSi5Cu1Mg	4.5~5.5	≤0.20	1.0~1.5	≤0.10	0.45~0.6	—
ER4010, R4010	AlSi7Mg	6.5~7.5	≤0.20	≤0.20	≤0.10	0.30~0.45	—
R4011	AlSi7Mg0.5Ti	6.5~7.5	≤0.20	≤0.20	≤0.10	0.45~0.7	—
ER4018, R4018	AlSi7Mg	6.5~7.5	≤0.20	≤0.05	≤0.10	0.50~0.8	—
ER4043, R4043	AlSi5	4.5~6.0	≤0.8	≤0.30	≤0.05	≤0.05	—
ER4043A, R4043A	AlSi5(A)	4.5~6.0	≤0.6	≤0.30	≤0.15	≤0.20	—
ER4046, R4046	AlSi10Mg	9.0~11.0	≤0.50	≤0.03	≤0.40	0.20~0.50	—
ER4047, R4047	AlSi12	11.0~13.0	≤0.8	≤0.30	≤0.15	≤0.10	—
ER4047A, R4047A	AlSi12(A)	11.0~13.0	≤0.6	≤0.30	≤0.15	≤0.10	—
ER4145, R4145	AlSi10Cu4	9.3~10.7	≤0.8	3.3~4.7	≤0.15	≤0.15	≤0.15

合金溶加棒及びワイヤ (AWS A5.10: 2017)

成 分 %								タセト 溶接材料
Zn	Ti	Zr	その他 成分	Be	残元素		Al	
					個々	合計		
≦0.04	≦0.03	—	V≦0.05	≦0.0003	≦0.03	—	99.70≦	MG1070, TG1070
≦0.06	≦0.02	—	Ga≦0.03	≦0.0003	≦0.02	—	99.80≦	
≦0.10	—	—	—	≦0.0003	≦0.05	≦0.15	99.00≦	MG1100, TG1100
≦0.03	≦0.01	—	Ga≦0.03, V≦0.05	≦0.0003	≦0.01	—	99.88≦	
≦0.10	≦0.05	—	—	≦0.0003	≦0.05	≦0.15	99.00≦	
≦0.07	0.10～0.20	—	—	≦0.0003	≦0.03	—	99.50≦	
≦0.10	0.15～0.30	—	Ni≦0.05, Sn≦0.05	—	≦0.05	≦0.15	Rem	
≦0.10	0.10～0.20	0.10～0.25	V=0.05 ～0.15	≦0.0003	≦0.05	≦0.15	Rem	
≦0.20	Ti+Zr≦0.10		—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.10	≦0.20	—	—	—	≦0.05	≦0.15	Rem	
≦0.10	≦0.20	—	—	—	≦0.05	≦0.15	Rem	
≦0.05	≦0.20	—	—	—	≦0.05	≦0.15	Rem	
≦0.10	0.04～0.20	—	—	0.04～0.07	≦0.05	≦0.15	Rem	
≦0.10	≦0.20	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.10	≦0.20	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.10	0.04～0.20	—	—	0.04～0.07	≦0.05	≦0.15	Rem	
≦0.10	≦0.20	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.10	≦0.20	—	—	≦0.0003	≦0.05	≦0.15	Rem	MG4043, TG4043
≦0.10	≦0.15	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.10	≦0.15	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.20	—	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.20	≦0.15	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.20	—	—	—	≦0.0003	≦0.05	≦0.15	Rem	

AWS クラス	ISO18273 成分表示	化 学					
		Si	Fe	Cu	Mn	Mg	Cr
ER4643, R4643	AlSi4Mg	3.6~4.6	≤0.8	≤0.10	≤0.05	0.10~0.30	—
ER4943, R4943	—	5.0~6.0	≤0.40	≤0.10	≤0.05	0.10~0.50	—
ER5087, R5087	AlMg4.5MnZr	≤0.25	≤0.40	≤0.05	0.7~1.1	4.5~5.2	0.05~0.25
ER5183, R5183	AlMg4.5Mn0.7 (A)	≤0.40	≤0.40	≤0.10	0.50~1.0	4.3~5.2	0.05~0.25
ER5183A, R5183A	AlMg4.5Mn0.7 (A)	≤0.40	≤0.40	≤0.10	0.50~1.0	4.3~5.2	0.05~0.25
ER5187, R5187	AlMg4.5MnZr	≤0.25	≤0.40	≤0.05	0.7~1.1	4.5~5.2	0.05~0.25
ER5249, R5249	AlMg2Mn0.8Zr	≤0.25	≤0.40	≤0.05	0.50~1.1	1.6~2.5	≤0.30
ER5356, R5356	AlMg5Cr(A)	≤0.25	≤0.40	≤0.10	0.05~0.20	4.5~5.5	0.05~0.20
ER5356A, R5356A	AlMg5Cr(A)	≤0.25	≤0.40	≤0.10	0.05~0.20	4.5~5.5	0.05~0.20
ER5554, R5554	AlMg2.7Mn	≤0.25	≤0.40	≤0.10	0.50~1.0	2.4~3.0	0.05~0.20
ER5556, R5556	AlMg5Mn1Ti	≤0.25	≤0.40	≤0.10	0.50~1.0	4.7~5.5	0.05~0.20
ER5556A, R5556A	AlMg5Mn	≤0.25	≤0.40	≤0.10	0.6~1.0	5.0~5.5	0.05~0.20
ER5556B, R5556B	AlMg5Mn	≤0.25	≤0.40	≤0.10	0.6~1.0	5.0~5.5	0.05~0.20
ER5556C, R5556C	AlMg5Mn1Ti	≤0.25	≤0.40	≤0.10	0.50~1.0	4.7~5.5	0.05~0.20
ER5654, R5654	AlMg3.5Ti	Si+Fe≤0.45		≤0.05	≤0.01	3.1~3.9	0.15~0.35
ER5654A, R5654A	AlMg3.5Ti	Si+Fe≤0.45		≤0.05	≤0.01	3.1~3.9	0.15~0.35
ER5754, R5754	AlMg3	≤0.40	≤0.40	≤0.10	≤0.50	2.6~3.6	≤0.30

成 分 %								タセト 溶接材料
Zn	Ti	Zr	その他 成分	Be	残元素		Al	
					個々	合計		
≦0.10	≦0.15	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.10	≦0.15	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.25	≦0.15	0.10～0.20	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.25	≦0.15	—	—	≦0.0003	≦0.05	≦0.15	Rem	MG5183, TG5183
≦0.25	≦0.15	—	—	≦0.0005	≦0.05	≦0.15	Rem	
≦0.25	≦0.15	0.10～0.20	—	≦0.0005	≦0.05	≦0.15	Rem	
≦0.20	≦0.15	0.10～0.20	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.10	0.06～0.20	—	—	≦0.0003	≦0.05	≦0.15	Rem	MG5356, TG5356
≦0.10	0.06～0.20	—	—	≦0.0005	≦0.05	≦0.15	Rem	
≦0.25	0.05～0.20	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.25	0.05～0.20	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.20	0.05～0.20	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.20	0.05～0.20	—	—	≦0.0005	≦0.05	≦0.15	Rem	
≦0.25	0.05～0.20	—	—	≦0.0005	≦0.05	≦0.15	Rem	
≦0.20	0.05～0.15	—	—	≦0.0003	≦0.05	≦0.15	Rem	
≦0.20	0.05～0.15	—	—	≦0.0005	≦0.05	≦0.15	Rem	
≦0.20	≦0.15	—	Mn+Cr= 0.10～0.6	≦0.0003	≦0.05	≦0.15	Rem	

資料 B 11 チタン及びチタン合金溶加棒及

AWSクラス	UNS No.	化 学 成						
		C	O	N	H	Fe	Al	V
ERTi-1	R50100	≤0.03	0.03~0.10	≤0.012	≤0.005	≤0.08	—	—
ERTi-2	R50120	≤0.03	0.08~0.16	≤0.015	≤0.008	≤0.12	—	—
ERTi-3	R50125	≤0.03	0.13~0.20	≤0.02	≤0.008	≤0.16	—	—
ERTi-4	R50130	≤0.03	0.18~0.32	≤0.025	≤0.008	≤0.25	—	—
ERTi-5	R56402	≤0.05	0.12~0.20	≤0.030	≤0.015	≤0.22	5.50~6.75	3.50~4.50
ERTi-7	R52401	≤0.03	0.08~0.16	≤0.015	≤0.008	≤0.12	—	—
ERTi-9	R56321	≤0.03	0.06~0.12	≤0.012	≤0.005	≤0.20	2.5~3.5	2.0~3.0
ERTi-11	R52251	≤0.03	0.03~0.10	≤0.012	≤0.005	≤0.08	—	—
ERTi-12	R53401	≤0.03	0.08~0.16	≤0.015	≤0.008	≤0.15	—	—
ERTi-13	R53423	≤0.03	0.03~0.10	≤0.012	≤0.005	≤0.08	—	—
ERTi-14	R53424	≤0.03	0.08~0.16	≤0.015	≤0.008	≤0.12	—	—
ERTi-15A	R53416	≤0.03	0.13~0.20	≤0.02	≤0.008	≤0.16	—	—
ERTi-16	R52403	≤0.03	0.08~0.16	≤0.015	≤0.008	≤0.12	—	—
ERTi-17	R52253	≤0.03	0.03~0.10	≤0.012	≤0.005	≤0.08	—	—
ERTi-18	R56326	≤0.03	0.06~0.12	≤0.012	≤0.005	≤0.20	2.5~3.5	2.0~3.0
ERTi-19	R58641	≤0.03	0.06~0.10	≤0.015	≤0.015	≤0.20	3.0~4.0	7.5~8.5
ERTi-20	R58646	≤0.03	0.06~0.10	≤0.015	≤0.015	≤0.20	3.0~4.0	7.5~8.5
ERTi-21	R58211	≤0.03	0.10~0.15	≤0.012	≤0.005	0.20~0.40	2.5~3.5	—
ERTi-23	R56408	≤0.03	0.03~0.11	≤0.012	≤0.005	≤0.20	5.5~6.5	3.5~4.5
ERTi-24	R56415	≤0.05	0.12~0.20	≤0.030	≤0.015	≤0.22	5.5~6.7	3.5~4.5
ERTi-25	R56413	≤0.05	0.12~0.20	≤0.030	≤0.015	≤0.22	5.5~6.7	3.5~4.5
ERTi-26	R52405	≤0.03	0.08~0.16	≤0.015	≤0.008	≤0.12	—	—
ERTi-27	R52255	≤0.03	0.03~0.10	≤0.012	≤0.005	≤0.08	—	—
ERTi-28	R56324	≤0.03	0.06~0.12	≤0.012	≤0.005	≤0.20	2.5~3.5	2.0~3.0
ERTi-29	R56414	≤0.03	0.03~0.11	≤0.012	≤0.005	≤0.20	5.5~6.5	3.5~4.5
ERTi-30	R53531	≤0.03	0.08~0.16	≤0.015	≤0.008	≤0.12	—	—
ERTi-31	R53533	≤0.03	0.13~0.20	≤0.02	≤0.008	≤0.16	—	—
ERTi-32	R55112	≤0.03	0.05~0.10	≤0.012	≤0.008	≤0.20	4.5~5.5	0.6~1.4
ERTi-33	R53443	≤0.03	0.08~0.16	≤0.015	≤0.008	≤0.12	—	—
ERTi-34	R53444	≤0.03	0.13~0.20	≤0.02	≤0.008	≤0.16	—	—
ERTi-36	R58451	≤0.03	0.06~0.12	≤0.02	≤0.0035	≤0.03	—	—
ERTi-38	R54251	≤0.05	0.20~0.27	≤0.02	≤0.010	1.2~1.8	3.5~4.5	2.0~3.0

びワイヤ (AWS A5.16 : 2013)

分 %			そ の 他 (1)	タセト溶接材料
Pd	Ru	Ni		
—	—	—	—	TGTi-1, MGTi-1
—	—	—	—	TGTi-2, MGTi-2
—	—	—	(1) Residuals Each <0.05 Residuals Total <0.20	TGTi-3, MGTi-3
—	—	—	—	TGTi-4, MGTi-4
—	—	—	—	TGTi-5
0.12~0.25	—	—	—	TGTi-7, MGTi-7
—	—	—	—	—
0.12~0.25	—	—	—	TGTi-11, MGTi-11
—	—	0.6~0.9	Mo=0.2~0.4	—
—	0.04~0.06	0.4~0.6	—	—
—	0.04~0.06	0.4~0.6	—	—
—	0.04~0.06	0.4~0.6	—	—
0.04~0.08	—	—	—	—
0.04~0.08	—	—	—	—
0.04~0.08	—	—	—	—
—	—	—	Mo=3.5~4.5, Cr=5.5~6.5, Zr=3.5~4.5	—
0.04~0.08	—	—	Mo=3.5~4.5, Cr=5.5~6.5, Zr=3.5~4.5	—
—	—	—	Mo=14.0~16.0, Nb=2.2~3.2, Si=0.15~0.25	—
—	—	—	—	—
0.04~0.08	—	—	—	—
0.04~0.08	—	0.3~0.8	—	—
—	0.08~0.14	—	—	—
—	0.08~0.14	—	—	—
—	0.08~0.14	—	—	—
—	0.08~0.14	—	—	—
0.04~0.08	—	—	Co=0.20~0.80	—
0.04~0.08	—	—	Co=0.20~0.80	—
—	—	—	Mo=0.6~1.2, Si=0.06~0.14, Zr=0.6~1.4, Sn=0.6~1.4	—
0.01~0.02	0.02~0.04	0.35~0.55	Cr=0.1~0.2	—
0.01~0.02	0.02~0.04	0.35~0.55	Cr=0.1~0.2	—
—	—	—	Nb=42.0~47.0	—
—	—	—	—	—

