

YT-505/YT-511/YT-521

*JIS Z 3317 W55G
 *AWS A5.28 ER80S-G
 *JIS Z 3317 W551CMT
 *AWS A5.28 ER90S-G
 *JIS Z 3317 W622C1M2
 *AWS A5.28 ER90S-G

For 0.5% Mo, 1~1.25%Cr-0.5%Mo and 2.25%Cr-1%Mo Heat Resisting Steels

APPLICATIONS

YT-505: Welding of 0.5% Mo steels such as ASTM A204 Gr. A-C or A335 P1 boiler tube.

YT-511: Welding of 1~1.25%Cr-0.5%Mo Steels such as ASTM A387 Gr.11 or A335 P11/12

YT-521: Welding of 2.25%Cr-1%Mo Steels such as ASTM A387 Gr.22 or A335 P22.

CHARACTERISTICS

YT-505, YT-511 and YT-521 are filler rods and spool wire for GTAW (TIG welding) to be used with Ar shield gas. Those products show good welding performance in Uranami welding (penetration bead welding).

GUIDELINES FOR USAGE

1. Preheating and PWHT should be carried out according to the specification such as ASME and so on.
2. All water, rust and oil in groove should be completely removed to prevent cracks and blowholes.
3. When uranami welding, it is recommended 100% Ar gas backings.

WELDING POSITION



TYPICAL CHEMICAL COMPOSITION OF WELD METAL (%)

Trade name	Shielding gas	C	Si	Mn	P	S	Cr	Mo	Sb	Sn	As	X-bar*
YT-505	100%Ar	0.09	0.02	1.74	0.013	0.004	—	0.46	—	—	—	—
YT-511	100%Ar	0.1	0.22	0.84	0.005	0.002	1.43	0.51	0.001	0.001	0.002	6.1
YT-521	100%Ar	0.12	0.08	0.76	0.005	0.004	2.35	0.98	0.001	0.001	0.002	6.1

*Note: X-bar=(10×%P+5×%Sb+4×%Sn+%As)×100

TYPICAL MECHANICAL PROPERTIES OF WELD METAL

Trade name	Shielding gas	Yield Strength, MPa	Tensile Strength, MPa	Elongation, %	Charpy 2V-notch, J		PWHT
YT-505	100%Ar	590	670	33	277 (-50°C)	280 (-36°C)	590°C×2.2hrs.
		520	600	31	279 (-50°C)	279 (-36°C)	645°C×9hrs.
YT-511	100%Ar	490	630	28	208 (-23°C)	231 (-12°C)	691°C×3.5hr
		390	590	32	234 (-23°C)	278 (-12°C)	691°C×24.5hrs.
YT-521	100%Ar	500	650	29	—	279 (-29°C)	691°C×5.5hr
		490	630	29	246 (-50°C)	266 (-29°C)	691°C×33.5hrs.

SIZES<DC(—)>

Diameter (mm)	0.8	1.0	1.2	1.6	2.0	2.4	3.2
Length of Filler Rod (mm)	—	100%	1000	1000	1000	1000	1000
Weight of spool wire (kg)	12.5	12.5	12.5	100%	100%	100%	100%