



The Everyday Pocket Handbook for Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW)



Number 4 in a series

Compiled as a useful tool for
on-the-job welding personnel by the
AWS Product Development Committee

Edited by
L. W. Myers Sr., Welding Engineer,
Turbo Products Division,
Dresser-Rand, Inc., Olean, NY

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GMAW Filler Metal Specifications and Classification System

Material	Filler Metal		X Designator Description	Example
	AWS Spec.	AWS Class.*		
Steel, carbon	A5.18	ERXXS-Y EXXC-Y	Tensile strength × 1000 (psi)	ER70S-3 E70C-3
Steel, low alloy	A5.28	ERXXS-Y EXXC-Y	Tensile strength × 1000 (psi)	ER80S-B2 E80C-B2
Stainless steel	A5.9	ERXXX-Y	Stainless alloy (308, 410, etc.)	ER308L EC308L
Aluminum	A5.10	ERXXXX-Y	Aluminum alloy (4043, 5083, etc.)	ER4043
Nickel	A5.14	ERNiXX-Y	Major alloying elements (Cr, Fe, Mo, etc.)	ERNiCr-3
Copper	A5.7	ERCuXX-Y	Major alloying elements (Al, Ni, Si, etc.)	ERCuAl-A2
Magnesium	A5.19	ERXXYYY	Major alloying elements (Al, Zn, etc.)	ERAZ92A
Titanium	A5.16	ERTi-Y		ERTi-5

***Legend**

E — Filler metal may be used as an electrode

R — Filler metal may be used as a rod

S — Solid filler metal

C — Composite or stranded filler metal

Y — Designator (or combination of designators) that describe specific alloy, shielding gas to be used, diffusible hydrogen limit, etc. Refer to the appropriate AWS Filler Metal Specification shown in table for explanation.