

THERMET™ HP50WCO

High Carbon Austenitic Alloys

KEY FEATURES

- Additions of cobalt and tungsten for maintaining matrix strength
- High carbon, high alloy for excellent hot strength and oxidation resistance at service temperatures of 950 - 1250 °C (1740 - 2280 °F)

TYPICAL APPLICATIONS

- Highly stressed furnace parts, sintering and calcining muffles
- Cement kiln components resistant to hot abrasion, radiant tubes, and pyrolysis coils

WELDING POSITIONS

All, except vertical down

DIAMETERS / PACKAGING

Diameter mm (in)	Length mm (in)	Carton kg (lbs)	Part Number
3.2 (1/8)	320 (12.6)	12.0 (26.46)	THHP50WCO-32
4.0 (5/32)	320 (12.6)	13.2 (29.10)	THHP50WCO-40

MECHANICAL PROPERTIES⁽¹⁾

	Tensile Strength MPa (ksi)	0.2% Proof Stress MPa (ksi)	Elongation %	Reduction of area	Hardness HV
Typical Performance ⁽³⁾ As-Welded	840 (122)	610 (88)	8.5	6	265

DEPOSIT COMPOSITION⁽¹⁾

	%C	%Mn	%Si	%S	%P	%Cr
Typical Range	0.40-0.60	0.5-1.5	0.2-1.2	0.02 max	0.03 max	24.0-28.0
Typical Performance ⁽³⁾ (Weld metal wt. %)	0.50	0.6	0.5	0.008	0.010	25
	%Ni	%Co	%W	%Mo	%Cu	%Fe
Typical Range	34.0-40.0	13.0-18.0	4.0-6.0	0.5 max	0.5 max	Balance
Typical Performance ⁽³⁾ (Weld metal wt. %)	35	14	4.6	0.05	0.05	19

TYPICAL OPERATING PROCEDURES

Diameter mm (in)	Polarity	Amp Range
3.2 (1/8)	DC+	85-120A
4.0 (5/32)	DC+	110-160A

⁽¹⁾ Typical all weld metal ⁽²⁾ Measured with 0.2% offset ⁽³⁾ See test results disclaimer on next pg. ⁽⁴⁾ Preferred polarity is listed first.

IMPORTANT: SPECIAL VENTILATION AND/OR EXHAUST REQUIRED

Fumes from the normal use of some welding products can contain significant quantities of components - such as chromium and manganese - which can lower the 5.0 mg/m³ maximum exposure guideline for general welding fume.

BEFORE USE, READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET (MSDS) FOR THIS PRODUCT AND SPECIFIC INFORMATION PRINTED ON THE PRODUCT CONTAINER.

Material Safety Data Sheets (MSDS) and Certificates of Conformance are available on our website at www.lincolnelectric.com

TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

CUSTOMER ASSISTANCE POLICY

The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

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