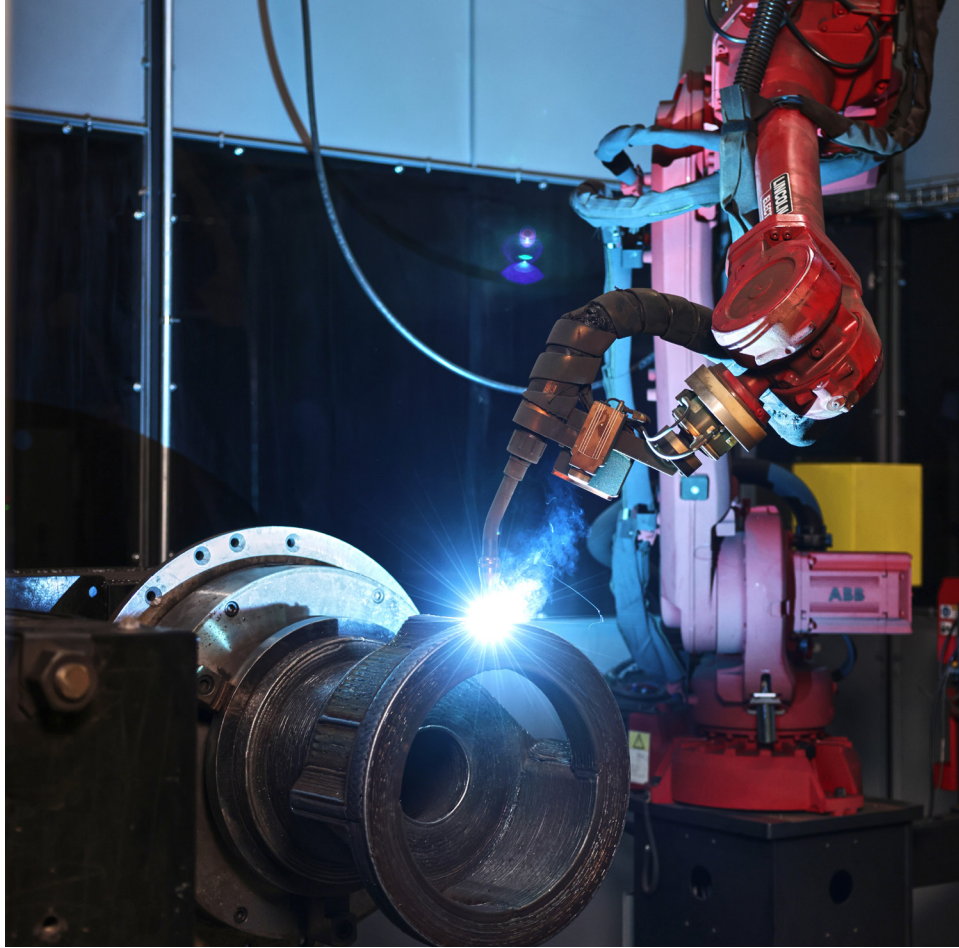


# HIGH-STRENGTH LOW-ALLOY STEEL



## KEY FEATURES

High-Strength Low-Alloy (HSLA) steel is known for its high tensile and yield strength as well as its atmospheric corrosion resistance. Its good notch toughness and strength-to-weight ratio along with excellent formability and ductility makes HSLA steel ideal for applications such as: pressure vessels, shipbuilding, heavy construction and agricultural equipment, machinery replacement parts, bridges and building structures, and more.

The mechanical properties compare favorably to the following high strength low-alloy steel casting grades:

MIL S-16216 Grade HY-80

MIL S-21952 Grade HY-80

### Typical Applications »

- Pressure Vessels
- Shipbuilding
- Heavy Construction and Agricultural Equipment
- Machinery Replacement Parts
- Bridges and Building Structures
- Energy and Oil & Gas
- Rail Transportation

## NOMINAL MECHANICAL PROPERTIES (AS-PRINTED)<sup>(1)</sup>

GMAAM <sup>(2)</sup>	Room Temperature Strength			Toughness		Vickers Hardness	CTE
	YS @ 0.2% Off (ksi)	UTS (ksi)	Elong (%)	ft-lbs @ 70 °F	ft-lbs @ -50 °F		
Wire Feedstock						HV10	in/(in °F)
HSLA Steel	80	105	20	> 100	> 20	280	7

(1) As-Printed indicates deposits were not subject to post-weld heat treatment

(2) Gas Metal Arc Additive Manufacturing (GMAAM)

The procedures Lincoln Electric uses to manufacture additive products made with this wire feedstock comply with ASME BPVC Supplement 1 Code Case 3020: Qualification of Gas Metal Arc Additive Manufacturing (GMAAM) Procedures (Section IX).

### Test Results

Test results for mechanical properties were obtained from GMAAM deposits produced and tested according to prescribed standards. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any GMAAM component before use in the intended application. This data is for illustrative purposes only. Actual results may vary.

### CUSTOMER ASSISTANCE POLICY

The business of 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.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to [www.lincolnelectric.com](http://www.lincolnelectric.com) for any updated information.