

High Strength Low Alloy (HSLA) Structural Steel



U. S. Steel Canada
A Subsidiary of United States Steel

Stelmax™ 50 and 60 Coated Steels for the Automotive Industry

Stelmax™ 50 and 60 are part of U. S. Steel Canada's family of cold rolled, zinc-coated high strength low alloy (HSLA) sheet products. With good formability and mid-range tensile strength, these steel products are used in a wide range of automotive unexposed structural applications.

Metallurgical Principle

These low carbon, niobium micro-alloyed steels are manufactured using stringent process controls to minimize mechanical property variability while maximizing ductility. Very low levels of sulfur are a standard feature for good stretched edge performance and, when requested, inclusion shape control is employed to further enhance stretched edge and hole expansion performance.

Mechanical Properties

Minimum values guaranteed in the rolling direction are given in the following table along with average production data (measured using ASTM A370 standard sheet specimens of 50 mm gauge length). Digitized stress-strain curves are available upon request.

GRADE	YS		TS		TE (%)	N-VALUE
	ksi	MPa	ksi	MPa		
STELMAX 50	50*	345	60*	414	22*	
TYPICAL DATA	55	380	63	434	31	0.196
STELMAX 60	60*	414	70*	482	18*	
TYPICAL DATA	65	448	73	503	27	0.186

*MINIMUMS AS REQUIRED BY INDIVIDUAL CUSTOMER SPECIFICATIONS

Available Thickness, Width and Coating Types**

GRADE	THICKNESS (MM)	MAX WIDTH (MM)	COLD	GALVANIZED	GALVANNEAL
			ROLLED	COATING	COATING
STELMAX 50	0.9 TO 2.0	1625	X	X	X
STELMAX 60	1.0 TO 1.5	1400		X	X

*MAXIMUM WIDTH IS A FUNCTION OF SPECIFIED THICKNESS.

**PLEASE INQUIRE ABOUT AVAILABILITY OF SIZES OUTSIDE OF THESE RANGES.

Production Experience

Stelmax™ 50 and 60 products have been a part of U. S. Steel Canada's product portfolio for the past fifteen years growing to more than 75,000 tons annually. Consistently tight yield strength control, coupled with excellent ductility, are the primary reasons for their popularity. Through our commitment to continuous improvement, the Stelmax™ grades have become unmatched in the industry for quality and consistency.

Stelmax™ 50 Property Variability

Tests by the Auto/Steel Partnership (A/SP) Task Force on Uniformity of Materials Properties determined U. S. Steel Canada's two Stelmax™ 50 sub-missions to be capable of very low yield strength variability, 8.4 ksi on average, while consistently exceeding the minimum 50 ksi yield strength requirement. In addition, both total elongation and n-values, measures of ductility, were excellent. The independent analysis was based on tensile data measured edge to edge and through the lengths of ten coils, each from different steel heats, supplied to a single size.



SPECIAL FEATURES

- Best-in-class consistency of mechanical properties
- Excellent ductility with mid-range tensile strength

APPLICATIONS

Automotive Unexposed (structural)



Hamilton Works
U. S. Steel Canada
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