

# Dual Phase Steel



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

## StelPhase II Advanced High Strength Dual Phase Steels

**StelPhase II™ is a family of Dual Phase products. These products feature excellent attributes for structural and reinforcement applications. Down-gauging opportunities can be easily achieved thanks to the superior strength and high energy-absorption properties of StelPhase II™. The specialized microstructure of this advanced high strength material combines both high tensile strength and good formability.**

### Metallurgical Principle

The steel microstructure of StelPhase II™ consists of a very hard phase of martensite in a soft formable ferrite matrix. This structure gives a good combination of high tensile strength, low yield-to-tensile strength ratio and very high initial work hardening rate with good elongation values. StelPhase II™ is very formable, providing more flexibility in part design. The strength of the formed part will be much higher than traditional high strength low alloy (HSLA) steel, especially at very low strain. The high initial work hardening rate, high tensile strength, give StelPhase II™ a very high capacity to absorb energy, making these steels suitable for use in structural and reinforcement applications.

### Available Thickness, Width and Coating Types

COATING LINE	THICKNESS (mm)	MAX WIDTH (mm)	GALVANIZE COATING	GALVANNEAL COATING
Z-LINE	0.7-1.8	1400	X	X
NO. 2 CGL	1.0-3.2	1245	X	ZN-FE

Please inquire about availability of other sizes not stated. Development plans for this family of steels are continuing.

### Mechanical Properties

Minimum values guaranteed on bare sheet, ASTM A370 standard sheet specimen (50 mm gauge length), in rolling direction.

GRADE (MPa)	YS (MPa)	UTS (MPa)	TE (%)	N (10-20%)
StelPhase II 590	340	590	24	0.15
StelPhase II 490**	290	490	27	0.16

\*\*StelPhase II™ 490 HAS A HIGHER R-VALUE, HENCE A BETTER DRAWING RATIO.

### Special Features

- Dual Phase steel microstructure containing both high strength martensite and formable ferrite
- Excellent energy-absorption
- High tensile strength coupled with good formability

### Applications

Automotive Unexposed (structural and reinforcement)



**Hamilton Works**  
**U. S. Steel Canada**  
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