CHRŌMX™ 4100

ChrōmX™ 4100 Grade 100, high-strength reinforcing steel provides the perfect blend of value and benefits for large construction projects. With a yield strength of 100 ksi, it allows for the use of up to 40% less reinforcing steel. This means engineers can solve difficult rebar congestion problems, while owners and contractors realize significant up front construction cost and time savings.

HIGH STRENGTH WITH DUCTILITY GRADE 100 STEEL

The unique technology and chemistry used to manufacture ChrōmX 4100 produces a Grade 100 steel that maintains excellent ductility. This means it can be fabricated just like common lower strength reinforcing steels without any special handling requirements.

- Solve Rebar Congestion
- Reduce Mat Foundation Steel
- Improve Concrete Placement
- Lower Rebar Placing Costs
- Reduce Placing Time
- Lower Cage Weights
- Less Fabrication Scrap
- Fewer Couplers
- Less Jobsite Transit and Storage

TODAY'S STEEL STANDARD®

Specifying and Designing with ChrōmX 4100

ChrōmX 4100 is specified as ASTM A1035 with a modified chemistry.

ACI ITG-6R-10 Report
2010 American Concrete Institute (ACI) Innovative Task Group report outlined the use of ASTM A1035 Grade 100 steel in reinforced concrete structures. The report details considerations of using Grade 100 steel within the framework of ACI 318-08

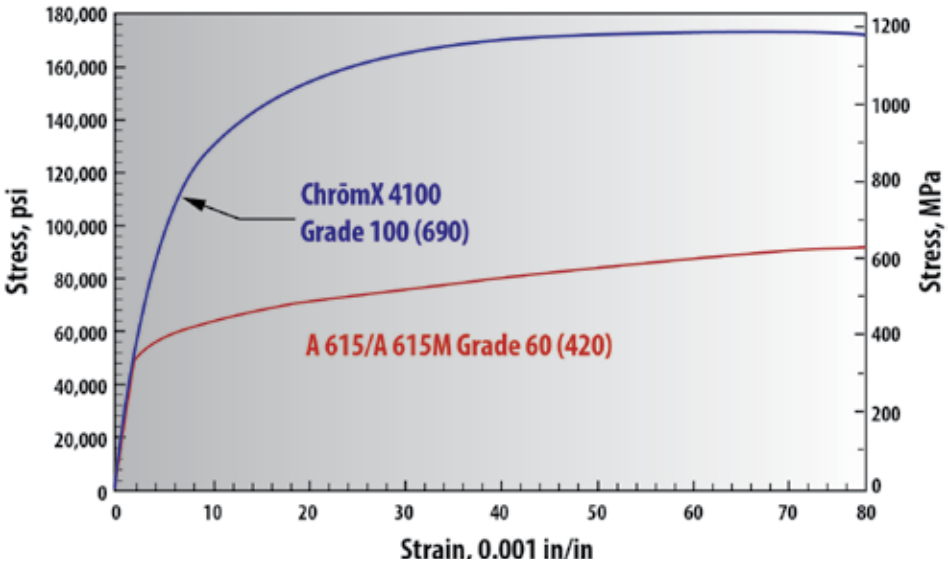
ICC-ES Evaluation Report ESR-2107
Provides design guidance for using ASTM A1035 up to 100 ksi beyond the current ACI 318 limitations. ESR-2107 demonstrates how ASTM A1035 Grade 100 complies with all applicable areas of the 2012 and 2009 International Building Code® (IBC)

AASHTO LRFD Bridge Design Specification
2013 interim revisions of AASHTO LRFD Bridge Design Specification allows reinforced concrete bridges to be designed using high-strength reinforcing steels up to a 100 ksi yield strength.

Corrosion Resistance
Due to its chrome content ChrōmX 4100 offers greater corrosion resistant than black steel.

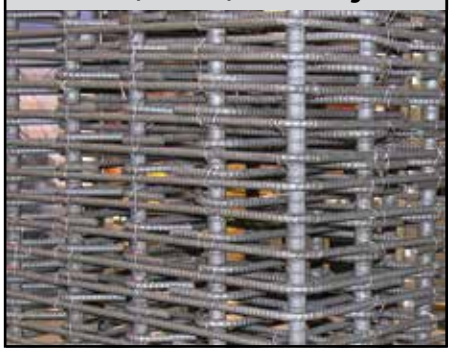
Mat Foundations | Shear Walls | Confinement Ties | Drilled Shafts | Bridge Piers | Precast Beams

CHRŌMX 4100



DESIGN EXAMPLE

Conventional Design
60 ksi (420 MPa) Yield Strength



ChrōmX 4100 Design Improvement
100 ksi (690 MPa) Yield Strength

BAR SIZES

REBAR: #3 - #11, #14, & #18

COIL: #3 & #4

SMOOTH ROUND DOWELS: 1-1/4 & 1-1/2 inch diameter

CUSTOM MILL-CUT LENGTHS:
Available by special order of 25 tons or greater and a minimum length of 20'

Physical Properties of ChrōmX 4100

Minimum Tensile Properties	Grade 100 [690]
Tensile strength, min. psi [MPa]	150,000 [1030]
Yield strength (0.2% offset) min. psi [MPa]	100,000 [690]
Stress corresponding to an extension under load of 0.0035 in./in. (0.0035mm/mm), min. psi [MPa]	80,000 [550]
Elongation in 8 in. [203.2 mm], min.%;	
Bar Designation No. 3 through 11 [10 through 36]	7
Bar Designation No. 14, 18, [43, 57]	6

Bar Designation No.	Diameter in [mm]	Cross-Sectional Area, in² [mm²]	Weight, lb/ft [kg/m]
3 [10]	0.375 [9.5]	0.11 [71]	0.376 [0.560]
4 [13]	0.500 [12.7]	0.20 [129]	0.668 [0.994]
5 [16]	0.625 [15.9]	0.31 [199]	1.043 [1.552]
6 [19]	0.750 [19.1]	0.44 [284]	1.502 [2.235]
7 [22]	0.875 [22.2]	0.60 [387]	2.044 [3.042]
8 [25]	1.000 [25.4]	0.79 [510]	2.670 [3.973]
9 [29]	1.128 [28.7]	1.00 [645]	3.400 [5.060]
10 [32]	1.270 [32.3]	1.27 [819]	4.303 [6.404]
11 [36]	1.410 [35.8]	1.56 [1006]	5.313 [7.907]
14 [43]	1.693 [43.0]	2.25 [1452]	7.65 [11.38]
18 [57]	2.257 [57.3]	4.00 [2581]	13.60 [20.24]

MMFX STEEL
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