

## Structural Applications Using Chromx<sup>®</sup> High-Strength Reinforcing Bars

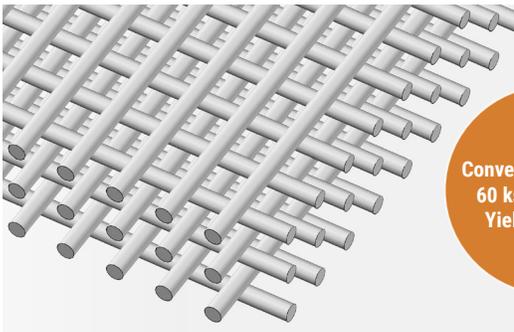
ASTM A1035 Grade 100 and 120 rebar is an excellent option for reducing construction labor and material cost while enhancing the ease of construction. The following comparison examples utilizing ChromX<sup>®</sup> reinforcing steels with a 100 ksi (690 MPa) yield strength demonstrate many potential areas of savings including:

- Reducing rebar congestion
- Improving constructability
- Reducing rebar fabrication
- Reducing project cost
- Easier concrete placement
- Allowing design flexibility



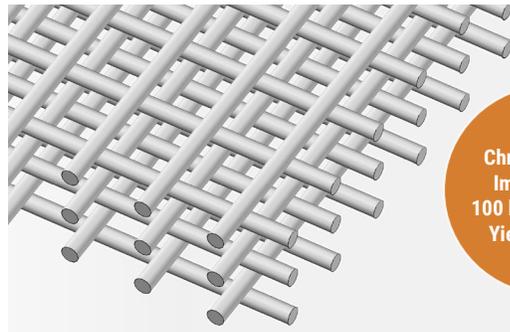
**DESIGN ACCORDING  
TO ACI 318-19 CODE**

### Mat Foundation Example



Conventional Design  
60 ksi (420 MPa)  
Yield Strength

#11 (36 mm) ASTM A615 Grade 60 (420) @ 4" Spacings



ChromX Design  
Improvement  
100 ksi (690 MPa)  
Yield Strength

#11 (36 mm) ASTM A1035 Grade 100 (690) @ 6" Spacings

**ChromX<sup>®</sup>  
(ASTM A1035)  
Concrete  
Reinforcing  
Steels**

**Up to 33%  
steel reduction  
with ChromX<sup>®</sup>  
reinforcing bars**

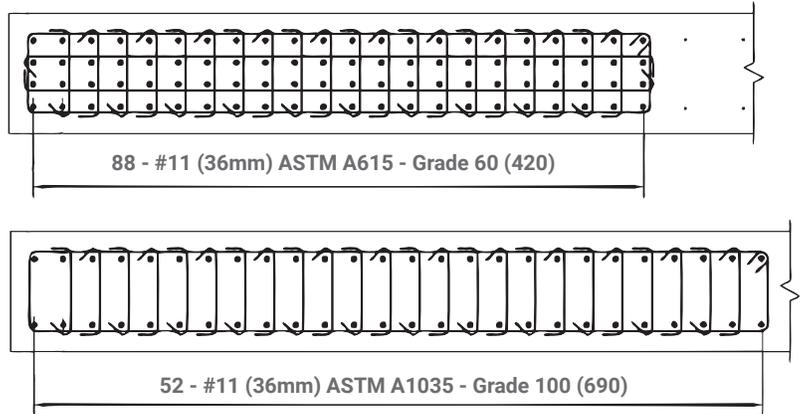


**Mat foundation reinforced with ChromX<sup>®</sup> bars for a 50-story high-rise in Miami, FL**

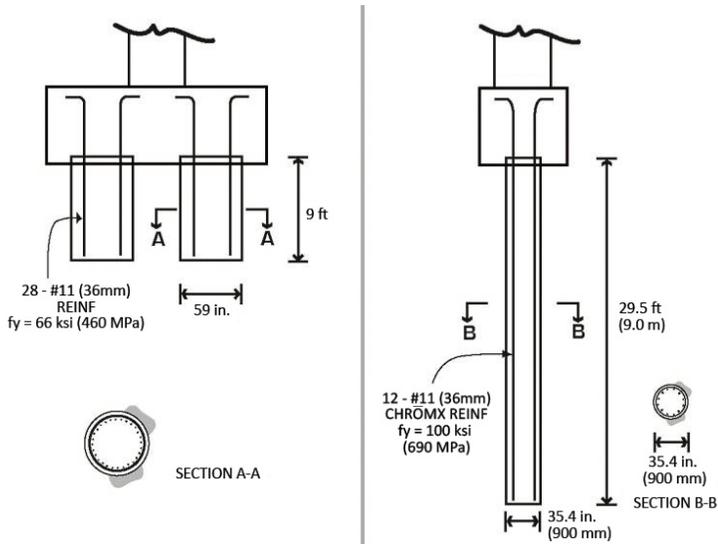
## Shear Wall Example

Designing a shear wall jam (vertical) using high strength ASTM A1035 Grade 100 rebar offers significant advantages over conventional A615 Grade 60.

- 50% Reduction in Vertical Reinforcing
- Reduced Cross Ties
- Easier Construction



## Drilled Pile Example



Drilled Piles designed using 100 ksi (690 MPa) ChromX® rebar lowers drilling time and cost while also reducing construction material requirements.

- 40% Less Concrete
- 29% Less Steel

	Baseline Design	ChromX® Design
<b>Pile Diameter</b>	0.375 (9.5)	0.11 (71)
<b>Reinforcement Grade</b>	0.875 (22.2)	0.60 (387)
<b>Reinforcement per Pile</b>	1.000 (25.4)	0.79 (510)
<b>Number of Pile per location</b>	1.128 (28.7)	1.00 (645)
<b>Length of Pile per location</b>	1.270 (32.3)	1.27 (819)
<b>Concrete Volume</b>	1.410 (43.0)	1.56 (1006)
<b>Steel Weight</b>	1.693 (43.0)	2.25 (1452)



it's what's **inside** that counts

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