

### REINFORCING STEELS BY MMFX

# ChrōmX 2000 Series HIGH STRENGTH REBAR

ChrōmX 2000 Series (ChrōmX 2100 and 2120) concrete reinforcing steels provide yield strengths of 100 ksi and 120 ksi [690 MPa and 830 MPa] at competitive prices. This product is ideal for construction projects in which high strength designs reduce the amount of steel used, improving constructability, reducing construction time and first costs for the owner.

#### HIGH STRENGTH REBAR WITH DUCTILITY

The unique formulation of ChrōmX 2000 Series reinforcing steel achieves the 100 and 120 ksi [690 MPa and 830 MPa] yield strengths of the ASTM A1035 specification, while maintaining excellent ductility and tensile-to-yield ratios above 1.25. The design guidance for using high strength steels up to 100 ksi [690 MPa] yield within the ACI ITG-6R, ICC-ES AC429 and ICC-ES ESR-2107 allows engineers to design concrete structures with Grade 100 [690] steel. Utilizing the high strength properties of ChrōmX 2000 steel can lower initial material costs, solve rebar congestion issues and save construction time and labor costs, by:

- Reducing Steel and Concrete Volumes
- Improving Concrete Pouring Efficiencies
- Lowering Rebar Placing Costs
- Reducing Placing Time
- Lowering Cage Weights
- Saving on Couplers
- Improving Jobsite Transit, Storage and Logistics

#### **No Special Handling Requirements**

The ductile high strength nature of ChrōmX 2000 steels allows the rebar to be cut and bent using standard fabrication equipment and accepted industry practices. It features all the ease of construction found in standard grade black bar — with all the benefits and superior performance of a technically advanced product.

#### Specifying ChromX 2000 Rebar

ASTM A1035 CL Grade 100 [690] or 120 [830]





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# Designing with ChrōmX 2000 Rebar up to 100 ksi [690 MPa] Yield

#### **GRADE 100 [690] DESIGN GUIDELINES REFERENCES**

ACI Design Guide and Codification Recommendations
ACI ITG-6R "Design Guide for the Use of ASTM A1035/
A1035M Grade 100 [690] Steel Bars for Structural Concrete"

## ICC Specifications for Commercial Construction

ICC-ES AC429 "Acceptance Criteria for High Strength Steel Reinforcing Bars"

#### **ICC-ES Report for ASTM A1035**

ICC-ES ESR-2107 "ASTM A1035/A1035M Grade 100 [690] Steel Reinforcing Bars"

#### **AASHTO LRFD for High Strength Bridge Designs**

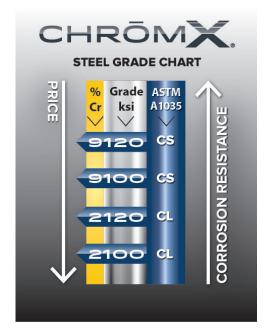
AASHTO LRFD Bridge Design Specifications
"Bridge Design Code for the Use of ASTM A1035/A1035M
Grade 100 [690] Steel Bars for Bridge Structures"

#### **GCC Approvals**

- ▶ Qatar Construction Specification, QCS 2014, Qatar
- ▶ Municipality of Abu Dhabi, UAE
- ▶ Trakhees, Department of Planning & Development, Dubai, UAE
- ▶ Abu Dhabi Department of Transport, Design Code for Maritime Infrastructure
- ▶ Abu Dhabi City Municipality Roadway Design Manual
- ▶ Abu Dhabi City Municipality Standard Specifications
- ▶ Dubai Municipality Product Conformity by the Dubai Central Laboratory, DCL, Certificate No. CL 16020331, Dubai, UAE as produced by Star Steel LLC

#### The ChromX Family

ChrōmX 2000 Series and 9000 steels, provide high strength with varying levels of corrosion resistance, so designers can utilize the high strength efficiencies and best match the corrosion protection requirements of a given project. Both Chrōmx steels can be used together to build quality structures most efficiently.



MMFX® Steel Corporation is a global specialty steel company that has removed long-standing limitations faced by structural engineers and the construction industry by introducing its ChrōmX brand high strength concrete reinforcing steel products with varying levels of corrosion resistance, so designers can utilize the high strength efficiencies and best match the corrosion protection requirements of a given project.

In conjunction with its industry partners and OEM manufacturers, MMFX continues to develop and deliver additional steel products utilizing the MMFX nanotechnology to the market, such as thread bar, anchor bolts, and couplers.



