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Corrosion-resistance of Uncoated A615 and A706 Steel Reinforcing Bar

Steel reinforcing bar produced in accordance with ASTM Specifications A615 and A706 make up the majority of uncoated bar (black bar) used today for reinforced concrete construction in the United States. With recent changes to these specifications, A706 bar now meets or exceeds all chemical and mechanical requirements of A615. Metallurgically, A615 has one chemical composition requirement which limits its Phosphorus content to a maximum of 0.06% while A706 has the following maximum limitations: Carbon 0.30%, Manganese 1.50%, Phosphorus 0.035%, Sulfur 0.045%, Silicon 0.50%. However, these requirements only pertain to mechanical properties and do not play a role in corrosion-resistance. Because both bar types are 99% iron, the primary material that undergoes corrosion, there is no difference in the corrosion-resistance performance characteristics of A615 and A706 bars produced today.

For more information on corrosion-resistance of steel reinforcing bar see CRSI Technical Notes: ETN-M-5, *Rust, Mill Scale, and Other Surface Contaminants on Steel Reinforcing Bars* and CTN-M-2, *Field Guide for Rust on Reinforcing Bars*.

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