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PURE220+™ Adhesive Anchoring System and Installations with Epoxy Coated Reinforcing Bars

ACI 318, Chapter 17 (-19 and -14) and ACI 318-11 Appendix D (and by reference to the 2021, 2018, 2015 IBC and 2012 IBC, respectively) requires that adhesive anchors for concrete be tested and qualified with standard steel threaded rods and/or reinforcing bars for each anchor diameter in concrete. This is to determine how the anchor size and steel element type influence the bond strength of installed adhesive anchors.

DEWALT publishes bond strengths for PURE220+ adhesive anchors that are based on standard threaded rods and reinforcing bars. Fortunately, DEWALT has also conducted supplemental laboratory testing in accordance with recognized standards on PURE220+ adhesive anchors installed with epoxy coated rebar in concrete. The table below shows the results of testing the adhesive anchor system with typical standard reinforcing bars and with epoxy coated reinforcing bars. The corresponding reduction factor derived from this comparative testing is provided below. This reduction factor must be applied to the bond strength when calculating the bond strength capacity for the given adhesive anchor used with epoxy coated reinforcing bars and relevant conditions.

Adhesive Anchor System	Steel Element	Drilling Method	Hole Cleaning Method	Bond Strength Reduction Factor
DEWALT PURE220+	Standard rebars (bare or galvanized)	Hammer drilling	Per published instructions	N/A (baseline values)
	Epoxy coated rebars			0.90 (10% reduction)

N/A = Not applicable.

1. Results shown are based on tension tests conducted in accordance with ACI 355.4/ASTM E488 in dry uncracked normal weight concrete.
2. Holes were drilled with a hammer drill and standard carbide drill bit and cleaned following published instructions for the [PURE220+ adhesive anchor system](#). Hollow drill bits (DEWALT DustX+ System) may be considered, as applicable.
3. Standard carbide drill bits and hollow drill bits must meet the requirements of ANSI B212.15; ANSI compliance for hole drilling is required by [ICC-ES ESR-5144](#).
4. See published literature for the specific adhesive anchor system for additional design and installation information which is available at anchors.DEWALT.com.
5. The reduction factor for epoxy coated rebars is supplemental to all other relevant design considerations for the specific application, as applicable.

PURE220+ adhesive anchors will achieve published design strengths for relevant loading conditions when the product is properly installed into holes drilled in concrete. The adhesive anchors must be installed in accordance with all other published installation instructions specific to the application and conditions of the connection.