



TECHNICAL BULLETIN CP-25

DURALPREP A.C. COMPRESSIVE STRENGTH

Duralprep A.C. is an epoxy modified cementitious bonding agent for concrete, and anti-corrosion coating for reinforcing steel. It is formulated to provide strong adhesion between new and hardened concrete, with a long working and open time to accommodate demanding construction schedules. For many years, Duralprep A.C. has been successfully used to bond concrete repairs and toppings with proven corrosion protection for embedded rebar.

Several engineering properties play a role in the performance of a concrete bonding agent, including tensile strength, flexural strength, bond strength, and compressive strength. Duralprep A.C. has been formulated to balance all the properties needed for a strong, durable concrete bonding agent. Some believe that the higher the compressive strength, the "better" the bonding agent, but that is not quite accurate. In reality, concrete bonding agents do not fail in compression. If stressed beyond their physical capability, a bonding agent will fail in tension or shear. Consequently, tensile strength and slant shear bond strength have more influence than compressive strength on the performance of a bonding agent, and this should be considered when comparing and selecting products.



The American Concrete Institute specification *548.13-14 Bonding Fresh Concrete to Hardened Concrete with a Multi-Component Epoxy Adhesive* requires that materials comply with *ASTM C 881, Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete*. However, the scope of ASTM C 881 only includes two-part epoxies, thus C 881 is not applicable to three-part epoxy/cement bonding systems. In spite of that, ASTM C 881 is still a good measure of performance for epoxy bonding materials.

The compressive strength test method dictated by ASTM C 881 is *ASTM D 695, Test Method for Compressive Properties of Rigid Plastics*. This method is suitable for evaluating materials like Duralprep A.C. because the test specimen is of a suitable size and geometry (a 1/2 inch diameter cylinder) for a chemically curing epoxy bonding material. However, bonding agent manufacturers often publish compressive strength results determined by ASTM C 109, a test method used for determining the compressive strength of hydraulic cement mortars utilizing a two inch cube specimen. ASTM C 109 is not appropriate for testing an epoxy/cementitious bonding agent that is designed to be applied in a thin layer. However, the industry's desire for this data requires us to keep ASTM C 109 results published on the Duralprep A.C. product literature.

Duralprep A.C. is specified and used to bond concrete repair mortars and toppings with continued success. A partial list of recent projects is on the back of this page. Duralprep A.C. has excellent adhesion to concrete and steel, provides an effective barrier against penetration of water and chlorides, and is easy to use. Most importantly, Duralprep A.C. has balanced properties and strengths that are more than sufficient for long term performance as a concrete bonding agent.



DURALPREP A.C.

RECENT PROJECTS

PROJECT	STATE	CITY	TYPE
Condo Repair	TX	S. Padre Island	Condominium Beam Repairs
Contessa at Bay Colony	FL	Naples	Housing
Eleven Hundred Gulf Shore Club	FL	Naples	Condominium
Exterior Waterproofing Wayne County	IL	Fairfield	Office Building
FMI Copper	AZ	Miami	Mine
Foxmoor 1 Condo	FL	North Fort Myers	Condominium
Fullerton Stadium Repairs	CA	Fullerton	Stadium
Island Winds Condos Phase II	FL	Fort Myers Beach	Condominium
James Monroe Parking Deck	VA	Richmond	Parking Deck
Longboat Arms	FL	Longboat Key	Condominium
Merida at Cape Marco	FL	Marco Island	Condominium
Meridian Club Condos	FL	Naples	Condominium
Moreno Valley Transfer Station	CA	Moreno Valley	Waste Transfer Station
Parking Garage Restoration	ON	Toronto	Parking Garage
Peck Plaza	FL	Daytona Beach	Condominium
PT Phoenix	AZ	Phoenix	Hospital
Sanibel Harbour Towers	FL	Fort Myers	Condominium
Sanibel Surfside Condo	FL	Sanibel	Condominium
Seaward Condos	FL	New Smyrna	Condominium
Seawinds of Marco	FL	Marco Island	Condominium
Silver Sands Condos	FL	Bonita Springs	Condominium
St. Kitts Condo	FL	Naples	Condominium Waterproofing
Stratford Condo - Phase II	FL	Naples	Condominium
Sundial East	FL	Sanibel	Condominium
The Apollo Condo	FL	Marco Island	Condominium
The Duchess	FL	Marco Island	Condominium
U-Haul	TN	Memphis	Storage Facility
Union Station Parking Garage Restoration	DC	Washington	Parking Garage
Vanderbilt Bay I	FL	Naples	Condominium
Vanderbilt Bay II	FL	Naples	Condominium
Ville De Marco West	FL	Marco Island	Condominium
White Surf Condominiums	FL	Daytona Beach Shores	Condominium
York River Bridge	ME	York	Bridge