Specifier Notes:

Red Head C6+ Adhesive Anchors are for use with cracked and uncracked concrete.

Red Head C6+ Adhesive Anchor System consists of a two-component, high-strength, structural adhesive, and anchor elements (continuously threaded rods or deformed steel reinforced bars) installed in normalweight concrete.

Red Head C6+ Adhesive Anchor System is a post-installed system, used to resist short and long term static, wind or earthquake loads.

Red Head C6+ Adhesive Anchor System can be installed closer together, and closer to the edge of a slab than most mechanical anchors permit, particularly compared to expansion anchors.

Red Head C6+ Adhesive Anchors are best used for oversized, core-drilled holes, hot temperature (78°F/26°C+) and low temperature application (39°F/4°C), seismic (Zones A-F), and other applications requiring longer working times.

Red Head C6+ Adhesive Anchors are approved for core-drill holes in cracked and un-cracked concrete, seismic, wet and submerged conditions.

Red Head C6+ Adhesive Anchors are suitable for pools, recreation centres/stadiums, bridges/elevated roadways, drinking/waste water treatment plants, airports, multi-family and non-residential buildings and in factories/warehouses.

Red Head C6+ Adhesive Anchors can be used with girders, barriers, signage, railing/gratings, seating, rebar dowelling, brick pinning, structural steel beams and vibratory pumps/machinery.

Red Head C6+ Adhesive Anchors are beneficial to your project because adhesives are typically stronger than mechanical anchors if the load is vibratory, or if higher resistance is required.

Red Head C6+ Adhesive Anchors are beneficial to your project because adhesives are stronger than grout, and faster and easier to dispense, especially if there is a deep embedment hole.

Red Head C6+ Adhesive Anchors are more versatile and lower in cost than mechanical anchors.

Epoxy adhesives cure slower and at warmer temperatures, and tend to achieve high strength.

SECTION 05 05 19 – POST-INSTALLED CONCRETE ANCHORS

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes:

Red Head C6+ Adhesive Anchors, cracked and uncracked concrete, post-installed.

* + - * 1. Related Requirements:

Division 3 - Concrete.

Division 4 - Masonry.

Division 5 - Metals

Divisions 22, 23 – Mechanical.

Division 26 – Electrical.

* + - 1. ACTION SUBMITTALS
         1. Product Data:

Include manufacturer’s product data sheets.

* + - * 1. Manufacturer’s instructions:

Submit manufacturer’s installation instructions.

* + - 1. DELIVERY, STORAGE, AND HANDLING
         1. Comply with manufacturer's written instructions for handling and storing.

1. PRODUCTS
   * + 1. PERFORMANCE REQUIREMENTS
          1. Red Head C6+ shall comply with :

ASTM C881, Type I, II, IV and V, Grade 3, Class B and C.

NSF/ANSI 61, certified to be used with drinking water systems.

ICC-ES ESR-4046 for concrete anchoring.

ICC-ES ESR-4109 for masonry anchoring.

2015 International Building Code.

* + - * 1. Red Head C6+ may be used in

Oversized holes up to 1/4" (6.4 mm) in diameter.

Diamond core drilled holes.

* + - * 1. Application suitable for damp, water-filled and submerged conditions.
        2. Minimum anchor spacing and distance from edge in accordance with manufacturer’s recommendations.
        3. Approved for use with cracked concrete and in seismic (Zones A-F) conditions.
        4. Red Head C6+ shall not be used in environmental conditions where temperature of concrete can rise from ≤40°F to ≥80°F (≤4°C to ≥26°C) within a 12 –hour timeframe.
        5. Red Head C6+ Adhesive Anchoring System may be used to resist tension and shear forces for floor (vertically down), wall (horizontal) and overhead installations with concrete temperatures between 40°F and 110°F (4°C and 43°C).
        6. Anchors are not permitted to support fire-resistive construction.
        7. If not otherwise prohibited by the Building Code, anchors are permitted for installation in fire-resistive construction provided at least one of the following is fulfilled:

Anchors are used to resist wind or seismic forces only.

Anchors that support gravity load-bearing structural elements are within a fire-resistive assembly, or a fire-resistive membrane, are protected by approved fire-resistive materials.

Anchors support non-structural components.

* + - * 1. Concrete:

Normalweight concrete shall comply with Sections 1903 and 1905 of the International Building Code.

Compressive strength, 2,500 psi – 8,500 psi (17.2 MPa – 58.6 MPa).

* + - * 1. Rods and reinforcing bars:

Zinc-plated carbon steel threaded rods or steel reinforcing bars shall be limited to dry, interior locations.

Hot-dipped galvanized carbon steel rods and stainless steel rods is permitted for use in exteriors and damp environments.

Steel anchoring elements in contact with preservative-treated and fire-retardant-treated wood shall be zinc-coated carbon steel or stainless steel. Minimum coating weights for zinc-coated steel shall comply with ASTM A153.

* + - 1. ADHESIVE ANCHORS
         1. Adhesive Anchors, epoxy (post-installed):

General Description:

Two component, high-strength, slow cure, low odour, structural, injectable epoxy (2:1 ratio) adhesive anchoring system, suitable for use in wet and submerged conditions), suitable for extreme temperatures and seismic (Zones A-F) conditions.

Temperature range:

Concrete temperature range (installation): 40°F - 110°F (4°C - 43°C).

In-service temperature range: -41°F - 176°F (-41°C - 80°C).

Cure times:

|  |  |  |  |
| --- | --- | --- | --- |
| Base Material (°F) | Cure Time (hours) | Gel Time (minutes) | Base Material (°C) |
| 110 | 2 hrs | 10 mins | 43 |
| 90 | 2.75 hrs | 14 mins | 32 |
| 70 | 6.5 hrs | 16 mins | 21 |
| 50 | 24 hrs | 30 mins | 10 |
| 40 | 48 hrs | 36 mins | 4 |

Bond strength: Refer to manufacturer’s performance data.

Substrates:

Concrete: lightweight, normal and high-strength.

Cracked and uncracked concrete.

Concrete block, hollow and grout-filled.

No substitutions permitted.

* + - * 1. Anchors:

Anchor elements: in accordance with manufacturer’s printed instructions.

Anchor sizes and types:

Threaded rod size range: 3/8" (9.5 mm) - 1-1/4" (32 mm).

Maximum depth of rod/rebar: 25" (635 mm).

Rebar: #3 - #10 (10M – 30M).

For larger dimensions/embedments, consult with Red Head’s technical support.

* + - * 1. Accessories:

Dispensers, nozzles and accessories in accordance with manufacturer’s recommendations.

1. EXECUTION
   * + 1. INSTALLATION
          1. Installation:

Install in accordance with adhesive anchor manufacturer’s printed installation instructions.

Anchors shall be installed in concrete base materials in pre-drilled holes using carbide-tipped masonry drill bit, or diamond core drill bit, in accordance with manufacturer’s printed instructions.

Hole shall be dust-free before injecting adhesive anchor.

Adhesive anchors are permitted to be installed in concrete that is cracked or that may be expected to crack during the service life of the anchor.

Anchor system shall be installed in cracked and uncracked normalweight concrete having specified compressive strength. Refer to manufacturer’s printed installation instructions.

Use manufacturer’s recommended extension tubing to inject adhesive directly into end of the hole for 9.5 mm (3/8") diameter anchors, and 12.7 mm (1/2") diameter anchors.

Use manufacturer’s piston plug to install adhesive for 15.9 mm (5/8") to 32 mm (1-1/4") threaded rod and reinforcement bars in overhead applications.

* + - * 1. Field Quality Control

Manufacturer’s field review to be in accordance with Section 01 45 00.

END OF SECTION