Specifier Notes:

Red Head A7+ Adhesive Anchor System is a post-installed anchorage system used to resist static, wind or earthquake tension and shear loads in cracked and uncracked normal-weight concrete having a specified compressive strength between 17 MPa and 59 MPa. It is permitted to be installed in concrete that is cracked or may crack during the service life of the anchor.

Red Head A7+ Adhesive Anchors can be installed within a range of temperatures and environments, from dry to wet, damp and submerged conditions.

Red Head A7+ Adhesive Anchors are suitable for pools, recreation centres/stadiums, bridges/elevated roadways, drinking/waste water treatment plants, airports, multi-family and non-residential buildings, factories/warehouses, among other building types.

Red Head A7+ Adhesive Anchors can be used to resist short and long-term loads, including wind and earthquake loads.

Red Head A7+ Adhesive Anchors can be used for brick pinning, concrete block reinforcement, railings and architectural metal, rebar dowelling, seismic retrofitting, traffic barriers and guardrails, structural steel framing and machinery anchoring.

Red Head A7+ Adhesive Anchors are beneficial to your project because adhesives are typically stronger than mechanical anchors, particularly if the load is vibratory, or if higher resistance is required.

Red Head A7+ Adhesive Anchors are typically more versatile than mechanical anchors.

Red Head A7+ 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 A7+ Adhesive Anchors are beneficial to your project because adhesives are typically stronger than grout, and faster and easier to dispense, especially if there is a deep embedment hole.

Hybrid adhesives, like Red Head A7+, set and cure quicker and in lower temperatures, compared to epoxy adhesives.

SECTION 05 05 19 – POST-INSTALLED CONCRETE ANCHORS

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

Red Head A7+ Adhesive Anchoring System, 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 A7+ shall comply with :

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

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

ICC-ES ESR-3903 for concrete anchoring.

ICC-ES ESR-3951 for masonry anchoring.

2015 International Building Code and International Residential Code Compliant.

* + - * 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 in cracked concrete and seismic conditions.
        4. Adhesive anchoring system may be used for vertical, horizontal and overhead applications.
        5. Anchor locations must comply with manufacturer’s written requirements.
        6. Red Head A7+ may be used in applications where temperature of concrete can rise from ≤40°F to ≥80°F (≤4°C to ≥26°C) within a 12 –hour timeframe. Such applications may include, but are not limited to, anchorage of building façade systems and other applications subject to direct sun exposure.
        7. Red Head A7+ Adhesive Anchors may be used to resist tension and shear forces for floor (vertically down), wall (horizontal) and overhead installations with concrete temperatures between 14°F and 110°F (-10°C and 43°C).
        8. Anchors are not permitted to support fire-resistive construction.
        9. If not otherwise prohibited by the Building Code, adhesive 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.

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 shall is permitted for use in exteriors and damp environments.

* + - * 1. Steel anchoring materials 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 be in comply with ASTM A153.
      1. ADHESIVE ANCHORS
         1. Adhesive Anchors, hybrid epoxy (10:1):

General Description:

Two component, high-strength, quick-cure, low odour, structural concrete and masonry, injectable hybrid adhesive, insensitive to moisture, suitable for extreme temperatures and seismic conditions, for use with continuously threaded rods and deformed reinforcing bar installed in normal-weight concrete and masonry substrates, cracked and uncracked.

Adhesive anchoring system may be used for vertical, horizontal and overhead applications.

Temperature range:

Concrete temperature range (installation): 14°F - 110°F (-10°C - 43°C).

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

Cure times:

|  |  |  |  |
| --- | --- | --- | --- |
| Base Material (°F) | Cure Time | Gel Time (minutes) | Base Material (°C) |
| 110 | 45 mins | 1.5 mins | 43 |
| 90 | 45 mins | 2.5 mins | 32 |
| 70 | 45 mins | 5 mins | 21 |
| 50 | 90 mins | 16 mins | 10 |
| 32 | 4 hours | 35 mins | 0 |
| 14 | 24 hours | 35 mins | -10 |

Bond strength: Refer to manufacturer’s performance data.

Spacing: Refer to manufacturer’s performance data.

Substrates:

Concrete, lightweight, normal and high-strength.

Cracked and uncracked concrete.

Concrete block, hollow and grout-filled.

Brick, stone, and structural clay tile.

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: 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, in accordance with manufacturer’s printed instructions.

Ensure hole is 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 may be installed in cracked and uncracked normal-weight concrete having specified compressive strength between 17 MPa and 59 MPa. Refer to manufacturer’s printed installation instructions.

Reinforcing bars must be clean and free of deleterious material, or other coatings.

Use manufacturer’s recommended extension tubing to inject adhesive directly into end of the hole for 9.5 mm (3/8") 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