

Rockwerx NaturalRock Climbing Walls

Rockwerx' Natural Rock Climbing Walls are the ultimate attempt to recreate the beauty and aesthetics of outdoor climbing through engineered climbing wall structures. Every climbing wall is custom designed and handmade. The undulating curves, corners, and cracks of Natural Rock's unique climbing wall composition gives the appearance of a true natural product. The absence of panel lines and artificial edges provide a seamless experience. The non-leaching, non-fading characteristics of Rockwerx composite polymer fabrications make them the product of choice for facility owners looking for low-maintenance, high-realism rock and plant installations.

Natural Terrain with Modular Options: Rockwerx Natural Rock walls can be climbed using built in features alone, but every wall is also designed with t-nut placements to attach a variety of modular holds. Their functional climbing terrain will be enjoyable for beginner and expert climbers alike.

Strength in Sculpture: Natural Rock framed wall systems feature a free-standing and self-supporting steel frame, allowing the climbing wall to take on any shape, at any angle, at any height.

Natural Rock Panels: Molded from real rock texture, Natural Rock panels provide the real life experience of climbing on rock, while offering wall owners increased affordability and versatility. Each panel is cast from molds that mimic the same features found on granite, limestone, or sandstone rock formations. Each panel can have up to 6 inches of relief, creating a superior sculpted real rock form on a base panel. This relief makes the paneled system function like seamless climbing terrain, offering diverse foot and hand placements over a variable surface.

Extreme Strength and Durability: Natural Rock is comprised of an outer composite polymer resin bonded to an internal glass fiber lining—providing a lightweight, strong product. Natural Rock has withstood the test of time in tough climates, and is not affected by freeze/thaw cycles or extreme temperatures. Its surface replicates the look of rock down to fine details. The organic pigments are infused throughout the resin so touch up or repainting is never required. Natural Rock is UV stable and does not fade when exposed to sunlight. It resists soil buildup and discoloration from algae. Chemicals, rain, and water minerals do not affect the surface, and it will not leach lime or display calcium buildup. Natural Stone conforms to ASTM E84 Class 1 Rating for fire safety.

Safe and Environmentally Friendly: Natural Rock products are certified by IPEMA (playground rating), ASTM (fire rating), and CWA (safety and performance rating). These certifications ensure that Natural Rock products are not only manufactured to fit into nature, but are safe and environment friendly.

5 Year Warranty: Rockwerx backs the durability, wearability, and integrity of Natural Rock products with a 5-year warranty. Rockwerx's climbing wall designers work with architects to detail and customize artificial climbing wall features through their turnkey 3-D design services, creating both virtual and physical models of proposed installations. Rockwerx brings over 15 years of combined wall building experience and over 1000 completed walls in various facility types. Their designs and engineering methods have stood the test of time, maintaining a reputation for revolutionary and reliable builds. Their projects range from some of the largest competition climbing venues in the world to recreational or multi-use facility climbing walls, and to unique climbing adventures in residential backyards.

Rockwerx provides complete design, engineering, fabrication, and installation services to help customers create next generation climbing walls. Their post-construction services include staff and operational trainings and comprehensive route setting packages, along with continuing consulting for climbing wall operators.

For more information, contact Rockwerx at (877)595-4155, info@Rockwerxstone.com,
www.Rockwerxstone.com.

SECTION 11 66 00.01 – CLIMBING WALLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Composite polymer-cast [interior] [exterior] artificial climbing wall systems [with internal structural support system].

1.2 ACTION SUBMITTALS

- A. Product Data.
- B. LEED Submittals:

Specifier: Credit MR 4 may apply for steel items utilized for structural supports as well as use of certain polymers containing recycled content. Consult Rockwerx for availability and percentages.

- 1. Credit MR 4: Submit documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include cost statement for each product.

Specifier: Credit MR 6 may apply for cast polymer products utilizing bio-based polymer resins in lieu of petroleum-based resins. Consult Createk for availability and percentages.

- 2. Credit MR 6: Submit documentation indicating percentages of rapidly renewable material in product. Include cost statement for each product.

C. Shop Drawings:

- 1. Include [three-dimensional model.] plans, elevations, sections, and attachment details.
- 2. Indicate [dead loads] [superimposed loads] [and] [live loads] for artificial climbing walls.

- D. Samples: For each exposed artificial climbing wall product and for each color and texture specified.

Specifier: Retain requirements for delegated-design submittal for projects requiring formal engineering documentation.

- E. Delegated-Design Submittal: Analysis data signed and sealed by qualified professional engineer responsible for preparation of calculations and shop drawings.

1.3 INFORMATIONAL SUBMITTALS

- A. Sample warranty.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data for artificial climbing walls.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Approved manufacturer listed in this section, with minimum [5] years experience in the manufacture and assembly of cast polymer artificial climbing walls used in similar applications.

Specifier: Retain requirements for delegated-design submittal for projects requiring formal engineering documentation.

- B. Professional Engineer's Qualifications: Qualified professional engineer, experienced in design of artificial climbing walls similar to those required for Project, and licensed in the Project state.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code – Steel."
- D. Manufacturer's Mock-ups: Construct mockup of artificial climbing walls at manufacturer's facility to establish quality standards for installation. Coordinate schedule for mockup construction with Architect.

1.6 PRODUCT STORAGE AND HANDLING

- A. Provide wall panels, frames, and related materials properly packaged and protected during shipping, handling, and storage to prevent damage.
- B. Store materials indoors under cover on raised platforms, fully protected from dirt and moisture.

1.7 WARRANTY

- A. Manufacturer's Warranty: Provide manufacturer's standard form in which manufacturer agrees to repair or replace components of artificial climbing walls that fail in materials or workmanship within specified warranty period.
 - 1. Failure includes delamination or excessive surface cracking, wear of artificial climbing wall finish.
 - 2. Warranty Period: [5] year(s) from date of Substantial Completion.
 - 3. Color Retention Warranty: [10] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide **Natural Rock Climbing Walls by Rockwerx**, Barre MA, (877)595-4155, info@rockwerx.com, www.rockwerxclimbing.com.

2.2 PERFORMANCE AND DESIGN CRITERIA

- A. Delegated Design: Design artificial climbing walls, including comprehensive engineering analysis of structural framework, supports, and connections by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance: ASCE/SEI 7 and requirements of authorities having jurisdiction.

Specifier: Retain and edit requirement in paragraph below if project site is subject to seismic design requirements.

- C. Seismic Performance: ASCE/SEI 7 and requirements indicated.
- D. Design Standard: CWA Standard [and EN 12572].

Specifier: Retain and edit requirement in paragraph below for exterior projects.

- E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes for temperature change of 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

Specifier: Retain requirement below for interior applications and where required by authorities having jurisdiction.

- F. Surface-Burning Characteristics:
 - 1. Flame-Spread Index, ASTM E 84: 25 or less.
 - 2. Smoke-Developed Index, ASTM E 84: [450] or less.

2.3 ARTIFICIAL CLIMBING WALLS

- A. Artificial Climbing Walls, General: Fabricated cast polymer and glass fiber composite artificial rocks, UV-resistant, through-colored, molded and finished to appear and climb like real rock, bolted in place for permanent site installation[, with structural support system].
 - 1. Climbing Wall Surface: Fiberglass molded castings with hand sculpted grout joints which combined provide a seamless, realistic climbing wall system.
 - 2. Wall Surface Climbing Features: Cast embedded climbing hand features, including edges, pockets, and cracks in climbing wall surface, located per approved submittals.
 - 3. Belay Anchor System: Place belay anchor system components in locations and number indicated or scheduled:
 - a. Automatic Belay: 41 foot (12.5 m) descent capacity, fall-safe design. **Rockwerx, TRUBLUE Auto Belay.**
 - b. Top Rope Belay Bars: 3 inch (mm) steel friction belay bar, **Rockwerx, Top Rope Bar.**
 - c. Lead Anchors:
 - 1) Wedge Bolts: Grade VIII, [zinc plated steel] [A304 stainless steel] rod. **Fixe Hardware, www.fixeusa.com, #140.**
 - 2) Bolt Hangers: Accommodate two carabiners; 4-mm-thick [zinc plated steel] [A304 stainless steel]. **Fixe Hardware, #038.**
 - 3) Top Anchors: 11 kN rating, [zinc plated steel] [A304 stainless steel]; **Fixe Hardware, Super Shut #166.**
 - 4) Belay Stations: Double bolt hangers, 35 kN rating, [zinc plated steel] [A304 stainless steel]. **Fixe Hardware, V-Anchor and DRACO Carabiner #363.**
 - 4. Access Hatches: Matching climbing wall components.

Specifier: Rappel Ledge and Top of Bouldering Wall are optional features available for climbing walls.

5. Rappel Ledge: Provide functional rappel ledge and belay ledge designed for teaching purposes at location indicated. Finish outer ledge with smooth texture.
6. Top of Bouldering Wall: Construct and finish to match climbing wall, free of climbing features and modular holds.
7. Climbing Equipment: Provided by Owner.

B. Panelized Artificial Climbing Walls:

1. Custom profile cast polymer panels in up to 4 by 8 foot (1219 by 2438 mm) segments with 6 inch (152 mm) relief depth.
2. Color: [Grey] [Sandy Brown] [Brown] [Match Architect's custom color].

C. Playground Boulder Artificial Climbing Walls:

1. Size: [8 by 12 by 8 feet high (2438 by 3658 by 2438 mm) high] [6 by 8 by 6 feet high (1829 by 2438 by 1829 mm) high] [5 by 6 by 4.5 feet high (1524 by 1829 by 1372 mm) high] [3 by 6 by 3 feet high (914 by 1829 by 914 mm) high] [Custom configuration as indicated on drawings].
2. Thickness: Not less than 3/4 inch (19 mm).
3. Color: [Grey] [Sandy Brown] [Brown] [Match Architect's custom color].

Specifier: Rockwerx' X-Nuts are a specialized evolution of T-Nuts designed specifically for the rigors of artificial rock wall climbing over the past 10 years: <http://www.rockwerxclimbing.com/4962.xml>

D. Modular Hold Anchors: T-nut-type threaded sleeves, at 1.0 placements per square foot. **Rockwerx, X-Notes.**

E. Modular Climbing Hold Package: Removable climbing holds with internal threading, at 1 placements per 3 square feet (1 per 0.3 m) [color to match rock surface] [colors as selected from manufacturer's full range].

1. 10 percent footholds.
2. 30 percent small climbing holds.
3. 40 percent medium climbing holds.
4. 20 percent climbing holds.

2.4 MATERIALS

A. Polyester Composite: Color impregnated, UV stabilized, non-mold-supporting, formed from corrosion-resistant polyester resin.

Specifier: Retain one or both of the following paragraphs and edit as required to stipulate minimum polymer content meeting sustainability requirements. Bio-based material requirement is related to both Federal project sustainability mandates and LEED rapidly renewable materials credits. Recycled content requirement is related to both Federal project sustainability mandates and LEED recycled content credits. Consult with Createk regarding availability of bio-based or recycled content polymers, which vary due to project design and color requirements. Requirements below will affect product cost.

1. Bio-Based Material Content of Polymer Fabrications: Provide cast polymer fabrications utilizing bio-based polymer resins[meeting requirements of Division 01 Section "Sustainable Design Requirements"].

2. Recycled Content of Polymer Fabrications: Provide cast polymer fabrications utilizing post-consumer recycled content plus one-half of preconsumer recycled content of not less than [25] percent.

Specifier: Retain paragraph below if steel structural supports are required.

- B. Steel Structural Supports:
 1. Steel Structural Tubing: ASTM A 500, Grade B, hot-dip galvanized according to ASTM A 123/A 123M.
 2. Steel Mechanical Tubing: ASTM A 513, welded steel mechanical tubing, hot-dip galvanized according to ASTM A 123/A 123M.
 3. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Artificial Rock Unit Fasteners: Manufacturer's standard; corrosion-resistant; hot-dip galvanized or plated steel and iron, or stainless steel; permanently capped, and theft resistant.
- D. Anchorages: Anchor bolts, hot-dip galvanized according to ASTM A 153/A 153M.

Specifier: Retain below for exterior installations requiring concrete foundations.

- E. Concrete for Artificial Rock Installation Foundations: Minimum compressive strength 3000 psi/28 days. Refer to requirements of Division 03 Section "Cast-in-Place Concrete."

2.5 CLIMBING WALL FABRICATION

- A. Fabrication, General: Assemble artificial climbing walls in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

Specifier: Retain paragraph below if structural support is required due to size or loading conditions. Consult Rockwerx representative.

- B. Structural Supports: Fabricate structural supports with cross-section profile and dimensions as indicated on approved Shop Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Examine areas where artificial climbing walls are to be installed, with Installer present. Verify compliance with requirements for installation tolerances and other conditions affecting installation and performance.

3.2 FOUNDATION

Specifier: Retain and edit Foundation Article if required for Project.

- A. Install concrete footings and anchors for artificial climbing walls in accordance with approved submittals and requirements of Division 03 Section "Cast-in-Place Concrete."

3.3 ERECTION OF ARTIFICIAL CLIMBING WALLS

- A. General: Comply with manufacturer's written instructions and approved Shop Drawings. Support, anchor, and fasten components securely using anchors and fasteners indicated and recommended by manufacturer for application.
 - 1. Comply with requirements of artificial climbing wall design standard.
- B. Erection of Structural Supports: Erect structural supports in accordance with approved submittals. Anchor and fasten using fasteners indicated. Utilize structural components furnished by manufacturer; do not modify components in field without manufacturer approval.
 - 1. Comply with AWS recommended practices for field welding.
- C. Installation of Climbing Wall Surface: Securely attach climbing wall surface components to each other [and to structural supports] using fasteners furnished by manufacturer.
- D. Belay Anchor System: Install belay anchor system fixed components in locations indicated in accordance with anchor system manufacturer's written recommendations.

3.4 CLEANING

- A. Repair or replace defective work as directed by Architect upon inspection.
- B. Clean installed unit surfaces. Touch up, refinish, or replace damaged components in a manner acceptable to Architect.

END OF SECTION