



Section 131200 – CLIMBING WALLS

Part 1 - GENERAL

1.1. Summary

- A. This section includes the following:
 - 1. Panelized, wood based climbing walls.
- B. Related Sections:
 - 1. Section "Structural Steel"
 - 2. Section "Rough Carpentry"
 - 3. Finishes

1.2. REFERENCES

- A. CWA – Standards for Artificial Climbing Walls.
- B. International Building Code (IBC) 2010 or code of local conformance.

1.3. SYSTEM DESCRIPTION

- A. Climbing wall to be constructed of modular, impact resistant, Advantech panels. Texture on panels to be coated with a non-aggressive pigmented epoxy friction coating. Cementitious coatings over plywood will not be accepted unless approved by Owner/Architect. Panel system shall be compatible with modular structural support system and shall allow for replacement of the climbing surface. Panel system must be capable of achieving various configurations including overhangs, vertical faces, below vertical slabs, arêtes, and dihedrals.
- B. The steel support structure may rely on a component of the facility as its primary structure, or may be self-supporting, as indicated. The climbing wall shall be designed and installed to CWA standards. Climbing wall shall include all supporting structure necessary to create the wall profiles, climbing surface, belay and handhold fastening systems, and specific equipment as defined below.

1.4. QUALITY ASSURANCE

- A. Climbing wall manufacturer shall be as specified and shall have a minimum of 10 years' experience in the manufacturing of artificial climbing walls. No substitutions will be permitted.
- B. Fabricator/Installer shall be acceptable to the climbing wall manufacturer.
- C. Installer shall have a minimum of 10 years' experience with manufacturer's materials or be supervised by manufacturer's representative.

1.5. SUBMITTALS

- A. General: Submit the following in accordance with Conditions of the Contract and General Conditions.



- B. Product data including climbing wall manufacturer's specifications, standard details and installation drawings.
- C. Submit 2 samples of climbing wall material, minimum 12 inches by 12 inches, showing color and finish.
- D. Shop drawings: indicating layout of climbing wall, dimensions of materials and parts, fastening and anchoring methods, and detail and location of joints.

1.6. DESIGN

- A. Climbing wall shall be custom designed to suit the facility, and must be specifically crafted to meet the client's needs and requirements as follows:
 - 1. Exert no more than 10 lbs/square foot live load vertically or horizontally on wall and floor systems.
 - 2. Unless otherwise conveyed by Owner or Architect through pre-design discussions, the general climbing wall configuration should be:
 - a. 30% less-than-vertical to vertical in nature
 - b. 40% minimally overhung in nature
 - c. 30% moderately to substantially overhung in nature
 - 3. Handhold fastener density: Supply at least 3 handhold fasteners per every sq. ft. of climbing wall surface area.
 - 4. Lead routes (if rope climbing wall): Equivalent for every top anchor supplied.
 - a. First anchor installed 12' above ground level
 - b. Subsequent anchors spaced approximately every 4 ft. vertically.
 - c. Belay bars with double point attachments at top of every lead line.
- B. Climbing wall returns (sides of the climbing wall) shall return to the facility walls and conceal the interior structure of the climbing wall and restrict access behind the climbing wall.
- C. Access to the back of wall.

1.7. ENGINEERING

- A. Climbing wall shall be engineered to meet CWA standards for climbing wall construction.
- B. Installation drawings to be delivered to General Contractor/Owner for review prior to start of on-site installation
- C. If required by Owner, engineering calculations shall be signed and sealed by an engineer licensed in the state where project is located.

1.8. DELIVERY, HANDLING, & STORAGE

- A. Protect products during transit, delivery, storage and handling to prevent damage, soiling, and deterioration.
- B. Protect climbing wall finish and edges in accordance with manufacturer's recommendations.
- C. Store climbing wall components in accordance with manufacturer's recommendations.



1.9. WARRANTY

- A. Climbing wall manufacturer shall warrant to the original purchaser for one year from the date of completion that its products are free from defects in materials and workmanship.

1.10. COORDINATION

- A. Coordinate installation of climbing wall after primary support structure is installed and before final finishes to climbing wall area have been performed.
- B. The Owner shall have direct contact with the climbing wall manufacturer in the design phase of the climbing wall to achieve specific programmatic requirements set forth by the Owner.

1.11. SITE CONDITIONS

- A. Building shall be enclosed and capable of maintaining a minimum temperature of 55 degrees F. Climbing wall area shall be supplied with an artificial light source by the General Contractor or Owner for the duration of climbing wall installation. Lighting shall be of sufficient quantity and brightness to perform detailed work.
- B. General Contractor shall provide multiple temporary outlets (110V) at various locations around the climbing wall area for operation of power tools.

2. ROCK CLIMBING WALL

2.1. Manufacturer: Eldorado Climbing Walls or approved equal

- A. Eldorado Climbing Walls Custom Panelized System

2.2. Climbing wall surface

- A. Panelized climbing wall system from Eldorado Climbing Walls is the basis of design. Other system(s) to be approved by Owner/Architect
- B. Climbing wall to be constructed of impact resistant, Advantech plywood panels. Texture on panels to be coated with a non-aggressive, pigmented epoxy friction coating. Cementitious coatings over Advantech will not be accepted unless approved by Owner/Architect.
- C. Surface coloration chosen by Owner and Architect from manufacturer's color palette.
- D. Integrated modular support structure
 - 1. The support structure shall be modular in nature and capable of transferring all applied design loads back to the primary vertical support structure that lie parallel to the projected plane of the climbing surface.
 - 2. Integrated modular support structure shall be made of adjustable pipe members capable of transferring all design loads from the climbing wall to the primary support structure.

2.3. PRIMARY SUPPORT STRUCTURE

- A. General: All structural steel and structural steel work shall conform to the specifications of design, fabrication, and erection of structural steel for buildings of the American Institute of



Steel Construction (AISC) Code of Standard Practice, and to the requirements of local building codes.

- B. Dimensions: Dimensions given in drawings prepared by the climbing wall manufacturer are final fabricated dimensions.
- C. Primary support structure members will be sized and detailed by climbing wall manufacturer. The engineering calculations will outline the reactions generated by the climbing wall.
- D. Anchorage details for the primary support structure will be provided by a structural engineering consultant.

2.4. CLIMBING WALL FASTENERS

- A. Modular handhold: Shall be 3/8" – 16 socket head cap screws or flat head cap screws of appropriate length as suggested by the manufacturer.
 - 1. All surfaces shall utilize heavy-duty steel t-nuts that accept 3/8" – 16 threaded fasteners.
- B. Climbing protection anchors
 - 1. Lead bolts (if rope climbing wall):
 - a. UIAA approved bolt hangers shall be attached through the panel flange into the hinge plate hardware using a 1/2" Grade 5 flat socket head cap screw or 1/2" Grade 5 hex bolt.
 - b. 1/2" Grade 5 flat socket head cap screw and 1/2" Grade 5 hex bolt shall be sufficient length to extend through the panel flange, hinge plate hardware and through a backup locknut behind the hardware.
- C. Belay anchors (if rope climbing wall):
 - 1. Each belay anchor shall consist of a through-bolted belay bar assembly with two 3/4" holes for double point anchor attachment. Each belay bar requires four and 1/2" Grade 5 hex bolts through panel flange, hinge plate hardware and nylock nut.
 - 2. A minimum horizontal distance between bolt hangers shall be 6 inches.

2.5. EQUIPMENT (if required)

- A. Climbing rope: Dynamic ropes. 1 per climbing route.
- B. Climbing harnesses: 2 per climbing route.
- C. Belay devices: GriGri style manufactured by Petzl: 1 per climbing route.
- D. Auto-locking steel carabiners: 1 per climbing route.
- E. Quick draws (where lead routes and top rope anchors are specified). Gym Safe Express draws by CAMP or equivalent. For each lead anchor.
- F. Modular handholds
 - 1. Composed of polyurethane to minimize breakage.
 - 2. Handhold selection shall be made based on the potential user base and shall include the following:
 - a. Large holds



- b. Medium holds
- c. Small holds
- 3. To include handhold bolt of appropriate length.
- G. Rental shoes
 - 1. All-purpose climbing shoes of size range to include most popular size for users
 - a. Evolve
- H. Auto Belay system
 - 1. TRUBLUE™ 1-887-565-6885

2.6. CLIMBING WALL FALL ATTENUATION SYSTEM (FLOORING)

- A. Dual durometer open and closed cell foam fall attenuation system with nylon carpet cover. 5.5" total thickness. Custom sized to fall area indicated. Impact absorbing bottom layer comprised of 4" open cell foam. Load distributing top layer comprised of 1 ½" closed cell foam with a flame laminated commercial grade carpet surface layer.
 - 1. Manufacturer:
 - a. ProTec padding by Eldorado Walls: 303-447-0512 or other climbing fall attenuation system approved by Eldorado Walls
- B. Color: As selected by Architect from manufacturer's full range

3. EXECUTION

3.1. PRE-INSTALLATION INSPECTION (if required by Manufacturer or the Owner)

- A. Verify that all surfaces are ready to receive work and are within specified tolerances.
- B. Beginning of installation means installer accepts conditions of existing surfaces.
- C. Verify that layout of the materials or equipment will not interfere with installed climbing wall.

3.2. INSTALLATION

- A. Erection of the climbing wall system shall be in accordance with manufacturer's recommendations.
- B. Erection shall be accomplished by a fully-trained, factory-authorized erector in accordance with section 1.4.
- C. Completed wall shall comply with specified tolerances and shop drawing requirements.

3.3. CLEANUP

- A. Clean area of debris from installation of climbing wall.
- B. Separate waste materials in accordance with the construction waste management plan and place in designated areas.

3.4. INSPECTION (if required by Manufacturer or the Owner)



- A. The completed climbing wall shall undergo a full, complete, final inspection by a duly trained supervisor of the manufacturer and shall be certified by the manufacturer that the finished product has been built in accordance with the manufacturer's approved installation drawings and these contract documents.
- B. The completed climbing wall shall undergo full and complete inspection by the Owner or Owner's representative at the completion of the climbing wall installation prior to demobilization.

3.5. TRAINING

- A. Climbing wall Contractor shall provide a half-day training session for the facility operations staff, following the climbing wall installation. Training should cover the following topics:
 - 1. Climbing wall maintenance and periodic inspections.
 - 2. Route-setting methods and management.
 - 3. Sample handhold installation and removal.

3.6. PROTECTION

- A. General Contractor to provide final protection in a manner acceptable to the Owner or Owner's representative that insures the climbing wall will be without damage or deterioration at time of substantial completion.