

Requirements and Standards for Specialized Rock Climbing Centers, and Individual Climbing Walls

Edition 2, 2020



OVERVIEW

The following are the minimum acceptable requirements by the Saudi Climbing and Hiking Federation (SCHF), regarding the building and designing of specialized rock climbing facilities, and designing and engineering artificial climbing wall structures.

The Saudi Climbing and Hiking Federation standards are intended to establish appropriate safety practices and minimize risk and danger during the operation of climbing walls. It is the owner/operator's responsibility to follow these standards.

CLIMBING FACILITY TYPE

| Specialized Climbing Center

- The width of the building must be a minimum of 5 meters, if it is a Rope Climbing center
- The width of the building must be a minimum of 7 meters, if it is a Bouldering center
- The internal wall height (clean height) must be a minimum of 8 meters, if it is a Rope Climbing center.
- The internal wall height (clean height) must be a minimum of 4 meters, if it is a Bouldering center.
- Climbing walls must be minimum 7 meters for Rope Climbing.
- Climbing walls must be minimum 3 meters for Bouldering.
- Only 25% of number of all routes can be designated for Auto-Belaying.
- The building must have a 2 meter wide access/exit to the designated climbing area.
- Storage space for climbing equipment, with minimal direct sun exposure and shall not be accessible by the public.
- Warm-up area of a minimum of 12 sqm.

| Individual Climbing Wall (Applies to Individual Rope Climbing walls within another commercial entity like schools, entertainment center, multi-purpose gym, etc.)

- The internal wall height (clean height) must be a minimum of 7 meters, if it is a Rope Climbing facility.
- The internal wall height (clean height) must be a minimum of 3.5 meters, if it is a Bouldering center.
- Climbing walls must be minimum 6 meters for Rope Climbing.
- Climbing walls must be minimum 2.5 meters for Bouldering.

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GENERAL STANDARDS FOR CLIMBING WALL

The following specifications apply to walls that are fixed-in-place and stationary while in use, including temporary installations. These specifications do not apply to portable climbing structures or inflatable climbing structures.

It is the responsibility of the owner/operator of the walls to establish appropriate safety, health, and operational practices for the use of the walls.

Manufacturing and Construction

- Manufacturer must handle all wall design aspects and give a complete design and architectural plan of the walls for the designated space or center.
- Manufacturer must handle all engineering aspect to meet the International and local standards for climbing wall constructions.
- Installation of the climbing wall system must be made by the manufacturer.
- The designs plans, engineering, and an owner's manual must be supplied to the owner by the manufacturer.

Inspection and Maintenance

Inspection and Testing

- The completed climbing wall must undergo a full complete final inspection by a trained supervisor representing the manufacturer and must be certified by the manufacturer that the finished product has been built in accordance with the approved installation drawings, and a certificate of the inspection should be provided to the owner.
- The climbing wall is required to undergo a monthly maintenance service by the owner/operator. and a yearly inspection of the wall by a specialist. The insights should be recorded in a log book.
- If the walls are attached to an existing building structure, a competent, licensed engineering design firm shall certify that the building structure can handle the loads of the climbing walls and the climbers, including shock loads of calling climbers.
- Auto Belays must go through inspection and certification with a minimum inspection of once per year.
- Equipment logbook (digital versions acceptable):
A log should be used to document systematic inspection and maintenance of the equipment within the center that has the climbing wall. The frequency of inspection, maintenance and repair should be determined by the equipment's manufacturers recommendation and a risk management approach (please refer to the item's manual that comes with it during purchase). Each piece of equipment within a system should be individually identifiable to allow recording of relevant information in the equipment logbook (manufacturer's item serial number).
Please note, that a representative by the Saudi Climbing and Hiking Federation must have access to the logbook at any time within normal working hours.

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- Recertification inspections of the climbing gear should be taken every 6 months. Recertification is conducted by an assigned individual by the Saudi Climbing and Hiking Federation.

TECHNICAL SPECIFICATIONS FOR CLIMBING WALLS

| Required Space

- Minimum of 90cm behind the climbing walls for access and maintenance.
- For Rope Climbing: A belay area of minimum 2 meters distance from the base of the wall, overhang, or climbing rope.
- The floor of the area must be covered in ENERGY ABSORBANT foam, specifically made for use in climbing settings. (see Flooring Specifications)
- For Bouldering: A jumping-off area of minimum 3 meters out of the wall or overhang.
- The floor coverage of the area must be climbing specific ENERGY ABSORBANT mats. (see Flooring Specifications)
- A minimum of 1 meter after the belay area to be empty with no restrictions.
- The ceiling over the climbing walls must be clear of any lighting or electrical wires.
- The ceiling over the belay area must be clear of any lighting or electrical wires.

| Materials

• Actual Wall

- o Wood panels certified for climbing:
 - Size: 18mm
 - Maximum Hand holds per square meter: 40
- o Glass Fiber/Polymer:
 - Size: 11mm
 - Maximum Hand Holds per square meter: 12

• Steel Structure

- The Steel specifications should abide with the local requirements.
- The steel support structure may rely on a component of the facility as its primary structure, or may be self-supporting.

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• Flooring

- o For Rope Climbing:
 - 14 cm thick foam padding (with or without carpet cover)
- o For Bouldering:
 - 30-40 cm foam mat. (with or without carpet cover)

| Routes

- The number of maximum routes per linear meter on the wall must be specified by the manufacturer.
- For Lead Climbing:
 1. The first hanger to be installed should be 3.1 meters above ground level.
 2. The subsequent hangers must be spaced approximately every 1.2 meters.

| Markings

- All walls must be durably marked (on the wall) in a clear, visible location, with the name, trade name, or Logo of the manufacturer.
- The following information must be displayed (near the walls):
 1. The name or trade name of the manufacturer including address and telephone number.
 2. The name or trade name of the importer or supplier including address and telephone number, if different from manufacturer.
 3. The name or trade name of the installation company including address and telephone number, if different from manufacturer.
 4. The installation date, including month and year.
 5. The maximum number of climbing routes on the walls that can be used simultaneously.
 6. The types of climbing the walls are designed for, or any restrictions for use.
(example: Top Rope Climbing Only, Bouldering only, No Roped Climbing Allowed, No Bare Foot Climbing)
 7. The approval of the mechanical and design aspect of the climbing wall to be by the Saudi Climbing and Hiking Federation.
 8. Auto-Belay certification from the Manufacturer, if applicable.
 9. General Safety Guidelines for climbers to follow on the walls.

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TECHNICAL SPECIFICATIONS OF INSTALLED HARDWARE ON CLIMBING WALLS

| Handhold Fasteners

- Handhold fasteners (T-Nuts) must be accessible for any repair and/or replacement behind the climbing wall.
- T-Nuts must have a diameter of minimum 9.5mm with heavy duty steel material.

| Protection Anchors for lead climbing

• Bolts

- Bolts must be UIAA approved with minimum Grade 5 Hex Bolt and with minimum diameter of 9.5mm
- Length to be sufficient enough to extend through the structural frame and through a backup lock nut.
- The bolt to be secured with a backup locknut behind the hardware.

• Hangers

- Hangers must be UIAA approved
- Hangers must protrude from the walls by more than 40mm and have the minimum radius of 9.5mm, with 30kN capacity.

• Lead Belay Anchoring

- Anchors must be comprised by two separate and independent Lead Anchors with minimum 2 (see Protection Anchors for lead climbing specifications), and both attached to the climbing rope by two non-locking carabiners with minimum Major Axis strength 15kN for belaying.
- The internal angle of separation between the two Lead Anchors must be a maximum of 60 degrees.
- Minimum horizontal distance between the two lead hangers must be 6 inches.

• Top Rope Belay Anchoring

- Anchors must be comprised by two separate and independent Lead Anchors (see Protection Anchors for lead climbing specifications), and both attached to the climbing rope by two Screw-Gate carabiners with minimum Major Axis strength 22kN for belaying.
- The internal angle of separation between the two Lead Anchors must be a maximum of 60 degrees.
- Minimum horizontal distance between the two lead hangers must be 6 inches.
- If installing a Top Rope Belay Bar instead, bar must be polished and with minimum outside diameter size of 8.9 cm installed along the top of the climbing wall only.

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TECHNICAL SPECIFICATIONS FOR EQUIPMENT USED ON CLIMBING WALLS

| Ropes

- Ropes must meet the UIAA safety requirements.
- Ropes installed for Top Rope climbing must be fixed and installed by the owner/operator. Participants must only use the pre-fixed ropes.
- Ropes must be Single Dynamic Ropes with a minimum of 10mm in thickness for Top Rope Climbing.
- Rope length must be double the wall height, plus 3 meters minimum.
- For Lead climbing, participant has the choice to use their own rope or use provided rope by the owner/operator.

| Carabiners

- All Carabiners used must meet UIAA Standards.
- Connection of the climber's harness to the rope, must be a figure-8 knot. If connection should rely on a single screw-gate carabiner for fast connection, then it must include a back-up connection such as a figure-8 knot.
- Only locking gate carabiners (Screw-gate or Auto-lock) to be used with belay devices or rope.
- For Top Rope climbing, all carabiners must be fixed and provided by the owner/operator.

| Fixed Quickdraws

Must meet the UIAA Standards with the below sizes:

- Quicklink: 9.5mm
- Carabiners: Stainless Steel, wire or bent gate, 23KN major axis.
- Sling: 10.1cm sling

| Belay Devices

- Belay devices must meet UIAA Standards.
- Top Rope Climbing must use an assistant-breaking belay device (example Gri-gri) pre-fixed on the rope by owner/operator with a locking-gate carabiner, also provided by the owner/operator.
- For Lead climbing, participant has the choice to use an assistant-breaking belay device or Tube belay device (ATC, Reverso), and use their own device or provided by the owner/operator.

| Harness:

Should comply with UIAA Standards for climbing harnesses and must be replaced as per manufacturers recommendation, or as soon as any visible wear or damage can be seen.