

HOME MODIFICATION CONSTRUCTION SPECIFICATIONS

Developed by the Colorado Department of Local Affairs/Division of Housing for Home Modification Programs

September 2018 Version

Effective August 1, 2016



COLORADO
Department of Local Affairs
Division of Housing

HOME MODIFICATION CONSTRUCTION SPECIFICATIONS: effective 8/1/16, [Version Sept 2018](#)

Section 1: General Specifications Throughout this document, any reference to “HCPF or DOH” refers to a predetermined representative of the Department of Healthcare Policy and Finance (HCPF) and the Division of Housing (DOH, a division within the Department of Local Affairs).

A. All home modifications completed by the contractor through the Home Modification Benefit program must meet the following minimum requirements. **NOTE:** Compliance with a local building code will take precedence over the Home Modification construction specifications.

B. Prior to starting any work, Contractors are responsible for verifying what building requirements will need to be met per the local jurisdiction. Contractors are responsible for verifying whether or not a contractor license and/or permits will be required by the local jurisdiction based on the proposed scope of work. Contractors are required to obtain all necessary permits either from the local jurisdiction and/or from the Department of Regulatory Agencies and provide Division of Housing with documentation of such permits when requested. Contractors are required to ensure that their subcontractors are licensed, when required, and are obtaining all required permits. Contractors will be responsible for all fines and fees associated with non-compliance with local codes and licensing/permitting requirements.

C. Prior to installation of any exterior home mod, HOA approval (if required) will need to be verified by the contractor. Contractor will not be responsible for obtaining HOA approval, only verifying that the HOA has given such approval, when required.

D. Contractors must presume that all paint in homes built before 1978 is lead-based paint unless the paint has been tested and is known to not be lead-based paint. All work must comply with EPA’s Lead Based Paint Renovation, Repair and Painting (RRP) Rule unless it meets one of these exclusions:
Housing built after 1978, OR
The modification work will disturb 6 square feet or less of painted surfaces per room or 20 square feet or less on the exterior.

If the project is not excluded then the EPA RRP rule applies. Lead-safe work practices must be followed and the client must receive pre-renovation education. Upon request by DOH, contractors must be able to provide proof of training and certification for the EPA RRP Rule.

Any work considered lead abatement must comply with Colorado Regulation 19, Part A.

The contractor must notify the Division of Housing prior to any work being started if any suspected or known asbestos containing material will be disturbed during the home modification work. Any work considered asbestos abatement must comply with Colorado Regulation No 8, Part B.

E. Unless otherwise agreed upon by the client and the contractor, during the process of installing a home modification, Contractor shall repair, to match, all damaged caused by the installation of the home modification and must be included in the initial bid.

F. Per the Home Modification Rule, Contractors are required to provide a one year warranty. Contractors are responsible for providing clients with all manufacturers' product information and product warranty information.

G. Contractors shall use fixtures, appliances or other products that are energy and water efficient such as Energy Star and/or Water Sense whenever possible.

H. All newly installed fixtures or finishes must match existing material as close as possible, unless otherwise approved by HCPF or DOH.

I. Contractors are responsible for following industry standards when addressing existing mold in the area of the home modification. Providing DOH with documentation, via photos, is the responsibility of the contractor. Excessive amounts of mold must be reported to DOH immediately.

J. Contractors are responsible for providing DOH with 'before' and 'after' photos of the home modification project as well as drawings of proposed home modifications.

K. Contractors are responsible for discussing the **approved** home modification bid with the client prior to starting any work and obtaining a signature from the client for the approved bid. All changes to the approved bid will require prior authorization from DOH. Contractors are responsible for obtaining the client's signature for all changes to the approved bid.

Section 2: RAMPS: Wood and Concrete Ramps

A. Width: The clear width of all ramp runs must be a minimum of 36". Handrails, supports, etc., cannot project into the clear width of the ramp run.

B. Slope: The slope or grade of the ramp must be no more than 1:12. Where steeper slopes are needed due to space or design limitations, HCPF or DOH approval is required. Approval of a local code official may also be required.

Cross slopes cannot be steeper than 1:48.

C. Ramp Runs: Straight runs cannot exceed 30'. Where longer runs are needed due to space or design limitations, a level resting area (landing) must be installed every 30'. (see Landings)

D. Designs: Fold-back/switch-back (180 degrees or 90 degrees) turn designs are permissible. At each point where the ramp's direction changes there must be a functional turning platform/landing with adequate space for the consumer's mobility device to safely brake and/or change directions. (see Landings)

E. Landings: Unless otherwise approved by HCPF or DOH and if applicable, a local code official, landings are required at the top of the ramp, bottom of the ramp, at a level resting area or where the ramp changes direction and must be a minimum of 5' x 5'. Larger landings must be approved by DOH. At any exterior

entry/exit door, when possible, the top landing should start at the hinged side of the door and extend beyond the latch side of the door to best utilize the available space to turn and maneuver a wheelchair, be flush with door threshold and have a ¼" slope per foot away from entry/exit door to prevent water from running back into the home.

E (1.) For wood ramps, if the ramp ends on a soft surface such as soil, grass, etc., then the landing at the bottom of ramp must be concrete or other smooth, level, hard surface, flush with the bottom of the ramp, and be a minimum of 5' x 5', unless otherwise approved by HCPF or DOH and if applicable, a local code official.

E (2.) For concrete/metal ramps, if the ramp ends on a soft surface such as soil, grass, etc., then the landing at the bottom of ramp must be concrete or other smooth, level, hard surface, flush with the bottom of the ramp and be a minimum of 5' x 5', unless otherwise approved by HCPF or DOH and if applicable, a local code official.

F. Surfaces: All ramp runs and landing surfaces must be slip resistant - carborundum grit, strips, rubber, or rough ("broom finish") concrete are acceptable surfaces. The application of Deck or Concrete Restore® or equal is also acceptable.

All newly constructed ramp runs, top landings and intermediate landings must be constructed by using decking boards (see I (2) for decking board specifications). Plywood IS NOT allowed.

G. Guard Rails: All ramps must include guard rails or curb edges to ensure that a wheelchair cannot roll off. (see Handrails for top rail specifications)

G (1.) For wood ramps, use either vertical spindles on 4" centers OR toe, mid and top guard rails. Toe guard rails and mid guard rails must be 2" x 4". Toe guard rail must be no more than 3 ½" from ramp surface. If a curved edge is used, the minimum height is 3".

G (2.) For concrete ramps use 1 ¼" steel tubing for toe and mid guard rails. A 4" (min) concrete edge can also be used for the toe rail.

H. Handrails: All ramps 30" or higher must have handrails on both sides of the ramp that comply with applicable local code. Handrails on ramps less than 30" can be installed, per OT and client recommendation. Handrails must be continuous and cannot reduce the minimum clearances of the ramp runs and landings. The maximum and minimum height of handrails, unless otherwise requested by the client, must be 34" – 38". See A117.1(latest version). Gripping surfaces must be free from any sharp or abrasive elements and obstructions of any kind. If, due to the client's disability, the required height range for the placement of the top handrail is not adequate, then the height can be modified to meet the client's needs and must be documented.

H (1.) For wood ramps, handrails must have finger holds and must extend a minimum of 12" beyond the ramp run. Extension shall return to a wall, guard or landing surface or shall be continuous to the handrail of an adjacent ramp run. Full extension of the handrail will not be required where such extension would be hazardous due to plan configuration.

H (2.) For concrete ramps, handrails must be a maximum of 2" and a minimum of 1 ¼" steel tubing. and must extend a minimum of 12" beyond the ramp run. Extension shall return to a wall, guard or landing surface or shall be continuous to the handrail of an adjacent ramp run. Full extension of the handrail will not be required where such extension would be hazardous due to plan configuration.

I. Materials and Support Structures for Wood Ramps: All wood ramps must be supported, at a minimum, by 4" x 4" posts placed at least every 8' and set in concrete. Where posts will be set on existing concrete, posts must be secured with 12 gauge galvanized powder-coated fence post base or approved equal. Side and center stringers must be used. End support header must be 2" x 6." Concrete deck block is acceptable if approved by the local jurisdiction.

I (1.) The use of pre-treated lumber or lumber treated on site, is required throughout the ramp. Pressure treated lumber is required for the framing and structural components of the ramp. Local building codes may be more specific as to the level of treatment in the lumber. Composite decking material is an approved alternative to treated lumber. Earth berming, due to uneven terrain and when used in conjunction with proper ramp construction is permissible.

I (2.) All decking boards must be 5/4"x 6" and spaced no more than 3/16" apart. Decking screws must be counter sunk or underneath (preferred) and be corrosion resistant stainless steel or double hot dipped galvanized fasteners.

I (3.) When using composite material, decking boards must be a minimum of 1" x 5". Composite deck screws must be used. Acceptable brands are Trex, ArmorGuard or equal.

J. Materials and Support Structures for Concrete Ramps: Concrete ramps must use concrete with a minimum compressive strength of 3500 psi, 5-7% air-entrained. Concrete ramps supported on compacted soil shall be re-inforced with, at a minimum, #6 weld mesh wire to prevent movement. Free standing concrete ramps shall be engineered.

Section 3: MODULAR RAMPS/METAL RAMPS

A. Metal Ramps: Aluminum modular wheelchair ramp systems must, at a minimum, comply with ANSI 117.1 specifications, unless otherwise approved by HCPF/DOH. Modular ramps must be installed per manufacturer's specifications and by a qualified installer. Modular ramps must be firmly set and must not sway, rock or move and comply with specifications for ramp landings.

B. Portable Ramps: The clear width of portable ramps must be a minimum of 30" and must, at a minimum, comply with a 1:12 slope, unless otherwise approved by HCPF or DOH and, if applicable, a local code official. Ramp runs on a portable ramp cannot exceed 12'. Portable ramps must have a non-skid surface, must comply with specifications for ramp landings and be installed per manufacturer's specifications.

C. Threshold Ramps: Threshold ramps must, at a minimum, comply with a 1:12 slope, have a non-skid surface and be used on thresholds 3” or lower. Threshold ramps can be either rubber or aluminum and must be installed per manufacturer’s specifications.

Section 4: REPAIRS to EXISTING RAMPS

A. If the project is to simply repair an existing ramp that is in unsatisfactory condition, the repairs must not in any way bring the ramp out of accessibility compliance or exceed the cost of replacing the ramp with a new one – unless otherwise approved by HCPF/DOH. If the existing ramp was not initially constructed to be in compliance with either the minimum specifications of the Home Mod program or another appropriate code, then HCPF/DOH will determine whether complete replacement is warranted.

Section 5: DOORS

A. Widening Doors: Whenever possible, door openings that are recommended by the OT to be widened should be widened to accommodate a 36” door, regardless of type of door. In cases where the existing structure prevents widening the door to a full 36”, then the door opening should be widened to the greatest extent possible without comprising structural integrity. Code compliant support, regardless of door type, must be provided when widening a door in both a non-load bearing wall and a load bearing wall.

A (1.) Unless otherwise requested by the client, a metal transition threshold must be installed.

A (2.) The installation of clear swing hinges are an approved method for widening a door.

B. Interior Doors: Contractor shall match, as closely as possible, the hardware, style and finish of existing door(s). Hinges must be installed with 3” deck screws.

B (1.) When appropriate, pocket doors and barn doors are acceptable. Barn doors may not be hollow core, unless requested by the client.

B (2.) The types of door handles are to be determined by the client, as noted in the Occupational Therapist’s evaluation.

B. (3). Locks shall be installed per client preference and as noted in the Occupational Therapist’s evaluation.

C. Exterior Doors: All modified or new exterior doors must be pre-hung, steel clad and lockable, have weather stripping and meet local building codes. If not required by code but needed by the client (per the Occupational Therapist’s evaluation) peep holes can be installed. They should be wide angled and must be installed at a height determined by the client.

D. Auto Door Openers: All automatic door openers must be installed by a qualified or certified installer. Installations must meet manufacturer's specifications so as not to compromise the manufacturer's warranty.

Section 6: FLOORING – Based on the OT evaluation and the client's needs, the following options of flooring are acceptable. All required underlayment must be installed per manufacturer's specifications. When necessary or required, subfloor must be repaired or replaced. Unless refused by the client, at least a 10% remnant must be left onsite along with all manufacturers' product information.

A. Laminate: Laminate must be a minimum of 12mm thick for clients using a motorized mobility device such as, but not limited to, electric wheelchair or motorized scooter or heavy duty mobility device, such as, but not limited to manual wheelchairs or Hoyer lift. Laminate must be a minimum of 8mm for all other applications. Contractor MUST BE ABLE TO provide DOH with verification of material specifications.

All laminate flooring must be installed per manufacturer's specifications so as not to compromise the manufacturer's warranty. Installation can either be "floating" or glued down, depending on manufacturer's recommendations.

B. Sheet Vinyl: Sheet vinyl must be a minimum of 8mm thick and have skid resistant surface. **Contractor MUST BE ABLE TO provide DOH with verification of material specifications.**

All Sheet vinyl must be installed per manufacturer's specifications, including specifications for appropriate underlayment, so as not to compromise the manufacturer's warranty.

C. Vinyl Tile: Vinyl tile must be either VCT or LVT and be at least 1/8" thick. **Contractor MUST BE ABLE TO provide DOH with verification of material specifications**

All vinyl tile must be installed per manufacturer's specifications so as not to compromise the manufacturer's warranty.

D. Ceramic Tile: Floor tiles must be either Grade 1 or 2 and must have a skid resistant surface. Only vitreous and impervious tiles can be used outdoors, in kitchens or in bathrooms. Tiles must have a high resistance to breakage and a high wear rating.

Floor tiles must be installed in such a manner as to prevent tile from cracking and/or breaking underneath the weight of the user(s).

All tile must be installed per manufacturer's specifications or per to installation guidelines from the Tile Council of North America.

E. Carpet: When carpet is recommended per the OT evaluation, a commercial grade carpet must be installed that will withstand client's mobility device.

F. Other Flooring: Flooring not mentioned above, such as, but not limited to, pre-engineered flooring, hard wood, stone, bamboo, must be approved by HCPF or DOH on a case by case basis.

SECTION 7: GROUT

All grout used in wet areas such as shower/tub, bathroom and kitchens must either be sealed or be epoxy grout.

Section 8: GRAB BARS –size and location of grab bars to be determined by the client and noted in the Occupational Therapist’s evaluation.

A. Installation of Grab Bars: All grab bars must be installed per manufacturer’s specifications. Size, color and finish of grab bar to be determined by the client. Use the appropriate drill bit for grab bar installation in tile. When it is not possible to mount the grab bar to a stud, solid backing must be used. If mounting grab bars to an acrylic tub/shower enclosure cannot be avoided, then use appropriate anchoring hardware that will prevent the tub/shower enclosure walls from bending or flexing. All grab bars, when installed, must meet or exceed the 250-lb. load rating based on client need.

Section 9: TOILETS – height of toilet to be determined by the client and noted in the Occupational Therapist’s evaluation.

Toilets must be vitreous china. Install toilet, tank and seat per manufacturer’s specifications. A new wax ring must be installed. Contractor will determine if a new flexible water supply line, new flange and/or new ¼ turn shut off valve need to be installed. Toilet must be firmly attached and must not sway, rock, move or leak. Acceptable brands include, but are not limited to Kohler, American Standard or Eljer.

Section 10: BATHROOM SINKS – sink, counter and vanity height to be determined by the client and noted in the Occupational Therapist’s evaluation.

A. Wall Mounted: Install new waste line when the existing line is too low for the new P-trap. Wood blocking, with a 2” x 6” or 2” x 8”, must be installed to support the sink. Attach sink to wall with lag screws or fasteners recommended or supplied by the manufacturer. Removable pipe protection must be installed over hot water and drain pipes, unless an offset drain is installed. There can be no sharp or abrasive surfaces under the sink. Contractor will determine if a new flexible water supply line, and/or new ¼ turn shut off valve need to be installed. Sink to be firmly set and not move.

B. Pedestal: Install new waste line when the existing line is too low for the new P-trap. Wood blocking, with 2” x 6” or 2” x 8”, must be installed to support the sink. Attach sink to wall with lag screws or fasteners recommended or supplied by the manufacturer. Contractor will determine if a new flexible water supply line, and/or new ¼ turn shut off valve need to be installed. Sink to be firmly set and not move.

C. Vanity: New cabinets shall have solid wood face and door frames and shall be Aristokraft, American Woodmark, or equal. Contractor shall repair and paint any wall damage due to the removal of the old

cabinets. The contractor will verify all field dimensions and provide the proper size cabinets for the space available. Include all scribe molding, fillers, and toe kicks required for a complete job. All handles, hardware, trim, fillers and other components for a complete installation must be provided. The type of handles and drawer pulls are to be determined by the client and noted in the Occupational Therapist's evaluation. Please see Section 1: General Specifications, letter D for information about lead based paint and asbestos.

Section 11: KITCHEN – sink, counter and cabinet height to be determined by the client and noted in the Occupational Therapist's evaluation. Under counter wheelchair access to be determined by the client and noted in the Occupational Therapist's evaluation.

A. Sinks: Sinks must be 20 gauge brushed stainless steel (or material of client's choosing with a comparable cost), self-rimming with a back ledge and a minimum of 8" deep.

B. Counter Tops: Counter tops must be new fully formed, plastic laminated top with a four inch back splash and rolled front edge. Use Formica or an approved equal, or material of client's choosing with a comparable cost, or material to match existing with a comparable cost.

C. Cabinets : New cabinets shall have solid wood face and door frames and shall be Aristokraft, American Woodmark, or equal. Contractor shall repair and paint any wall damage due to the removal of the old cabinets. The contractor will verify all field dimensions and provide the proper size cabinets for the space available. Include all scribe molding, fillers, and toe kicks required for a complete job. All handles, hardware, trim, fillers and other components for a complete installation must be provided. The type of handles and drawer pulls are to be determined by the client and noted in the Occupational Therapist's evaluation.

Section 12: FAUCETS

A. Sink Faucets: All sink faucets can be dual, single lever or motion activated and they have copper bushings and a Water Sense label. Acceptable brands include, but are not limited to, Moen, Delta or American Standard or equal. Contractor will determine if a new flexible water supply line, and/or new ¼ turn shut off valve need to be installed.

B. Tub/Walk In Tub/Shower Faucets: Anti-scald or Posi-Temp chrome valves must be installed for all single lever faucets. Faucets can be dual lever, if requested by the client. Acceptable brands include, but are not limited to Moen, Delta or American Standard or equal.

C. Hand Held Shower Hose: Shower hose must be stainless steel and a minimum of 60" with diverter and mounted on an adjustable height slide bar or remote holder that is securely attached to the shower wall in a rigid manner.

Section 13: MODIFYING TUBS

A. Removing a portion of the tub wall is permitted when a prefabricated kit is being installed. Acceptable manufacturers and/or brands are The Safeway Step, Surface Specialists, ORCA Tub Cuts or The Tubcut. Kits must be installed per manufacturer's specifications. Contractor must verify whether kit can be used with existing tub.

Section 14: WALK IN TUBS

A. All walk in tubs must be installed by a certified or qualified installer and be installed per manufacturer's specifications.

B. Contractor must ensure that appropriate electrical service is provided when necessary.

C. Prior to acquiring and installing a walk in tub, contractors are to contact HCPF or DOH with an opinion on whether a new water heater is needed.

D. Prior to acquiring a walk in tub, contractors are responsible for determining whether or not there is adequate space to install the walk in tub.

Section 15: ACCESSIBLE SHOWERS - Roll In or Walk In Showers

A. Shower Pans/Floors: All shower pans/floors, whether prefabricated or built, must have a $\frac{1}{4}$ " per foot slope to the drain and must be slip resistant.

A (1.) For roll in showers, there must be a smooth transition from bathroom floor to shower floor, no more than $\frac{1}{4}$ " threshold. A collapsible rubber/plastic barrier or a removable threshold can also be installed.

A (2.) For walk in showers, the threshold must comply with OT recommendations, based on the client's need.

A (3.) For tiled shower floors, ceramic tile must be at least 2" x 2". Manufacturer's recommendations for type and spacing of grout must be followed.

B. Shower Walls/Surrounds: Backer board/cement board must be used for all shower walls. No green board.

B (1.) When using ceramic tiles on shower walls, all exterior edges must be finished with trim pieces. Top edge (if not going up to ceiling) must also be finished with trim pieces.

B (2.) Pre-fabricated tile wall surrounds are acceptable and must be installed per manufacturer's specifications.

B (3.) Fiberglass (FRP) or Vikrell wall surrounds are acceptable and must be installed per manufacturer's specifications.

C. Shower Accessories: All showers must include, unless refused by the client, a wall mounted soap dish, a wall mounted shelf, a permanently attached curtain rod, a weighted shower curtain and a hand held shower hose (see Section 12 C for shower hose specifications). Only existing shower doors can be replaced. The new shower doors must be made of tempered glass, be of a reasonable cost and must be comparable in style to the existing doors.

Section 16: LIFTS and TRACK SYSTEMS

A. Stairway Chair Lifts: Lifts must be new. Used or refurbished lifts or lifts with a cable drive are not allowed. All lifts must comply with ASME 18.1 (latest version). Lifts must be appropriate for the client's height, weight and body frame, as recommended in the Occupational Therapist's evaluation. The mount and dismount areas must provide adequate space for the client to use lift safely and the end section of the glide must not protrude into the traffic area of others. The operating mechanisms must be accessible to the client. When using the existing electrical service to operate the lift, the contractor must verify that usage does not create a hazard. When new electrical service is required, it must meet code. Contractor is responsible for providing manufacturer with accurate and detailed measurements of existing stairs. The installation of lift must comply with manufacturer's specifications and be installed by qualified or certified installer.

B. Vertical and Incline Platforms Lifts: Lifts must be new and must comply with ASME 18.1 (latest version) and include, but not limited to, an upper landing gate, solid sides, locks, safety platform. Used or refurbished lifts are not allowed. Lifts must be appropriate for the client's height, weight and body frame, as recommended in the Occupational Therapist's evaluation. Mount and dismount areas must provide adequate space for the client to use lift safely. Operating mechanisms must be accessible to the client. When using the existing electrical service to operate the lift, the contractor must verify that usage does not create a hazard. When new electrical service is required, it must meet code. Contractor is responsible for providing manufacturer with accurate and detailed measurements of area where lift is to be installed. The installation of lift must comply with manufacturer's specifications and be installed by a qualified or certified installer.

C. Ceiling Track Systems: Track systems must be new and must comply with ASME 18.1 (latest version). Track systems must be appropriate for the client's height, weight and body frame, as recommended in the Occupational Therapist's evaluation. The layout of the track system must follow the Occupational Therapist's recommendation, based on client need. Mount and dismount areas must provide adequate space for the client to use track system safely. Operating mechanisms must be accessible to the client. When using the existing electrical service to operate the track system, the contractor must verify that usage does not create a hazard. When new electrical service is required, it must meet code. Track must be installed by a qualified or certified installer and attached to ceiling supports, per manufacturer's specifications.

SECTION 17: STAIRS: Compliance with a local building code is required and supersedes the following minimum specifications:

A. Width: The clear width of stairways must be at least 36 inches.

B. Risers: The height of risers cannot exceed 7 3/4 inches.

C. Treads: The tread depth must be at least 10 inches.

D. Handrails : Handrails must be provided on at least one side of each continuous run of treads or flight with four or more risers. Handrail height, measured vertically from the sloped plane adjoining the tread nosing, or

finish surface of the ramp slope, should be between 34 inches and 38 inches. If, due to the client's disability, the required height range for the placement of the handrail is not adequate, the height can be modified to meet the client's need and must be documented