



Industry Standard vs Shelter Standard Comparison Chart

Our goal at Shelter is to build the best possible home. We have studied building science and techniques of "green building" because we want to build homes that are high quality, energy efficient, comfortable, sustainable, and healthy. We understand that some of these techniques add cost to the initial investment of a new home, but strongly believe in the cost savings you will see from energy bills, reduced maintenance and replacement costs over the long haul. The following is a summary of what is commonly practiced in the industry vs. the standard that we build our homes to with explanations to help you understand why these are included.

Category	Industry Standard	Shelter Standard	Notes
Radon Mitigation	Not required	Active Mitigation System	We install an active Radon Mitigation System that gives Radon gas that accumulates below slabs or in crawl spaces a place to go. This active system utilizes perforated piping below grade to gather the gas and then evacuates it away from the building using a low sone-energy efficient fan.
Foundation Protection	No coating on crawl space foundation. Damp proofing on basement foundations	Waterproof coating on all foundations	We coat all foundations with a waterproof coating. Why? Concrete is a porous material that wicks water from the ground. This coating provides a barrier from the moisture, eliminating water intrusion problems through concrete walls. This protection comes with a written 10 year warranty against water penetration.
Foundation Protection Board	Not typically used	Used as necessary	When ground conditions contain a large quantity of rock or shale, we will install a protection board to the level of grade to the concrete wall which protects the water proof membrane and provides an additional water drainage plane. This increases the warranty to 10 years in addition to providing the necessary protection.
Capillary Break	Not required	Standard on all homes	A capillary break is applied to the footings before the concrete walls are poured to minimize the water wicking action between the footings and foundation walls.
Drainage	Required-often poorly completed	Standard on all homes	We take great care to backfill with positive slope away from the building for the first 6' with the required 6" separation from finish grade, framing and siding material.
Backfill to Top of Footing on Crawl Space Foundations	Required-not commonly done	Standard on all homes	Code requires that backfill be placed to the top of interior footings on crawl space foundations. This is a requirement often overlooked by most builders. We see the value in a cleaner crawl space that is easier to work in and helps keep moisture from penetrating under a footing.
Crawl Space	Unconditioned	Conditioned	A conditioned crawl space is more energy efficient and provides a healthier indoor environment for the structure's occupants.

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Footing Drain	May or may not be required; determined by storm water plan.	As necessary	On many homes, due to ground conditions, we install a footing drain to evacuate water away from the foundation minimizing water intrusion problems. Sometimes this is required by storm water engineering, but often times it is simply included as good building practice.
Interior Flat Work-Capillary Breaks	Not required	Expansion joints around perimeter	Expansion Joints are placed around the perimeter of a basement slab, acting as a capillary break between the foundation wall, footing, and basement slab. This is another area where we seek to minimize moisture penetration.
Interior Flat Work-Control Joints	Not required-typically over spaced if included at all	Control joints at minimum 10'x10' grids or no more than 100 sq' ft. depending on layout.	Control joints are saw cut or troweled into the slab to give cracks a controlled place to go and minimize long unsightly cracks. It is a given that concrete will crack, so we utilize this method to help control the cracking.
Interior Flat Work-Visqueen Under Slab	Not required	A layer of clear visqueen is placed under slabs	Provides capillary break reducing moisture drawn out of the ground and into the slab
Exterior Flat Work-Fiber mesh	Not required	Fiber mesh in all exterior slabs	Fiber mesh is a fiber reinforcer to help strengthen concrete and minimize cracking.
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Framing Corners	Multi-stud corners	2 stud open corners	Two stud open corners are able to receive insulation eliminating cold spots at corners. A stud is R-7 insulation compared to the R-19 or 21 insulation that can be used. Additionally, angled walls will receive rigid insulation prior to sheeting.
Sill Plate Air Sealing	Not required	2 beads of sub-floor glue	2 beads of sub-floor glue placed on sub-floor prior to standing walls for additional air sealing benefit.
Ladder Block at Interior Partition Walls	Not commonly used	Standard on all homes	Ladder blocking at interior partition walls allows insulation to be placed in this cavity eliminating a cold air space.
Deck Flashing	None	Flash all beams & house connections	Increase the life span of the product and move water away from the home structure.
Indoor Air Quality	None	Air sealing system	Stops unwanted airflow into walls. All penetrations are caulked including electrical holes, mechanical trade penetrations at plate lines, electrical outlets, and electrical fixture boxes.

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Insulation	Typical RES Check	Upgraded from RES Check Standard	
	R-19 fiberglass batt in walls	R-21 blown cellulose	Creates a high density barrier limiting air movement as well as providing great insulating qualities.
	R-38 in attics	R-38 option R-49	Most heat loss is through your ceiling. We use a blown in cellulose in all areas possible.
	R-30 in floors	R-30 in Floors	Used when living space is cantilevered or over an unconditioned space.
Roofing	20 year composite shingle minimum	30 year architectural composite shingle	High quality, attractive, wind resistant shingle.
Gutters	Not required unless specified by storm water plan	Standard on all homes	Gives water a path to the ground and eliminates splashing which causes excess damage to siding. Downspouts terminate a minimum 4' from building.
Exterior Doors	Steel insulated	Insulated fiberglass as standard	
Interior Doors	Hollow core	Solid core doors standard	Deadens sounds and is a higher quality product.
Garage Doors	No insulation	I-Drive openers & insulated doors standard	Insulates garage area for finished or future finish of garage areas.
Windows	Vinyl w/ low E	Vinyl 1" insulated with Low E ² double glazed glass with argon gas	Low E double glazed is a coating put on two surfaces of the window to provide multi-seasonal benefits of heat retention in the winter, as heat tries to leave the home, and deflection of rays in the summer to help keep cool air inside. Argon gas is a sound proof agent and helps slow the movement of cold air trying to penetrate you house in the winter. Glazing unit is 3/4" allowing the above features to maximize the potential. Tinting options are available to reduce solar heat gain.
House Wrap	Not required	House wrap entire perimeter of home	Acts as an air and vapor barrier to protect against air and moisture damage. Works as a vital part of the drainage plane keeping water away from the structure of the house.
Window Flashing	Minimal caulk around flange with basic flashing	Follow detailed procedure for air and water management using moist stop or equivalent	House wrap cut and pinned back, covered with flex flash, 3 edges of windows caulked, windows sealed with forti flash, house wrap lapped over top of flashing and seams taped to complete air and water management system of install.
Drywall	Square corners, orange peel texture	Rounded corners in traffic areas, crimped square at the bottom to receive base, orange peel texture on walls, skip trowel hand texture on ceilings.	Provides cleaner lines that are easier to maintain.
Vapor Barrier	Plastic	Low permeability primer	Plastic can trap air in the wall cavity and may condense on walls, without a way to escape. Using a Low Perm (Less than 1.0 perm) primer allows a bit of air movement so if it does get into the walls, it can get back out.

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Interior Paint	Standard latex	Pro-Green latex	Pro-Green is a low VOC paint that limits harmful vapors during the painting process.
Fireplace and Woodstove	Minimal insulation and draft stops	Take great care in the detail of draft stopping and insulation to minimize air loss common in fireplace areas	Fireplaces to be heat producing for zoned area.
Appliances	No Requirement	Energy Star	We recommend the use of Energy Star Appliances and require them on homes that meet the Energy Star standard.
Plumbing		Use posi-temperature controls at all bath and shower locations	Posi-temperature valves control the heat gain or loss of water when another fixture is used while a shower is in use.
Hot Water Tanks	Standard gas or electric	Marathon electric hot water heaters	Use of Marathon ultra efficient and highly insulated hot water heaters. Significantly reduces the loss of heat over time with no back drafting typical in gas heaters.
Bath Fans	Standard electric fans	Use Panasonic Whisper Green fans	1 per floor - Ultra Quiet Low Sone fan, runs continually to facilitate necessary air movement through your house. These fans have a sensor that increases the speed of the fan when you are in the room yet still maintains an extremely quiet sone.
		Use Panasonic Quiet Green fans	At all other fan locations we use these ultra efficient and extremely quiet fans.
Heating/Cooling Systems	Many options available. Typically use 80% efficient gas, non-sealed combustion. Cooling optional.	90% plus efficient gas standard on all homes. Electric heat pump optional and recommended.	We recommend and typically use an electric heat pump, with 90%+ gas back up. A heat pump is the most efficient heating and cooling unit at average to above average temperatures. The back up kicks in during extreme cold temperatures. All units are sealed combustion. Using electric and gas allows you options should utility prices drastically change. Additionally we use variable speed motors to maximize energy efficiencies during use. Fresh air is brought in through the return air using a mechanical damper.
Duct System	Flex ducting	Sealed hard pipe	Hard metal allows air to efficiently move through the system, fully sealed with mastic to eliminate air loss.
Cold Air Returns	Cut into stud cavity	Use thermo-pan lined chases	Keep air from moving through raw/bare wood and keep it in a contained sealed space. Chase is sealed with mastic at all joints and penetrations.
Electrical	Standard plugs and can lights	Vapor boxes and sealed can lights	Vapor resistant electrical boxes and sealed can lights to keep air from moving into walls.
Lighting		CFL-Compact Fluorescent Lighting	We recommend the use of compact fluorescent bulbs where ever possible.
Energy Star® certification		Home Certification	Shelter has built several homes that have received full Energy Star certification. Homes are tested and approved by an independent home performance specialist.