



**Level B – Custom Single-Family,
Multi-Family & Commercial Series**

014000 Quality Requirements

1. **Building Code Compliance:** Hi-Tech warrants compliance with the Canadian Standards Association A-277 Procedures for Factory Certification of Buildings ("CSA A277") and the National Building Code of Canada ("NBCC") as appropriate for the occupancy and use class of the structure and as adopted and amended by the province where the modular structure is to be delivered as of the date of the initiation of manufacture. Hi-Tech is only responsible for such local variations from the effective provincial code as have been communicated in writing to Hi-Tech by the Purchaser and incorporated into the terms and conditions of the Purchase Agreement for the structure.

018313 Superstructure Performance: Design Loads

1. **Floor Load:** 40 pounds per square foot
2. **Ground Snow Load:** 40 pounds per square foot
3. **Wind Load:** up to 90 miles per hour
4. **Seismic Zone:** 0 to 1

0611001 Wood Framing: Floors

1. **Floor Joists:** 2x dimensional lumber or open truss joist, depth and spacing per plan.
2. **Perimeter Rim Joists:** Single, double or triple 2x dimensional lumber or engineered LVL beams spliced with metal gang plates or wood and steel assemblies per plan.
3. **Porch and Balcony Framing:** Treated lumber and compatible fasteners per plan.
4. **Joist Support:** Metal joist hangers @ mate-line rim joists.
5. **Bridging:** Dimensional lumber bridging or strong-backs, size and location per plan.

0611002 Wood Framing: Exterior Walls

1. **Wall Height:** Per plan, within constraints of transportation regulations.
2. **Studs:** 2x4, 2x6, 2x8 or double-wall ("thick-wall"), spacing per plan, center-drilled where necessary for electrical wiring.
3. **Plates:** Double top and single bottom plates, matching studs. Double-wall assemblies may not require a double top plate on the inner wall.
4. **Headers for Exterior Wall Openings:** Engineered & sized per specific spans.
5. **Wall-to-Floor and Wall-to-Roof Connections:** Mechanically fastened with additional galvanized steel banding connectors from walls to roof. Wall sheathing overlaps floor rim joist 2".
6. **Exterior Wall Fastening:** All wood-to-wood connections with mechanical fasteners.
7. **Gable End-Walls Under Hinged Roofs:** Pre-framed 2x3 gable end walls (2x6 for occupied space under roofs of 9/12 pitch or greater), typical stud & plate construction, sheathed with OSB. Shipped loose for installation and completion in field by others.

0611003 Wood Framing: Mating Walls

1. **Studs:** 2x3, 2x4, 2x6 or 2x8, spacing per plan.

2. **Plates:** Double top and single bottom plates matching studs or as required for rated fire assemblies.
3. **Headers for Mating Wall Openings:** Engineered & sized per specific spans.
4. **Demising Walls and Other Rated Separations:** Rated fire assemblies per plan.

0611004 Wood Framing: Interior Partitions

1. **Studs:** 2x3, 2x4, 2x6 or 2x8, spacing per plan.
2. **Plates:** Single top and bottom plates, matching studs or as required for rated fire assemblies.
3. **Headers for Interior Partition Openings:** Framed to match stud wall with cripples above.
4. **Demising Walls and Other Rated Separations:** Rated fire assemblies per plan.
5. **Upper level stairway enclosing walls to unfinished 1-1/2 story (cape cod style) attic space and to the attic space of ranch, bi-level and multi-story designs with storage trusses:** Enclosing walls for stairway are open frame panelized and shipped loose. All other framing and finish materials for unfinished areas are to be furnished and installed on-site by others.

0611005 Wood Framing: Roofs

1. **Roof Pitch:** Per plan within constraints of transportation regulations.
2. **Ceiling Contour:** Flat or Vaulted within constraints of transportation regulations.
3. **Roof Framing:** Engineered wood trusses, dimensional lumber or engineered LVL rafters, spacing per plan. Framed assemblies to complete any roof peaks and any hipped ends shipped loose for site installation.
4. **Lower Level Ceiling Framing:** 2x ceiling joists, depth and spacing per plan, with 2x dimensional lumber, engineered LVL or wood and steel assembly rim joists, number and depth per plan.
5. **Mating Line Beams:** Engineered LVL beams or wood and steel assemblies are used over openings and are concealed above the ceiling, if possible.
6. **Backers:** OSB backers for electrical boxes and fixtures.
7. **Overhangs:** All gable rakes and eaves of ranch, bi-level and 2-story designs are 12". Eaves of 1-1/2 story designs are 9". Gable ends per plan.
8. **Sub-Fascia Board:** 2x6 lumber
9. **Dormers, Cross Gables, Crickets, Draft Curtains and Rated Fire Assemblies:** Engineered per plan and code requirements. Pre-fabricated, if possible. May require assembly and installation on-site by others.

061600 Wood Sheathing

1. **Floor Decking:** 3/4" (23/32") tongue and groove, OSB floor decking installed perpendicular to joists with staggered joints, glued, fastened with .099" x 2" 6D ring-shank nails 6" OC (all seams are sanded). Installed under and between knee walls on upper level of 1-1/2 Story (cape cod style) plans. 1/4" luan underlayment, installed over the sub-floor decking, in all linoleum areas.
2. **Porch and Balcony Decking:** Treated or composite decking and compatible fasteners per plan.

3. **Wall Sheathing:** 7/16" OSB on all exterior walls. 3.4 mm luan installed under drywall of mating walls.
4. **Roof Decking:** 7/16" OSB decking with "H" - clips between trusses.

062200 Finish Carpentry: Millwork

1. **Window Jamb:** All window jamb extensions ½" vinyl-wrapped (Charlotte Oak), veneer core plywood. Optional stained pine jambs or drywall returns.
2. **Casing:** 2-1/4" non-finger jointed colonial pine casing, stained to match interior doors and window jambs.
3. **Base Molding:** 3" non-finger jointed colonial pine baseboard, stained to match interior doors and window jambs.

064300 Finish Carpentry: Stairs and Railings

1. **Stairs To Basement:** Furnished and installed on-site by others.
2. **Stairs-To Upper Levels:** Wood stringers with carpet-grade 2x wood treads. 3/4" painted pine risers. When included in plans, newels are colonial style stained hardwood and balusters are colonial style poplar, painted white or stained. When newels and balusters are not included in plans, stairs are enclosed with half walls, capped with stained pine. Finished treads are optional.
3. **Handrails-To Upper Levels:** Pine or poplar colonial-style rails stained to match interior doors and trim, with metal handrail brackets, are shipped-loose for installation on-site by others.
4. **Porch and Balcony Railings:** Available as options.

072100 Thermal Protection: Insulation

1. **Floors:** Available as option. Typically furnished and installed on site by others.
2. **Walls:** Fiberglass batt insulation appropriate to dimensional lumber stud size. Cellulose insulation with bora-spray for double-wall ("thick-wall") framing installed to 4 lbs/cubic foot density. Optional Styrofoam or polyisocyanurate rigid insulation boards.
3. **Roof: R-40** blown cellulose in ranch, bi-level and 2-story attics. Insulation baffles at eaves.
R-30 blown cellulose in lower level ceiling of 1-1/2 story (cape cod style) with unfinished upper level. Insulation baffles at eaves.
R-19 fiberglass batt insulation shipped for installation on-site by others behind knee-walls. All insulation for unfinished upper level ceiling furnished and installed on-site by others.
R-38 fiberglass batts in angled portion of ceiling of 4-module, 1-1/2 story cape cod style, with factory finished upper level.
4. **Rims of Ceilings and Floors Above Lower:** Rigid Styrofoam or polyisocyanurate, fastened to rim boards between joists.
5. **Window/Door:** Foam insulation around windows. Fiberglass insulation between door frames and wall framing.
6. **Rated Fire Assembly Insulation:** Per plan.
7. **Sound Attenuating Insulation:** Optional.

072500 Moisture Protection: Weather Barriers

1. **Floor Bottom:** Poly-scrim reinforced plastic sheeting transit protection, applied seasonally, to be removed on-site during module installation. Wood and/or metal bottom closure available as options.

2. **Wall Weather Wrap:** Air infiltration/water barrier building wrap between siding and sheathing (entire home wrapped including gable ends). Optional membranes, flashings and battens for rain-screen systems.
3. **Vapor Barrier:** Continuous 6-mil poly installed on warm side (between exterior wall studs and gypsum wall board and between truss bottom cords and gypsum ceiling board).

073100 Moisture Protection: Roofing

1. **Shingles or Membranes:** Optional.
2. **Shingle Underlayment:** Optional.
3. **Drip Edge:** Optional.
4. **Ice Dam Protection:** Optional.
5. **Attic Ventilation:** Optional.

074600 Moisture Protection: Siding

1. **Siding:** Optional.
2. **Siding Trim:** Optional.
3. **Soffit:** Optional.
4. **Fascia:** Optional.

079000 Joint Protection: Sealants

1. **Exterior Wall, Floor & Roof Intersections:** Flexible acrylic sealant between wall/floor, wall/wall and wall/ceiling or wall/roof intersections.
2. **Inter-Module Seal at Mate Walls:** Bulb seal installed around perimeter.

081011 Openings: Doors and Frames

1. **Exterior Main Entry Door:** 3'-0" x 6'-8" x 1-3/4" 6-panel "white" vinyl finish insulated steel front entry door with dead bolt and round satin nickel door handle.
2. **Exterior Secondary Entrance Door:** 2'-8" x 6'-8" 1-3/4" 6-panel "white" insulated vinyl finish steel entry door with deadbolt and satin nickel round style door handle. "Fire Rated" when used as door to garage.
3. **Exterior Patio Door:** Insulated 6'-0" x 6'-8" Low-E vinyl (per print/option) with screen door and manufacturer's individual lock system. Grids optional.
4. **Exterior Door Keying:** All exterior door locksets and deadbolts (except patio door) are keyed alike.
5. **Exterior Door Thresholds:** All exterior doors have adjustable thresholds with temporary covering/protection installed.
6. **Exterior Door Weather Stripping:** Compression style.
7. **Exterior Door Jamb/Brick Mold:** Vinyl wrapped wood on Main and Secondary doors. A door to a garage is primed finger-jointed pine.
8. **Exterior Commercial Metal Frames, Doors, Storefronts, Hardware and Keying:** Available as options.
9. **Storm Doors:** Optional.
10. **Interior Passage Doors:** 1-3/8" thick 6'-8" high (width per plan, 2'-6" minimum for bedrooms, utility rooms and basement, when required) 6-panel, hollow core, embossed wood grain/toned doors, with stained pine jambs. Optional pocket doors.
11. **Interior Wardrobe/Closet Doors:** Bi-fold or swing type per plan, 6-panel, hollow core, embossed wood grain/toned, with stained pine jambs.
12. **Interior Passage Door Hardware:** Lever style with brushed nickel finish.
13. **Interior Privacy Locks:** Privacy locks on all bathroom and bedroom doors.

14. **Interior Door Hinges:** Three, solid metal, satin finished nickel, mortised type.
15. **Interior Doorstops:** Baseboard or hinge mounted as appropriate, for all swing doors.
16. **Interior Commercial Metal Frames, Doors and Hardware:** Available as options.
15. **Openings Without Doors:** Full height to ceiling (no dropped headers), with drywall finish (mate line openings require site finishing by others). Optional cased openings with dropped headers.

083100 Openings: Access Doors & Panels

1. **Crawlspace Access:** Furnished and installed on-site by others
2. **Attic Access:** Provided with insulated panel when required by code.
3. **Temporary Access Openings:** Openings provided as necessary for on-site inter-module connection of mechanical systems by others. To be closed and finished on-site by others.

085000 Openings: Windows

1. **Windows:** White vinyl, low maintenance, single-hung, 3/4" insulated "Low "E" glass with tilt sash and fiberglass screen. Egress windows in all bedrooms, all other windows sized per plan. Double-hung, casement, awning and fixed glass windows and grids optional.
2. **Windows in End Gables of 1-1/2 Story (Cape Cod) Designs:** Sized per plan and shipped loose for installation on-site by others. Trapezoid and special design windows are optional.

092116 Finishes: Drywall

1. **Gypsum Board Assemblies for Walls:** 1/2" drywall, adhesively applied horizontally and mechanically fastened with nails at perimeter and screws in field of board. Water resistant drywall in tub/shower areas. All drywall finished smooth. Optional 5/8" Type X in single or multiple layers for rated fire assemblies.
2. **Gypsum Board Assemblies for Ceilings:** High-strength drywall secured to trusses or ceiling joists with two-part urethane adhesive and screws. Ceiling has smooth finish (Optional stipple/texture finish). Ceiling drywall held back 12" where necessary for on-site finishing at mate line openings. Optional 5/8" Type C and Type X in single or multiple layers for rated fire assemblies. *Note: Any exposed ceiling framing at mate line requires cross fastening with lag screws on site by others prior to drywall replacement and finishing.*
3. **Gypsum Board Joint Finish:** Reinforced corner bead for outside corners. Fiber mesh tape for flat joints with paper tape for all inside corners. All joints bed coated with high-strength joint compound and finished smooth with one-or-more finish coats of topping compound.

096000 Finishes: Flooring

1. **Ceramic Floor and Wall Tile:** Optional.
2. **Resilient Flooring:** Optional
2. **Carpeting:** Optional

099100 Finishes: Paint

1. **Interior Walls and Ceilings:** Flat white latex primer.
2. **Interior/Exterior Trim:** Pre finished stained pine with nail holes puttied with color matched filler. Brickmold caulked to exterior door jambs.

102000 Specialties: Interior

1. **Mirrors:** Optional
2. **TP Holders, Towel Bars and Door Hooks:** Optional.
3. **Shower Curtains and Enclosures:** Optional.

105000 Specialties: Storage

1. **Closet Shelves:** Single 12" vinyl-coated metal ventilated shelf in all clothes/guest closets. 4 - 16" vinyl coated metal ventilated shelves in linen and pantry closets.

107000 Specialties: Exterior

1. **Shutters, Lineals, and Other Architectural Ornaments:** Optional.

113100 Equipment: Residential Appliances

1. **Range hood:** 30" white, 160 cfm with light, vented to outside.
2. **Dishwasher:** Plumbing, electrical and base cabinetry prepared to accept installation of standard dishwasher if appliance not purchased from HTH.
3. **Kitchen and Laundry Appliances:** Optional.

122000 Furnishings: Window Treatments

1. **Blinds:** Optional

123000 Furnishings: Casework

1. **Cabinets:** Custom built, Oak Park kitchen and bathroom cabinets with recessed panel - square oak framed doors.
2. **Cabinet Height:** 30" overhead cabinets.
3. **Cabinet Hardware:** Concealed 2-way adjustable hinges. satin nickel drawer and door knobs/pulls.
4. **Cabinet Trim:** 2-9/32" oak crown molding for overhead cabinets.
5. **Cabinet Configuration:** Drawer over door style base cabinets with one roll-out shelf in bases over 9" wide.
6. **Pantry Cabinets/Closets:** Pantry cabinets include 5-full depth shelves.
7. **Toe Kick:** All cabinets have finished toe kick.
8. **Bath Vanities:** Master bath vanities are 21" deep by 36" high (incl. countertop). Secondary bath vanities are 21" deep x 33" high (incl. countertop). Optional banks of drawers available.
9. **Countertops:** High-pressure laminate with rolled edge countertop and integral 4" post formed backsplashes at all walls. Optional self-edge high-pressure laminate, solid-surface and granite countertops. *Note: On peninsula tops, edges may be mixed between post-formed and self-edge.*

125000 Furnishings: Furniture

1. **Residential and Office Furniture:** Optional.

1334232 Fabricated Structures: Module Dimensions/Transportation

1. **Module Dimensions:** Governed by DOT regulations, but generally a module 15'-9" wide x 14'-6" high (on trailer) x 72' long, is the maximum size without special routing, equipment, restrictions and cost.
2. **Transport Method:** Returnable carriers
3. **Shipped Loose Materials:** See Hi-Tech scope-of-work standards for materials to complete the home that are shipped loose for installation on-site by others.

221000 Plumbing Piping:

1. **Water Supply Lines (installed):** Color-coded cross-linked polyethylene (PEX) with brass fittings. Water lines are solvent free and freeze/thaw stable. Water distribution system is pressure tested to 100 psi; Inter-module connections and connection to water source furnished and installed on-site by others. Optional copper water lines.
2. **Water Heater & Shower Diverted Water Lines:** Water lines to shower diverters, water heater and softener (if ordered) are color-coded cross-linked polyethylene (PEX).
3. **Shutoff Valves:** Individual water shut off valves at all fixtures except tubs and showers.
4. **Main Water Shutoff:** ¾" Ball valve master shut off on cold side prior to hot water feed when heater is located within module.
5. **Dishwasher:** Prep for optional dishwasher.
6. **Washer:** Recessed washer box with hot & cold supply valves and 2" ABS drain included within laundry area .
7. **Plumbing for Icemaker:** Installed through floor outside of wall with poly line to refrigerator.
8. **Drain, Waste & Venting:** DWV piping is ABS stubbed through the floor. Inter-module connections, completion of vents through roof, and connections to sanitary system furnished and installed on-site by others.
9. **Piping for Upper Levels of Multi-Story Designs:** Water supply lines and DWV installed and run to termination point per plan for connection and completion on-site by others.
10. **Piping for Upper Level of 1-1/2 Story (Cape Cod) Designs:** Water supply line and DWV stubbed to upper level for future baths.

223000 Plumbing: Equipment

1. **Water Heater:** Optional.

224100 Plumbing: Fixtures

1. **Water Closets:** Elongated style toilets with porcelain tank and lid. (1.6 gallon per flush water conserving style).
2. **Sinks:**
 - a. **Kitchen:** Stainless steel 33" x 22" x 8" deep, double bowl kitchen sink.
 - b. **Bathroom:** White oval vitreous china bowl with popup drain and overflow. Pedestal sink standard in half baths.
3. **Tubs & Showers:**
 - a. One-piece fiberglass showers, tub/showers, garden and corner tubs (per plan). Optional handicap tubs and showers.
4. **Faucets:**
 - a. **Exterior:** One exterior frost-free water faucet with back flow protection , located per plan.
 - b. **Kitchen:** Delta Peerless single lever, satin nickel with sprayer.
 - c. **Bath Vanity:** Delta Peerless single lever satin nickel.
 - d. **Corner Tubs (per plan):** Delta Peerless dual knob satin nickel.
 - e. **Tub/Shower Combination:** Delta Peerless single lever, satin nickel with diverter spout.
 - f. **Shower:** Delta Peerless single lever satin nickel with anti-scald protection.
 - g. **Showerheads:** Installed and reinforced 80" above finished floor.

233000 Heating, Ventilation and Air Conditioning (HVAC)

1. **Gas Piping:** None.
2. **Instrumentation & Control:** Pull wire for site supplied and installed thermostat.
3. **Air Exchange System:** Fan with flex-ducting to roof vent. Some provinces require a heat recovery ventilator ("HRV").
4. **Air Distribution-Exhaust fans:** Exhaust fans in all baths are 50 CFM fan/light combination with separate switch for the fan and the light. Vented to exterior with insulated flexible duct.
5. **Dryer Vent:** When laundry area is specified within module, vented through sidewall or recessed into wall and installed through the floor. Parts shipped loose for completion on site.
6. **Air Distribution-Cold Air Return:** Intake installed high on the walls and cut through the floor on first floor, through ceiling on upper levels, and completed on site by others.
7. **Air Distribution-Registers:** Boots and 4x10 floor registers installed. Toe kick under cabinet registers in kitchens and bathrooms as required.
8. **Ducts for Upper Level of Multi-Story Designs:** Flexible ducts installed from register boots to chases and/or temporary access openings for connection on-site by others.

262000 Electrical: Distribution

1. **Switchboards & Panelboards:**
 - a. **Service:** 200 AMP
 - b. **Panel Box:** 32/64-space circuit capacity, all circuits labeled, with gray cover. Optional larger panels and sub-panels.
 - c. **Panel Box Installation:** For basement installation (standard) panel box will be temporarily secured to bottom of floor joists for shipment and site installation by others. For in-wall installation (optional) panel box will have a 2" ABS wire chase and two additional 1" wire chases – one to attic and one to basement.
2. **Conductors & Cables:**
 - a. All wiring is copper with nonmetallic sheathing ("NMC"), sized per code. Optional MC cabling. Optional EMT conduit with wire furnished and installed on-site by others for multi-module structures.
3. **Circuit Protection:**
 - a. **Ground Fault Interrupters:** GFI for all exterior receptacles, baths and kitchen appliance circuits.
 - b. **Arc Fault Breakers:** All bedrooms.
 - c. **Inter-Module Wire Connections:** Junction boxes.
4. **Boxes & Devices:**
 - a. **Switches:** Toggle switches throughout.
 - b. **Three-Way Switches:** Three-way electrical switches at hallways over 10' long, foyers, and rooms with two entrances – up to three.
 - c. **Exhaust Fan Switches:** Separate switches for lights and fans.
 - d. **Receptacles:** Tamper resistant except dedicated appliance receptacles and receptacles above kitchen counters, in attics and in crawl spaces.
 - e. **Exterior Receptacles:** Two exterior GFI protected receptacles.
 - f. **Dishwasher Receptacle:** Hard-wired box on dedicated 15 amp circuit.
 - g. **Washer Receptacle:** 110 volt, 20 amp.

- h. **Dryer Receptacle:** 220 volt, 30 amp.
- i. **Range Receptacle:** 110 volt behind range, 220 volt, 40-amp (for electric range).
- j. **Garbage Disposal Receptacle:** Wiring for garbage disposal on separate switch at kitchen sink OPTIONAL
- k. **Switched Receptacles for Rooms without Optional Light Fixtures:** Per plan
- l. **Heat Tape Receptacle:** Optional.
- m. **Door Chime:** 110-volt electric hard-wired door chime with a 12-volt transformer for door bell button at front door.

265000 Electrical: Lighting

- 1. **Exterior Lighting:** Optional fixtures. May be shipped loose for installation by others, if subject to transport damage.
- 2. **Interior Lighting:** Optional incandescent, fluorescent and LED fixtures.
- 3. **Emergency and Exit Lighting:** Optional fixtures.
- 4. **Light Bulbs & Globes:** Optional.

274000 Communications: Audio-Visual

- 1. **Phone Jacks:** Optional. Cabling typically furnished and installed on-site by others.
- 2. **TV Jacks:** Optional. Cabling typically furnished and installed on-site by others.
- 3. **Data Jacks:** Optional. Cabling typically furnished and installed on-site by others.

283100 Electronic Safety & Security: Detection & Alarm

- 1. **Smoke Alarms:** Smoke alarms are hard wired with battery backup. Number and location per code.
- 2. **Carbon Monoxide Alarms:** One or more carbon monoxide or combination smoke/CO alarms per level, as required by code.
- 3. **Equipment and Fixtures for the Visually and Hearing Impaired:** Available as options.
- 4. **Heat Detectors and Fire Alarm Systems:** Optional electrical accommodation for heat detectors, pull boxes and other elements of fire alarm systems, which are typically furnished and installed by others.
- 5. **Security Systems:** Optional electrical accommodation for motion detectors, alarms and other elements of security systems, which are typically furnished and installed by others.

NOTE: *Hi-Tech Housing, Inc has a continuous product improvement program making all specifications subject to change without notice. Check with Hi-Tech Housing, Inc. for current specifications and features for all homes.*