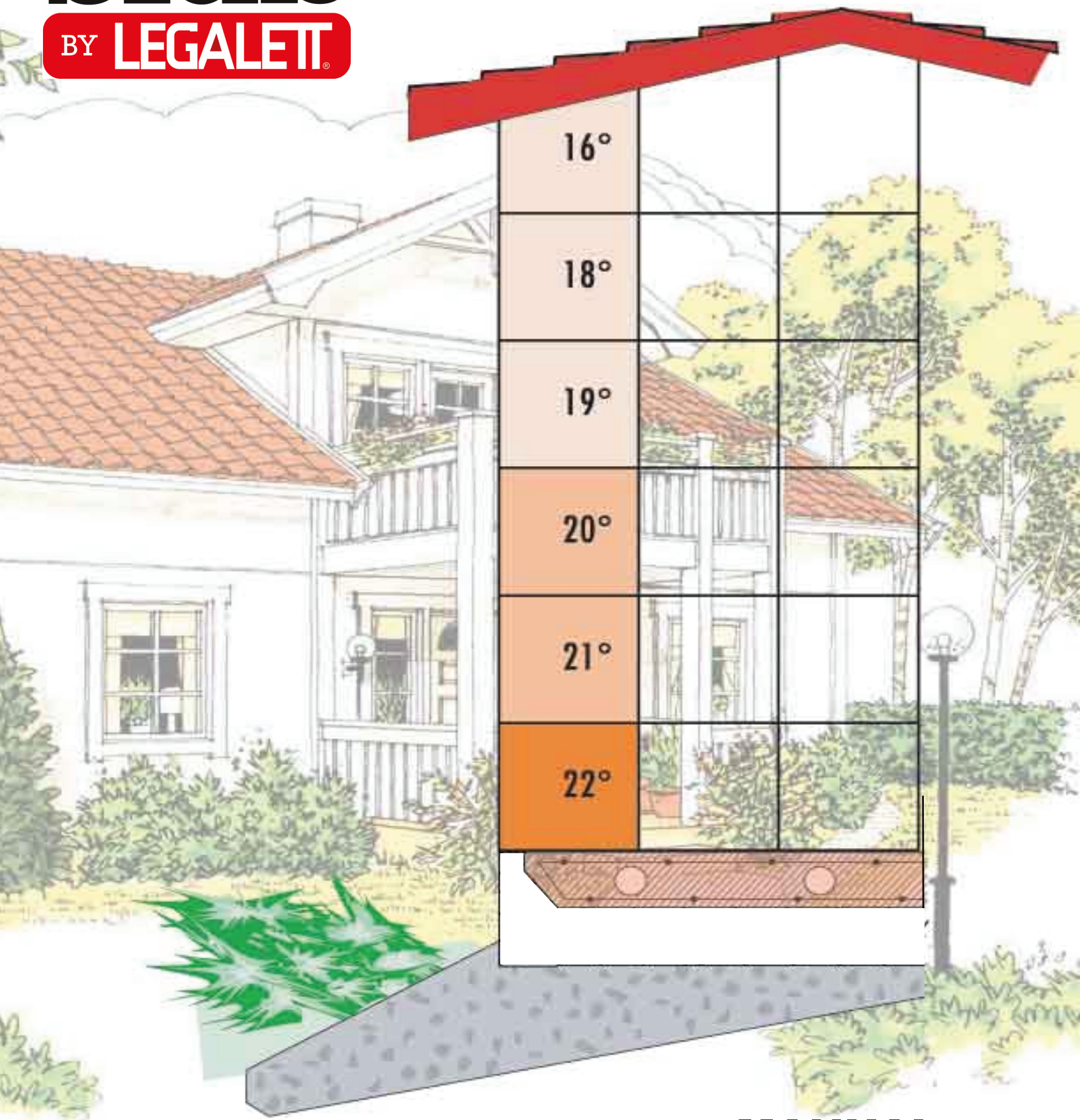
GEO-slab BY LEGALETT

DESIGNED FOR COMFORT
ENGINEERED FOR SIMPLICITY



GEO-SLAB INSTALLATION MANUAL

INDEX

THANK YOU FOR PURCHASING YOUR LEGALETT SYSTEM.

THESE INSTRUCTIONS ARE INTENDED AS AN AID TO A QUALIFIED CONTRACTOR OR TRADESMAN FOR PROPER INSTALLATION AND OPERATION. READ THESE INSTRUCTIONS THOROUGHLY BEFORE ATTEMPTING INSTALLATION. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN IMPROPER INSTALLATION AND MAY VOID WARRANTY.

CONSULT LOCAL BUILDING CODES TO MAKE SURE THE INSTALLATION IS COMPLIANT

READ CAREFULLY BEFORE INSTALLING YOUR LEGALETT SYSTEM

TYPICAL INSTALLATION PROCEDURE

LEGALETT

Created: June 2007
Revised: April 2011

Form № 0538

1. Set benchmark to establish finished slab elevation. See Product Data Sheet - Excavation and Skirting. If excavation level needs to be raised, refer to the drawing for instructions on the use of compacted fill.
   NOTE: Final landscaping of ground surface at slab shall slope minimum 5% away from slab.

2. Place 3/4" or 3/8" **clear** stone (min. 4" thick) and ensure gravity drainage to daylight. Level to within 1/2" of desired elevation using a vibratory plate compactor.

3. Set up batter boards to 1½" to 3" (depending on building length) above finished slab elevation and lay out building perimeter. String line is NOT used to set elevation of components.

4. Locate and place plumbing risers and all other underslab services (ie. water, gas, electrical, etc.) **as well as extra sheet of insulation under 2" 4000 series boxes as per drawing.**

5. Re-level after plumbing installation to within ¼" of desired elevation under edge elements and within ½" of desired elevation in slab centre. Compaction is not required.

6. Begin edge element installation. Tie top of edge elements together using metal cap and check elevation of edge element using laser. **Lap metal cap joint at corners and joints and secure with sheet metal screws.**

7. Tie bottom of edge elements together by simultaneously installing two courses of expanded polystyrene (EPS) insulation board, tied together and to elements with 6" nails to keep edge elements in place and square. Backfill gravel against outside of edge element as adjacent foam layers are secured. Pay special attention to corners and ensure that corners are well supported by gravel. Back-rake gravel under each sheet just before placement. Alternately, follow foam layout on drawing to ensure minimum waste, ie. using the cut-off piece from the previous row to start the next row of foam. For either method, ensure that vertical foam joints do not line up through 2 layers of foam.

8. Install any in-slab water lines in a groove in the EPS layer and foam the groove after line installation, or use conduits or sleeves above the EPS. Under no circumstances should ANY water lines be placed directly in the concrete without conduits or sleeves.

9. Cut out foam layer(s) and install each furnace box as per drawings and Product Data Sheets.

10. Install bottom layer of wire mesh on chairs at perimeter and under bearing walls as per drawings. Use one chair per every 2' at mesh edges. Secure the mesh sheet edges together with rebar ties.

11. Mark pipe spacing (as show on drawing) on EPS using lumber crayons or line marking paint.

12. Install pipe as per drawings and pipe cut list. Each joint is secured with one screw. Support pipe with supplied foam pipe supports where not supported by mesh (1 per meter/3'). **Use of duct tape on joints is not necessary.**

13. Once pipe layout is complete, ensure all piping is in correct location with respect to markings and lock joints with a second screw.

14. Install pipe insulation as per drawings and fasten in place with supplied tie wraps. Insulate outlet pipes (except 100 mm (4") 3000 series heaters) within 300 mm (12") of the box with supplied low expansion foam. Place carefully (or cut off excess) to ensure min. 75 mm (3") concrete cover over foam near box.

15. Install top layer wire mesh and other rebar as per drawings. Tie top and bottom mesh layers together around pipe at perimeter with supplied **tie wraps** and tie interior mesh and rebar together with supplied **wire ties**.

16. Install skirting (if required) and backfill along perimeter. See product datasheet - Excavation and Skirting.

17. Complete inspection (Trained Legalett Installer / Agent only) or call for inspection by LEGALETT personnel. Fill out and submit Inspection Report complete with photographs.

18. After approval of inspection report by LEGALETT personnel and receipt of authorization code to pour, place concrete using pencil vibrator. Install ICF dowels/anchor bolts and confirm their locations with framing contractor and ensure bolts are offset from studs and have a minimum of 3" embedment in concrete.

19. Steel trowel surface using power trowels.

20. Keep top of slab moist for three days to minimize shrinkage cracking.

21. A LEGALETT construction heater can be used the day after the concrete is placed for cold weather pours only. In all cases, the construction heater MUST be run for a minimum of 2 weeks after the building is closed in (and insulated if during the heating season) and before permanent heating insert(s) and floor coverings are installed. To obtain effective drying, the entire slab should be heated to 27°- 30°C (80°-85°F). Overall reduction in moisture content of the slab is important to prepare the surface for floor covering adhesives and prevent moisture damage to the permanent insert(s). For further information contact LEGALETT and / or refer to the following datasheets: i) Construction Heater and Floor Finishes and ii) Slab Drying and Moisture Test.

22. Request flushing adaptor (water units only), moisture test kit and thermostats.

23. Complete start-up inspection and submit form to LEGALETT for approval. Upon approval and receipt of authorization code to install heaters, permanent heating insert can be installed.

Tools - Suggested

1. Auto leveling laser with receiver - 2nd receiver helpful for larger slabs.
2. Saws - handsaw, keyhole / pruning saw, small chainsaw, chop saw and spare blades (metal for steel pipe and 60+ tooth for plastic pipe), battery reciprocating saw with long blade and circular saw.
3. Utility knife, extendable blade recommended such as H-1 Olfa.
4. Battery drills with magnetic 1/4" hex drivers
5. Tape measures.
6. Chalk line with red chalk.
7. Drywall T-square.
8. Framing square.
9. Lumber crayons, magic markers, pencils or line marking spray paint (*inverted cans*).
10. Tin snips.
11. Hammers - claw and small sledge.
12. Bolt cutter.
13. Shovel and wheelbarrow.
14. Landscaping rake (*36" wide*) and comb rake.
15. Rebar tie spinners or hook for drill.
16. Generator if power not available (*including gas, oil*).
17. Extension cords.
18. Flood lights if required.
19. Small (*18"*) plate packer or small vibrating roller.
20. Digital camera.
21. Hearing, eye, hand, foot and head protection.
22. Architectural drawings for building to verify dimensions, possible interferences (*floor drains, plumbing etc.*), conduit locations and verify heater box locations are in appropriate locations.
23. Scale ruler - 1/4” = 1’ or 1/2” = 1’ depending on plan scale
24. Provisions for waste disposal.
25. Low expansion foam gun (for supplied low expansion foam cannisters).

Materials - Suggested

1. Batter boards - 2x2 stakes, 1x4 strapping, 1-1/2" wood screws and mason line.
2. 5“-6" spiral nails.
3. Wire mesh and rebar as per drawing.
4. Dowels (*ICF walls*) or anchor bolts (*wood frame walls*).
5. Angle for garage doors (*optional*).
6. Rigid or flexible electrical conduit, complete with fittings, locknuts and PVC cement (*refer to Rough-In PDS for sizes*).
7. 1” poly (75 PSI) or 1” conduit to sleeve water lines.
8. 1/2" oxygen barrier PEX for water lines (*cut ends at 45° for ease of installation in sleeves*).
9. Wire pulling lubricant for long water line runs.
10. Patio stone or cinder block or large stone to weigh down furnace box.

- CAREFULLY READ THESE INSTRUCTIONS -

RECOMMENDATION: Rough in for both electrical and water heaters for possible future conversion.

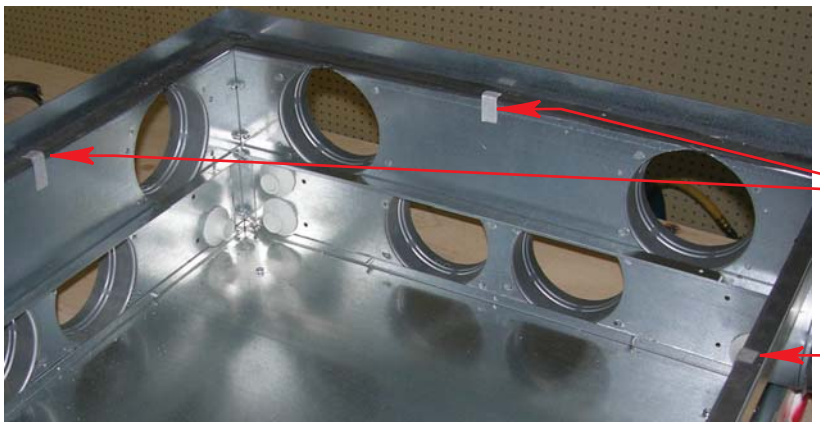
HEATER BOX PLACEMENT: As per drawing with height adjusted such that the hatch is 0 mm to 6 mm (0" - 1/4") above the finished concrete surface.

ELECTRICAL:
Power: 30A service (with temporary 30A breaker for construction heater). Install ¾" conduit and terminal adapter – conduit to be routed to a future local disconnect. Install wiring immediately for cold weather pour only.
Control Wiring: Install one ¾" conduit and terminal adaptor for 2 thermostat conductors.
Boiler Interlock (optional): Install one ¾" conduit and terminal adaptor. For interlock, refer to 5200W Water Insert and Boiler Interface Product Data Sheets.

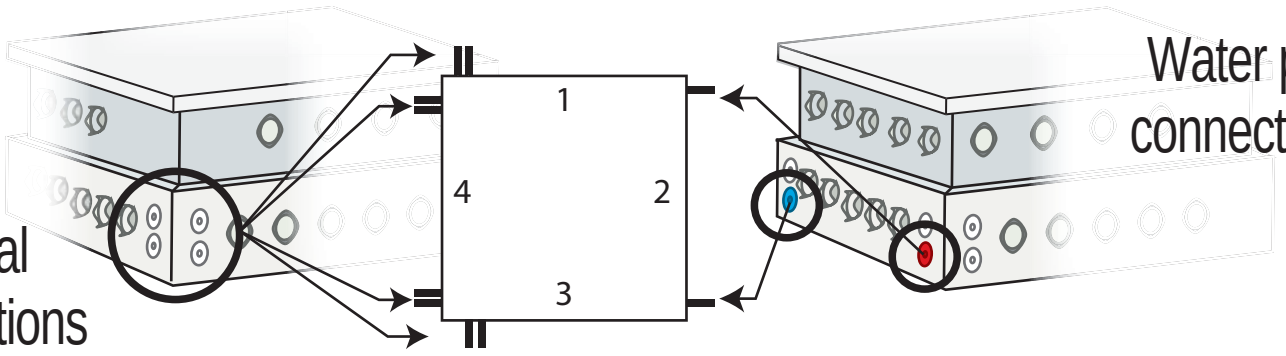
WATER: Install 2 sleeves (1" poly (75 PSI) or conduit) for feed and return water lines at locations shown below. Sleeves to terminate inside box. Install ½" water lines in sleeves and extend a minimum of 100 mm (4") inside box. Water line orientation MUST match drawing.

ALL CONDUITS/SLEEVES TO TERMINATE ABOVE CONCRETE SLAB SURFACE AT A CONVENIENT LOCATION (nearby wall or mechanical room). Seal conduit/sleeve exposed ends with duct tape prior to concrete pour.

PRE-POUR PREPARATION: Install inner lid, making sure temporary cover spacer angles are taped in place to the inside of the box. Install wood floor hatch with label side up. Seal hatch to heater box with duct tape to prevent concrete contamination.



Temporary spacer angles (remove after pour)



Water pipe connections

Electrical connections

3000 SERIES
HEATER BOX ROUGH-IN

Created: February, 2009
Revised: March 2010

Form № 0552

- CAREFULLY READ THESE INSTRUCTIONS -

RECOMMENDATION: Rough in for both electrical and water heaters for possible future conversion.

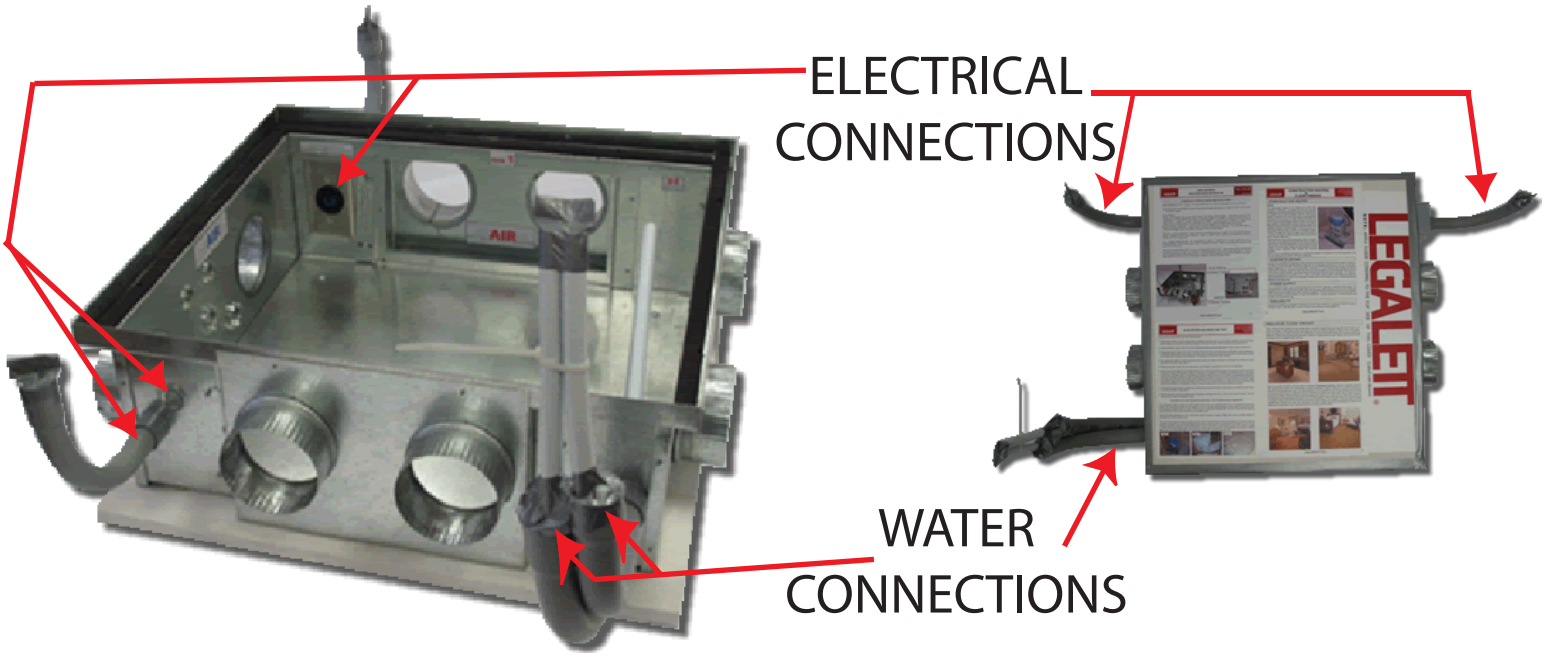
HEATER BOX PLACEMENT: As per drawing with height adjusted such that the hatch is 0 mm to 6 mm (0" - 1/4") above the concrete surface.

ELECTRICAL:
Power: 30A service (with temporary 30A breaker for construction heater). Relocate supplied PVC electrical box from heater box interior (shipping position) to exterior (ensure ground screw is accessible). Install ¾" conduit and terminal adapter – conduit to be routed to a future local disconnect. Install wiring immediately for cold weather pour only. Install supplied plug and cover plate.
Control Wiring: Install one ¾" conduit and terminal adaptor for 2 thermostat conductors.
Boiler Interlock (optional): Install one ¾" conduit and terminal adaptor. For interlock, refer to 3200W Water Insert and Boiler Interface Product Data Sheets.

WATER: Install 2 sleeves (1" poly (75 PSI) or conduit) for feed and return water lines at locations shown below. Sleeves to terminate inside box. Install ½" water lines in sleeves and extend a minimum of 300 mm (12") inside box.

ALL CONDUITS/SLEEVES TO TERMINATE ABOVE CONCRETE SLAB SURFACE AT A CONVENIENT LOCATION (nearby wall or mechanical room). Seal conduit/sleeve exposed ends with duct tape prior to concrete pour.

PRE-POUR PREPARATION: Ensure sealing angles are secure. Install and secure inner lid with 8 supplied screws (do NOT over tighten). Install wood floor hatch with handle side down. Seal hatch to heater box with duct tape to prevent concrete contamination.



EXCAVATION AND SKIRTING INSTALLATION - TYPICAL

Created: June 2007
Revised: May 2011
Form № 0537
Page 1 of 2

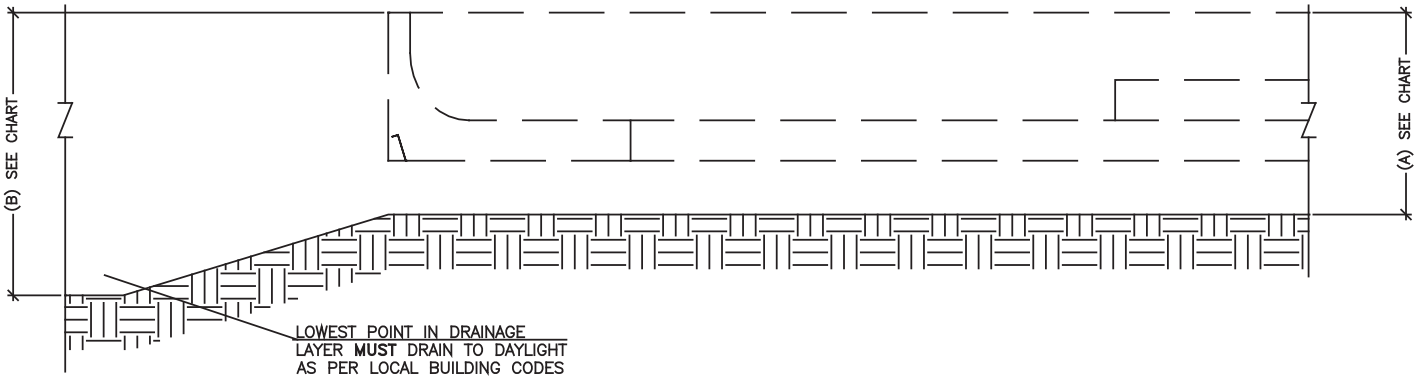
- READ THIS DATA SHEET IN CONJUNCTION WITH THE DESIGN DRAWING -

IMPORTANT: If installing the skirting after the pour, you must remove the skirting notch prior to placing the edge elements. See Step 2.2

STEP 1.0 - EXCAVATION

1. Size of excavation: Building size + skirting width + 2 ft. on all sides.

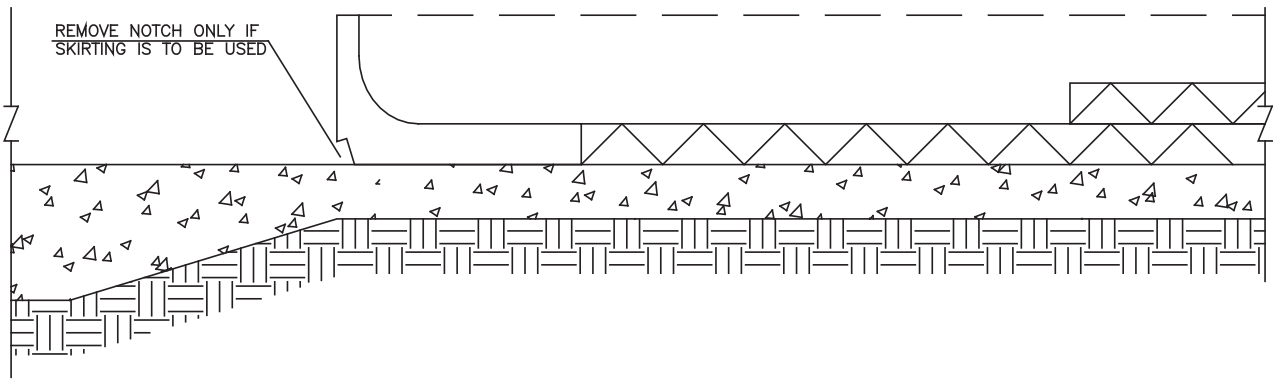
2. Excavation depth is measured from finished slab surface (Elevation of top of slab for slab on grade shall allow for daylight drainage and 5% finished grade slope).



Depth Below **HEATED BUILDING** Slab Surface			Depth Below **UNHEATED BUILDING** Slab Surface		
Slab (A)	Building perimeter (B)	Clear Stone Allowance	Slab (A)	Building perimeter (B)	Clear Stone Allowance
Slab thickness plus 10”	Slab thickness plus 16”	4” Minimum	Slab thickness plus 12”	Slab thickness plus 18”	6” Minimum

STEP 2.0 - PLACE STONE, ASSEMBLE SLAB

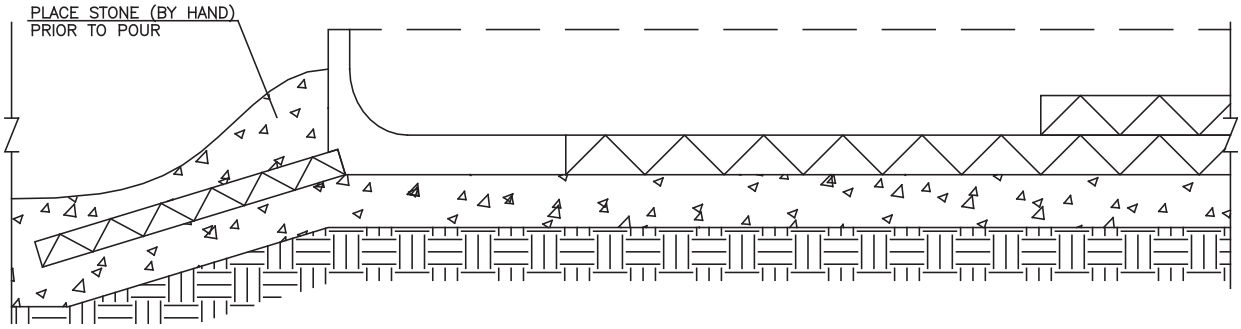
1. Place clear stone as per design drawing.
2. Assemble slab as per design drawing. If skirting is to be used, remove skirting notch **BEFORE** placing edge element.



- READ THIS DATA SHEET IN CONJUNCTION WITH THE DESIGN DRAWING -

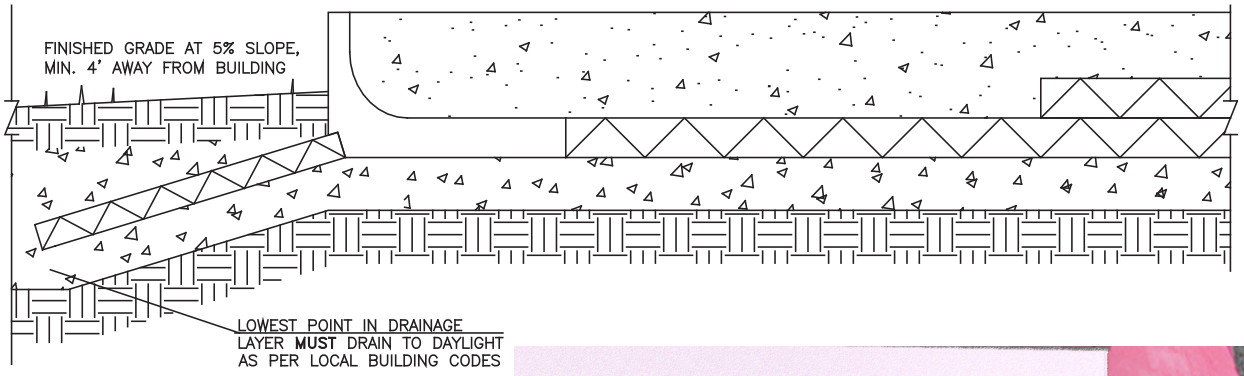
STEP 3.0 - SKIRTING PLACEMENT (IF REQUIRED)

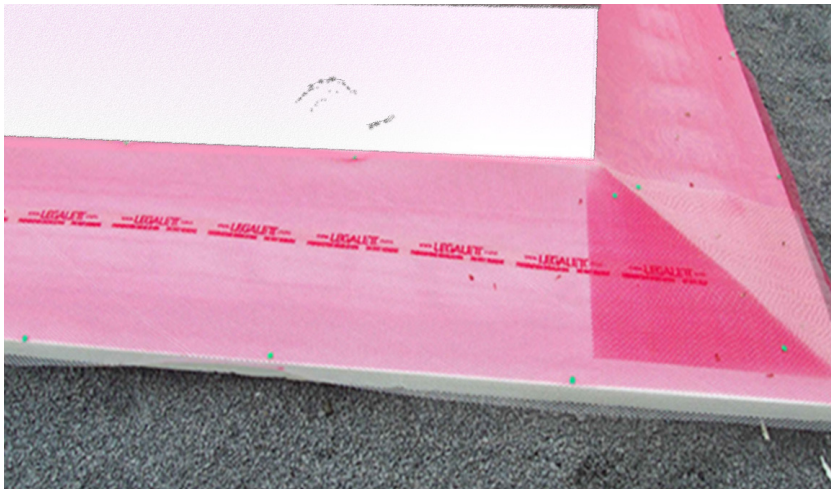
1. Rake stone to produce a 30% slope down from bottom of edge element and to expose pre-cut notch.
2. Place skirting as per drawings and as illustrated below. **TAKE PHOTOGRAPHS OF INSTALLED SKIRTING.**
3. Place stone on top of skirting to secure in place.



STEP 4.0 - POUR

1. Pour concrete, keeping top of slab moist for 3 days.
2. Rake gravel back to allow for backfill as illustrated below, and parge, stucco or otherwise finish edge element.
3. Backfill and complete landscaping to finish grade (Minimum 5% slope away from building).





SLAB DRYING AND MOISTURE TEST PROCEDURE: (Request Moisture Test Kit BEFORE starting Slab Drying Process)

1. Ensure that building is closed in, reasonably insulated and air-tight. Cool and cold weather operation of the construction heater without an air-tight and insulated envelope will not allow the slab to reach the desired drying temperature.

2. Remove any standing water and dirt in box with a high powered vacuum cleaner. Be sure to vacuum out each pipe run individually to ensure no water is present. Simply installing the construction heater without vacuuming out the lines will not expel standing water from the piping, causing water damage to the insert when the insert is first energized. This damage is not covered under warranty.

3. Install construction heater, referring to the **Construction Heater product data sheet** for power supply requirements.

4. Run construction heater 2-3 days continuously with construction heater uncovered to evaporate and disperse any trace water left in the piping. (See Figure 1)

5. Rotate construction heater 90° and repeat step 4 once. Rotation for steps 5-6 is required to ensure even air distribution **for 4000 series boxes only**.

6. Rotate construction heater 90° and install enclosure over construction heater (shipping crate placed upside down over the construction heater, as illustrated in Figure 2). Improvise an enclosure in the absence of a shipping create. Information on acquiring a shipping crate, or instructions on building a shipping crate can be obtained by **contacting LEGALETT**. Continuous heating is required to raise the temperature of the slab to a minimum of 27°C (80°F) for non-insulative floor coverings, and 30°C (86°F) for insulative floor coverings. Runtime is an additional 7-10 days once the construction heater is enclosed, rotating the construction heater every 2-3 days, for a total runtime of 14 days of continuous heating. If the desired temperature is not reached by 14 days, increase runtime until the desired temperature is reached.

7. Check slab moisture content by following the Slab Moisture Test kit instructions (See Figure 3) provided. If moisture is present, repeat step 6. Moisture test to be left in place for observance by Heater Technician.

8. Re-vacuum box and pipe runs to confirm no water. If water is present repeat steps 2-7.

9. Record required run time and observed floor temperature readings during construction heater operation - required for the Start-up Inspection Report. Construction heater to be left in place for observance by Heater Technician.

FAILURE TO FOLLOW THE ABOVE STEPS WILL VOID ALL MECHANICAL WARRANTIES

The construction heater can also be used to heat the slab immediately after the pour to extend the construction season. The construction heater can be installed in the box, with appropriate temporary wiring, before the slab is poured. The construction heater is then run, starting immediately after the pour until the concrete has set (approximately 48 hours). This is recommended for cold weather pours, in conjunctioin with insulative blankets.

Pours have been performed at -10°C (14°F) when heated concrete is supplied. Please refer to your concrete supplier for instruction for all cold weather pours.

The construction heater can also be used to provide comfort heat before and after the drying period. For comfort heat-only operation, a standard 2 or 3-wire thermostat can be used to interface with the construction heater to cycle the heat as required to maintain the thermostat setpoint. The fan will only run during a call for heat. Refer to the wiring diagram inside the construction heater electrical enclosure. This modification should be performed by a qualified electrician only.

Figure 1

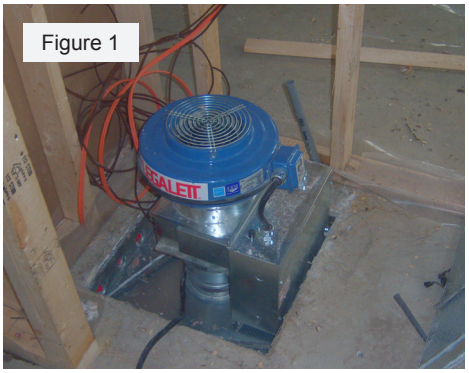


Figure 2

Figure 3

CONSTRUCTION HEATER

USAGE

The Construction Heater is an integral part of the Slab Installation Procedure. To properly dry the slab, the slab temperature must be elevated above typical room temperature for sufficient time to remove excess moisture. Running the heater full time for a minimum of two weeks is necessary after the walls and roof are up (to retain some of the heat), but before the permanent heating inserts or before floor finishes are installed. The detectable moisture content of the slab is affected by the temperature of the slab. Moisture exists in two phases in the slab - liquid and vapour. The liquid content is not detectable, while the vapour content is. As the slab is heated, moisture changes from liquid to vapour and the quantity of moisture in the vapour phase increases while the quantity of liquid moisture decreases.

Heating the slab drives off the developing vapour moisture. The construction heater can be used for winter pour conditions after the pour. With the application of heat during the curing process, the construction heater can help extend the winter building season especially when coupled with insulative blankets.

CONCRETE DRYING

Drying of the slab before the application of floor finishes and installation of the permanent inserts is important. The goal is to heat the slab temperature past the normal operating temperatures with the construction heater (higher than 27°C for non-insulative floor finishes and 30°C for insulative floor finishes), so that the majority of the excess moisture is driven off. Once you have exceeded normal operating temperatures and driven off the excess moisture, very little moisture will come out of the slab during operation. The maximum operating temperature for the slab is 27°C - 30°C in the winter months, which is well below the maximum operating temperature for floor finish adhesives. Please refer to the procedure as per the **Slab Drying and Moisture Test data sheet**.

POWER SUPPLY

The construction heater uses a 5 kW (nominal) element and a 0.2 kW fan, operated on standard 230V power. It is equipped with a 4-foot long cord with a 230V, 30A male dryer plug, which requires a minimum 2C10 extension cable to be wired into a panel with a 230V, 30A dryer receptacle for the 4000 series box. Alternately, the construction heater plugs directly into the 3000/5000 series boxes with the supplied twist-lock plug. The heater draws 23-26 amps, therefore a 30 amp service is recommended. Consult your electrician. If using a generator, it is recommended that a 6 kW unit or greater be used.

AVAILABILITY

Construction heaters are available for purchase or for rent from LEGALETT. To contact LEGALETT, dial our toll free number 1-866-299-7567 or see our online parts catalogue at www.legalett.ca.

INSULATIVE FLOOR FINISHES

When choosing floor finishes with any heated floors, it is best to choose floor coverings with low R-values, such as tile or linoleum. These types of floor coverings allow the most effective delivery of heat into the living space, while maintaining the lowest possible slab temperature, reducing slab heat losses and increasing operating efficiency. These coverings also allow the slab's maximum heating potential to be reached, something that will not occur with an insulative floor covering.

High R-value floor finishes, such as carpet or hardwood (**Hardwood Flooring**), require an elevated concrete slab temperature to force the heat through the floor coverings in order to achieve the surface temperature required to provide adequate heat. If you have decided to use insulative floor coverings, although not essential, it is recommended that you select the thinnest underlays for carpet coverings and/or the thinnest hardwood coverings available. Following these recommendations will reduce the R-value of the chosen floor covering. For example, a thin engineered hardwood (in the 1/2" thick range) is better than the typical 3/4" solid hardwood on sleepers. Note that if high R-value floor coverings are to be used in your project, it is advised that you notify Legalett when placing your order, this information will allow Legalett engineers and designers to take the R-values into consideration when confirming your order and designing your system.

The main source of heat is the LEGALETT System. If there is a supplementary heat supply, such as radiators or air heating, the temperature setting for the latter should be approximately 1-2°C (2-4°F) lower than the setting for LEGALETT.

Due to the high thermal mass of the slab, room temperature adjustments in the order of 1-2°C (2-4°F) may take a 1-2 day period to fully stabilize. Temporary reductions in temperature, such as in the event of a week's absence, should be avoided. Please consult your Owner's certificate for the Minimum Temperature Setpoint for your building.

It is required that the system be protected by a ground fault interrupt circuit breaker. A local interrupt (switch) should be installed for each heater and only shut off during servicing.

Note that the set temperature of a LEGALETT heated area can be 2-3°C (4-6°F) cooler than the typical set temperature of a conventionally heated room, while maintaining the same level of comfort and saving energy. In addition, since the temperature of the air at the ceiling is lower than it would be with a conventional system, heat loss through the ceiling is also reduced, saving additional energy.

SETTING

LEGALETT thermostats should be operated in the HOLD mode and should be set between 17- 22°C (63-72°F) to achieve an optimal comfort level, depending on personal preference, for single tier energy rates.

For multi-tiered energy rate structures only, set the thermostat to 22°C (72°F) during the time periods of the lowest energy cost, and 17°C (63°F) during the time periods of the highest energy cost. Adjust as required for comfort, using the programmable mode. See thermostat instruction sheet for programming instructions.

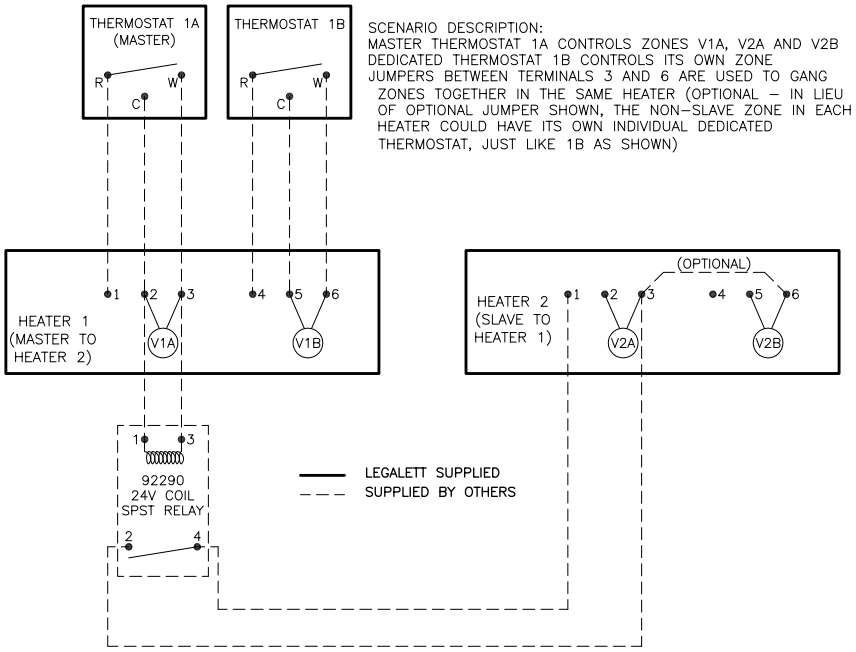
The fan switch does not control the Legalett fan and has no effect. The flame indicates heating mode, NOT a call for heat.

LOCATION - MOUNT DIRECTLY TO WALL (DOES NOT MOUNT TO ELECTRICAL BOX)

Each thermostat should be installed as follows:

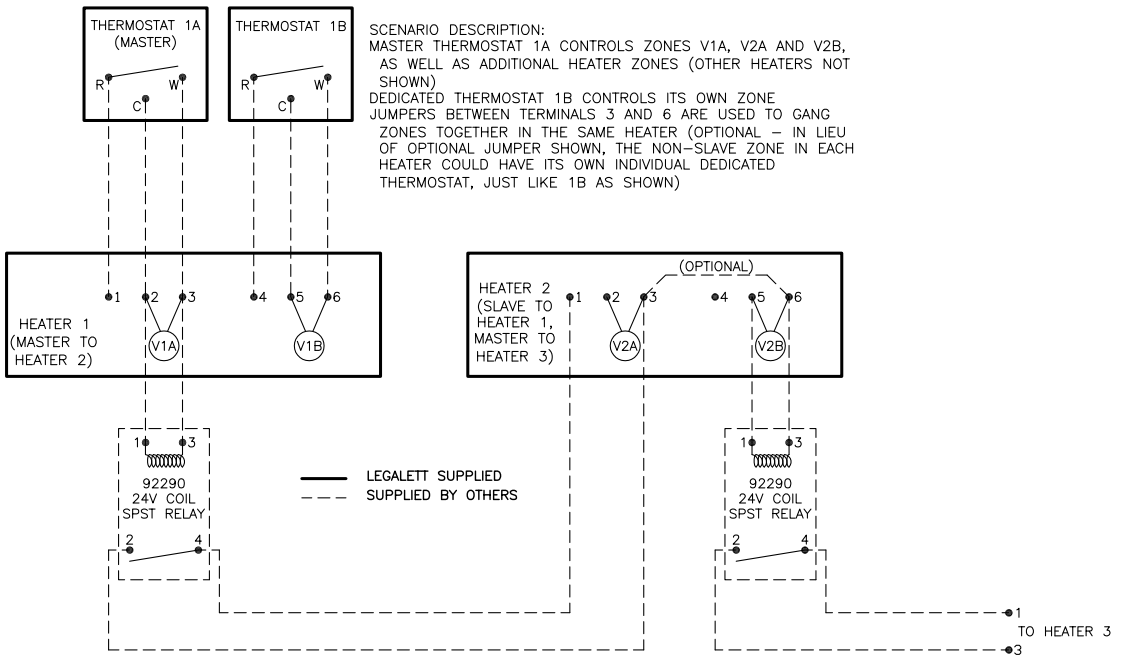
1. In the area or zone served by the pipe loops that it is controlling.
2. 1500 mm (60") above the floor level.
3. So that the thermostat is not affected by direct sunlight or other sources of heat or cold.
4. So that the thermostat is not affected by any ventilation or cold air ducts.
5. Out of reach of a shower, tub or sink.

ONE THERMOSTAT CONTROLLING ZONES IN 2 HEATERS



INTERLOCK REQUIRES 2 CONDUCTORS FOR MASTER HEATER/THERMOSTAT AND 2 CONDUCTORS FOR SLAVE HEATER, FROM MASTER TO SLAVE
EXISTING INTERNAL HEATER WIRING NOT SHOWN FOR CLARITY
SLAVE RELAY BY OTHERS – MARS 92290 OR GENERIC EQUIVALENT 24V AC COIL SPST FLANGE MOUNT RELAY
SLAVE RELAY CAN CONNECT TO MASTER THERMOSTAT DIRECTLY, TO TERMINALS C AND W
A SINGLE SLAVE RELAY CAN CONTROL ONLY ONE SLAVE HEATER ONE RELAY IS REQUIRED FOR EACH SLAVE HEATER – SEE MULTIPLE HEATER DIAGRAM FOR MULTIPLE SLAVE HEATERS
V = LEGALETT VALVE ACTUATOR OR LEGALETT ELECTRIC COIL RELAY

ONE THERMOSTAT CONTROLLING ZONES IN 3+ HEATERS



INTERLOCK REQUIRES 2 CONDUCTORS FOR MASTER HEATER/THERMOSTAT AND 2 CONDUCTORS FOR SLAVE HEATER, FROM MASTER TO SLAVE. NOTE THAT ONE HEATER IN THE MIDDILE OF A CHAIN CAN BE BOTH MASTER AND SLAVE, AND THUS REQUIRE 4 CONDUCTORS IN TOTAL (AS SHOWN)
EXISTING INTERNAL HEATER WIRING NOT SHOWN FOR CLARITY
SLAVE RELAYS BY OTHERS – MARS 92290 OR GENERIC EQUIVALENT 24V AC COIL SPST FLANGE MOUNT RELAY
SLAVE RELAY CAN CONNECT TO MASTER THERMOSTAT DIRECTLY, TO TERMINALS C AND W
A SINGLE SLAVE RELAY CAN CONTROL ONLY ONE SLAVE HEATER ONE RELAY IS REQUIRED FOR EACH SLAVE HEATER
V = LEGALETT VALVE ACTUATOR OR LEGALETT ELECTRIC COIL RELAY

VENTILATION - GENERAL

Since the LEGALETT System moves air within the slab, and not within the structure, it cannot be used for ventilation. This lack of air movement has many pleasant side effects discussed elsewhere in this site. However, some ventilation air is still required, and this is implemented by using a code-required ventilation system.

Separation of the heating system from the ventilation system has another often-overlooked benefit - it reduces the size and required operation time of the ventilation system to only what is required to maintain fresh air. Trying to combine the heating and ventilation systems is an inefficient process, since you must ventilate all the time to maintain heating. The problem with ventilating all the time is that since you are bringing in fresh air, it is typically colder or hotter than the interior air, and energy is required to change the temperature of the fresh air to be the same as the ambient. For a structure that is intermittently used, this energy usage is a total waste, not just for heating/cooling the fresh air, but actually moving it around as well. Such intermittent-use structures, like churches, schools, or other assembly buildings are especially suited to the LEGALETT System, since the LEGALETT System heats all the time as required, maintaining a superior comfort level, while the ventilation system (with its accompanying high energy consumption for air movement and heating/cooling) is only used during occupancy. Such energy savings can be substantial, even in residential applications. Refer to 'HRV/ERV Operation with Legalett' Product Data Sheet for more information. In summary, ventilate (and heat/cool) only when required to save energy, and enjoy the comfort of the LEGALETT System all the time!

BUILDING TECHNIQUES THAT REDUCE THE INFLUX OF HEAT AND HUMIDITY

ICF Walls:
Insulated Concrete Form (ICF) walls, with their internal concrete cores, offer the benefits of thermal mass through what is commonly called the 'thermal mass effect'. Simply put, these wall systems use the thermal mass of concrete to slow spikes of temperature from passing through the concrete wall. They absorb the heat spike in the middle of the day, and radiate it back outside during the night, thus reducing the effect of the heat spike (or cold snap at night). This effectively reduces the heating and cooling requirements of the structure.

Low-E Windows:
Low-E coatings, which act as insulators to heat in the summer (and winter), reducing the heat flux through the window into the structure, also reducing the cooling requirements of the structure.

Energy Recovery Ventilators:
Opening windows during the summer is typically done to 'cool' the building, especially at night. The problem with doing so is that while you may be bringing in cooler air into the house, you are also bringing in humidity. This elevated humidity (typical of hot, muggy summer days) is what causes the discomfort that air conditioning tries to reduce. Remember that air conditioning is 90% dehumidification, and 10% cooling. The answer to reducing this influx of humidity is to ventilate the house using a mechanical ventilation system that brings in fresh air, while rejecting the heat AND humidity in the fresh air, maintaining the lower temperature inside the structure. This can be done with an Energy Recovery Ventilator (ERV), which is the same concept as a Heat Recover Ventilator (HRV), but also recovers (or in this case, rejects) the humidity in the incoming fresh air stream by transferring it to the outgoing stale air stream.

HRV'S NEED "TOUCH-UP" HEAT WHEN USED IN COMBINATION WITH RADIANTLY HEATED BUILDINGS

"Radiant Heat - Is heat transfer transmitted through space/air in all directions from a body/object with more energy to a body/object with less energy. If one object is warmer than another, the cooler object will absorb the heat radiated from the warmer object, cooling one and warming the other. The sun is a perfect example of radiant heat exchange, the radiant heat travels through cold space until it hits a surface. This is why people and objects feel much warmer when exposed to the sun than when they are shaded. **AIR IS HEATED VERY LITTLE BY RADIANT ENERGY, IT IS HEATED PRIMARILY BY COMING IN CONTACT, VIA CONVECTION, WITH OBJECTS HEATED BY THE SUN OR OTHER HEAT SOURCES." THIS SAME CONCEPT IS AT WORK IN RADIANT HEATING SYSTEMS INCLUDING LEGALETT.**

LEGALETT radiant floor heating provides even, comfortable, warmth, as there is less air movement. There are no drafts with this type of heating except for building envelope infiltration and/or mechanical ventilation. The thermal mass evens out temperature fluctuations. The floor is warm to the touch. Unlike conventional forced-air furnaces, radiant floor heating has no ducts or radiators to contribute to dust collection. The LEGALETT System is virtually an invisible system.

"Thermal comfort" means that a person feels comfortable - they are neither too cold nor too warm. It can be achieved when the air temperature, humidity and air movement are within a specified range often referred to as the "comfort zone". Even with ideal conditions, cold or warm walls, ceilings, or floors can cause local air temperature differences that may cause discomfort. Drafts caused by air movement may also be a factor, even if the temperature of the air is within accepted parameters. Air velocity is one of the six main factors affecting human thermal comfort. Because of its important influence on skin temperature, skin wettedness, convective and evaporative heat loss, and thermal sensation, air velocity has always been incorporated into thermal comfort standards.

In a radiant heated building ventilation must be done separately, but remember - in general, the less air movement in a room or the lower the air velocity, the higher the thermal comfort level. The introduction of outside air to the living space for new "well constructed" homes is, however, recommended or required by code to reduce indoor humidity levels and pollutants. The use of a Heat Recovery Ventilator (HRV) or Energy Recovery Ventilator (ERV) is common for this purpose. During winter months all HRV's (or ERV's) recover heat from the exhaust air to PRE-HEAT the incoming air. In all cases, the PRE-HEAT effectiveness reduces as the outdoor air temperature drops off. In other words, an HRV may be 80% efficient at 5°C (41°F) outdoor air temperature, and 55% efficient at -10°C (14°F). Since a radiant floor heating system does not heat the air, but only objects in the heated space, an HRV introduces COLD AIR DRAFTS. FOR THIS REASON - LEGALETT RECOMMENDS THE USE OF AN IN DUCT "TOUCH UP" HEATER FOR ALL HRV INSTALLATIONS TO REDUCE COLD AIR DRAFTS.

HRV's typically use about 100 to 200 Watts per hour of electrical energy to move air. The in duct heater typically would consume an additional 500 to 2,000 Watts depending on outside temperature. An in duct heater maybe electric or water coil. The use of an HRV, i.e. the time it is run or the amount of outside air introduced to a home, is dependant on occupancy, the number of showers taken, cooking of meals, etc. Therefore, the required amount of outside air introduced in to a home can vary considerably. All recommendations from government agencies are averages and based on good practice and call for design capacity of about 1 air change every 3 hours or for a 2,000 sq.ft. home about 90 CFM of fresh air make up. HRV's are typically supplied with controls including timers for scheduled ventilation, demand switches for high-speed ventilation of bathrooms, utility rooms and kitchens (although a range hood may still be needed), humidistats to control moisture levels in the home and various gas sensors. An HRV may have multiple air flow speeds or maybe run intermittently. HRV's require their own duct system. HRV ducts are usually 6" to 8", and require sealing and insulation (like any good duct system) when outside the thermal envelope.

Existing building codes for radiantly heated homes require an HRV. A typical ten-room home (living room, dining room, family room, kitchen, two bathrooms, a master bedroom, and three bedrooms) would require an HRV with a rated capacity of 120 CFM. To ensure adequate ventilation for humidity control, the total ventilation capacity of the HRV at high speed should be close to this total. The suggested low speed HRV ventilation rate should be 40–60 percent of the high speed.

From an air quality perspective, a minimum ventilation rate of 15 CFM is required for each person in the home. If 2 people live in a 2,000 sq.ft. home, chances are the HRV is over-ventilating even at low speed and should be run intermittently to control humidity only. Running the HRV only as required for air quality and humidity control can have a significant beneficial effect on total heating costs.

EXAMPLES:

Scenario 1: A/C with HRV

- 4,000 sq.ft. home
- Occupancy: 2
- A/C system installed for summer cooling, 2,000 CFM capacity, used in winter to distribute fresh air from HRV, R12 insulation on A/C ductwork in attic, above ceiling insulation
- HRV installed capacity: 200 CFM, 60% average efficiency
- 7,000°F heating degree days - Ottawa, CAN

Typical Operation (not recommended):
- A/C system operates full time to circulate air in home and distribute fresh air from HRV, which also runs full-time.
- Total yearly operating cost: $2,100

Optimum Operation (recommended):
- A/C System operation only when HRV requires fresh air distribution. HRV runs 4 hours per day to provide an average of 30 CFM
- Total yearly operating cost: $300

Yearly Savings via proper operation: $1,800

Scenario 2: HRV

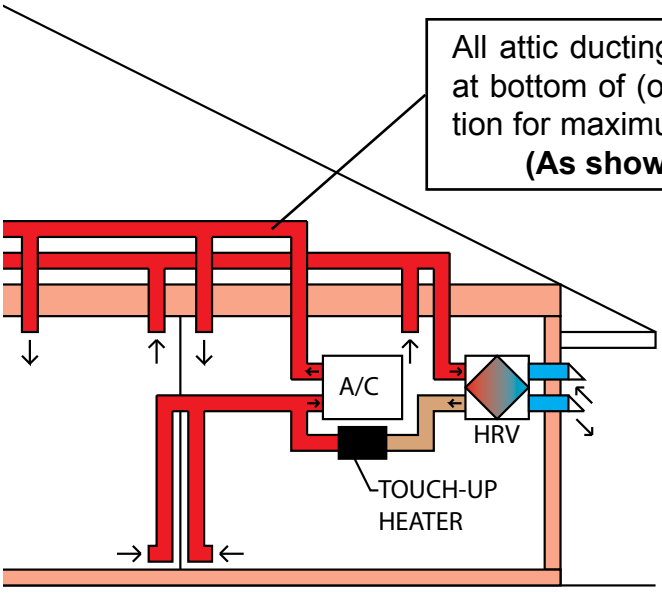
- 2,000 sq.ft. home
- Occupancy: 3
- HRV distributes fresh air directly, HRV ducting installed at bottom of (or below) attic insulation
- HRV installed capacity: 100 CFM, 60% average efficiency
- 7,000°F heating degree days - Ottawa, CAN

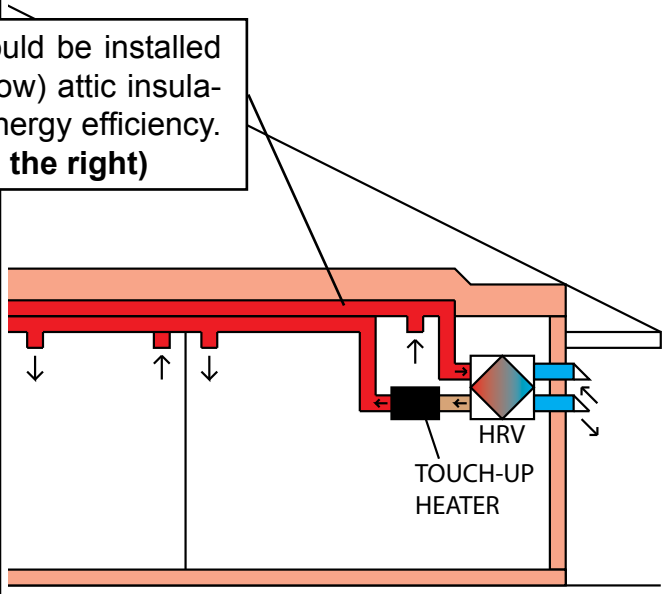
Typical Operation (not recommended):
- HRV runs full-time.
- Total yearly operating cost: $300

Optimum Operation (recommended):
- HRV runs 11 hours per day to provide an average of 45 CFM
- Total yearly operating cost: $100

Yearly Savings via proper operation: $200

All attic ducting should be installed at bottom of (or below) attic insulation for maximum energy efficiency. **(As shown on the right)**





AIR CONDITIONING AND LEGALETT

Created: January 2008
Revised: January 2008
Form № 0544
Page 1 of 1

The LEGALETT System Reduces Cooling Requirements By Absorbing Excess Heat When It Is Being Generated And Releasing It Later. This Makes The Room Temperature More Constant During The Day.
Thus A LEGALETT Heated Structure Requires Less Cooling Capacity Than A Normal Structure By 'Shaving The Peaks', Or Reducing The Effect Of Heat Spikes.

Common questions we get are:
"What about Air Conditioning?" or
"Can the LEGALETT system be used to Cool?"

To understand the answers to these questions,
one must step back and look at the whole picture.

The Basics:
Cooling and heating are two very opposite processes. Everyone knows that hot air rises, and cold air falls. What does this tell us? Well, it tells us that heating should come from the floor, and cooling should come from the ceiling. Putting your heating and cooling together in EITHER the floor or the ceiling is counterproductive, and reduces the efficiency of the heating or cooling effect.

What Should You Do?:
For maximum practicality and efficiency, the cooling and heating systems should be separated - you should heat from the floor, and cool from the ceiling. Heating from the floor is easy - simply use the LEGALETT System. Cooling from the ceiling is also easy - simply cool your ventilation air. Ventilation air is required by code, and it is a simple matter to add cooling to that air flow, if cooling is indeed required, which brings us to the next point ...

Do You Need a Cooling System?
Cooling systems are used to reduce the heat and humidity levels in a structure to increase comfort. To reduce cooling requirements, you must reduce the influx of heat and humidity into the conditioned space, or moderate its presence. The former is a function of building construction techniques, while the latter is something that the LEGALETT System can help with. Refer to the LEGALETT Product Data Sheet '**Ventilation And Building Techniques (General)**' for more information.

How Does LEGALETT Reduce the Need for Cooling?
Since the LEGALETT System has tremendous thermal storage capacity. This thermal mass can moderate temperature swings that would otherwise be present from an intermittent influx of heat, i.e. during the day when the sun is out, or a heat spike. Simply put, the LEGALETT system reduces cooling requirements by absorbing excess heat when it is being generated and releasing it later. This makes the room temperature more constant during the day. Thus a LEGALETT heated structure requires less cooling capacity than a normal structure by 'shaving the peaks', or reducing the effect of heat spikes.

Can The LEGALETT System Be Used To Cool?
Based on the above, the answer is simply no - you don't want a cold floor for your feet. That would be the total antithesis of the LEGALETT System - a horrible COLD floor!

Slab Cooling and Moisture:
The LEGALETT System eliminates mould and mildew by maintaining a minimum positive temperature differential between the slab and the ground. The polystyrene (EPS) insulation provides a capillary break to prevent moisture from migrating (especially) during summer conditions from the ground into the slab. To cool the slab would be analogous to inviting moisture into the slab to provide a breeding ground for mould bacteria. This concept is totally opposite to the LEGALETT Way , which is to have safe, warm, dry, mould and mildew free concrete!

The Tremendous Thermal Energy Storage of up to 8" (200 mm) of Concrete in the LEGALETT System Moderates the Interior Temperature Against Sudden Changes in Temperature, Simply, Silently and Effectively!

Heat Load of a building is determined by calculating:

Transmission losses (amounts to 50-75% of total heating requirements)

Ventilation losses (can be as much as 10-25% of total heating requirements)

Air infiltration losses (can be as much as 15-50% of total heating requirements)

How do radiant heated floors behave?

Radiant heated floors provide even, comfortable, warmth, as there is less air movement. There are no drafts with this type of heating except for building envelope infiltration and/or mechanical ventilation. The thermal mass evens out temperature fluctuations. The floor is warm to the touch. **Radiant heat does very little to heat up air in the building** **(refer to HRV/ERV OPERATION WITH LEGALETT PDS – 0545)**

What does Legalett do?

Sell warm floors, which are normally 10 Btu/hr/sq.ft., though Legalett can supply up to 15-20 Btu/hr/sq.ft. if requested – **we are only part of building heating requirements.**

Builders/Architects responsibility:

Heat load calculations for the building taking into account the heat supplied by Legalett.

All ventilation losses including HRV/ERV design and supply including a touch up heater as per Legalett HRV datasheet. **(pds 0533)**

Building envelope design and building construction and hence control over infiltration losses. It is good practice to specify a maximum air leakage rate, confirmed by a blower door test.

In cases of excessive infiltration, size the HRV/ERV touch up heater to match both ventilation and **excessive infiltration** losses or provide heat for excessive infiltration separately. In this situation the air that is introduced to the occupancy space is being heated directly for comfort and is controllable. Overheating the floor **will not** accomplish this.

LEGALETT

WARRANTY / GARANTIE

Created / Créé: July / juillet, 2007
Revised / Revisé: Jan / jan, 2010

Form / formulaire № 0515

LIMITED PRODUCT WARRANTY

STRUCTURAL - SLAB ON-GRADE ONLY

The LEGALETT system is covered by a 7-year structural warranty, which covers the design only of the structural portions of the slab on grade and extends for 7 years from the date of installation. Note that minor shrinkage cracking is normal with a large slab, and these cracks neither extend all the way through the slab, nor do they affect the structural strength of the slab. The structural portion of the warranty must be validated with an authorization code, as explained below. The authorization code will appear on the Home Owner's Certificate.

MECHANICAL

The LEGALETT system is covered by a 2-year mechanical parts warranty from insert delivery date, which covers the mechanical components of the Heating system only, and is limited to the mechanical components contained within the furnace box and the controls as supplied by LEGALETT. Items supplied by LEGALETT are clearly indicated on the LEGALETT drawing supplied with the Installation Manual, and do not include piping between the controls and the heater, electrical wiring outside the box, boilers or other components of the system not supplied by LEGALETT. Mechanical warranty does not cover damage caused by improper use, mishandling, and/or moisture damage to equipment, labour or delivery. The Mechanical portion of the warranty must be validated with an authorization code, as explained below. The authorization code will appear on the Home Owner's Certificate.

VALIDATION

The LEGALETT procedure for warranty validation includes the following steps:

1. Installation according to the design drawings.
2. Installation and/or inspection completed by a LEGALETT Installer or Agent. An authorization code, provided by LEGALETT, is required before pouring the slab and at system start-up to validate structural and mechanical warranties. Inspection reports submitted and on file with authorization code.
3. Correction of any deficiencies noted during the inspections in order to obtain authorization code from LEGALETT.
4. Proper use of the construction heater during construction to elevate the slab temperature to a minimum of 27°C. Construction heater must be run for a minimum of two weeks prior to installation of the permanent heating insert(s).

FOR MECHANICAL SERVICE & SUPPORT:

After installation, the Installer or Installer's qualified sub-trade may:

1.Troubleshoot the insert in place using the functional check for electric coil unit or the functional check for water coil unit, with either phone or e-mail support.

Phone: 1-866-299-7567 extension #225, Email: **tech@legalett.ca**.

2. If a defective part is found, remove and return the defective part for a replacement to

Shipping address: Legalett Inc.
Service & Support
103 Warner Drive
Long Sault, ON K0C 1P0

POUR LE SERVICE & LE SUPPORT MÉCANIQUE:

Après l'installation, l'installateur ou son sous-contracteur qualifié peuvent:

1. Résoudre le problème d'unité de chauffage sur-place en utilisant le contrôle fonctionnel pour les unités électriques ou le contrôle fonctionnel pour les unités d'eau, avec le support technique par téléphone ou par courriel Tel.: 1-866-299-7567 extension #225, Courriel: **tech@legalett.ca**.

2. Si une partie défectueuse est trouvée, enlevez-le et retournez la partie défectueuse.

Adresse d'expédition: Legalett Inc.
Service & Support
103 Warner Drive
Long Sault, ON K0C 1P0

GARANTIE DE PRODUIT LIMITÉ

STRUCTURALE - DALLE-SUR-SOL SEULEMENT

Le système LEGALETT est couvert par une garantie de 7 ans sur la structurale, qui couvre seulement la conception des parties structurales de la dalle-sur-sol et se prolonge pendant 7 années de la date de l'installation. Notez que des fissurations de rétrécissement mineures sont normaux avec une grande dalle, et ces fissures ne se prolongent pas complètement à travers de la dalle et elles n'affectent pas la résistance de la structure de la dalle. La portion structurale de la garantie doit être validée avec un code d'autorisation, comme expliqué ci-dessous. Le code apparaîtra sur le certificat du propriétaire.

MÉCANIQUE

Le système LEGALETT est couvert par une garantie de pièces mécanique de 2 ans à partir de la date de livraisen de l'unité de chauffage, qui couvre les éléments mécaniques du système de chauffage seulement, et est limité aux éléments mécaniques contenus dans la boîte de chauffage et les commandes comme fourni par LEGALETT. Des articles fournis par LEGALETT sont clairement indiqués sur le schéma de LEGALETT fourni avec le Manuel d'installation, et n'incluent pas la tuyauterie entre les commandes et l'unité de chauffage, le câblage électrique en dehors de la boîte, les chaudières ou d'autres composantes du système non fourni par LEGALETT. La garantie mécanique ne couvre pas des dommages provoqués par l'utilisation ou maniulation inexacte, et/ou des dommages d'humidité à l'équipement, au travail ou à la livraison. La partie mécanique de la garantie doit être validée avec un code d'autorisation, comme expliqué ci-dessous. Le code apparaîtra sur le certificate du propriétaire.

VALIDATION

La procédure LEGALETT pour la validation de garantie, inclut les étapes suivants:

1. Installation selon les dessins de conception.
2. Installation et/ou inspection accomplie par un installateur ou agent de LEGALETT, un code d'autorisation, fourni par LEGALETT est requi avant la coulée de béton et au démarrage du système pour valider la garantie structurale et mécanique. Les rapports d'inspection sont soumis et dans le dossier avec le code d'autorisation
3. La correction de n'importe quels manques notés pendant les inspections.
4. Utilisation appropriée de l'unité de chauffage de construction pendant la construction pour élever la température de la dalle à un min. de 27°C. L'unité de construction doit fonctionner un min. de 2 semaines avant l'installation des insertions de chauffage permanentes.

Legalett Canada Inc.
103 Warner Drive
Long Sault, Ontario, K0C 1P0
Tel: 866-299-7567
Fax: 613-937-0125
E-mail: tech@legalett.ca

(Revised 5/24/11)

SITE INSPECTION
PRE-POUR REPORT
LEGALETT INC.

Date of Inspection:		Service Rep:	
Legalett Project #:		Installer:	
Project Title:		Scheduled pour date/time:	
		Drawing and Rev. # from which slab was installed:	

DO NOT POUR UNLESS YOU HAVE RECEIVED AN AUTHORIZATION CODE

Checked

All pictures as per Photo Location Plan (provided with drawings) submitted electronically with this report ☐
- Number of high quality pictures (min 250 KB each in size) submitted with report _____

PART 1 - Structural (Report to be done at 100% installation completion) - FOR ALL SLABS ON GROUND

1) Site Prep
- 3/8"-3/4" clear stone used for top 4"-6" (see drawing) of gravel drainage layer (no fines) ☐

2) Edge Element (Does not apply for basements)
- Height of Edge Element above EPS in middle of slab _____
- Height of Edge Element above EPS at edge of slab _____
- Skirting installed (if any) and photographs provided (minimum 2 photos required) ☐
- Exterior fill completed or gravel or braces up against edge element (braces only allowed for unskirted slabs) ☐

3) EPS Under Slab
- Type (I,II,III,IV etc.) _____ Location (edge, mid., etc.) _____
- Type (I,II,III,IV etc.) _____ Location (edge, mid., etc.) _____
- Type (I,II,III,IV etc.) _____ Location (edge, mid., etc.) _____
- Staggered Joints ☐

4) Reinforcement
- Continuous top wire mesh as per drawing ☐
- Top and bottom edge strips of wire mesh, tied around pipe with ty-raps, as per drawing ☐
- Wire mesh chaired as per drawing ☐
- Wire mesh and/or rebar under all bearing walls and posts as per drawing ☐
- Top rebar placed and spaced as per drawing ☐
- Concrete cover to be minimum 20 mm (3/4") for top and 30 mm (1-1/4") for bottom ☐

5) Elevation and Drainage
- Slab elevation allows for adequate drainage, min. 5% slope (6" drop 10' away from slab edge) ☐
- Gravel drainage layer drains to daylight or sump ☐

6) Slab Penetrations by Others
- Check for any other service or penetration (or bundle of penetrations) greater than 6" in diameter within the perimeter reinforcing - if so explain and provide picture. ☐

7) Comments _____
_____
_____
_____
_____

Legalett Canada Inc.
103 Warner Drive
Long Sault, Ontario, K0C 1P0
Tel: 866-299-7567
Fax: 613-937-0125
E-mail: tech@legalett.ca

(Revised 5/24/11)

SITE INSPECTION
PRE-POUR REPORT
LEGALETT INC.

DO NOT POUR UNLESS YOU HAVE RECEIVED AN AUTHORIZATION CODE

PART 2 - Mechanical (Report to be done at 100% installation completion) - FOR HEATED SLABS ONLY

1) Heating Box (insert not yet received/installed)
- Type (water or electric) _____ Quantity _____
- Location as per plan ☐
- Check that box orientation matches plan, noting orientation of water lines and electrical conduits ☐
- Vertical Placement from top of slab, lid 0 - 6 mm (0" - 1/4") above finished surface ☐
- Box properly supported on foam (foam below box is set into clear stone for 5" and basement slabs) ☐
- Box firmly anchored with grout or cement block on box to prevent flotation during pour ☐
- Conduits installed and capped for electrical (power and thermostats) ☐
- Conduit installed and capped for optional boiler interlock (optional for electric units for future conversion) ☐
- Conduits or sleeved water lines installed and capped for water supply and return lines (optional for electric units for future conversion) ☐
- Box lid handle down, edges taped to box and lid screws in place as per rough in data sheet ☐

2) Piping Loops
- Location and number of elbows as per plan and cutlist (check each loop - extras are noted) ☐
- Inlets to box connected or capped as per plan ☐
- Outlets from box connected and insulated or capped as per plan ☐
- 2 screws installed per joint (4 per fitting) for ALL piping types ☐
- Insulation installed - 60% on top for half insulation and full insulation, as per plan ☐

3) In-slab Services by Others
- All horizontal hot water lines (including domestic) are thermally isolated from slab by sleeving or insulating, or run in insulation layer, encased in expanding foam ☐

4) Comments _____
_____
_____
_____

PART 3 - FOR ALL SLABS

I,_____, as the person taking responsibility for this installation, certify that the structural portion of the installation was 100% complete when I was personally onsite to inspect it, and that the installation is in accordance with the latest revision of the design drawing, as noted on Page 1.

I am an Installer in Training (this report must be counter-signed by the training LSR) or I am a Trained Installer.

Signed: _____ Date: _____ Phone: _____

For Internal Use Only ☐ Completed ☐ Completed with Deficiencies ☐ Incomplete Report

Reviewing Agent	Date Received	Authorization Code	Signed

Notes/Deficiencies:

Legalett Canada Inc.
103 Warner Drive
Long Sault, Ontario, K0C 1P0
Tel: 866-299-7567
Fax: 613-937-0125
E-mail: tech@legalett.ca

(Revised 5/20/11)

SITE INSPECTION START-UP REPORT

LEGALETT INC.

Date of Inspection:		Service Rep:	
Legalett Project #:		Installer:	
Project Title:			

This report with pictures must be submitted together and in full for a Legalett agent to review. For a unheated slab, the Legalett authorization code will be issued upon approval. For a heated slab, the Legalett Heating Insert will be released for installation to a Heating Technician, upon approval.

PART 1 - To be completed for all slabs

1) Client **site** mailing address _____

2) Client **site** courier (physical) address _____

3) Client phone number _____ 4) Client e-mail address _____

4) Edge element parged or otherwise protected from sunlight by others ☐ or by installer ☐

5) Documentation - Client has copies of:
a) Installation, Operation and Maintenance Manual ☐
b) Project Drawings ☐

REMAINING PARTS FOR HEATED SLABS ONLY

Prior to proceeding with these steps, a heater preparation kit must be requested from Legalett. The kit includes a moisture testing kit, thermostats, the zone control layout and a flushing adaptor for water units only. Note that floor coverings can only be installed AFTER slab drying is complete.

PART 2 - PRIOR TO HEATER INSERT INSTALLATION
- minimum 2 site visits required
- One set of photos is required for each individual construction heater installation and moisture test - MINIMUM 3 PHOTOS MUST BE CORRECTLY DATED

7) Slab and Box Preparation
- Vacuum each loop and dry out box - verify each loop is not blocked and any water has been removed ☐
- Clean box properly - Provide **photo** of each empty box cleaned and ready for insert ☐

8) Electrical Supply (to be completed by a qualified technician)
- GFI protection (local spa panel accepted) ☐
- Local disconnect installed (local spa panel accepted) ☐
- Thermostat 3 conductor wiring run from thermostats locations to box in preparation for heater insert ☐
- Thermostats installed or arrangements made for Heater Technician to install thermostats ☐
- Power Supply wiring to box in preparation for heater insert ☐
- Boiler interlock wiring installed with 2 conductor wiring to box in preparation for heater insert (optional) ☐

Legalett Canada Inc.
103 Warner Drive
Long Sault, Ontario, K0C 1P0
Tel: 866-299-7567
Fax: 613-937-0125
E-mail: tech@legalett.ca

(Revised 5/20/11)

SITE INSPECTION START-UP REPORT

LEGALETT INC.

9) Slab Drying and Moisture test

- Start date of Slab Drying with construction heater - Provide dated **photo:** _____ DD/MM/YY ☐
- Apply supplied moisture test kit to slab after minimum 14 days of un-interrupted construction heater usage and min. floor temperature of 27-30°C/80-85°F. Construction heater remains running past 2 weeks during moisture test. ☐
- Polyethylene Slab Moisture Test start dated **photo.** Polyethylene sheet must be taped to slab surface for min. 48 hours (ending minimum 16 days of un-interrupted construction heater usage) with no visible condensation between slab surface and plastic test sheet. If moisture is detected, remove sheet, continue to run construction heater for 3 days and re-test. ☐
- Moisture test to be left in place and Construction heater left running uninterrupted in at least one box for verification by Heating Technician. (Except 5200W which requires flushing adaptor to be installed after slab drying). Record 5200W insert and multiple insert end dates here:_____ and multiple insert floor temperatures here (min. 27-30°C/80-85°F): _____ C/F (circle one) ☐

10) Water Connections (Prior to Electrical Connection)

- Install Flushing Adaptor, verify hot water to unit, check for leaks ☐
- Check for local shut off valves ☐
- Flushing adaptor to be left in place for confirmation by Heating Technician ☐
- Installed boiler/hot water heater capacity: _____ kW / Btu/hr (circle one)

11) Comments _____

_____

_____

_____

_____

Signed: _____ Date: _____ Phone: _____

For Internal Use Only	☐ Completed	☐ Completed with Deficiencies	☐ Incomplete Report
Reviewing Agent	Date Received	Authorization Code	Signed

Notes/Deficiencies:

www.LEGALETT.ca

LEGALETT supplies Air-Heated Floors and Frost Protected Shallow Foundations for residential homes, retirement homes, schools & daycare facilities, churches, commercial & industrial buildings.

There is always a LEGALETT design that works.

“ the LEGALETT way...

the natural way...”

The information in this manual is intended for the U.S and Canada.

“All information, illustrations and specifications in this manual are based on the latest information available at the time of publication.

The right is reserved to make changes at any time without notice”

LEGALETT Inc.

Toll Free: *1-866-299-7567*
Email: *sales@legalett.ca*
Web: *www.legalett.ca*