

**TERRATEC**®

Installation Instructions



October, 2011 - older versions of assembly instructions are no longer valid

**MATERIALS REQUIRED**

**TERRATEC PRODUCTS**

- Architectural 1 x 6 Solid Deck Boards and EuroBoard 1 x 6 Hollow Deck Boards
- Quick Clips w/ Screws
- L-Trim (black powder-coated aluminium)
- Terratec Substructure 2 x 4 Boards
- #8 x 1 1/2" (M4 x 40) Stainless Steel Fixed Point Connection Screws
- Screw Hole Plugs for EuroBoard

**GENERAL PRODUCTS**

- Framing Material (Treated Wood or Terratec Substructure)
- #8 x 2 1/2" (M4 x 65) Stainless Steel Wood Screws

**TOOLS REQUIRED**

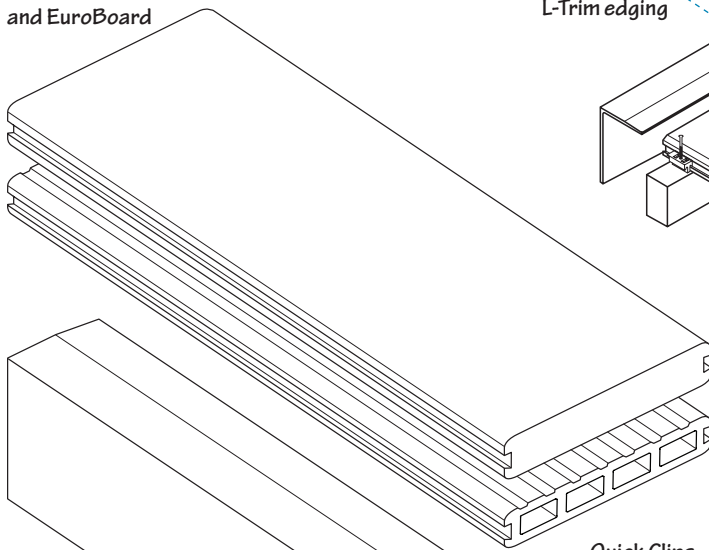
- Chop/Skill Saw
- Screw Gun W/Bits
- Measuring Tape & Pencil
- 7/64" (0.28 cm) Dia. Drill Bit W/Countersink

**BEFORE YOU BEGIN**

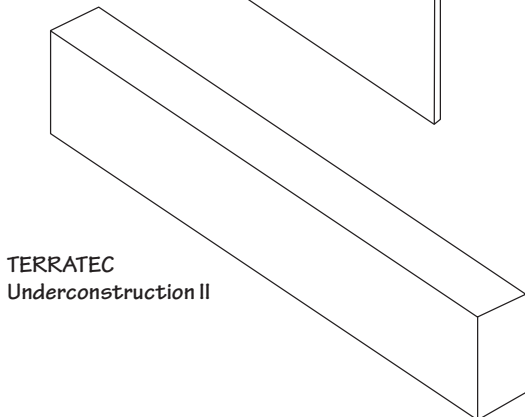
- Check local building code requirements.
- Confirm intended use as Residential Outdoor Construction.
- Obtain local building code permit.
- Use Code-compliant standard wood frame construction or Terratec Underconstruction II.
- If using ACQ or CA treated wood frame, use manufacturer's recommended type of stainless steel or hot dip galvanized (G185) joist hangers, cross-bracing or deck frame lateral support.
- Use steel or wood cross-bracing for deck and frame lateral support for elevated decks.
- Follow safety precautions. Use gloves, goggles and respiratory protections. Use extreme caution with all power tools. Inhalation of dust particles is potentially harmful to your health.
- Follow the detailed instructions provided by installation guide.
- Obey the requirements of the latest occupational health and safety act regulation for construction projects where applicable.

**TERRATEC PRODUCTS**

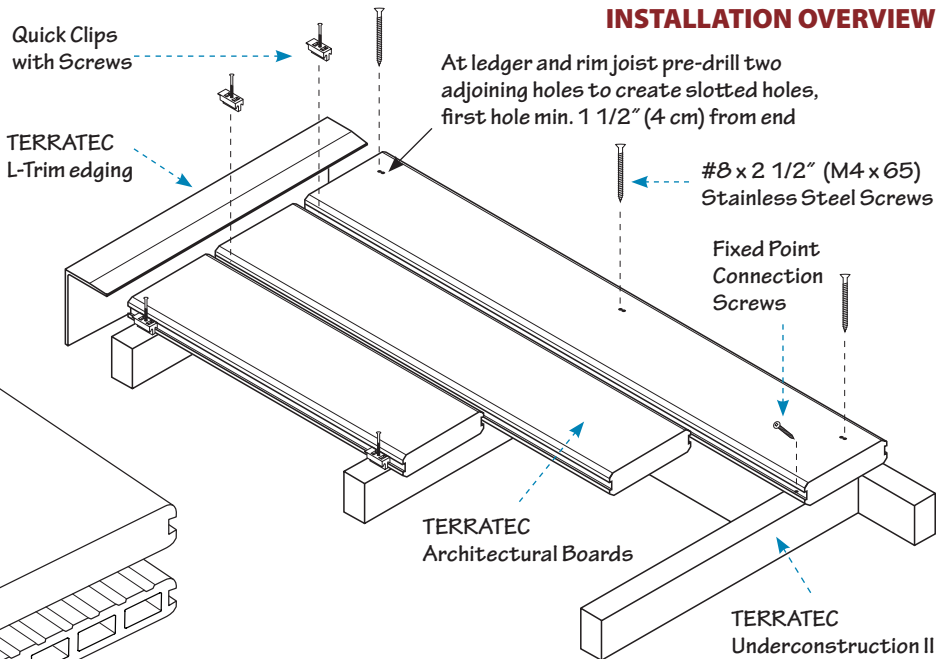
TERRATEC deck boards Architectural and EuroBoard



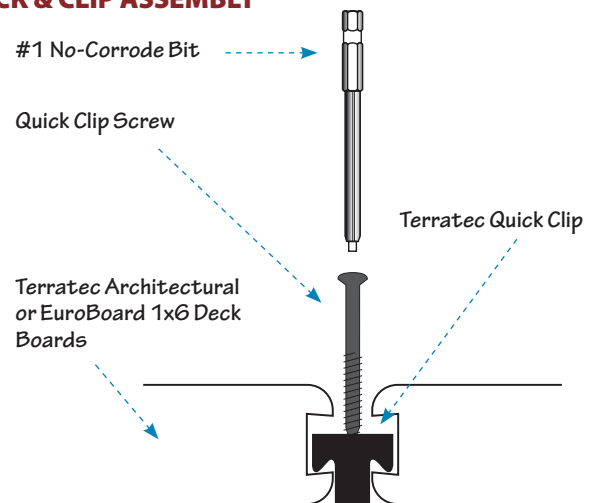
TERRATEC L-Trim edging



TERRATEC Underconstruction II



**BASIC DECK & CLIP ASSEMBLY**



All framing materials (treated wood, screws and fasteners) should be code-compliant.

**NOTE:** See following pages for deck board dimensions and recommended spacing for proper installation.

**BUILDING THE SUBSTRUCTURE**

First, a complete substructure frame must be screwed together and secured to a concrete foundation using stainless steel machinist's squares. For the substructure use either Terratec Underconstruction II as shown in (Diagram 1a/b) or treated wood. Substructure joists must be spaced at 16" (45 cm) on centers. If deck boards are angled at 45° space at 12" (30 cm) on centers (Diagram 1c).

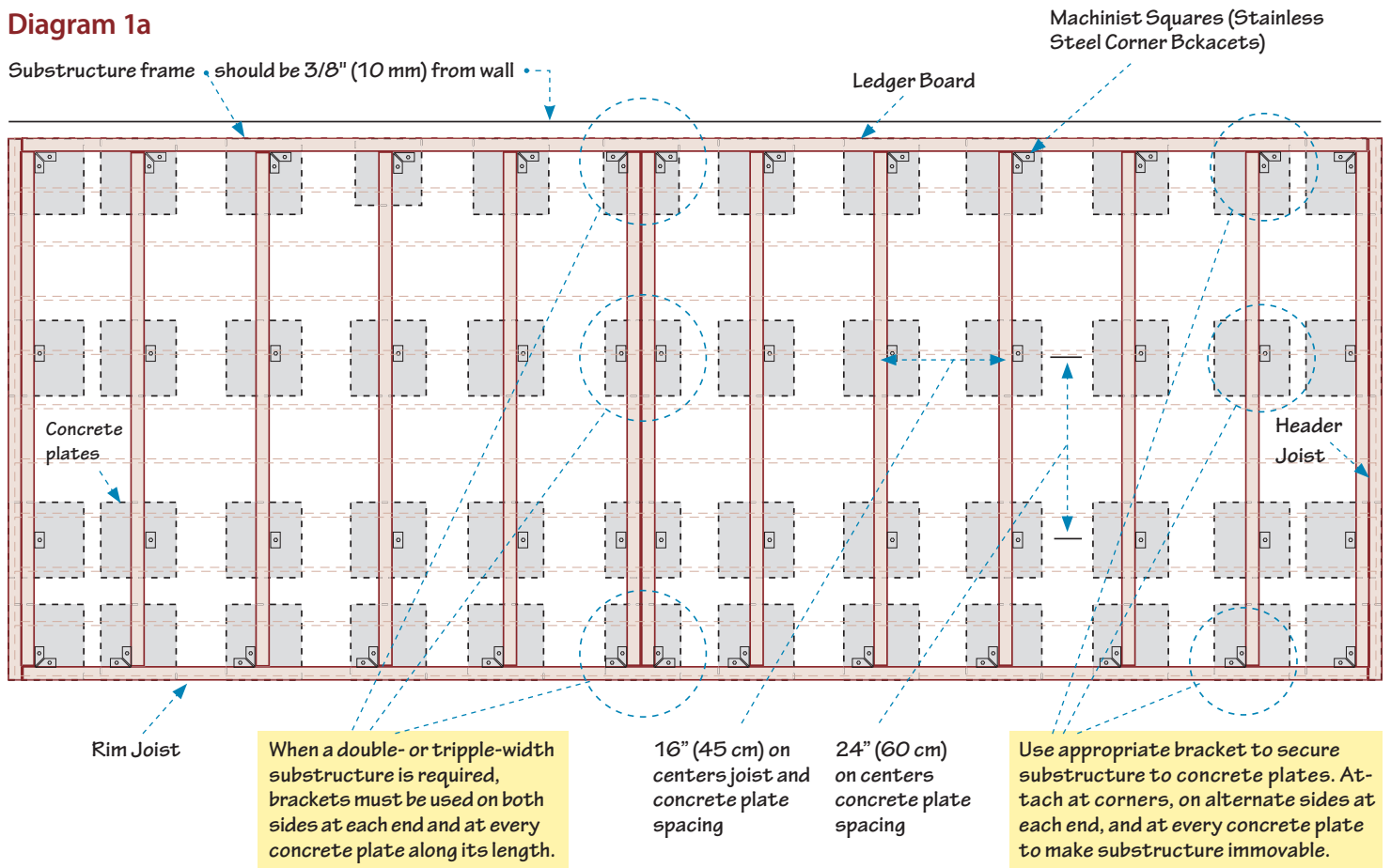
**NOTE: If complete floor pavement is not present and the ground underneath consists of dirt or stone chips, then immovable concrete plates must be used for stabilization (Diagram 1a/b). In either case, the frame needs to be stabilized by securing it to an immovable base. Substructure joists must be secured at every concrete plate as shown in (Diagram 1a).**

The concrete plates should be at each corner of the frame and under each joist connection point. Along the length of each joist, a concrete plate should be placed every 24" (60 cm) on centers. If another form of substructure is used (i.e. steel or treated), it must also be anchored to the concrete plates. When placing concrete plates, a 1% slope is required from the house to the outer edge of the deck so surface moisture runs away from the house.

The open space between concrete plates must not be obstructed to allow for proper air circulation (Diagram 1b).

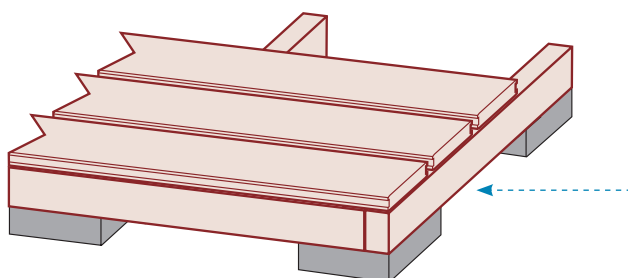
Terratec is not suited for use on stone chip or dirt foundations nor is it suitable for applications where it will be immersed in standing water.

**Diagram 1a**



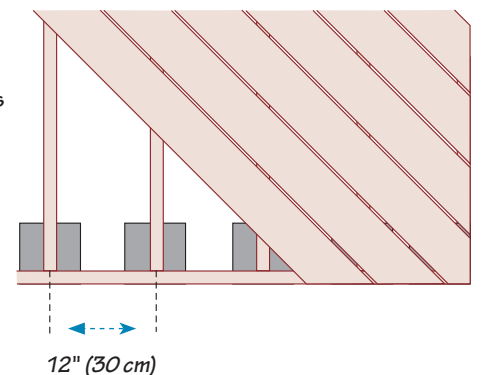
**Diagram 1b**

Concrete plate spacing and venting. Proper venting is required. The space between concrete plates must be open to allow air to circulate under deck.

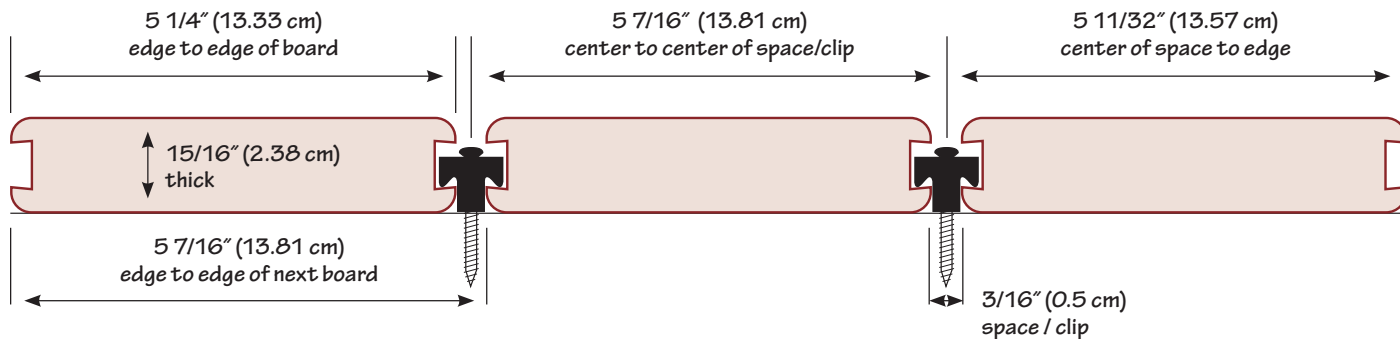


**Diagram 1c**

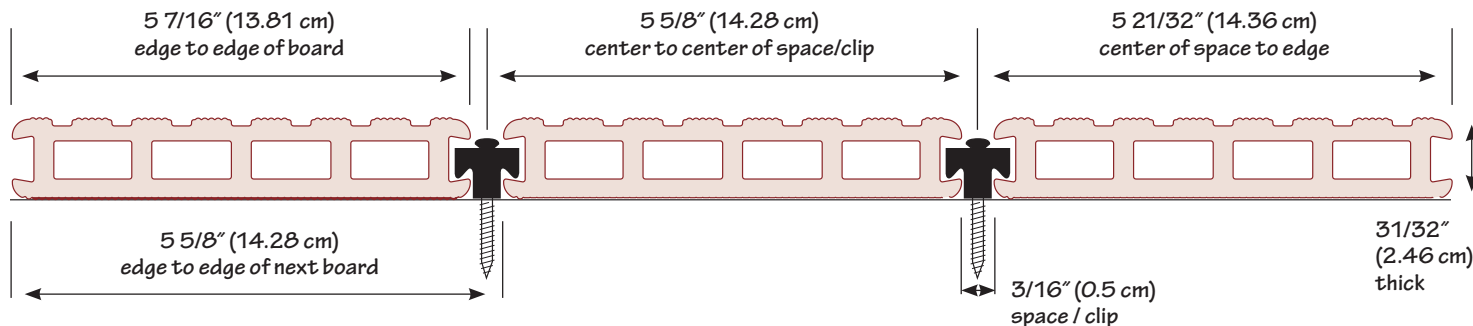
If boards are angled at 45°, substructure joists must be spaced 12" (30 cm) on centers.



**TERRATEC ARCHITECTURAL DIMENSIONS**



**TERRATEC EUROBOARD DIMENSIONS**



**DECK BOARD INSTALLATION**

**NOTE: Read Terratec decking installation instructions carefully before starting construction on your deck.**

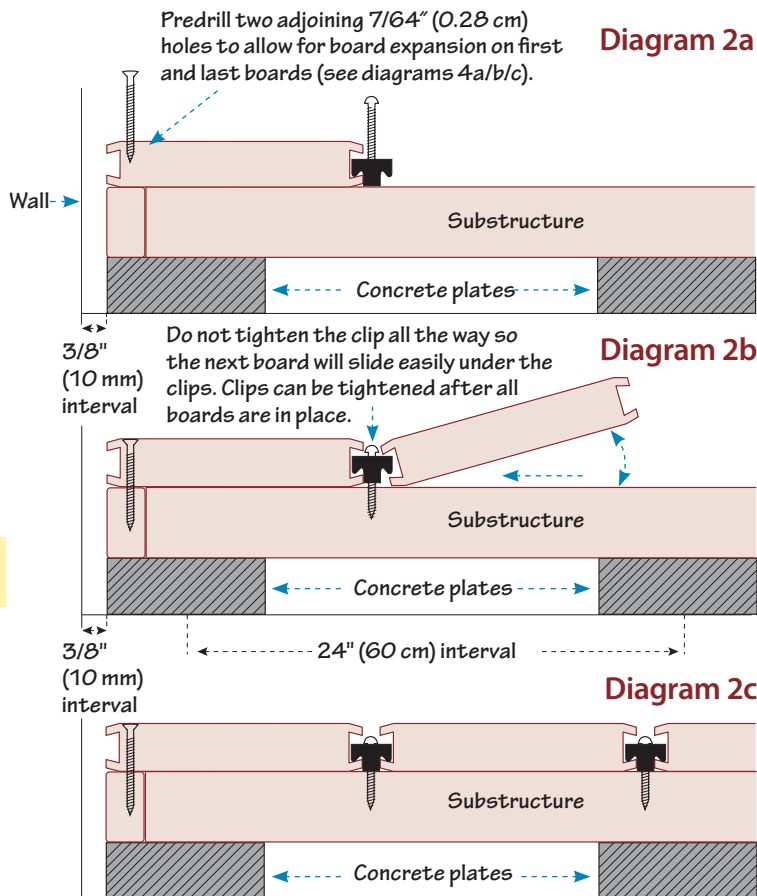
1. After the substructure has been constructed and secured, lay the first deck board onto the deck frame at the house (Diagram 2a). To allow for expansion/contraction along the length of the ledger, pre-drill two 7/64" (0.28 cm) diameter pilot holes side by side to create slotted holes every 16" (45 cm) on centers for each screw. Use #8 - 2 1/2" (M4 x 65) Stainless Steel deck screws to fasten the board to the ledger (Use this same procedure at the rim joist). Use of a countersink adapter is recommended so screw heads will be nicely flush with decking surface.

For EuroBoard, the first and last deck boards are fastened by pre-drilling with a 3/8" (10 mm) drill bit (Through only the roof of the chamber) and then screwed into the substructure. When a battery-powered screwdriver is used, we recommend working with a rotary coupling. Do not over tighten to prevent the screw head from driving through the floor of the chamber. For a better visual appearance, we recommend using our screw covers to plug the hole.

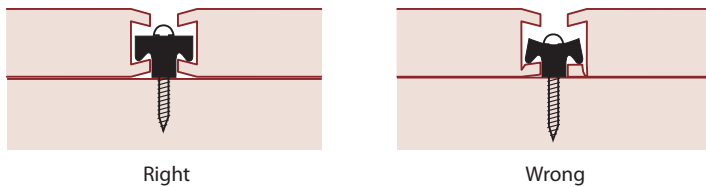
**NOTE: Several boards must be laid out before fastening in order to detect possible color differences ahead of time.**

2. Place Terratec Quick Clips—also acting as 3/16" (0.5 cm) spacers—against the side of the first board at each deck support or joist spaced not more than 16" (45 cm) on centers and screw them down stopping short of fully tightened using attached screws. Not fully tightening the screw makes it easier to insert the next board under the Clip (Diagram 2b). Based on your deck configuration, identify the location of your fixed point connection using information on pages 5 to 7 in this guide and fix the first deck board as per instructions.

3. Place the second board tightly in position under the Quick Clips against the first board. Install Quick Clips against the second board as per instruction in paragraph above and repeat for remaining boards (Diagram 2c). See note next page.



## Diagram 2d



**NOTE:** We recommend waiting until all the clips and deck boards have been loosely installed, then finish tightening all the clips. **DO NOT OVER TORQUE SCREWS INTO QUICK CLIPS. OVERTIGHTENING WILL INHIBIT EXPANSION/CONTRACTION MOVEMENT AND MAY CRACK BOARD LIP (Diagram 2d).**

**IMPORTANT:** When laying deck boards, please pay attention to the directional arrows ( → ) found on the sides of the boards. They must be laid in such a way that the arrows all point in the same direction.

4. Continue installing each deck board in the same manner using Quick Clip fasteners and fix each board at the appropriate fix point as illustrated in the Expansion & Contraction section. Fasten the last board using the same instructions as the first board (Diagram 2a).

5. If boards require trimming, do not trim individually. Once all boards are laid, check the ambient temperature at that time and refer to the expansion/contraction charts on pages 5 and 7. Then trim all boards at the same time accordingly. To trim boards, mark chalk line at appropriate temperature gap measurement, then set skill saw blade to just over board thickness and cut boards.

## EXPANSION/CONTRACTION FIXED POINT CONNECTIONS

To direct normal expansion/contraction of polymer based products toward the edge of the deck and away from any butt joints, fix deck boards as indicated in (Diagram 4a/b/c page 6). Where butt joints occur, a double-width substructure is required (Diagram 3a), which must be secured to each concrete plate along its length as shown in (Diagram 1a page 3).

The lengthwise expansion always goes in the outward direction and is calculated according to the length of the board (See expansion/contraction table on page 7).

There are two options for fixed point connections:

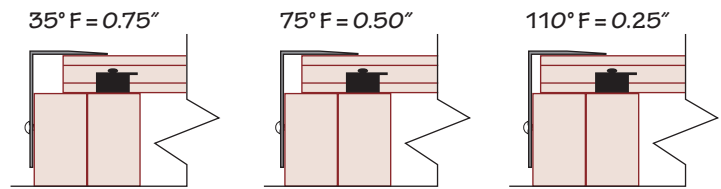
Option 1, pre-drill an angled hole through the lip of the board, then drive screw through the lip and into the substructure (Diagram 3a/b).

Option 2, pre-drill a pilot hole then attach with screw through the surface of the board. Use of a countersink adaptor is recommended so screw heads will be nicely flush with decking surface (Diagram 3a/b).

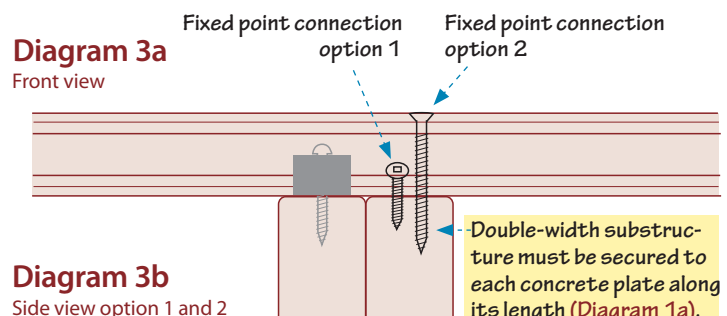
For EuroBoard, pre-drill with a 3/8" (10 mm) drill bit (Through only the roof of the chamber) and then screwed into the substructure. Do not over tighten to prevent the screw head from driving through the floor of the chamber. For a better visual appearance, we recommend using our screw hole plug to cover the hole (Diagram 3c).

## SAMPLE TEMPERATURE GAP CALCULATION 40' DECKS

AMBIENT TEMPERATURE		"A" GAP
35° F	2° C	0.75" (2 cm)
75° F	24° C	0.50" (1.25 cm)
110° F	43° C	0.25" (0.75 cm)

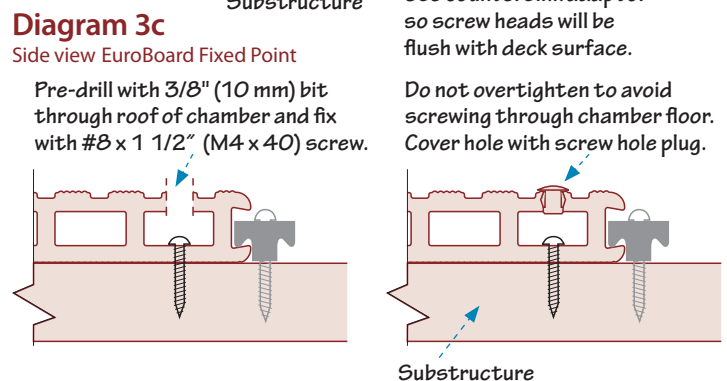
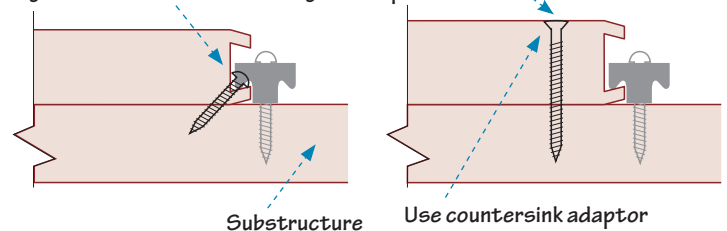


**NOTE:** This table has been developed for a maximum 40' long deck consisting of two 20' long deck boards end butted with both boards fixed to the substructure at the butt joint.

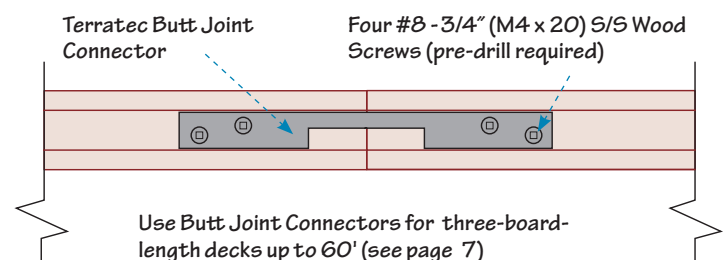


1. Fixed point connection Screw angled into board lip. Pre-drill hole first. Do not overtighten to avoid screw cracking board lip.

2. Fixed point connection Screw through surface.



## BUTT JOINT USING BUTT JOINT CONNECTOR SIDE VIEW



## FIXED POINT CONNECTION CONFIGURATIONS

**Diagram 4a)** If using a single board length, use a double-width substructure at the middle and fix the boards where marked by the black dots.

**Diagram 4b)** If two boards are joined lengthwise with one butt joint line in the center of the deck, use the triple-width substructure and fix where marked by the black dots.

**Diagram 4c)** If two boards are joined lengthwise with staggered butt joints, use two triple-width substructures and fix where marked by the black dots.

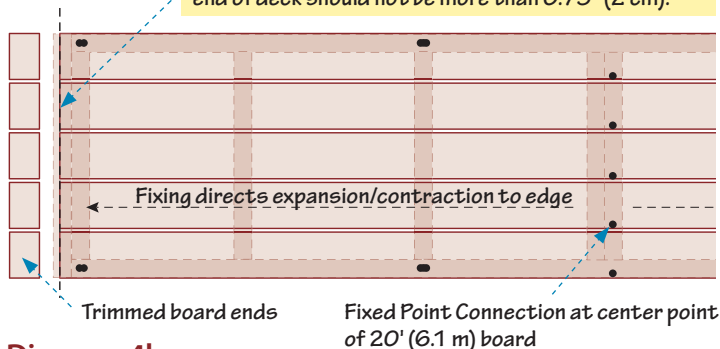
If your deck requires two board lengths and if they are fastened with screws as described above (4b/4c), the butt joints can be laid without a gap since the expansion will be directed toward the edge of the deck where it can be hidden under the L-Trim.

**NOTE:** For decks requiring three or more board lengths refer to diagrams on page 7.

### Diagram 4a

Single 20' board

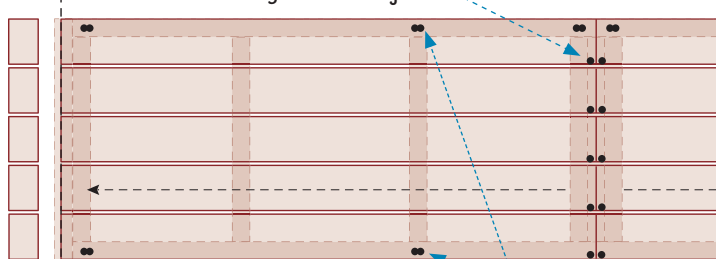
Trim deck board ends to equal length after all boards have been fastened. Use temperature chart page 7 to determine proper gap based on temperature at time of trimming. The maximum gap from deck boards to end of deck should not be more than 0.75" (2 cm).



### Diagram 4b

Center butt joints

Triple-width TERRATEC substructure (Diagram 3a)  
Fixing at the butt joints



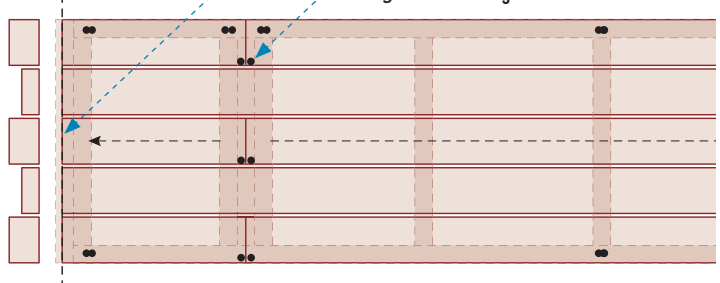
The maximum gap from deck boards to substructure edge should not be more than 0.75" (2 cm). See chart on page 5.

At Ledger Board (first board edge) and Rim Joist (last board edge) pre-drill two adjoining 7/64" (0.28 cm) holes and fasten with screw in middle to allow for expansion

### Diagram 4c

Staggered butt joints

Double-width TERRATEC substructure  
Fixing of the butt joints



## FINISHING

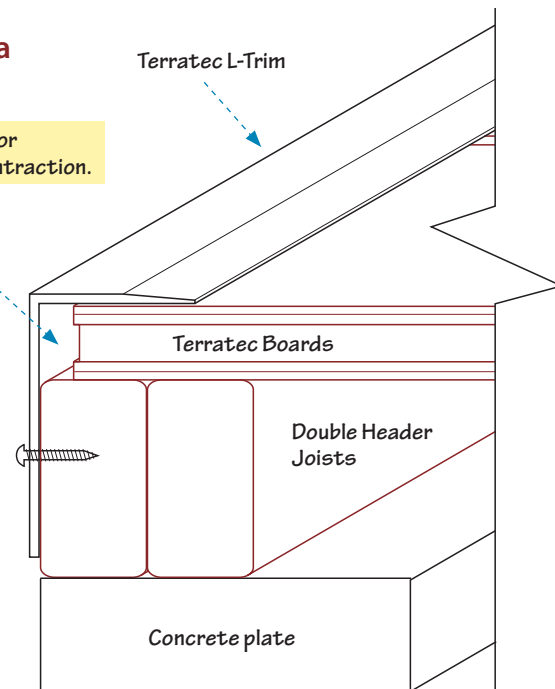
L-Trim is a powder coated aluminium edging developed by Terratec to hide deck board expansion/contraction. Install L-Trim after all the deck boards have been fastened and ends trimmed (Diagram 4a) to allow gap for expansion/contraction (Diagram 5a). To determine gap see temperature chart on page 7. To install L-Trim simply trim to length needed, mitering ends at corners to 45°. Then place on deck edge and secure using #8 x 3/4" (M4 x 20) Stainless Steel Self-tapping screws at a minimum of every 32" (80 cm) through the side face and into the substructure.

**IMPORTANT:** Do not use L-trim for edging on steps or stairs due to a tripping hazard.

### Diagram 5a

Isometric View

Gap to allow for expansion/contraction.



### Diagram 5b

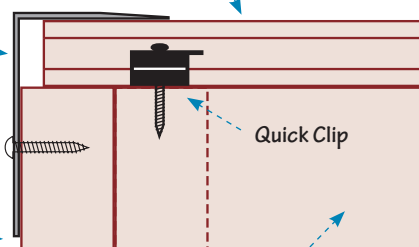
Side view

Terratec L-Trim optional

#8 x 3/4" (M4 x 20) S/S Self-tapping Deck Screw at 16" (45 cm) O/C (typical)

Double Header Joists

Terratec 1 x 6 Architectural Decking



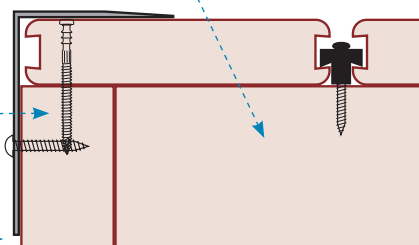
Terratec Underconstruction II or Pressure Treated Wood Framing

### Diagram 5c

End view

#8 x 2 1/2" (M4 x 65) Stainless Steel Deck Screws 16" (45 cm) O/C at Rim Joist

Rim Joist



**EXPANSION/CONTRACTION TABLE TO DETERMINE HOW TEMPERATURE AFFECTS BOARD LENGTH.**

Because boards can expand or contract lengthwise under influence of temperature, it must be ensured that the Terratec board is gapped properly at edge of substructure.

Using the example (table at right) of a 20' (6.1 m) long board and 20° daytime temperature, that means: the gap between the end of the board and the edge of the substructure must be 0.32 cm, since the greatest possible lengthwise extension in this case is 0.48 cm (0.80 – 0.32 cm = 0.48) and the greatest possible shrinkage is 0.16 cm (0.32 – 0.16 cm = 0.16). To ensure the edge profile always has enough gap, the table values shown must be taken into account.

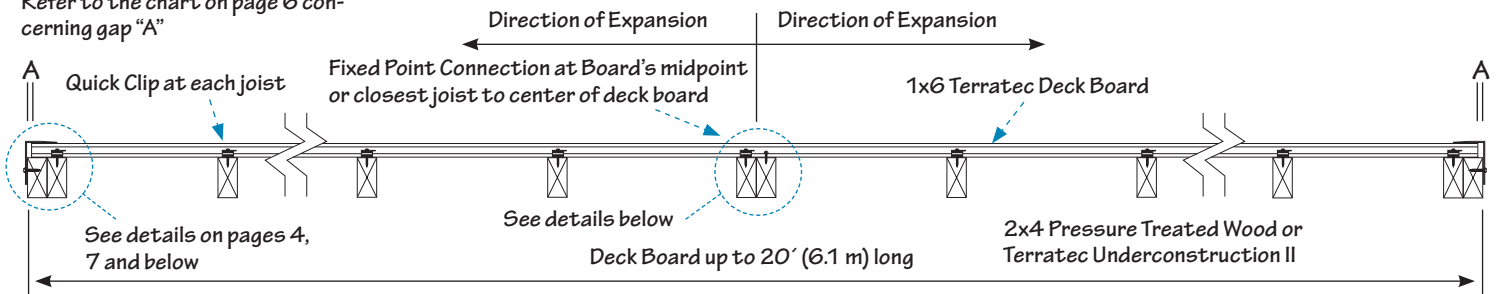
Length of the TERRATEC boards in Meters	Approximate temperature on the day of installation in Celsius							
	5°	10°	15°	20°	25°	30°	35°	40°
	Maximum lengthening of the boards in cm							
1.84 m	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.32
2.44 m	0.16	0.16	0.16	0.16	0.16	0.32	0.32	0.32
3.05 m	0.16	0.16	0.16	0.16	0.32	0.32	0.32	0.48
3.65 m	0.16	0.16	0.16	0.16	0.32	0.32	0.48	0.48
4.27 m	0.16	0.16	0.16	0.32	0.32	0.48	0.48	0.64
4.88 m	0.16	0.16	0.16	0.32	0.32	0.48	0.64	0.64
5.48 m	0.16	0.16	0.16	0.32	0.48	0.48	0.64	0.80
6.10 m	0.16	0.16	0.16	0.32	0.48	0.64	0.80	0.80

Length of the TERRATEC boards in Feet	Approximate temperature on the day of installation in Fahrenheit							
	41°	50°	59°	68°	77°	86°	95°	104°
	Maximum lengthening of the boards in inches							
6 ft	1/16	1/16	1/16	1/16	1/16	1/16	1/16	1/8
8 ft	1/16	1/16	1/16	1/16	1/16	1/8	1/8	1/8
10 ft	1/16	1/16	1/16	1/16	1/8	1/8	1/8	3/16
12 ft	1/16	1/16	1/16	1/16	1/8	1/8	3/16	3/16
14 ft	1/16	1/16	1/16	1/8	1/8	3/16	3/16	1/4
16 ft	1/16	1/16	1/16	1/8	1/8	3/16	1/4	1/4
18 ft	1/16	1/16	1/16	1/8	3/16	3/16	1/4	5/16
20 ft	1/16	1/16	1/16	1/8	3/16	1/4	5/16	5/16

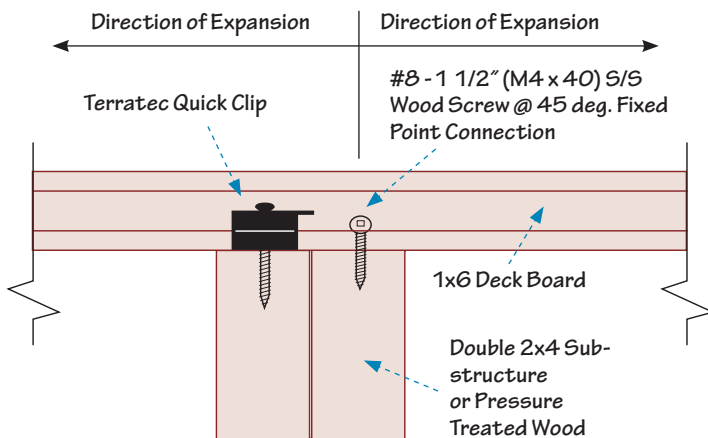
**SINGLE BOARD UP TO 20' LONG (NO BUTT JOINT)**

**NOTE:** Pre-drill 7/64" (0.28 cm) dia. pilot hole for fixed point connection screws at 45 deg. (typical). Use fixed point connections to secure deck board to substructure at locations shown below to control expansion and contraction toward the edge of the deck and under the L-Trim edging where any movement will be hidden from view.

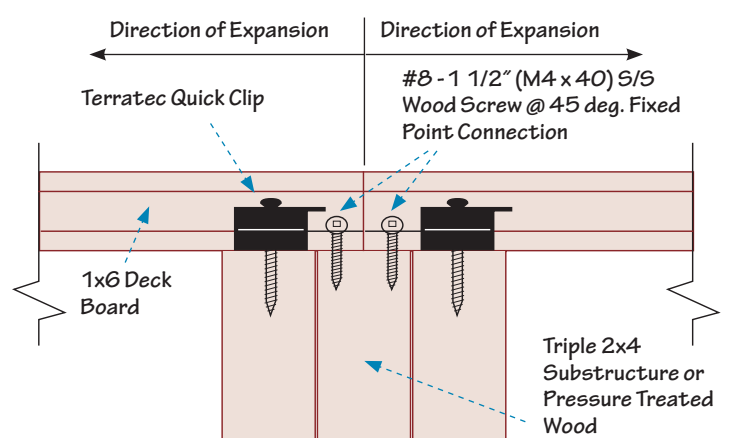
Refer to the chart on page 6 concerning gap "A"



**SINGLE BOARD – CENTER FIXED POINT CONNECTION SIDE VIEW**

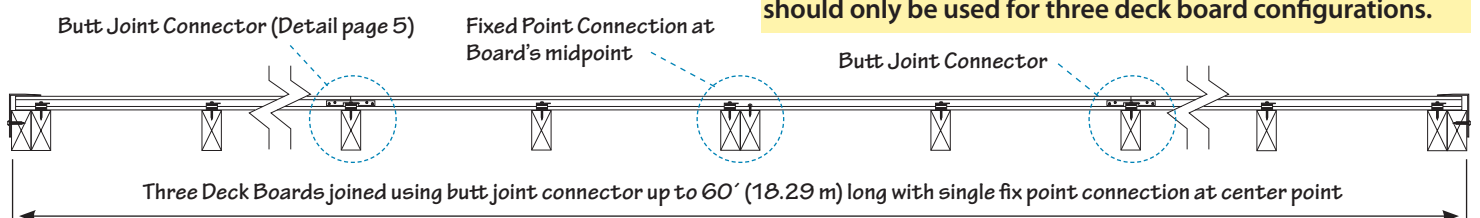


**TWO BOARD BUTT JOINT CONFIGURATION – CENTER FIXED POINT CONNECTION SIDE VIEW**



**THREE DECK BOARDS MADE CONTINUOUS USING BUTT JOINT CONNECTORS UP TO 60' LONG**

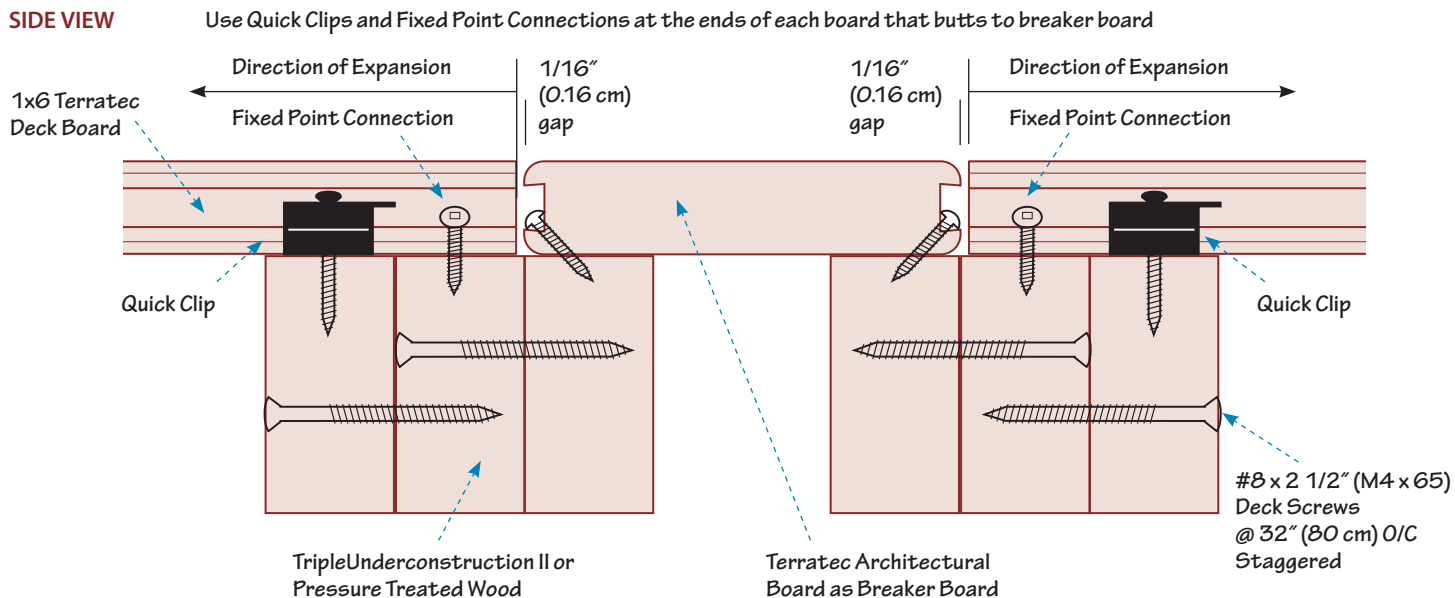
**NOTE:** For decks using more than three deck boards see page 8 for proper configuration. Butt joint connectors should only be used for three deck board configurations.



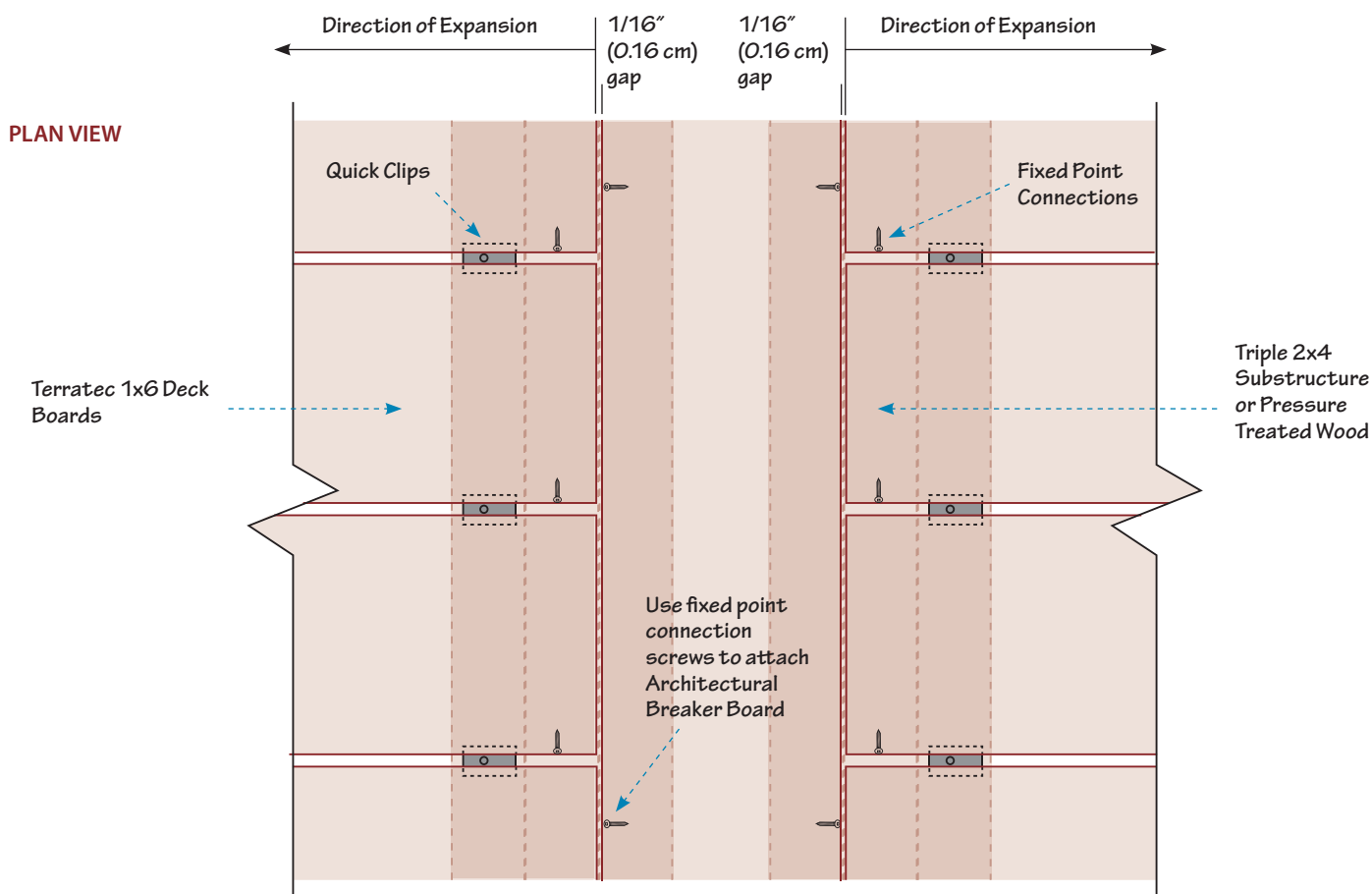
### BREAKER BOARD BUTT JOINT DETAIL

NOTE: Pre-drill 7/64" (0.28 cm) dia. pilot hole for fixed point connection screws at 45 deg. (typical)

#### SIDE VIEW



#### PLAN VIEW



Due to normal expansion/contraction miter joints are not recommended as they presume no expansion or contraction.

Minimal color differences and slightly curved boards may occur for technical reasons and do not constitute grounds

for a defect complaint. Curved boards can be corrected as they are being laid with application of a slight force.

Terratec is manufactured for residential construction only. It is not intended for commercial or industrial use.