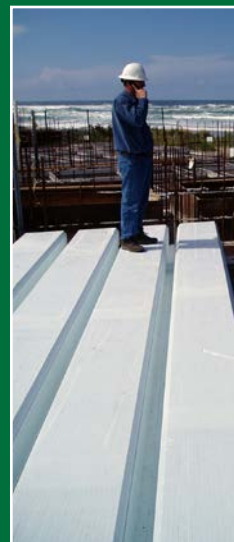
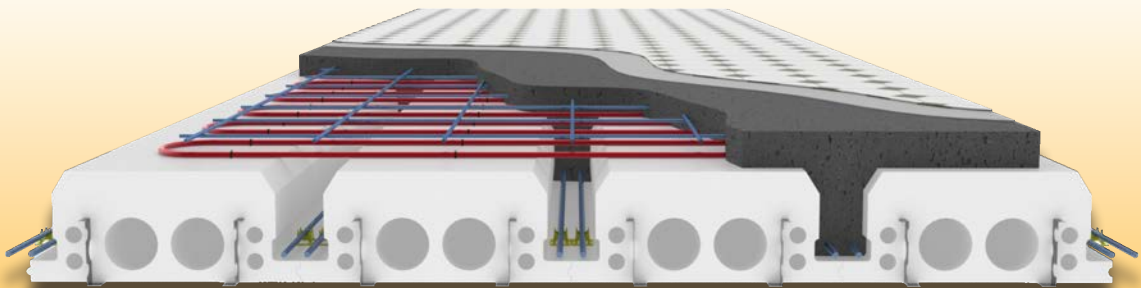


# Concrete Building Solutions

# QUAD-DECK



**Insulating Concrete Forms for Floors and Roofs**

# The Quad-Deck Advantage

## The Technology

Ideal for use in both commercial and residential construction, Quad-Deck combines the strength, security, and reliability of concrete with the energy efficiency, design flexibility and comfort of insulating concrete forms. Quad-Deck uses Plastbau® Technology to create an energy efficient and quality insulating concrete floor and roof system.

### Advantages for Contractors & Architects:

#### Fast & Flexible

- Delivered to site ready to install
- Lightweight, easy to handle – no forms to be stripped
- Up to 31' [9.5m] free spans, available in thicknesses of 7" to 13½" [178mm to 343mm]
- Slab thickness from 1¾" to 6" [45mm to 152mm]
- Easily integrates with Quad-Lock ICF system

#### Lightweight

- Lighter structure; eliminates 50% of conventional shoring
- Reduces floor mass dead load by up to 50%
- Reduces structural requirements for foundations and walls

#### Reduced Costs

- No site waste
- Uses less concrete & steel compared to traditional concrete slab
- High R-Values (R-16 to R-33); Low U-Values (0.35 to 0.17)

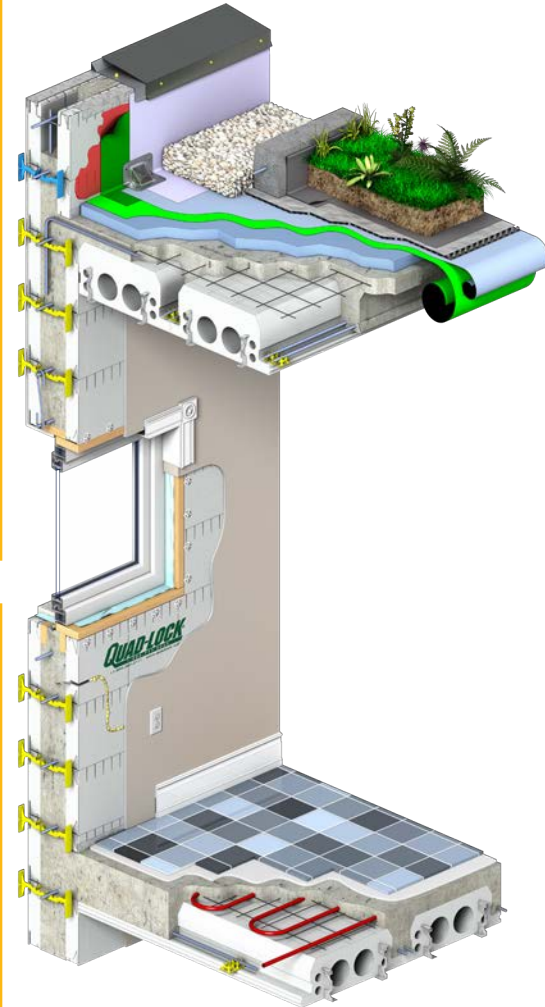
### Advantages for Owners:

#### Durable & Sustainable

- Long-term building durability; life-cycle measured in centuries
- Reduced HVAC requirements, heating and cooling costs
- Lower life-cycle costs
- Thermal mass properties; ideal for passive solar designs

#### Quiet, Healthy, Safe & Comfortable

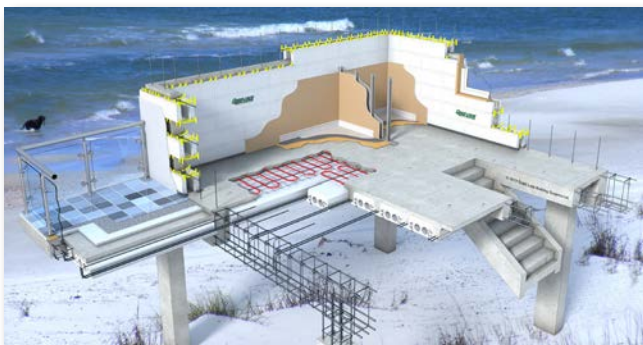
- High STC ratings; deadens sound transmission
- Rated Fire Resistance (ACI216)
- Minimized air infiltration - no allergens, improved indoor air quality
- Inert material; doesn't support the growth of mold or mildew
- Not a food source for insects
- Perfect for in-floor radiant heating
- More consistent indoor temperatures
- Superior protection against catastrophic events - ideal for Safe Rooms



*"After exhaustive comparisons of many different floor and roof systems, I found Quad-Deck to be the safest, highest performing, and most cost effective system available based on a life-cycle cost analysis."*



*- Kyle Dumbleton,  
AIA, LEED Assoc.  
Midwest Modern, LLC  
Madison, WI*



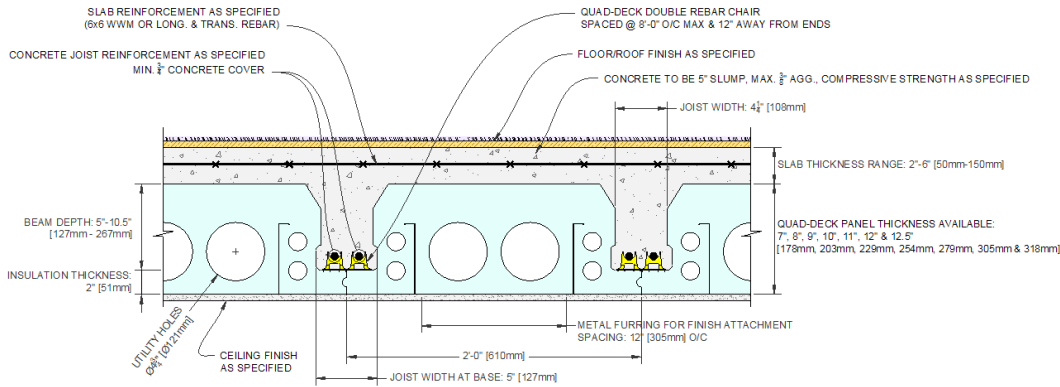
## Insulated Floors for Elevated Buildings

More and more schools and owners of homes and commercial buildings in flood zones are using elevated Quad-Deck floors to minimize or eliminate future water damage and substantially reduce insurance premiums.

# The Quad-Deck Solution

## How Quad-Deck Works

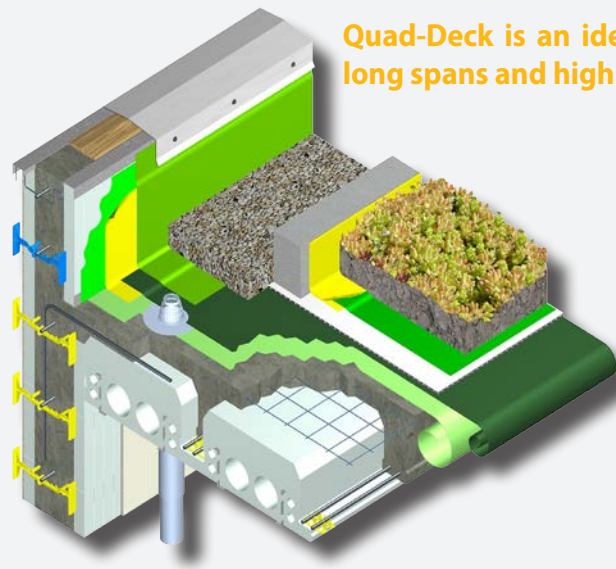
Each of the expanded polystyrene (EPS) panels are supported and reinforced with two integral steel beams molded into the product from end to end. The result is a self-supporting joist and deck forming system that provides the maximum strength of a reinforced concrete deck with a minimum of materials and labor.



*"The forethought of using the Quad-Deck System on the roof allowed us to create a wonderful green space, providing the residents with added living space and the many additional benefits of green roof technology."*

## The Quad-Deck Living Green Roof

Quad-Deck is an ideal substrate for living Green Roofs providing long spans and high load capacity.



- Using Quad-Deck rather than traditional slab will add less incremental mass to the building structure, reducing overall construction costs
- Much less susceptibility to water damage, rot, mold or mildew – far superior to a wood joist roof
- Increased energy savings from Quad-Deck's stay-in-place insulation and from Intensive or Extensive Greening
- Green Roofs extend the life of your building by providing protection from the daily temperature changes to the roof membrane
- Green Roofs are ideally suited for LEED certified projects and for water runoff management

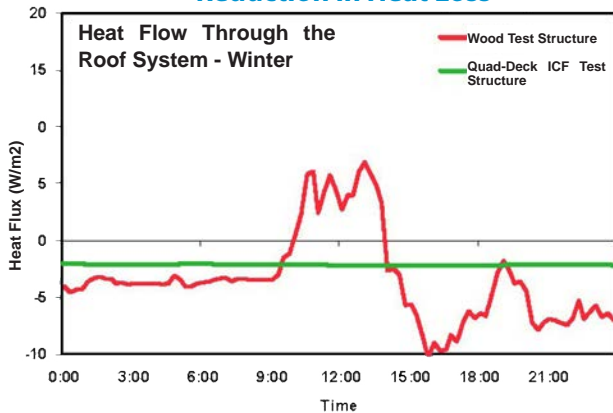


*- Keith Miles  
Northern Hills  
Redevelopment  
Orange, NJ*

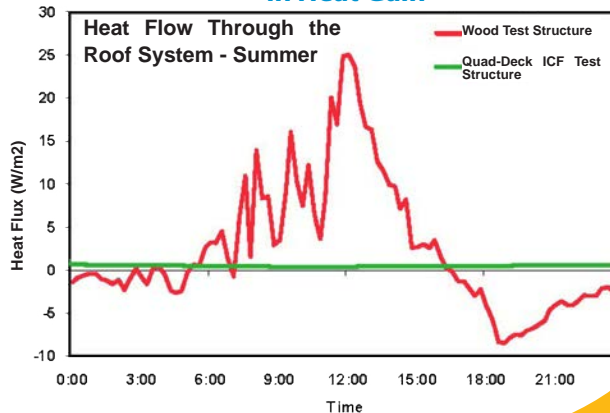
## Green Roof Study

A recently completed 2-year study by BCIT's Centre for Architectural Ecology confirms that Quad-Deck Green Roofs provide superior Thermal performance when compared to traditionally built structure.

**Quad-Deck Green Roof = 50-75% Reduction in Heat Loss**



**Quad-Deck Green Roof = 99% Reduction in Heat Gain**



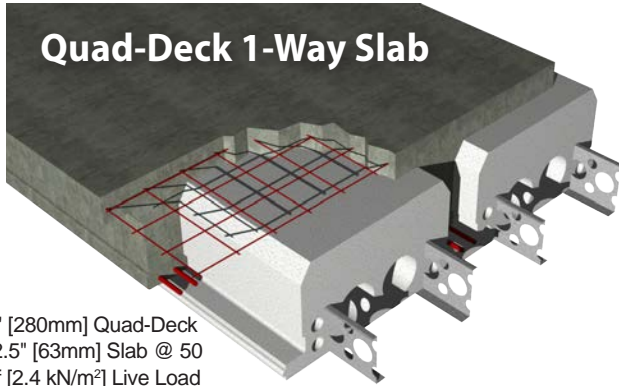
*BCIT's Centre for Architectural Ecology, Study Director, Maureen Connally calls green roofs "...the greatest real estate opportunity of this century."*



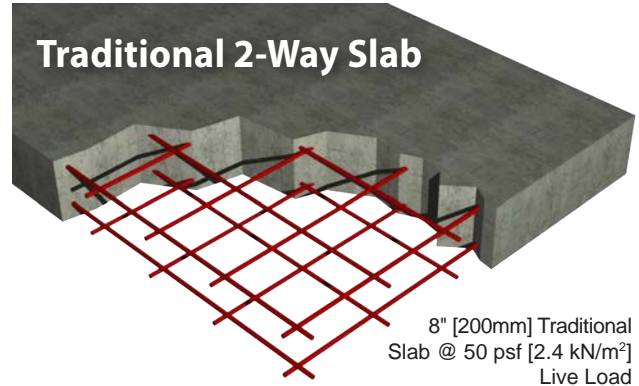
# Quad-Deck Comparison

## Quad-Deck vs. Traditional Slab

Single Span = 25' [7.6m] • Floor Area = 1500 sqft [140m<sup>2</sup>]



11" [280mm] Quad-Deck  
+ 2.5" [63mm] Slab @ 50  
psf [2.4 kN/m<sup>2</sup>] Live Load



8" [200mm] Traditional  
Slab @ 50 psf [2.4 kN/m<sup>2</sup>]  
Live Load

<b>Steel Requirements</b>	Quad-Deck = 4070lb [1850kg]	<b>33% Savings in steel consumption</b>
	Traditional Slab = 6070lb [2750kg]	
<b>Concrete Requirements</b>	Quad-Deck = 18.4yd <sup>3</sup> [14m <sup>3</sup> ]	<b>50% Savings in concrete usage</b>
	Traditional Slab = 37yd <sup>3</sup> [28m <sup>3</sup> ]	

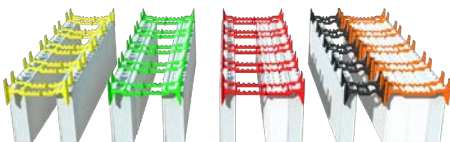
**By reducing your Steel & Concrete Requirements with Quad-Deck, you also reduce your Mass by over 50% and use 50% less Shoring.**

### Product Testing:

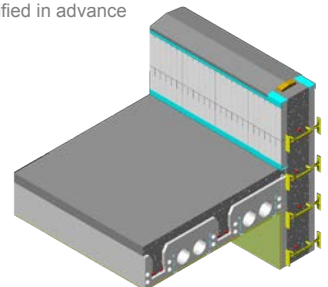
- Quad-Deck finished with 1/2" GWB met the requirements of NFPA 286-11 and ISO 9705:1993, Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.
- Quad-Deck complies with ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
- Quad-Deck achieves up to STC 53 under ASTM E-90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
- Quad-Deck's ultimate average pullout value for embedded steel furring is 410lb [185kg] as per Load Testing report performed by Applied Technical Services Inc.

**SHORING & BRACING:** Installer is responsible for the design and correct installation of Shoring of Quad-Deck forms in accordance with ACI (American Concrete Institute) 347R-94 "Guide to Framework for Concrete" Chapter 2, Design. Any variance from these standards must be provided and certified in advance by a Structural Engineer, licensed for the job-site location and specifications.

**REINFORCED CONCRETE:** Installer is responsible for placement of all reinforcing steel in accordance with ACI (American Concrete Institute) 318-95 "Building Code Requirements for Reinforced Concrete". Any variance from these standards must be provided and certified in advance by a Structural Engineer, licensed for the job-site location and specifications.



**Easily integrated with Quad-Lock ICF walls to form a complete ICF Building Envelope.**



*"We use Quad-Deck because of its strength advantage. Once the concrete is poured on the Quad-Deck and into the Quad-Lock walls, it ties the floors and walls together seamlessly. This has been a superior selling point to our customers."*



*- Mike Hanes  
Homes American Made  
Caro, MI*

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**ISO 9001**  
Certified Company



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