

# Floor and Roof system



CONCRETE BUILDING CONCEPTS



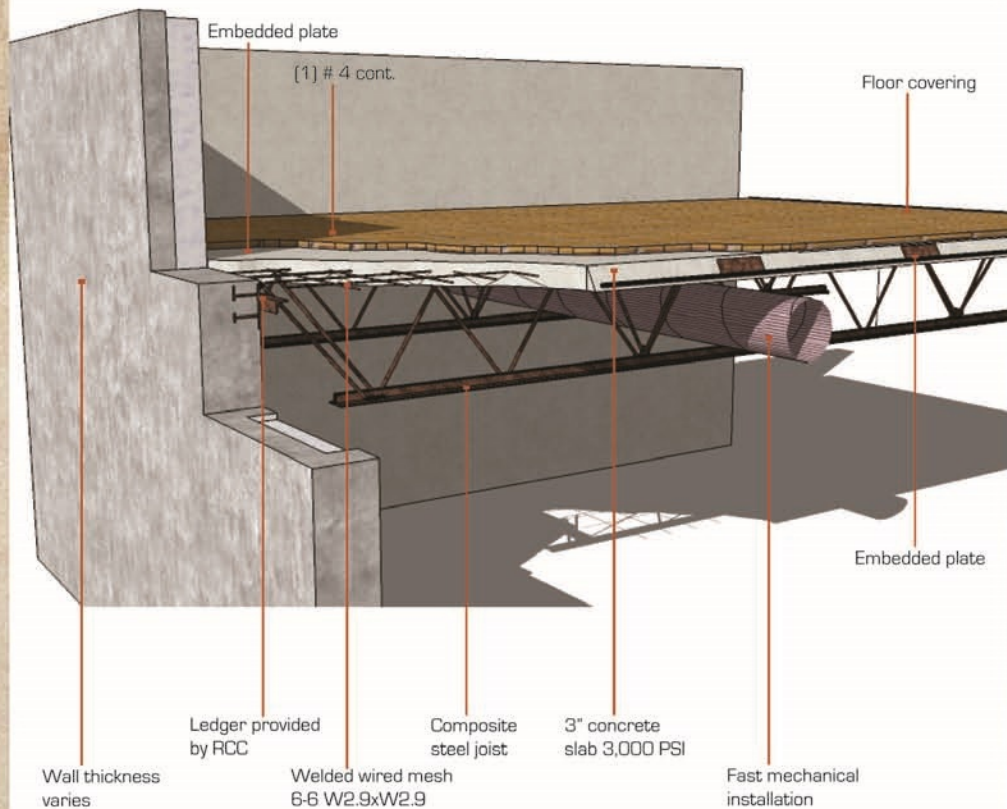
# Product Overview

## Floor and Roof System

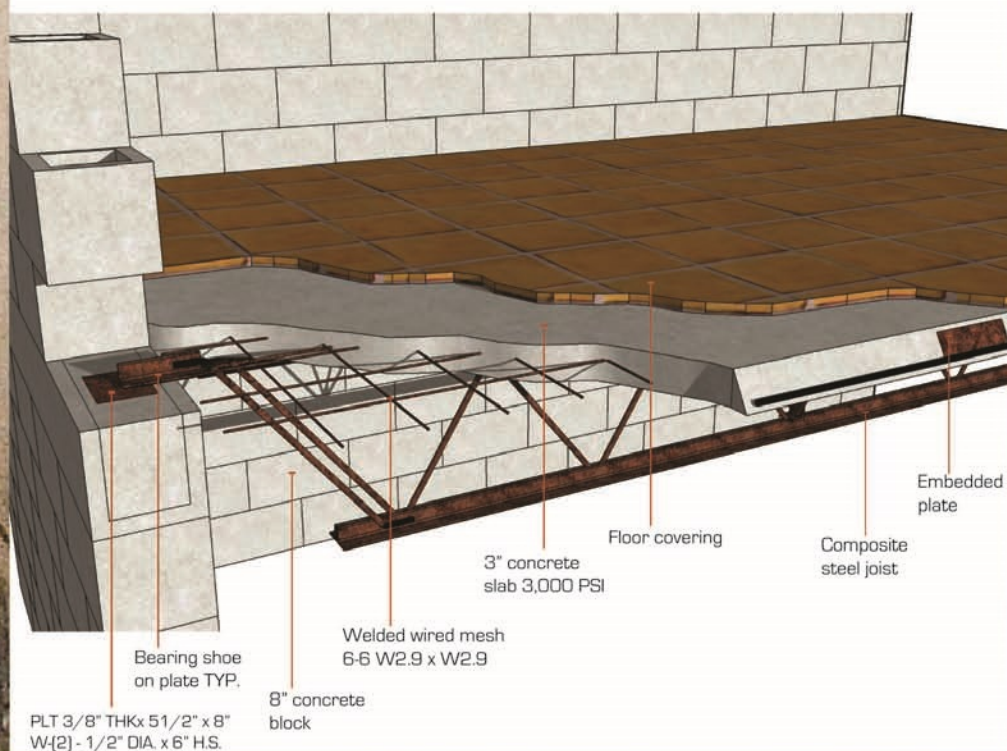
The **Floor and Roof System** produced by **Concrete Building Concepts** has proven to be stronger, more durable and faster to install while costing less. Produced off-site at our production facility, the **Floor and Roof System** can be easily installed on steel and concrete structures. A panel can form the roof of a building or can simultaneously form the ceiling of one level and the floor of the next. The steel joist furnished by Concrete Building Concepts provide ample space for the easy installation of ventilation ducts, and electrical and plumbing lines. The depth selected in the design can conform to the designer's requirements to facilitate duct installation, as well as ceiling attachments, while openings in any slab can be pre-cast at the factory.



## Floor System connection to GWS



## Floor System connection to BLK



# Cross Section Detail



## Floor System connection to Tilt-up

Tilt wall  
thickness varies

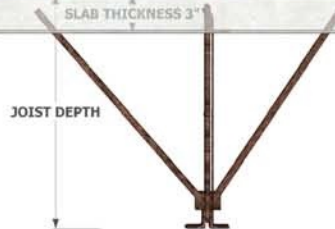
Number 5  
round bar 4" long

Welded wired mesh  
6-6 W2.9xW2.9

Embedded anchor plate

Ledger provided  
by Concrete Building Concepts

### Top of slab



## Clear span table

Depth	DL= 65 PSF/LL=40PSF	DL= 65PSF/LL=50PSF
9"	20'-0"	17'-0"
12"	25'-0"	22'-0"
17"	38'-0"	34'-0"
21"	42'-0"	38'-0"
24"	45'-0"	40'-0"

Clear span is the maximum length of a concrete panel without any central support. It depends on the joist height and can reach about 45 feet.



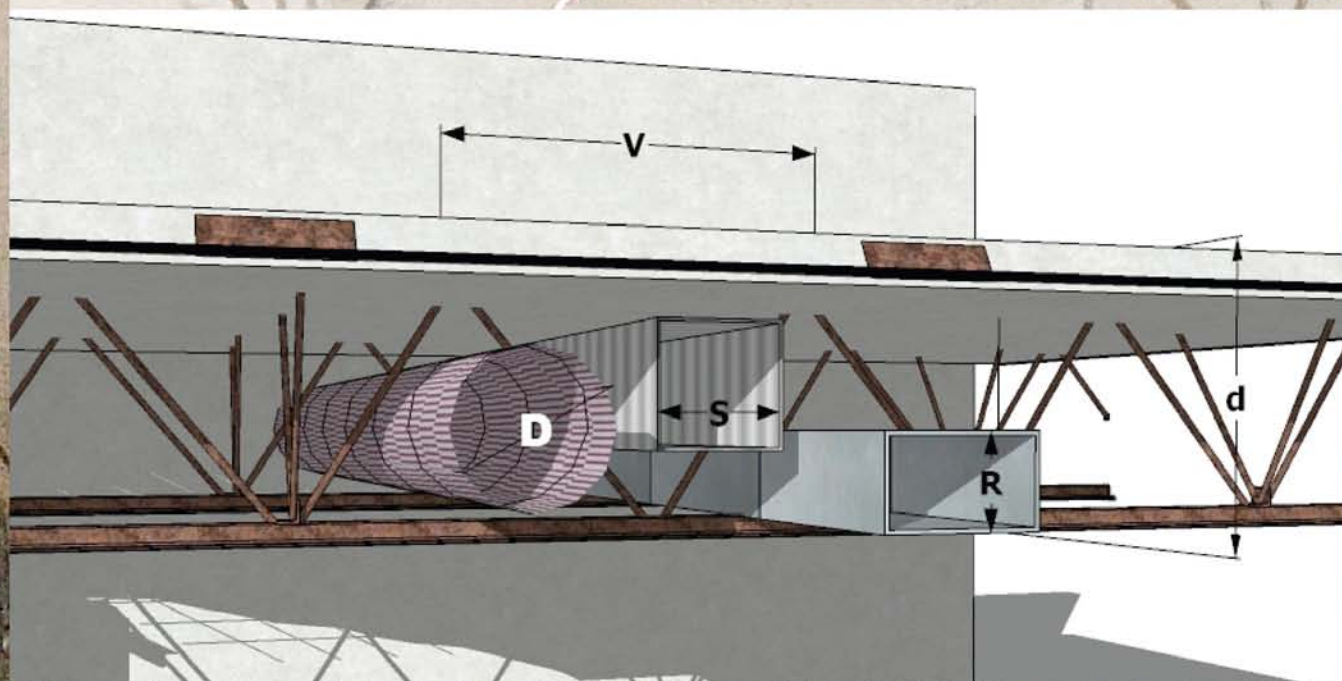
# Technical Specifications

The **Floor and Roof System** is comprised of double structural angles acting in tension with smooth round bars used for diagonal web members acting in shear, all welded together and embedded with a longitudinal member within a reinforced concrete slab designed to meet compressive forces from negative movements. All materials meet and exceed standards and specifications for local and national codes.

## Maximum duct openings

Depth	Diameter (D)	Square(S)	Rectangular (R)
9"	4"	3"x 3"	5"x 3"
12"	6"	5"x 5"	6"x 4"
15"	8"	6"x 6"	8"x 5"
17"	10"	8"x 8"	10"x 6"
19"	11 1/2"	8 1/2"x 8 1/2"	10"x 6"
21"	13"	10"x 10"	12"x 6"
24"	14"	11"x 11"	12"x 6"

The maximum duct openings are the spaces available for running ventilation systems and electrical and plumbing lines. They vary according to the joist depth.





flexibility

## Production Process

- > **Free proposal:** Concrete Building Concepts staff reviews the plans received from a prospective customer and provides a free proposal, providing each customer an exact cost for the project before it starts.
- > **Engineering:** Computer-aided design is used to engineer each floor and roof to meet the customer's specifications, with strength and precision being the highest priority. The engineering calculations are then provided to the customer to be used for approvals and permits.
- > **Form Layout:** Steel joists, welded wire mesh and additional reinforcing steel are all tied and chaired in steel cambered casting beds at a standard 8' width.
- > **Quality Control Inspection:** After all components are set in place, the materials are thoroughly inspected to ensure all required engineering standards are met.
- > **High Strength Concrete:** After a complete inspection, 3,000 psi concrete is poured and vibrated onto the casting bed to produce a **Floor and Roof System** panel.

efficient





speed

# Installation Process

> **Delivery:** Once the **Floor and Roof System** panels are completed, they are placed on flatbed trucks and transported to the building site for installation.

> **Precise Placement:** Individual floor and roof sections are carefully lowered into place using a crane.

> **Panel Fastening:** After the **Floor and Roof System** sections are in place, they are individually joined by a trained and qualified installation crew.

Plates embedded into the **Floor and Roof System** panels are welded together to secure the panels using a process engineered for strength and durability even under harsh conditions.

> **Ready for Finishes:** The **Floor and Roof System** can now accommodate owner-specified coverings and finishes. Engineering letters are provided to assure installation quality and eliminate detailed on-site inspections from the building department.

> **Fast Installation:** Can be completed in days and in most cases in just a few hours, in comparison to competing systems that can take several weeks.

The Royal Concrete Concepts **Floor and Roof System** can accommodate buildings up to four stories.





# Features and Benefits

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## End Customers

- Non-combustible
- Termite resistant
- Safe, rock solid construction
- Reduced life cycle cost
- Minimal sound transfer
- Energy efficient
- Reduced insurance cost

## Architects/Engineers

- Design flexibility
- Fully engineered
- Proven details with all systems
- Design and technical support

## Builders

- Cost effective
- Speed of construction
- Reduced on-site supervision
- Safe and clean job site

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