

# ULTRA-SPAN

TECHNOLOGIES INC.

Hollowcore Production Catalogue



Less cement,  
Unbeatable profit.

[www.ultraspan.ca](http://www.ultraspan.ca)

# Less cement, Unbeatable profit.



Ultra-Span's hollowcore extruder technology uses a concrete mix that produces a high quality slab with an optimal water/cement ratio. As a result the hollowcore slab cures in as little as six hours. No additives required.

Using up to 10% less cement than competing technologies means more money in your pocket.

# Hollowcore Production Catalogue

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# Technology Profile

For decades Ultra-Span engineers have been working to perfect the hollowcore concrete extrusion industry. Our commitment is to understand the factors that affect profits - for both business and technology.

Our extruders, concrete saws, casting pallets, supporting and material handling equipment and other manufactured equipment are the most efficient, durable and profitable you can buy.

Sounds pretty good - but what's our greatest achievement? A foolproof profit making system that applies our experience to

your mechanical operations. When you buy Ultra-Span machines you can make a great concrete product. When you install the Ultra-Span system your operation will make you money.

Perhaps you want to upgrade your existing hollowcore production operation. The bottom line advantages

that appeal include low maintenance, high volume and cost effective operation. The fact is that you would have the most advanced, extensively tested, longest running, reliable hollowcore production machinery in the world.



## Supplying the World

Ultra-Span works for established operations as well as new start-ups. Take advantage of the Ultra-Span technologies system. It has been applied in every corner of the world - and been a profit maker!

In as little as 5 months you can make your first product. We can help plan factory specifications, choose support machinery, assist in installation, train staff and be there, on-site or on-line, for continual technical support. With the uncertainties of business, Ultra-Span is committed to providing the producer with the technology and equipment that will make the operation a success.

Around the world, from South America to Europe, from the Middle East to Australia, from the Pacific Rim to China and encompassing North America - Canada, Mexico and the United States, Ultra-Span is performing. Performing in harsh extremes of environments like desert heat, severe winter cold, sweltering tropical rain forests and even extremes of altitude, from low lying plains to mountain heights all the while producing the same high quality products. Our machinery operates as anticipated, producing superior product without costly plant shutdowns or production stoppages.

## ISO Standard

To some an ISO standing is a badge of honour. Our ISO 9001-2000 is merely a by-product of our commitment to

our customers and to maintaining the industries' highest standard. We adhere to manufacturing and business practices beyond the international code - doing it right the first time saves everyone money.

## High Efficiency, Greater Profits

What will come from your Ultra-Span equipment - it's common to produce 300,000 square feet of product with little more than standard machine servicing. What's more, because of the low water to cement ratio you can expect reduced curing time - as short as 6 hours! Imagine the impact - the slab you produce today can be onsite and in place in the shortest time possible.

You'll be able to operate your Ultra-Span equipment with a very low production cost largely due to savings afforded by less cement, less labour and less maintenance.

We're proud that Ultra-Span equipment creates a superior hollowcore product while using less concrete mass than some of our nearest competitors. Ultimate control and use of "0" slump concrete extrusion with Ultra-Span equipment eliminates concrete sagging and bulging inside the cores.

Ultra-Span operations requires fewer employees than other systems to produce hollowcore product. With initial training, most functions of the Ultra-span equipment can be handled by local labour. Lower

labour costs, including the ability to hire from the local work force, will significantly increase your profit margin.

Maintenance costs for Ultra-Span equipment will be lower than those of other systems. You can attribute the savings on maintenance to better machinery, a simplified process, and industry leading training that allows employees a better understanding of the machinery and processes involved! And that's just the hard costs, imagine the savings by avoiding downtime - that's proactively adding to the revenue stream.

Infrastructure costs can be kept to a minimum. Ultra-Span equipment is installed and operates in various environments around the world - without the environmental controls that many other systems would require... some facilities are outdoors with only curing blankets, others require only minimal housing to ensure above freezing temperatures are maintained.

An efficient system is what everyone wants - and what Ultra-Span delivers. We can supply continuous efficient delivery from mixer to extruder with a self-propelled concrete delivery entry system, or use your existing mobile system.

Due to Ultra-Span's fast rate of extrusion and low water-cement ratio, the hollowcore product can cure in as short a time as 6 hours. In times of high demand, you can turn the beds around in 24, 12 or even 8 hours.

Patented 'Whisper' technology allows our vibration technology to operate at a conversational 85 decibels or less – a far cry from other vibration technologies that reach as high as 120 decibels. By using this quiet high frequency vibration process, Ultra-Span is able to produce a product that has higher compressive strength, no strand slippage and can use 10-15% less cement than other methods. The lower noise level provides a safer workplace without sacrificing high product quality.

### Meeting Your Customers Needs

Local architectural firms can design better, more cost efficient buildings – and win more contracts – by specifying your Ultra-Span hollowcore products. Our industry-leading depth-span-load ratio allows designers and contractors to save money on every floor. Longer spans with high load capacity means less column or support wall requirements and better

space utilization. Cores can be used for heating and ventilation ducting or for wiring and plumbing chases.

Whole new markets can be yours for the taking. With minimal modifications your Ultra-Span extruder can produce a variety of different concrete products – extruded concrete wall panels, or a variety of core configurations; some filled, others unfilled; are possible. Come to us with your needs and we'll customize a solution that meets them!

### Technical Assistance Where and When You Need it

We've gone to great lengths to produce suggested load tables and diagrams for your engineering and sales use. We've written production and maintenance procedures in plain language . It's part of our effort to provide years of trouble free operations and success.

Ultra-Span always provides technical support when and where it's needed, before, during and after the development of a successful operation. During the planning phase, our engineers can provide advice and technical assistance to configure your operation for maximum output and ease of expansion. Our engineers have supervised the building and installation phase of facilities around the world - we'll even provide coordination and installation services if requested! After you're up and running we'll be there providing ongoing operations and after sales service support for problem solving and strategic thinking. If it's a situation we've seen before, we'll tell or show you the solution, if it's a new problem we'll find a solution.

#### Bottom Line

Low maintenance, high volume and cost effective operation.

#### Quick Start-up Time

In as little as 5 months you can make your first product.

#### Ultra-Span Not Only Sells Equipment, We Broker Knowledge

Helping plan factory specifications, choose support machinery, assist in installation, train staff and be there, on-site or on-line, for continual technical support.

#### Adaptability

Different markets have different concerns, regulations, directives and environments - Ultra-Span can modify and enhance equipment design to meet any requirement, anywhere around the world.

#### Quiet Strength

Patented 'Whisper' technology allows our vibration technology to operate at a conversational 85 decibels or less while producing some of the industries' strongest materials...significantly stronger.

#### Better Product, Better Options

Our industry leading depth-span-load ratio allows designers and contractors to save money on every floor. Longer spans with high load capacity means less column or support wall requirements and better space utilization.

#### Conduits Built In

Hollowcores can be used for heating and ventilation ducting or wiring and plumbing chases.

#### Large Production Runs, Quick Turnaround, Reduced Inputs, Low Supervision

Curing times as short as 6 hours, less materials and less line workers than competitors systems.

#### Low Maintenance Costs

Lower than what other operations might spend.

#### Support/Related Machinery

Designed for specific tasks and to interact with each other for maximum efficiency (includes hollowcore saws, material delivery systems, production service vehicles and other machines... we can even custom design for your specific needs).

#### Expand Your Product Offerings

With minor modifications you can produce a wide variety of concrete products which have a number of applications.

#### A Partnership

Ultra-Span is famous for its high level of support, both hands-on and through well developed manual materials provided to customers.

#### Innovation

Our engineers are technical specialists, constantly looking for innovations that will benefit our customers, their machines and their operations.



Fewer moving parts.

We design all of our machines with durability, efficiency and ease of maintenance in mind. Our hollowcore extruders have less downtime and operate at a very low cost.

[www.ultraspan.ca](http://www.ultraspan.ca)

# EXT-300 Hollowcore Extruders

EXT-300 Extruders



Low noise extrusion (less than 85dB) with Ultra-Span's "Whisper" Technology.

Extrudes concrete at a rate of up to maximum 1.9 meters (75 inches) per minute, drive is easily adjustable to suit your concrete mixing and delivery systems speed and capacity.

High quality slabs: dimensionally accurate, superior finish, optimum

concrete density and excellent bond to strand.

Increased profits due to highly efficient trouble free production, reduced maintenance costs and reduced concrete consumption.

Zero slump concrete with optimum water/cement ratio reducing curing time in as little as 6 hours with controlled curing methods.

Longer spans with high load capacity.

Long term technical support along with innovative design and engineering expertise.

Highest international standards, an ISO 9001-2000 company.

Optional accessories allowing for project diversification.

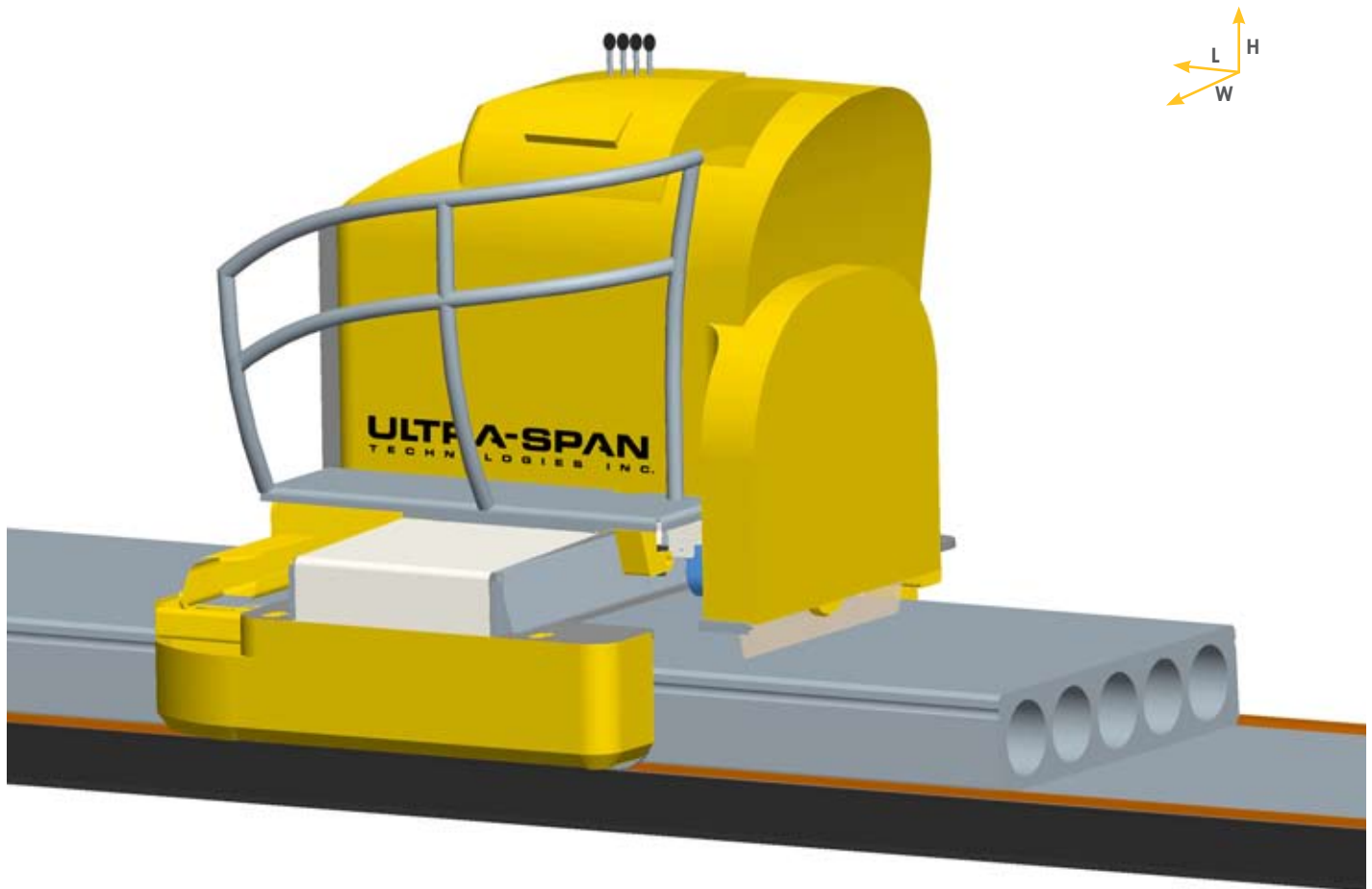
# EXT-300 Hollowcore Extruders



Model	EXT-300-10	EXT-300/15120DK	EXT-300/20120DK	EXT-300/25120DK	EXT-300/30120DK	EXT-300-40
Slab Size	10cm (4")	15cm (6")	20cm (8")	25cm (10")	30cm (12")	40cm (16")
<b>Dimensions</b>						
Length	315cm (124")					
Width	165cm (65")					
Height (from rail)	168cm (66")					193cm (76")
Weight (approximate)	2500kg (5500lb)	2812kg (6200 lb)	2950kg (6500 lb)	3040kg (6700 lb)	3093kg (6820 lb)	3950kg (8700 lb)
Hopper Capacity	1.1m <sup>3</sup> (1.4yd <sup>3</sup> ) (extensions available)					
Ribbon Augers (Patented)	12	8	6	5	4	4
Number of Drive Motors	2					
Total HP	15	30				50
Number of Gear Boxes	2 (ratio 25:1)					
<b>Vibration System</b>						
Electronic Frequency Inverter	1					
Top Vibrator	2					
Internal Vibrator	2	8	6	5	4	4
<b>Electrical Consumption (maximum amps)</b>						
575-600/60 HZ	30	40	46	51	56	76
440-480/60 HZ	37	48	56	62	68	93
415 /50 HZ	42	50	64	71	78	101
380 /50 HZ	44	55	69	77	85	110
Concrete Consumption (@ max. speed)	10.4 lineal m/m <sup>3</sup> (25.1 lineal ft/yd <sup>3</sup> )	8.6 lineal m/m <sup>3</sup> (21.5 lineal ft/yd <sup>3</sup> )	7.5 lineal m/m <sup>3</sup> (17.8 lineal ft/yd <sup>3</sup> )	6.2 lineal m/m <sup>3</sup> (14.7 lineal ft/yd <sup>3</sup> )	5.6 lineal m/m <sup>3</sup> (13.1 lineal ft/yd <sup>3</sup> )	4.0 lineal m/m <sup>3</sup> (9.8 lineal ft/yd <sup>3</sup> )
Hopper Level Sensor	Yes					
Variable Speed Drive	Yes					

Canada Patents 1280273 and 1308882  
Other patents pending and in other countries

# SCC-400 Cross Cut Saw



The Ultra-Span SCC-400 Saw is a compact "mini" saw designed to perform 90% of a producer's cutting needs by performing 90° cross cuts with extremely low maintenance costs.

Hydraulic controlled motions allow blade speeds to be preset during installation, virtually eliminating blade damage due to operator error, therefore greatly increasing blade life and reducing the cost per cut.

Dependability and durability are

designed and manufactured into the product, which is built to International ISO 9001-2000 Quality standards.

Increased blade life due to use of heavy duty bearings, solid state electrical system, a modern hydraulic system, etc., all designed and built for optimum performance, reliability, and ease of use while keeping maintenance costs extremely low.

Laser light guidance allows for fast setup and greater accuracy of cut.

Cross cutting is completed quickly and accurately from the operator's position. Adjustable motion stops allow fine tuning for blade cutting motion.

A steel roller cage is incorporated into the carriage which protects the carriage and frame components from dirt and debris, and provide an extra degree of safety for the operator.

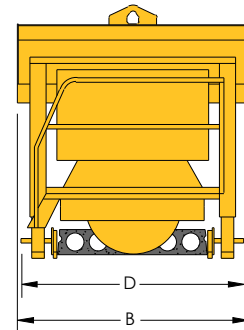
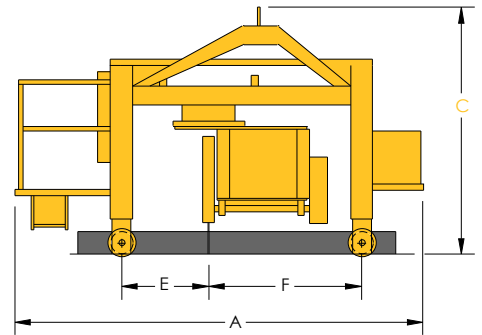
## Dimensions and Specifications

Dimensions	
Length	157cm (62")
Width	180cm (71")
Height	173cm (68")
Saw Motor	30HP, Voltage to Suit (380-600V)
Weight	900kg (2000 lb)
Depth of Cut	0-32cm (0-12")

Saw Blade	
Diameter	800mm (32")
Speed	1240 RPM (@ 60 hz)

Note: Minimum recommended spacing between beds is 60cm (24")

# SCR-300 Cross/Rip Cut Saw



The Ultra-Span SCR-300 Cross/Rip Cut saw is capable of performing 90° cross cuts and 180° rip cuts directly on the casting bed.

Increased versatility; one saw capable of cutting 15cm (6in) to 40cm (16in) slabs. Provides greater design flexibility for your customer.

Reduced cutting costs; elimination of triple handling and double cutting

the product. One person operation. Preset blade speed provides longer blade life and eliminates blade damage caused by operator error. Cross cuts accomplished in as little as one minute-5 seconds. Longitudinal rip cuts as rapid as 7.6m (25ft)/minute. Laser light guidance allows for fast setup and greater accuracy of cut.

Dependable and durable; manufactured to international quality

standards (ISO 9001-2000). Solid state electrical circuitry designed for optimum performance. All controls are interlocked eliminating any possibility of damage caused by activating two or more commands at the same time.

Safe working platform, excellent visibility. Extremely low maintenance.

## Dimensions and Specifications

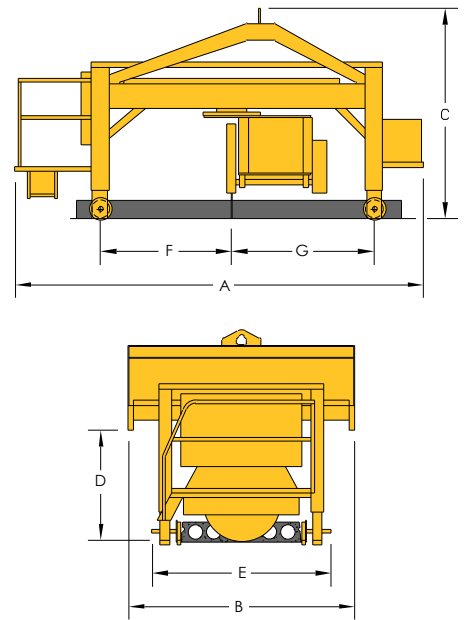
Dimensions	
<b>A</b>	374cm (147")
<b>B</b>	203cm (80")
<b>C</b>	160cm (63") Retracted 224cm (88") Extended
<b>D</b>	182cm (72")
<b>E</b>	104cm (41")
<b>F</b>	135cm (53")
<b>Saw Motor</b>	60 HP @ 380-600V
<b>Weight</b>	2495kg (5500 lb)
<b>Depth of Cut</b>	0-42cm (0-16")

Saw Blade	
<b>Diameter</b>	800-900mm (32-36")
<b>Speed</b>	1240 RPM

Note: Minimum recommended spacing between beds is 60cm (24")

# SMA-300 Multi-Angle Saw

SMA-300 Multi-Angle Saw



The Ultra-Span SMA-300 Multi-Angle Saw is capable of performing 90° cross cuts, 180° rip cuts, and angle cuts up to 45° left or right directly on the casting bed.

Increased versatility; one saw capable of cutting 15cm (6in) to 40cm (16in) slabs. Provides greater design flexibility for your customer.

Reduced cutting costs; elimination

of triple handling and double cutting the product. One person operation. Preset blade speed provides longer blade life and eliminates blade damage caused by operator error. Cross cuts accomplished in as little as one minute-5 seconds. Longitudinal rip cuts as rapid as 7.6m (25ft)/minute. Laser light guidance allows for fast setup and greater accuracy of cut.

Dependable and durable;

manufactured to international quality standards (ISO 9001-2000). Solid state electrical circuitry designed for optimum performance. All controls are interlocked eliminating any possibility of damage caused by activating two or more commands at the same time.

Safe working platform, excellent visibility. Extremely low maintenance.

## Dimensions and Specifications

Dimensions	
A	412cm (162")
B	220cm (87")
C	160cm (63") Retracted 224cm (88") Extended
D	111cm (44") Retracted
E	182cm (72")
F	134cm (53")
G	145cm (57")
Saw Motor	60 HP @ 380-600V
Weight	2950kg (6500 lb)
Depth of Cut	0-42cm (0-16")

Saw Blade	
Diameter	800-900mm (32-36")
Speed	1440 RPM

Note: Minimum recommended spacing between beds is 60cm (24")

# PSV-300 Production Services Vehicle



Cleaning the casting bed removes dust and debris from the casting bed's surface with a rotating brush which spans the full width of bed (including the rails). Water is applied ahead of the rotating brush to assist the cleaning process as well as keeping dust levels to a minimum. Final cleaning is provided by a rear mounted rubber wiper removing any residual water. Brush and wiper are raised when not in the cleaning mode.

Applying release agent (form oil) to the casting bed surface is achieved by a pump and tank which supplies a release agent to the rear mounted spray bar providing a light film of oil to

the casting bed surface.

Pulling multiple prestressing strands in a single pass with rear mounted strand hooks pull up to seven prestressing strands the full length of the casting bed.

Increased production as the time cycle between cutting/stripping the product and producing new product is significantly reduced (by as much as 50%), saving valuable time during the production process.

Reduced production costs; a two to five man operation has now been reduced to a one man operation. Quantity of release agent is substantially reduced as it is now

applied in exact amounts. Up to 7 prestressing strands can be quickly and easily pulled at the same time.

Extremely low maintenance insures smooth slab bottom year after year for your clients. Increases the life span of the casting beds.

Easy access to controls from driver's seat.

Designed with safety in mind; operator protected by overhead cage. Excellent visibility

Manufactured to international quality standards (ISO 9001-2000).

## Dimensions and Specifications

Dimensions	
Length	305cm (120")
Width	178cm (70")
Height (with tank)	250cm (99")
Height (without tank)	208cm (82")
Weight	1045kg (2300 lb)
Water Tank Capacity	52L (20gal)

Electrical Consumption (Maximm Amps)	
550-600/60 HZ	15
440-480/60 HZ	14
415/50 HZ	13
380/50 HZ	11

### Drive

- Electrical powered / hydraulically operated and controlled
- Variable Speed (forward & reverse)
- Travel 76m/min (250ft/min)
- Cleaning 46m/min (150ft/min)

# Erection and Lifting Clamps

## Erection Clamps

- Factor of Safety = 6
- Clamp can be used to erect 15cm - 30cm hollowcore slabs.
- The rated load per clamp is 4,545 Kilograms.
- Provisions on clamp for customer supplied safety sling.



Ultra-Span clamps are heavy duty and have very high load ratings. The erection clamp features a quick engagement and release design for continuous work flow.

Ultra-Span Erection clamps are specially designed to permit fast, efficient and safe erection of Ultra-Span hollowcore.

The thin wall gripping plates ensure

that the hollowcore slabs can be installed in the exact final location ready for grouting. Erected hollowcore slabs provide an immediate work platform.

## Lifting Clamps

### Size of Clamps

- 448 / 10120 10cm (4 inch)
- 648 / 15120 15cm (6 inch)
- 848 / 20120 20cm (8 inch)
- 1048 / 25120 25cm (10 inch)
- 1248 / 30120 30cm (12 inch)
- 1648 / 40120 40cm (16 inch)

### Factor of Safety = Six (6)

### Ratio load per clamp

- 10,000 pounds per clamp
- 4,545 kilograms per clamp



The clamps are heavy duty and have very high load ratings. A major advantage of the clamps is that they are designed with pivoting clamp faces making it possible for the clamp to match the cross section regardless of any concrete growth. The clamps feature quick engagement and

release design for smooth continuous work flow.

Lifting clamps are utilized in the production cycle of Hollowcore. The removal of the hollowcore from the casting bed is accomplished with a pair of lifting clamps. These clamps are

designed with sufficient strength to lift the hollowcore from the casting bed as well as break the suction between the hollowcore and the casting bed all while permitting a safe and efficient operation.

# Casting Beds



## Specifications

- A honeycomb frame that is more rigid due to more cross braces, provided with holes for under pallet heating.
- These pallets are manufactured in 5.59M (18.34ft) sections and of a design that make installation fast and easy.
- The pallet dish is 1/4" (6mm) thick material, resulting in a more stable, longer lasting structure with less vibration. The dish is welded to the base.
- Radius or chamfered rail design.
- Guaranteed tolerances and quality.

The casing beds are an important component in the production of hollowcore concrete. The smooth surface of the underside of the slab is a direct result of the accuracy of the casting bed surface.

Therefore, great care must be taken in laying the casting beds as their accuracy will affect the quality of the hollowcore slab.

In order to keep the production cycle as short as possible, heat curing can be used. The temperature of the slab must be carefully controlled during the curing period.

Heating commences 3-5 hours after extrusion. The rate of temperature increase should not exceed 22°C per hour and the maximum temperature of the slab must not exceed 65-70°C.

During the curing period the slab must be covered with a sheet membrane, such as polythene, to prevent rapid evaporation of the moisture in the slab.

Our casting beds are installed in all types of climates and have been proven to ensure quality and resistance to warping due to temperature fluctuations.

Less weight,  
Longer spans,  
Save up to 20%.

Hollowcore Slab Load Tables

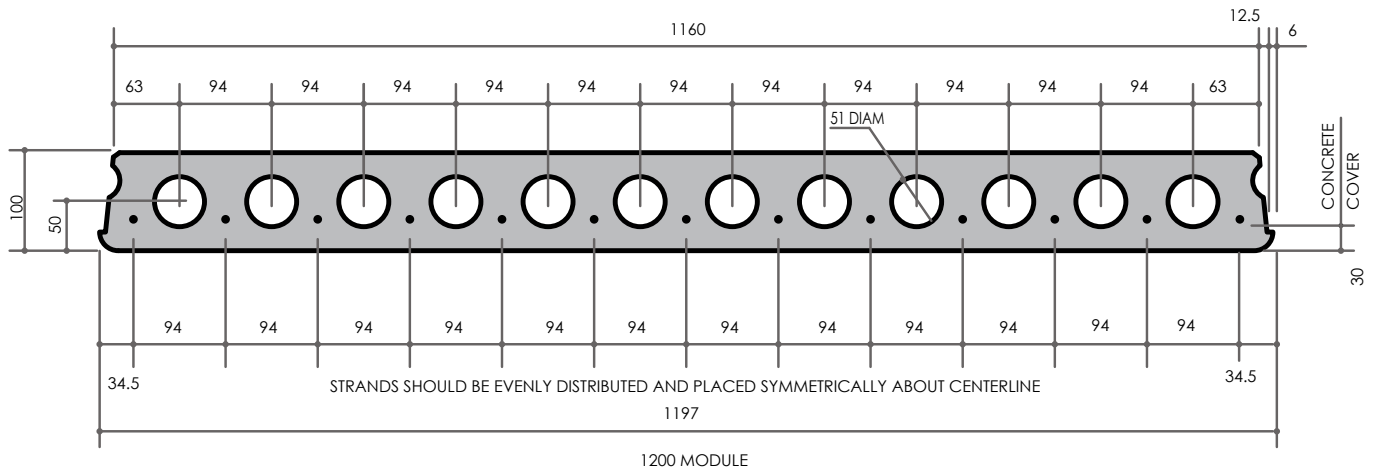


Ultra-Span's hollowcore extruder technology utilizes a section profile with optimal strength and weight properties, allowing for longer spans. By using longer spans architects can design buildings with up to 20% cost savings over other technologies.

# 10cm (4") Slab and Reinforcing Geometry

These tables are for general descriptive purposes only.

Actual design load tables are dependent on local codes and standards, material properties and product end usage.



## Load Table of Allowable Superimposed Service Loads in kN/sq. metre

Strand	Area of Steel (mm <sup>2</sup> )	φMn (kN-m)	Span in metres											
			2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	
5 - 9mm	275	26.6	26.4	16.5	11.0	7.8	5.6	4.2	3.2	2.4				
6 - 9mm	330	31.1	31.1	19.5	13.1	9.3	6.8	5.1	3.9	3.0	2.2			
5 - 11mm	370	33.6	33.7	21.1	14.3	10.1	7.5	5.6	4.3	3.3	2.6	2.0		
7 - 9mm	385	35.4	35.6	22.3	15.1	10.8	7.9	6.0	4.6	3.6	2.7	2.1		
8 - 9mm	440	38.0	37.7	24.1	16.3	11.6	8.6	6.5	5.1	4.0	3.1	2.5		
9 - 9mm	495	38.5	37.7	24.4	16.5	11.8	8.7	6.6	5.1	4.0	3.2	2.5	2.0	
7 - 11mm	518	37.4	37.7	23.7	16.0	11.4	8.5	6.4	5.0	3.9	3.0	2.4	1.9	
9 - 11mm	666	37.8	28.3	17.6	11.8	8.4	3.6	2.6	1.9	1.3	0.9	0.6	0.3	
11 - 11mm	814	38.2	28.6	17.8	12.0	8.5	3.7	2.6						

(Includes 0.5 kN/m<sup>2</sup> dead load)

Values below lower heavy line indicate web shear controls.

Values above upper heavy line indicate long-time camber less than zero with no superimposed service loads.

## Slab Selection and Material Properties

<b>Net Area</b>	92 947 mm <sup>2</sup>
<b>Moment of Inertia</b>	96.21 x 10 <sup>6</sup> mm <sup>4</sup>
<b>Centroid From Slab Bottom</b>	50 mm
<b>Section Modulus, Top</b>	1924 x 10 <sup>3</sup> mm <sup>3</sup>
<b>Section Modulus, Bottom</b>	1924 x 10 <sup>3</sup> mm <sup>3</sup>
<b>Web Width</b>	569 mm
<b>V/s Ratio</b>	37 mm
<b>Self Weight</b>	1.89 kN/m <sup>2</sup> 192.2 kg/m <sup>2</sup>

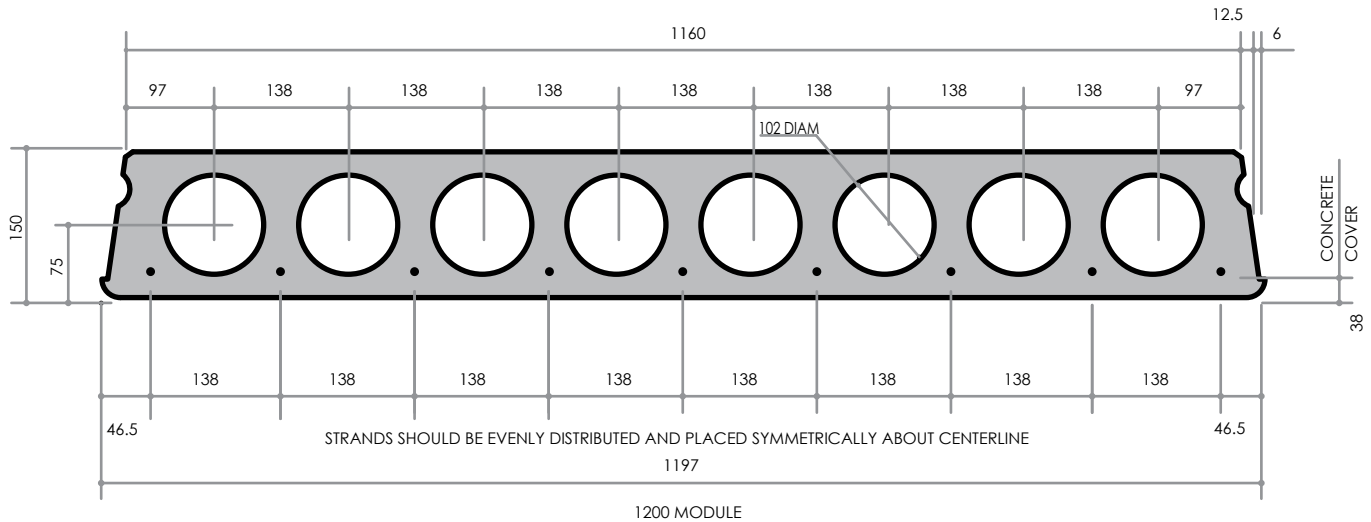
<b>Strength of Concrete</b>	40 MPa
<b>Strength at Release</b>	28 MPa
<b>Unit Weight of Concrete</b>	2400 kg/m <sup>3</sup>
<b>Ultimate Steel Strength</b>	1860 MPa
<b>Strand Jacking Stress</b>	1395 MPa
<b>Strand Type</b>	Low Relaxation
<b>Grout Joint Requirements</b>	472 m <sup>2</sup> /m <sup>3</sup>

Self weights are based on grouted section.

# 15cm (6") Slab and Reinforcing Geometry

These tables are for general descriptive purposes only.

Actual design load tables are dependent on local codes and standards, material properties and product end usage.



## Load Table of Allowable Superimposed Service Loads in kN/sq. metre

Strand	Area of Steel (mm <sup>2</sup> )	φMn (kN-m)	Span in metres												
			4	4.5	5	5.5	6	6.5	7	7.5	8	9	9.5		
5 - 9mm	275	46.0	7.4	5.5	4.2	3.2	2.4	1.8							
6 - 9mm	330	54.4	12.6	9.6	7.5	5.9	4.7	3.8	3.1	2.5					
5 - 11mm	370	59.7	14.0	10.7	8.4	6.7	5.3	4.3	3.5	2.9	2.3				
7 - 9mm	385	62.5	14.7	11.3	8.9	7.0	5.7	4.6	3.8	3.1	2.5				
8 - 9mm	440	70.3	16.7	12.9	10.2	8.1	6.6	5.4	4.4	3.6	3.0	2.1			
5 - 13mm	495	76.2	18.3	14.1	11.1	8.9	7.3	6.0	4.9	4.1	3.4	2.4			
8 - 11mm	592	89.5	19.6	16.9	13.4	10.8	8.8	7.3	6.0	5.1	4.3	3.0	2.6		
9 - 11mm	666	97.8	19.6	17.4	14.7	11.9	9.8	8.1	6.8	5.7	4.8	3.5	3.0		
7 - 13mm	693	95.4	19.6	17.4	14.3	11.6	9.5	7.8	6.6	5.5	4.6	3.3	2.8		
8 - 13mm	792	92.4	19.6	17.4	13.8	11.2	9.1	7.6	6.3	5.3	4.5	3.2	2.7		
9 - 13mm	891	89.6	15.9	12.3	9.6	7.7	6.2	5.1	4.2	3.4	2.8				

(Includes 0.5 kN/m<sup>2</sup> dead load)

Values below lower heavy line indicate web shear controls.

Values above upper heavy line indicate long-time camber less than zero with no superimposed service loads.

## Slab Selection and Material Properties

<b>Net Area</b>	109 526 mm <sup>2</sup>
<b>Moment of Inertia</b>	297.10 x 10 <sup>6</sup> mm <sup>4</sup>
<b>Centroid From Slab Bottom</b>	75 mm
<b>Section Modulus, Top</b>	3961 x 10 <sup>3</sup> mm <sup>3</sup>
<b>Section Modulus, Bottom</b>	3961 x 10 <sup>3</sup> mm <sup>3</sup>
<b>Web Width</b>	344 mm
<b>V/s Ratio</b>	43.1 mm
<b>Self Weight</b>	2.28 kN/m <sup>2</sup> 232.6 kg/m <sup>2</sup>

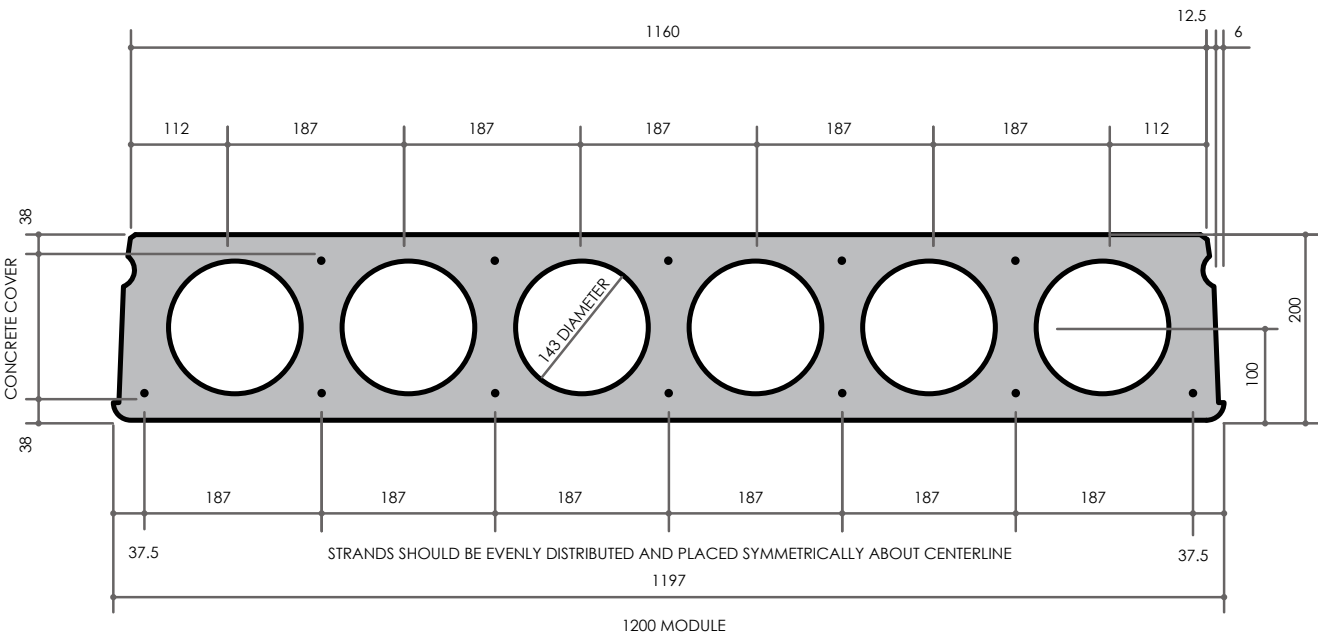
<b>Strength of Concrete</b>	40 MPa
<b>Strength at Release</b>	28 MPa
<b>Unit Weight of Concrete</b>	2400 kg/m <sup>3</sup>
<b>Ultimate Steel Strength</b>	1860 MPa
<b>Strand Jacking Stress</b>	1395 MPa
<b>Strand Type</b>	Low Relaxation
<b>Grout Joint Requirements</b>	235 m <sup>2</sup> /m <sup>3</sup>

Self weights are based on grouted section.

# 20cm (8") Slab and Reinforcing Geometry

These tables are for general descriptive purposes only.

Actual design load tables are dependent on local codes and standards, material properties and product end usage.



20cm (8") Load Table

## Load Table of Allowable Superimposed Service Loads in kN/sq. metre

Strand	Area of Steel (mm <sup>2</sup> )	φMn (kN-m)	Span in metres													
			4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5
4 - 9mm	220	55.7	8.9	6.6	5.0	3.8	2.8	2.1	1.6							
5 - 9mm	275	69.0	11.5	8.7	6.6	5.1	4.0	3.1	2.4	1.8	1.4					
3 - 13mm	297	73.2	12.3	9.3	7.2	5.6	4.4	3.4	2.7	2.1	1.6					
4 - 11mm	296	73.5	12.4	9.4	7.2	5.6	4.4	3.4	2.7	2.1	1.6					
6 - 9mm	330	82.0	14.0	10.7	8.3	6.5	5.1	4.1	3.2	2.6	2.0	1.6				
5 - 11mm	370	90.7	21.6	16.7	13.1	10.5	8.5	7.0	5.7	4.7	3.9	3.2	2.7	2.2		
7 - 9mm	385	94.7	22.7	17.5	13.8	11.1	9.0	7.4	6.1	5.0	4.2	3.5	2.9	2.4	2.0	
4 - 13mm	396	95.9	23.0	17.7	14.0	11.2	9.1	7.5	6.2	5.1	4.3	3.5	2.9	2.4	2.0	
6 - 11mm	444	107.4	25.4	20.1	15.9	12.8	10.4	8.6	7.1	6.0	5.0	4.2	3.5	3.0	2.5	2.1
5 - 13mm	495	117.8	25.4	22.3	17.6	14.2	11.6	9.6	8.0	6.7	5.7	4.8	4.1	3.4	2.9	2.5
7 - 11mm	518	123.6	25.4	22.6	18.6	15.0	12.3	10.2	8.5	7.2	6.1	5.1	4.4	3.7	3.2	2.7
6 - 13mm	594	138.7	25.4	22.6	20.3	17.1	14.1	11.7	9.8	8.3	7.0	6.0	5.1	4.4	3.8	3.3
7 - 13mm	693	158.7	25.4	22.6	20.3	18.5	16.4	13.7	11.5	9.8	8.3	7.2	6.2	5.3	4.6	4.0

(Includes 0.5 kN/m<sup>2</sup> dead load)

Values below lower heavy line indicate web shear controls.

Values above upper heavy line indicate long-time camber less than zero with no superimposed service loads.

## Slab Selection and Material Properties

<b>Net Area</b>	138 658 mm <sup>2</sup>
<b>Moment of Inertia</b>	683.03 x 10 <sup>6</sup> mm <sup>4</sup>
<b>Centroid From Slab Bottom</b>	100 mm
<b>Section Modulus, Top</b>	6830 x 10 <sup>3</sup> mm <sup>3</sup>
<b>Section Modulus, Bottom</b>	6830 x 10 <sup>3</sup> mm <sup>3</sup>
<b>Web Width</b>	314 mm
<b>V/s Ratio</b>	52.2 mm
<b>Self Weight</b>	2.87 kN/m <sup>2</sup> 292.18 kg/m <sup>2</sup>

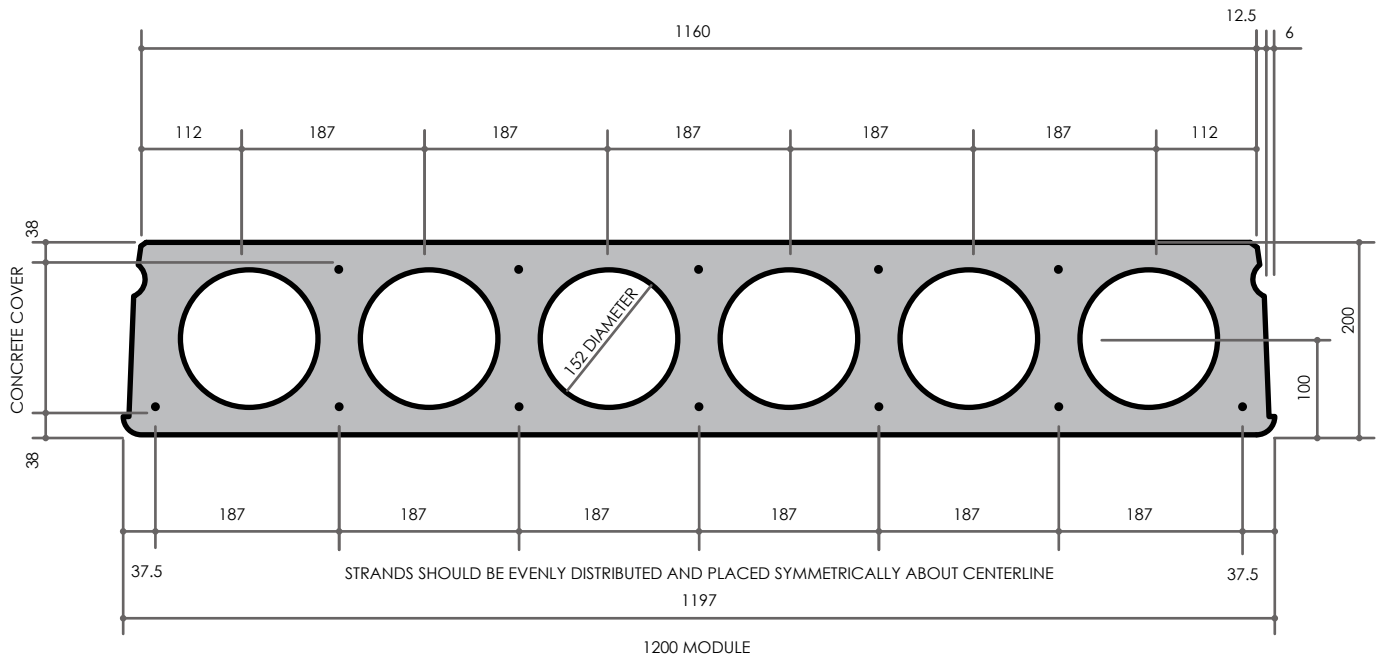
<b>Strength of Concrete</b>	40 MPa
<b>Strength at Release</b>	28 MPa
<b>Unit Weight of Concrete</b>	2400 kg/m <sup>3</sup>
<b>Ultimate Steel Strength</b>	1860 MPa
<b>Strand Jacking Stress</b>	1395 MPa
<b>Strand Type</b>	Low Relaxation
<b>Grout Joint Requirements</b>	241 m <sup>2</sup> /m <sup>3</sup>

Self weights are based on grouted section.

# 20cm (8") "Light" Slab and Reinforcing Geometry

These tables are for general descriptive purposes only.

Actual design load tables are dependent on local codes and standards, material properties and product end usage.



## Load Table of Allowable Superimposed Service Loads in kN/sq. metre

Strand	Area of Steel (mm <sup>2</sup> )	φMn (kN-m)	Span in metres													
			4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10	10.5
4 - 9mm	220	55.7	9.1	6.8	5.2	3.9	3.0	2.3	1.7							
5 - 9mm	275	69.0	11.7	8.8	6.8	5.3	4.2	3.3	2.6	2.0	1.6					
3 - 13mm	297	73.2	12.5	9.5	7.3	5.8	4.5	3.6	2.9	2.3	1.8					
4 - 11mm	296	73.5	12.6	9.5	7.4	5.8	4.6	3.6	2.9	2.3	1.8					
6 - 9mm	330	82.0	14.2	10.8	8.4	6.7	5.3	4.3	3.4	2.8	2.2	1.7				
5 - 11mm	370	90.7	21.0	16.9	13.3	10.7	8.7	7.1	5.9	4.9	4.1	3.4	2.9	2.4		
7 - 9mm	385	94.7	21.0	17.7	14.0	11.2	9.2	7.5	6.2	5.2	4.4	3.7	3.1	2.6	2.1	
4 - 13mm	396	95.9	21.0	17.9	14.2	11.4	9.3	7.7	6.4	5.3	4.4	3.7	3.1	2.6	2.2	1.8
6 - 11mm	444	107.4	21.0	18.7	16.1	13.0	10.6	8.8	7.3	6.2	5.2	4.4	3.7	3.2	2.7	2.3
5 - 13mm	495	117.8	21.0	18.7	16.8	14.4	11.8	9.8	8.2	6.9	5.9	5.0	4.3	3.6	3.1	2.6
7 - 11mm	518	123.6	21.0	18.7	16.8	15.2	12.5	10.4	8.7	7.4	6.2	5.3	4.6	3.9	3.3	2.9
6 - 13mm	594	138.6	21.0	18.7	16.8	15.3	14.1	11.9	10.0	8.5	7.2	6.2	5.3	4.6	4.0	3.4
7 - 13mm	693	158.2	21.0	18.7	16.8	15.3	14.1	13.0	11.6	9.9	8.5	7.3	6.3	5.5	4.8	4.2

(Includes 0.5 kN/m<sup>2</sup> dead load)

Values below lower heavy line indicate web shear controls.

Values above upper heavy line indicate long-time camber less than zero with no superimposed service loads.

## Slab Selection and Material Properties

<b>Net Area</b>	126 147 mm <sup>2</sup>
<b>Moment of Inertia</b>	650.68 x 10 <sup>6</sup> mm <sup>4</sup>
<b>Centroid From Slab Bottom</b>	100 mm
<b>Section Modulus, Top</b>	6507 x 10 <sup>3</sup> mm <sup>3</sup>
<b>Section Modulus, Bottom</b>	6507 x 10 <sup>3</sup> mm <sup>3</sup>
<b>Web Width</b>	260 mm
<b>V/s Ratio</b>	47.8 mm
<b>Self Weight</b>	2.62 kN/m <sup>2</sup> 267.8 kg/m <sup>2</sup>

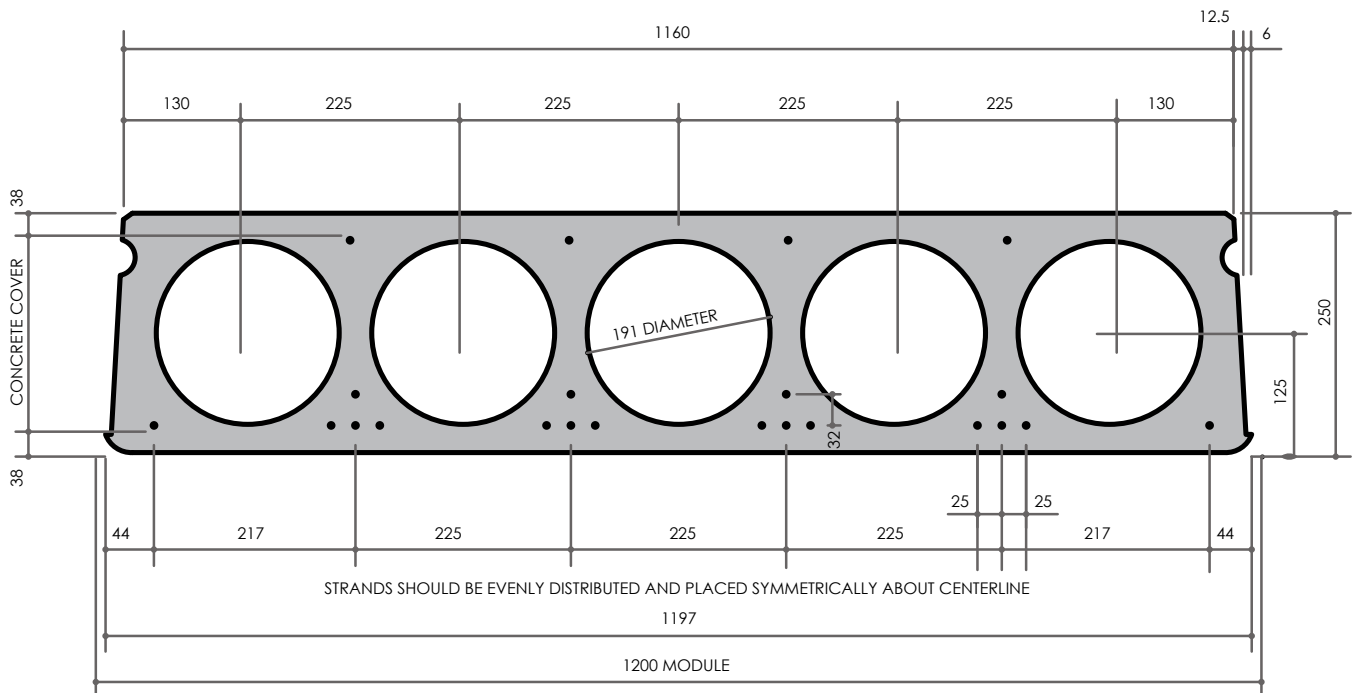
<b>Strength of Concrete</b>	40 MPa
<b>Strength at Release</b>	28 MPa
<b>Unit Weight of Concrete</b>	2400 kg/m <sup>3</sup>
<b>Ultimate Steel Strength</b>	1860 MPa
<b>Strand Jacking Stress</b>	1395 MPa
<b>Strand Type</b>	Low Relaxation
<b>Grout Joint Requirements</b>	241 m <sup>2</sup> /m <sup>3</sup>

Self weights are based on grouted section.

# 25cm (10") Slab and Reinforcing Geometry

These tables are for general descriptive purposes only.

Actual design load tables are dependent on local codes and standards, material properties and product end usage.



25cm (10") Load Table

## Load Table of Allowable Superimposed Service Loads in kN/sq. metre

Strand	Area of Steel (mm <sup>2</sup> )	φMn (kN-m)	Span in metres																		
			6	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15
4 - 9mm	219	74.1	4.3	3.3	2.5	1.9															
6 - 11mm	329	109.6	7.3	5.9	4.8	3.9	3.2	2.6	2.0	1.6											
4 - 13mm	395	129.1	9.0	7.4	6.1	5.0	4.1	3.4	2.8	2.3	1.9	1.5									
8 - 11mm	438	144.1	14.5	12.0	10.1	8.5	7.2	6.1	5.2	4.5	3.8	3.3	2.8	2.4	2.0						
6 - 9mm	445	144.6	14.6	12.1	10.1	8.5	7.2	6.2	5.3	4.5	3.8	3.3	2.8	2.4	2.0						
10 - 11mm	548	177.4	15.4	14.3	12.9	11.0	9.4	8.0	6.9	6.0	5.2	4.5	3.9	3.4	3.0	2.5	2.2				
6 - 13mm	592	188.5	15.4	14.3	13.3	11.8	10.1	8.7	7.5	6.5	5.7	4.9	4.3	3.8	3.3	2.8	2.5	2.1	1.8		
8 - 9mm	594	188.9	15.4	14.3	13.3	11.8	10.1	8.7	7.5	6.5	5.7	5.0	4.3	3.8	3.3	2.9	2.5	2.1	1.8		
4+4 - 9+13mm	614	195.6	15.4	14.3	13.3	12.3	10.6	9.1	7.9	6.8	6.0	5.2	4.6	4.0	3.5	3.0	2.6	2.3	2.0		
10 - 9mm	742	231.2	15.4	14.3	13.3	12.4	11.6	10.9	9.7	8.5	7.5	6.6	5.8	5.1	4.5	4.0	3.5	3.1	2.7	2.4	2.1
8 - 13mm	768	239.1	15.4	14.3	13.3	12.4	11.6	10.9	10.1	8.9	7.8	6.9	6.1	5.4	4.7	4.2	3.7	3.3	2.9	2.6	2.2
5+5 - 9+13mm	790	244.1	15.4	14.3	13.3	12.4	11.6	10.9	10.3	9.1	8.0	7.0	6.2	5.5	4.9	4.3	3.8	3.4	3.0	2.7	2.3
10 - 13mm	987	293.9	15.4	14.3	13.3	12.4	11.6	10.9	10.3	9.8	9.3	8.9	7.9	7.1	6.3	5.7	5.1	4.5	4.1	3.6	3.3

(Includes 0.5 kN/m<sup>2</sup> dead load)

Values below lower heavy line indicate web shear controls.

Values above upper heavy line indicate long-time camber less than zero with no superimposed service loads.

## Slab Selection and Material Properties

<b>Net Area</b>	149 262 mm <sup>2</sup>
<b>Moment of Inertia</b>	1 252.3 x 10 <sup>6</sup> mm <sup>4</sup>
<b>Centroid From Slab Bottom</b>	125 mm
<b>Section Modulus, Top</b>	10 018 x 10 <sup>3</sup> mm <sup>3</sup>
<b>Section Modulus, Bottom</b>	10 018 x 10 <sup>3</sup> mm <sup>3</sup>
<b>Web Width</b>	217 mm
<b>V/s Ratio</b>	55.3 mm
<b>Self Weight</b>	3.15 kN/m <sup>2</sup> 320.8 kg/m <sup>2</sup>

<b>Strength of Concrete</b>	40 MPa
<b>Strength at Release</b>	28 MPa
<b>Unit Weight of Concrete</b>	2400 kg/m <sup>3</sup>
<b>Ultimate Steel Strength</b>	1860 MPa
<b>Strand Jacking Stress</b>	1395 MPa
<b>Strand Type</b>	Low Relaxation
<b>Grout Joint Requirements</b>	161 m <sup>2</sup> /m <sup>3</sup>

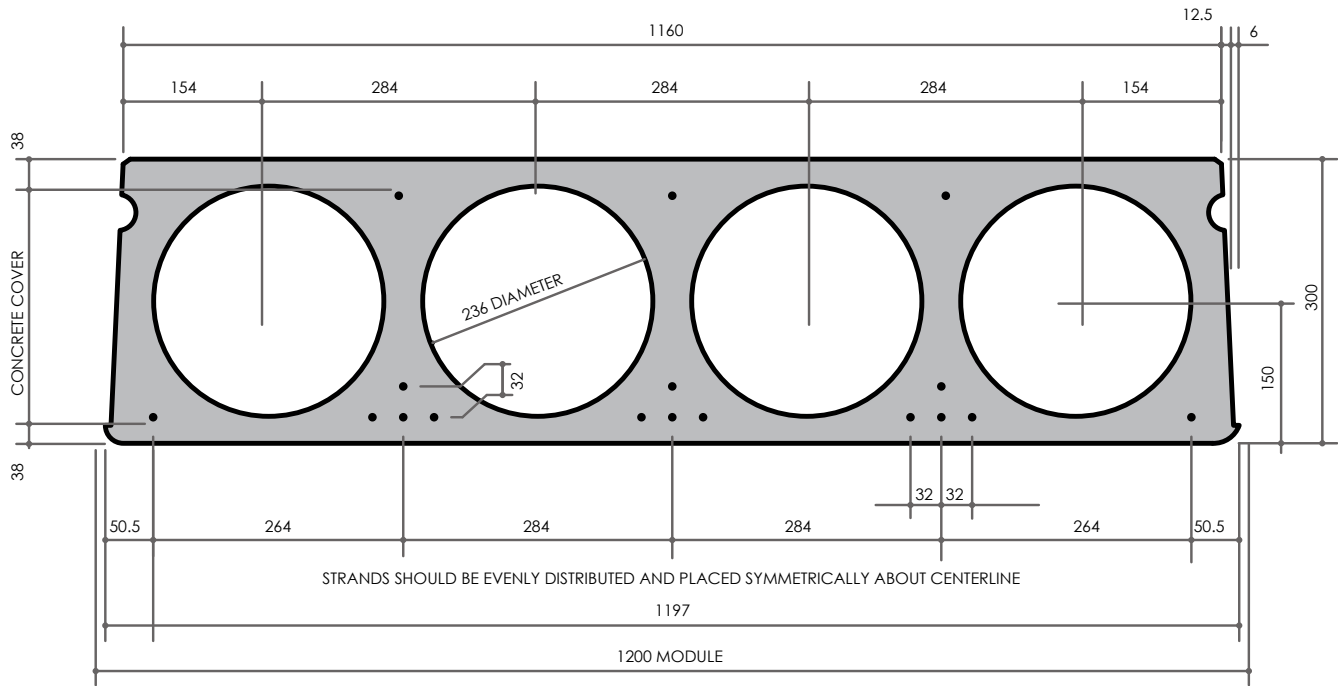
Self weights are based on grouted section.

# 30cm (12") Slab and Reinforcing Geometry

These tables are for general descriptive purposes only.

Actual design load tables are dependent on local codes and standards, material properties and product end usage.

30cm (12") Load Table



## Load Table of Allowable Superimposed Service Loads in kN/sq. metre

Strand	Area of Steel (mm <sup>2</sup> )	φMn (kN-m)	Span in metres															
			9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5
6 - 9mm	330	137.3	2.7	2.2	1.7													
5 - 11mm	371	152.6	3.3	2.7	2.2	1.7	1.3											
4 - 13mm	395	162.3	3.7	3.0	2.5	2.0	1.6											
5 - 13mm	495	200.7	7.7	6.7	5.8	5.0	4.3	3.7	3.2	2.8	2.4							
7 - 11mm	519	210.3	8.2	7.1	6.2	5.4	4.6	4.0	3.5	3.0	2.6	2.2						
6 - 13mm	594	238.2	9.7	8.4	7.3	6.4	5.6	4.9	4.3	3.8	3.3	2.8	2.5	2.1				
8 - 11mm	594	238.5	9.7	8.4	7.3	6.4	5.6	4.9	4.3	3.8	3.3	2.9	2.5	2.1	1.8			
7 - 13mm	693	274.9	11.5	10.1	8.9	7.8	6.9	6.1	5.4	4.7	4.2	3.7	3.2	2.9	2.5	2.2		
10 - 11mm	742	293.2	12.5	10.9	9.6	8.5	7.5	6.6	5.9	5.2	4.6	4.1	3.6	3.2	2.8	2.5	2.2	
8 - 13mm	792	310.6	13.4	11.7	10.3	9.1	8.1	7.2	6.4	5.7	5.1	4.5	4.0	3.6	3.2	2.8	2.5	2.2
11 - 11mm	816	319.7	13.4	12.2	10.7	9.5	8.4	7.5	6.7	5.9	5.3	4.7	4.2	3.7	3.3	2.9	2.6	2.3
9 - 13mm	891	345.0	13.4	12.7	11.8	10.4	9.3	8.3	7.4	6.6	5.9	5.3	4.7	4.2	3.8	3.4	3.0	2.7
10 - 13mm	990	378.0	13.4	12.7	12.1	11.5	10.4	9.3	8.3	7.5	6.7	6.0	5.4	4.9	4.4	4.0	3.6	3.2
11 - 13mm	1089	409.1	13.4	12.7	12.1	11.5	11.0	10.3	9.2	8.3	7.5	6.8	6.1	5.5	5.0	4.5	4.1	3.7

(Includes 0.5 kN/m<sup>2</sup> dead load)

Values below lower heavy line indicate web shear controls.

Values above upper heavy line indicate long-time camber less than zero with no superimposed service loads.

## Slab Selection and Material Properties

Net Area	165 511 mm
Moment of Inertia	2 049.8 x 10 <sup>6</sup> mm <sup>4</sup>
Centroid From Slab Bottom	150 mm
Section Modulus, Top	13 665 x 10 <sup>3</sup> mm <sup>3</sup>
Section Modulus, Bottom	13 665 x 10 <sup>3</sup> mm <sup>3</sup>
Web Width	200 mm
V/s Ratio	59.7 mm
Self Weight	3.51 kN/m <sup>2</sup> 358.44 kg/m <sup>2</sup>

Strength of Concrete	40 MPa
Strength at Release	28 MPa
Unit Weight of Concrete	2400 kg/m <sup>3</sup>
Ultimate Steel Strength	1860 MPa
Strand Jacking Stress	1395 MPa
Strand Type	Low Relaxation
Grout Joint Requirements	134 m <sup>2</sup> /m <sup>3</sup>

Self weights are based on grouted section.



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