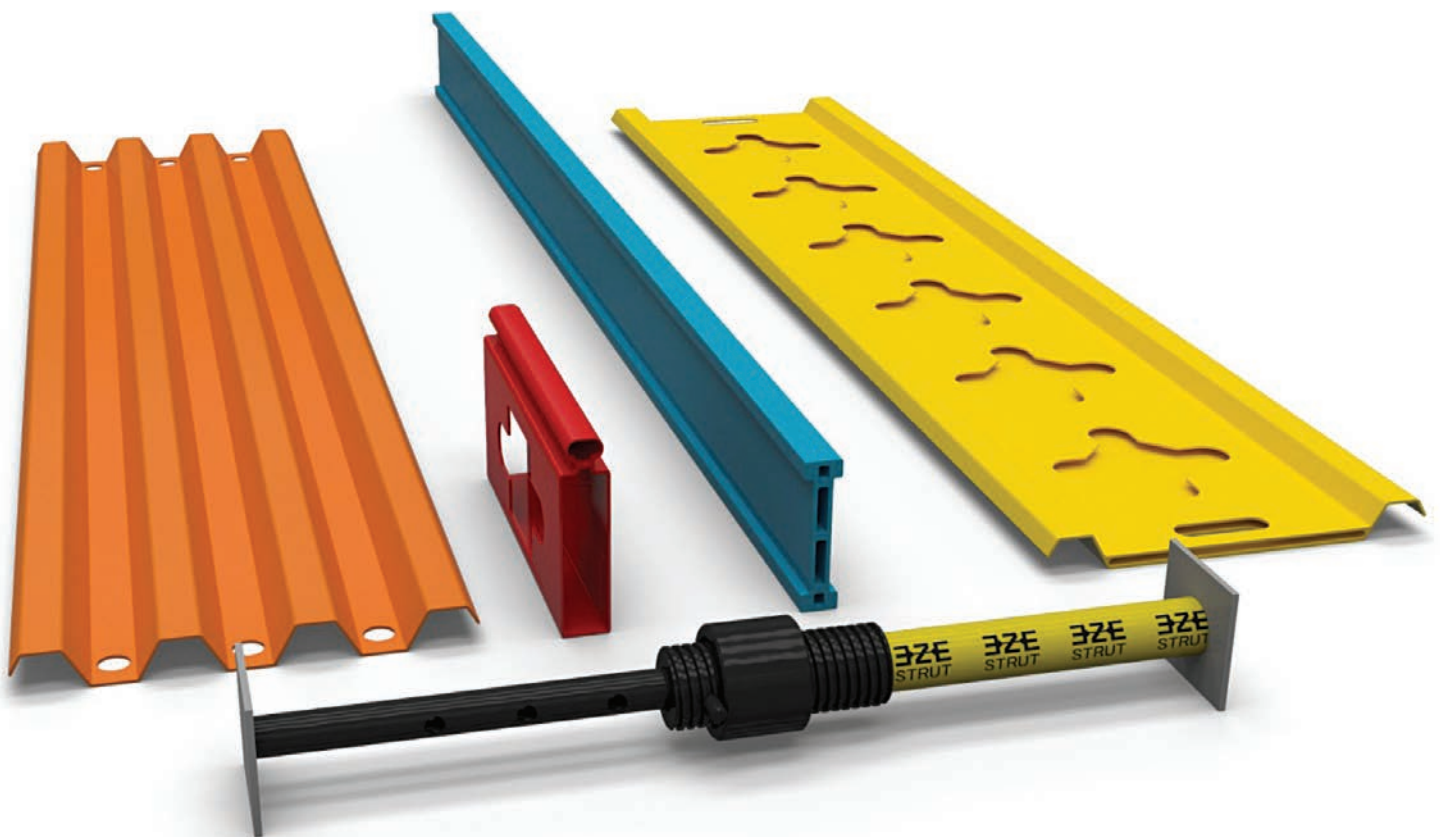


TECHNICAL DATA SHEET

EZE Shoring System Technical Data



EZE Shoring

Composite Trench Lining System

The EZE Shoring composite trench lining system is the world's first non-metallic trench lining system. Manufactured by Exel Composites UK, this high performance composite system comprises of only five different components.

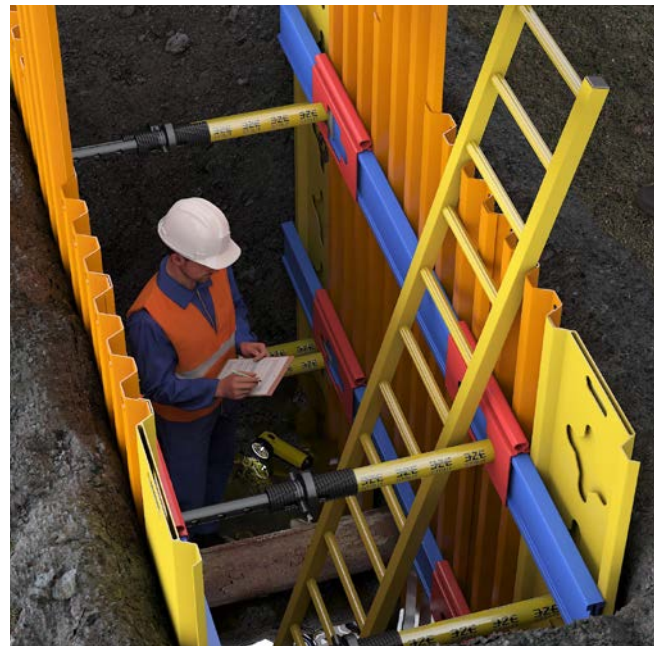
The lightweight, easy to assemble system uses composite struts (where necessary) to make it **100% non-conductive**. This makes it the safest, easiest and lightest trench lining product available for the installation of underground utilities – gas, water, and electricity. (Steel struts can also be utilised in the system as an alternative option if conductivity is not a critical factor.)

EZE Shoring offers **simplicity**, with no pins, clips, slings, pumps or hydraulics to worry about. Each individual component weighs less than 25kg.

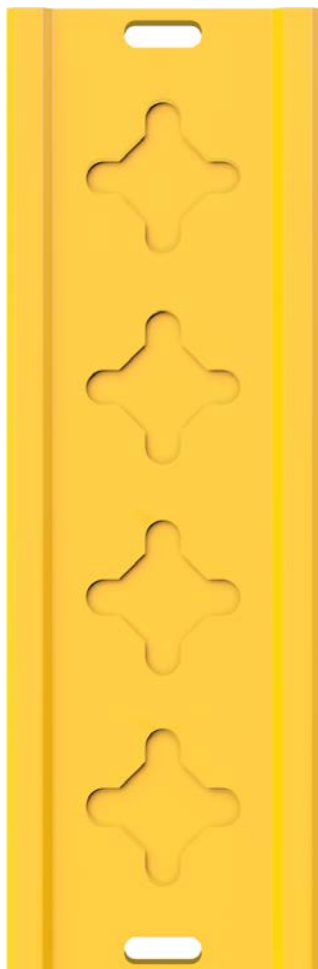
Easily fitting into a 'transit van' for rapid deployment if required, the system is very flexible in accommodating different depths and trench lengths.

EZE Shoring is **patent and design protected** in the UK and Internationally.

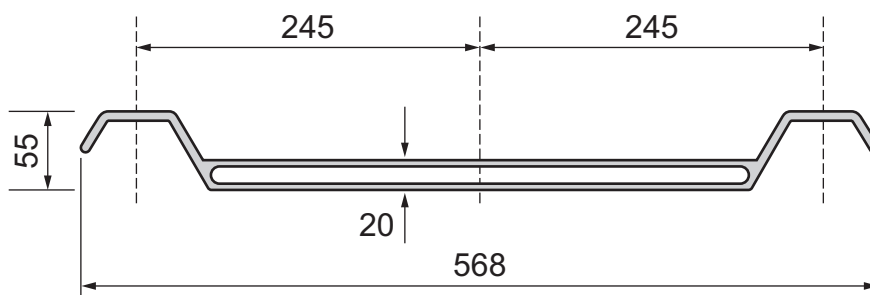
EZE Shoring can be utilised in excavations 2.52m deep and in widths up to 1.7m wide and up to 2.5m wide with metallic props if required.



EZE Hub Pile



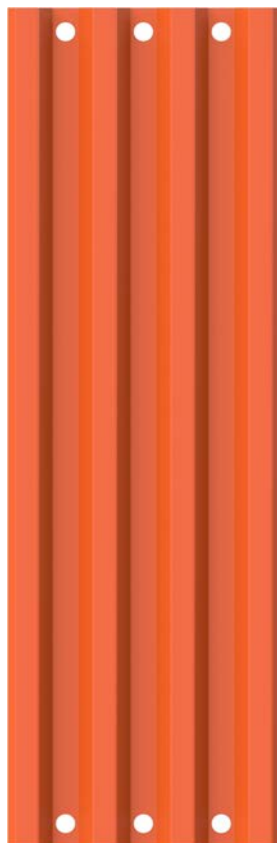
A pair of EZE Shoring Hub piles along with two adjustable struts are 1st lowered into the excavation. See page 32 for the installation guide.



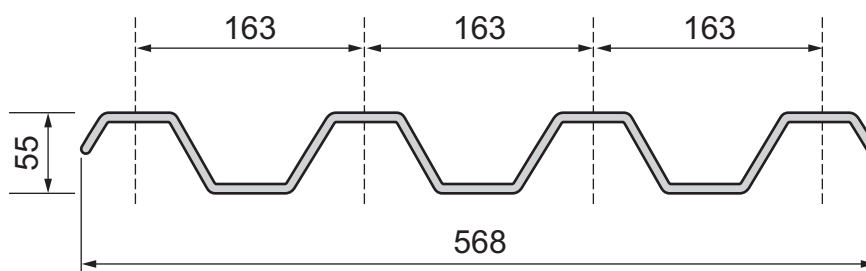
EZE Hub Pile	
Allowable Bending Moment	2kNm per pile
	3.5kNm per run
Section Modulus	29991mm ³
Characteristic Full Section Young's Modulus*	18GPa

Description	Code	Weight (approx.)
EZE Hub Piles 1380mm	EZEH 1380	10kg
EZE Hub Piles 1760mm	EZEH 1760	12.7kg
EZE Hub Piles 2140mm	EZEH 2140	15.4kg
EZE Hub Piles 2520mm	EZEH 2520	18.15kg

EZE Infill Pile



EZE Shoring Infill Piles are used between the Eze Shoring Hub Piles, supported by the walers / sliders and struts. See page 32 for the installation guide



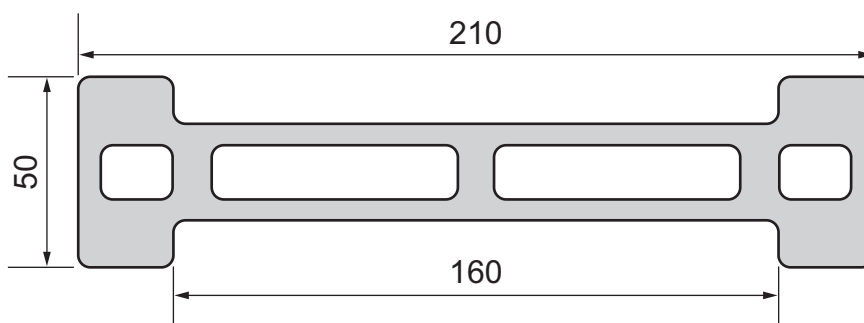
EZE Infill Pile	
Allowable Bending Moment	3kNm per pile
	5.2kNm per run
Section Modulus	43348mm ³
Characteristic Full Section Young's Modulus*	17GPa

Description	Code	Weight (approx.)
EZE Infill Piles 1380mm	EZEI 1380	7.1kg
EZE Infill Piles 1760mm	EZEI 1760	9kg
EZE Infill Piles 2140mm	EZEI 2140	11kg
EZE Infill Piles 2520mm	EZEI 2520	13kg

EZE Waler



Walers are used to support the Eze Shoring Hub Panel and Corrugated Infill panels, supported by the struts located into the sliders. See page 32 for the installation guide



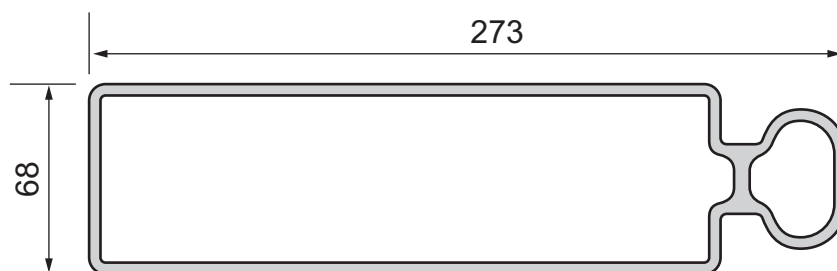
EZE Waler	
Allowable Bending Moment	6kNm
Section Modulus	28412mm ³
Characteristic Full Section Young's Modulus*	34GPa

Description	Code	Weight (approx.)
EZE Waler Piles 1500mm	EZEW 1500	13kg
EZE Waler Piles 2000mm	EZEW 2000	17kg
EZE Waler Piles 2500mm	EZEW 2500	21kg
EZE Waler Piles 3000mm	EZEW 3000	25kg

EZE Slider



Sliders are located onto the Walers and are used to support the Eze Shoring Hub Piles and Infill panels, supported by the struts located into the sliders. See page 32 for the installation guide

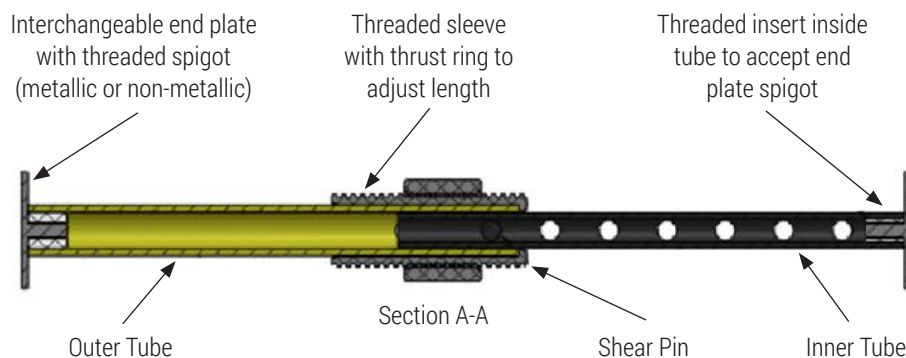
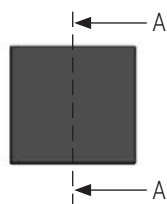


EZE Slider	
Allowable Bending Moment	N/A
Section Modulus	61533mm ³
Characteristic Full Section Young's Modulus*	23GPa

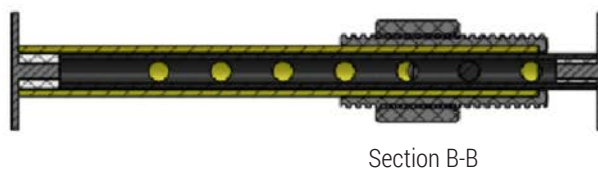
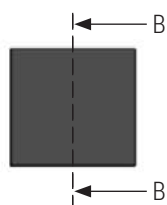
Description	Code	Weight (approx.)
EZE Shoring Slider 460mm	EZES 560	2.6kg

EZE Strut

Fully Open



Fully Closed



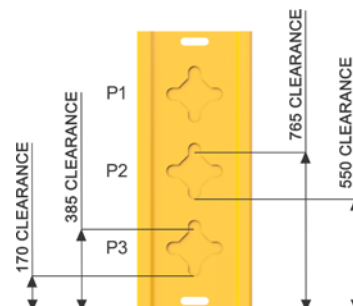
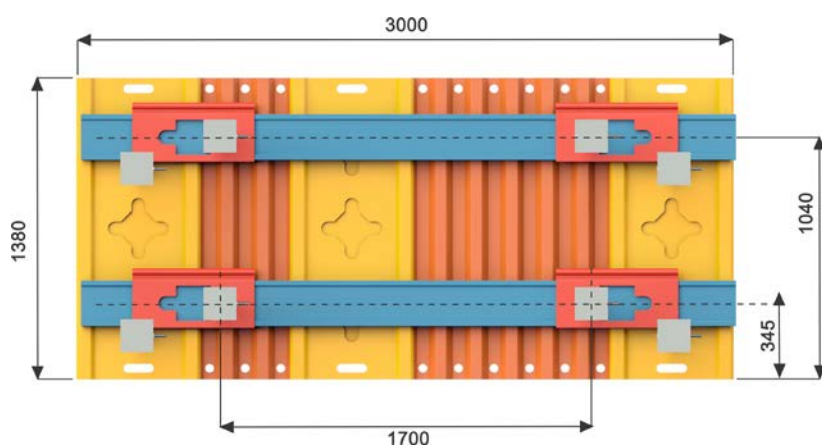
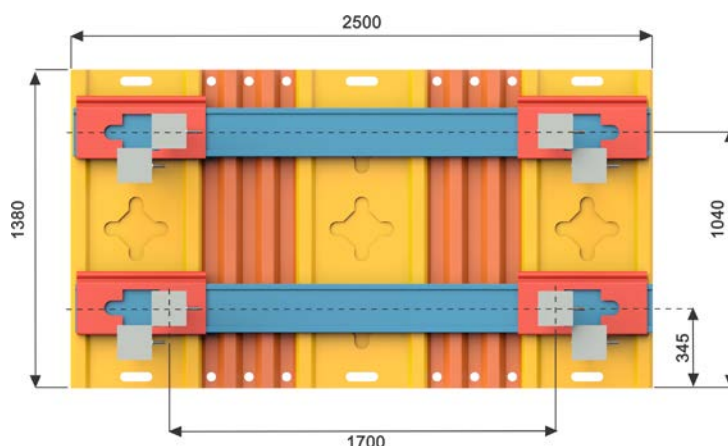
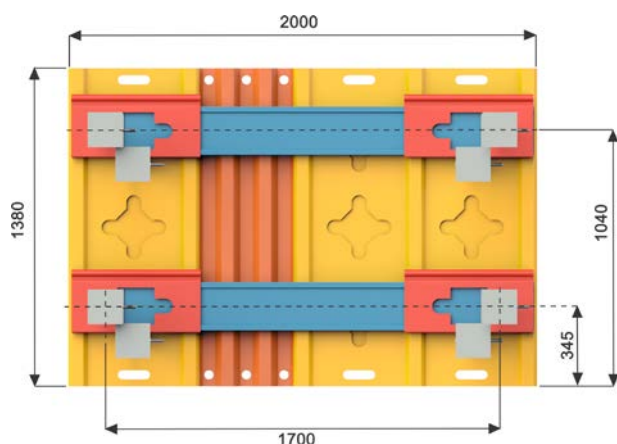
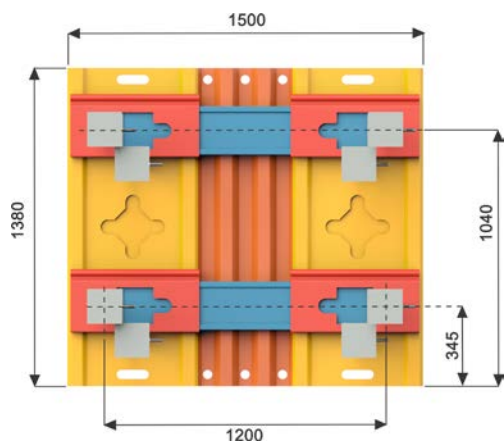
EZE Strut	
EZE Strut Type 1	511mm / 711mm (Open/Closed)
EZE Strut Type 2	706mm / 1107mm (Open/Closed)
EZE Strut Type 3	1041mm / 1741mm (Open/Closed)
Composite Strut	30kN SWL (Open/Closed)

Note: For standard use the system takes a metallic prop with a 150mm base plate on each end.

Description	Code	SWL	Weight (approx.)
EZE Strut (Composite) – Type 1	EZEC ST1	30kN	6kg
EZE Strut (Composite) – Type 2	EZEC ST2	30kN	7kg
EZE Strut (Composite) – Type 3	EZEC ST3	30kN	8kg
EZE Strut (Steel) – Type 1	EZEC ST4	30kN	8kg
EZE Strut (Steel) – Type 2	EZEC ST5	30kN	9kg
EZE Strut (Steel) – Type 3	EZEC ST6	30kN	10kg

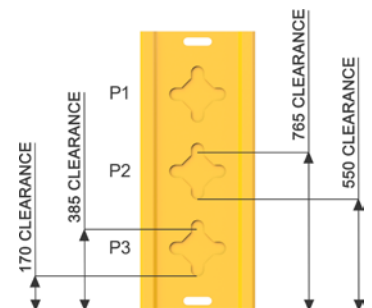
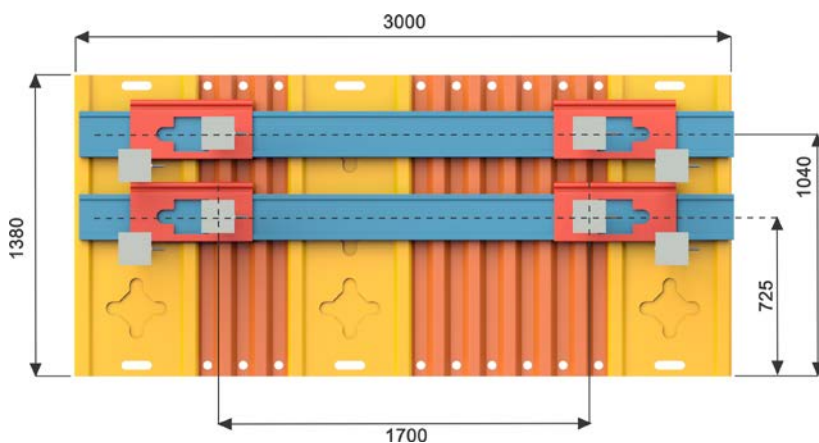
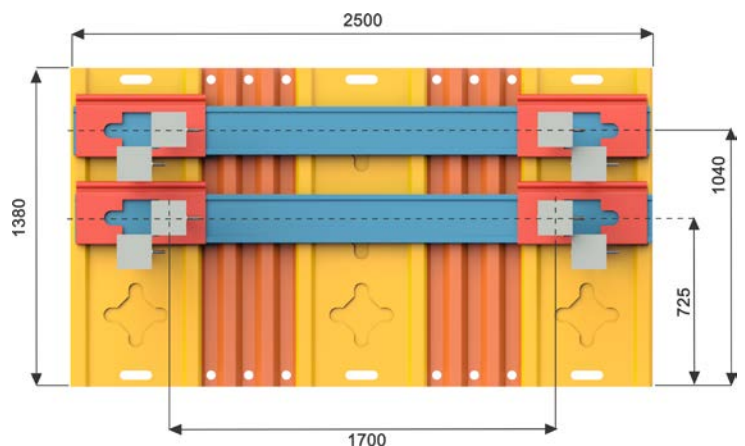
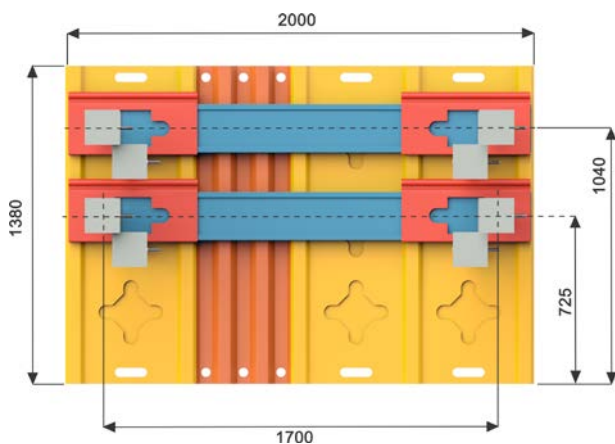
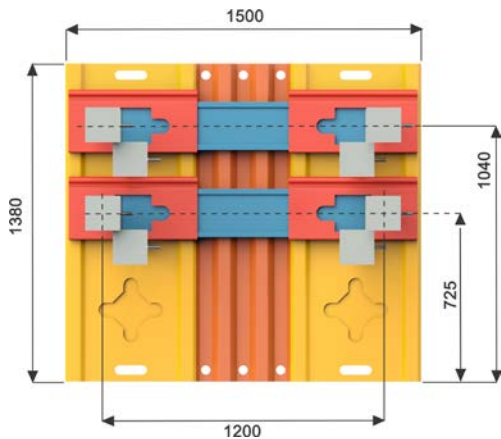
Dimension Schemes: 1.38m Deep

Configuration A



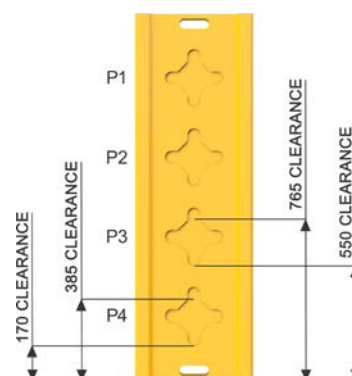
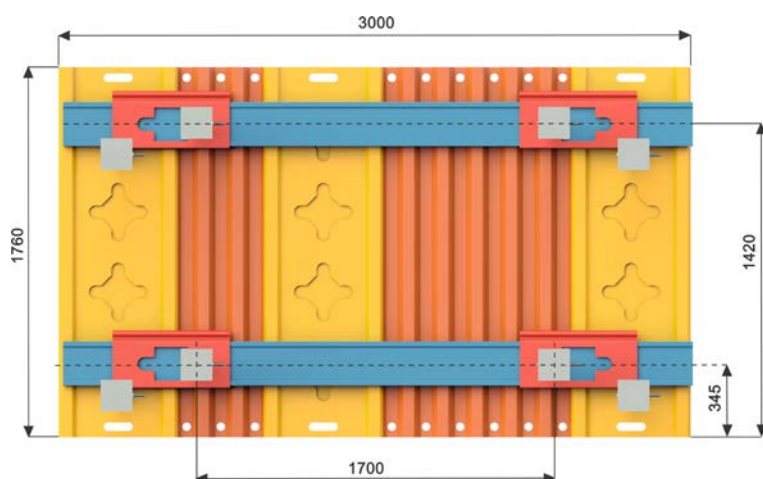
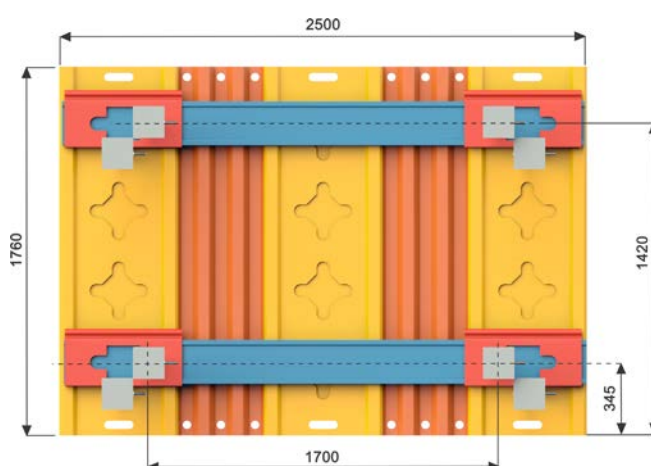
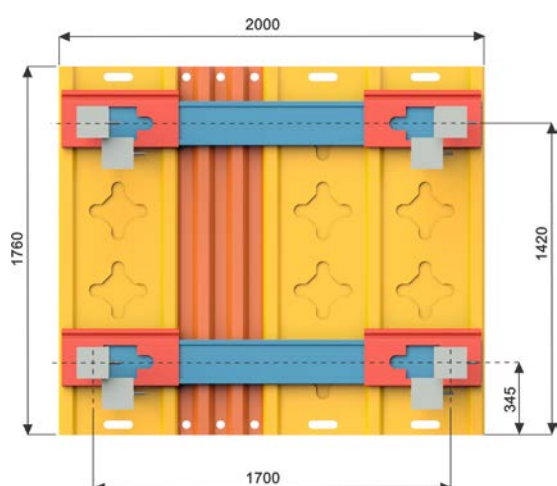
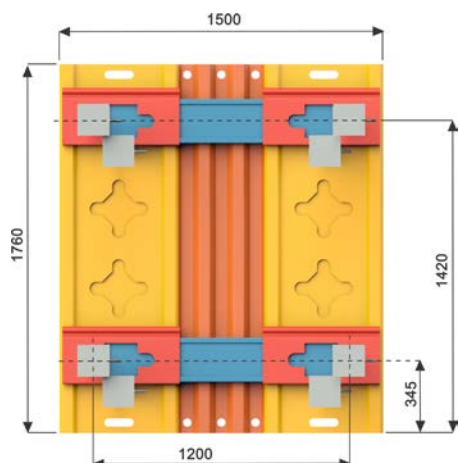
Dimension Schemes: 1.38m Deep

Configuration B



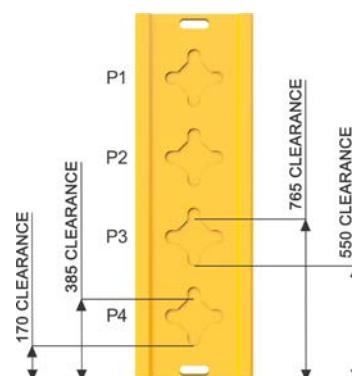
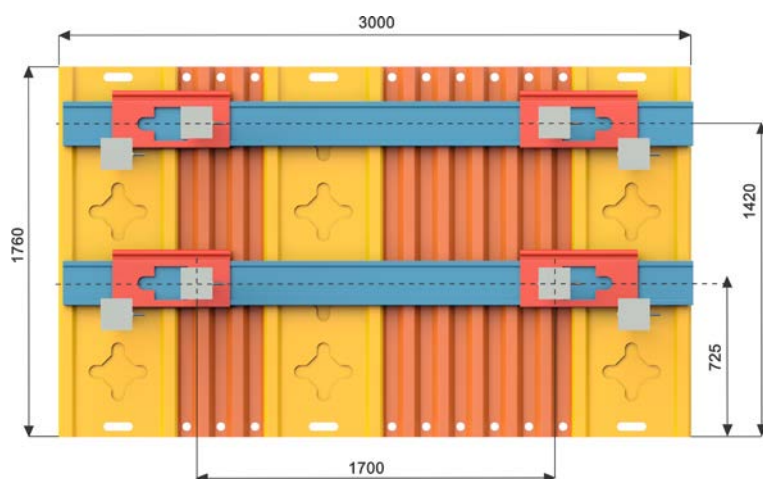
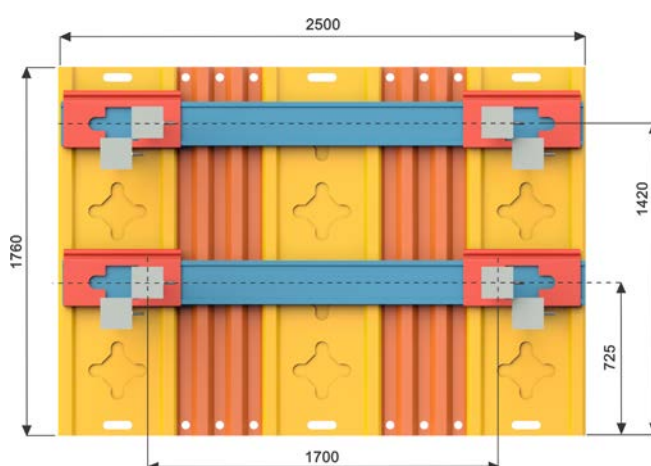
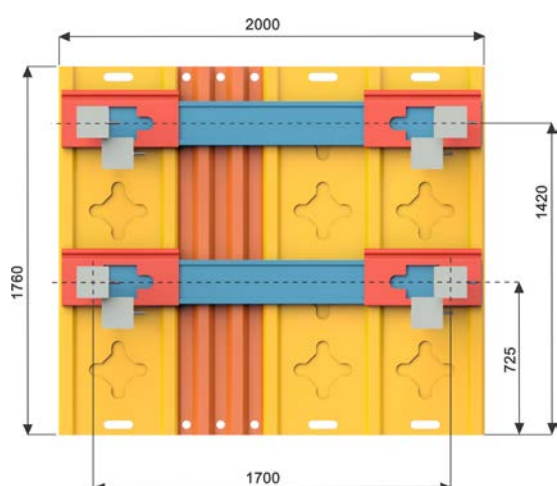
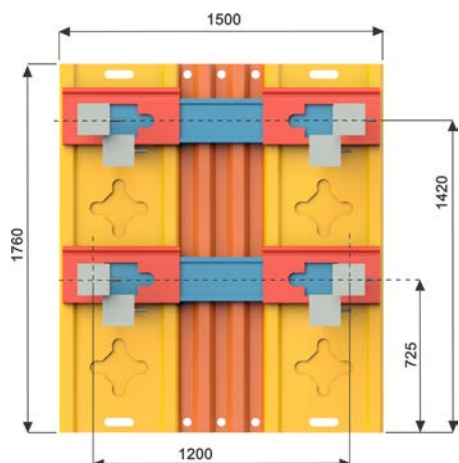
Dimension Schemes: 1.76m Deep

Configuration A



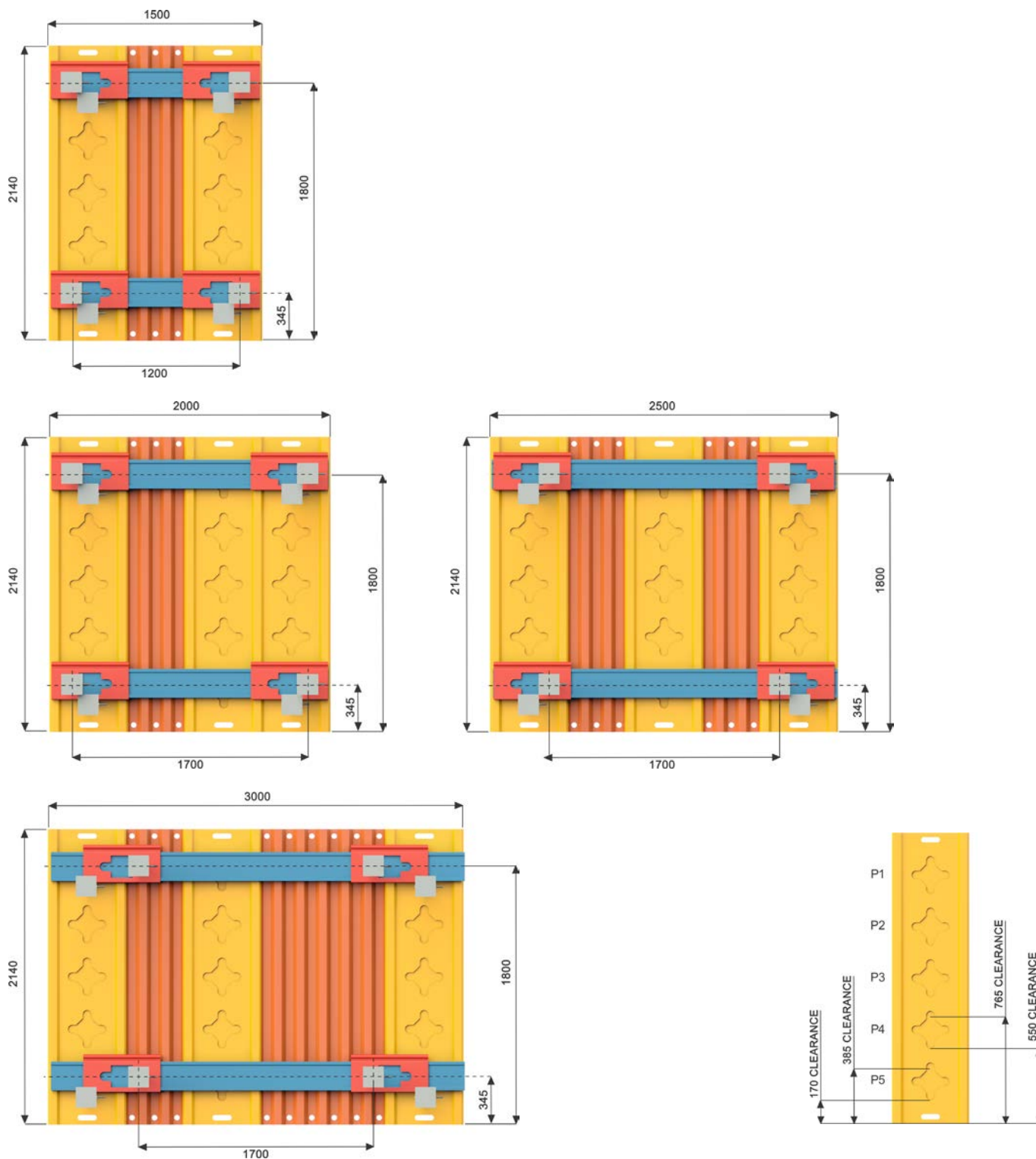
Dimension Schemes: 1.76m Deep

Configuration B



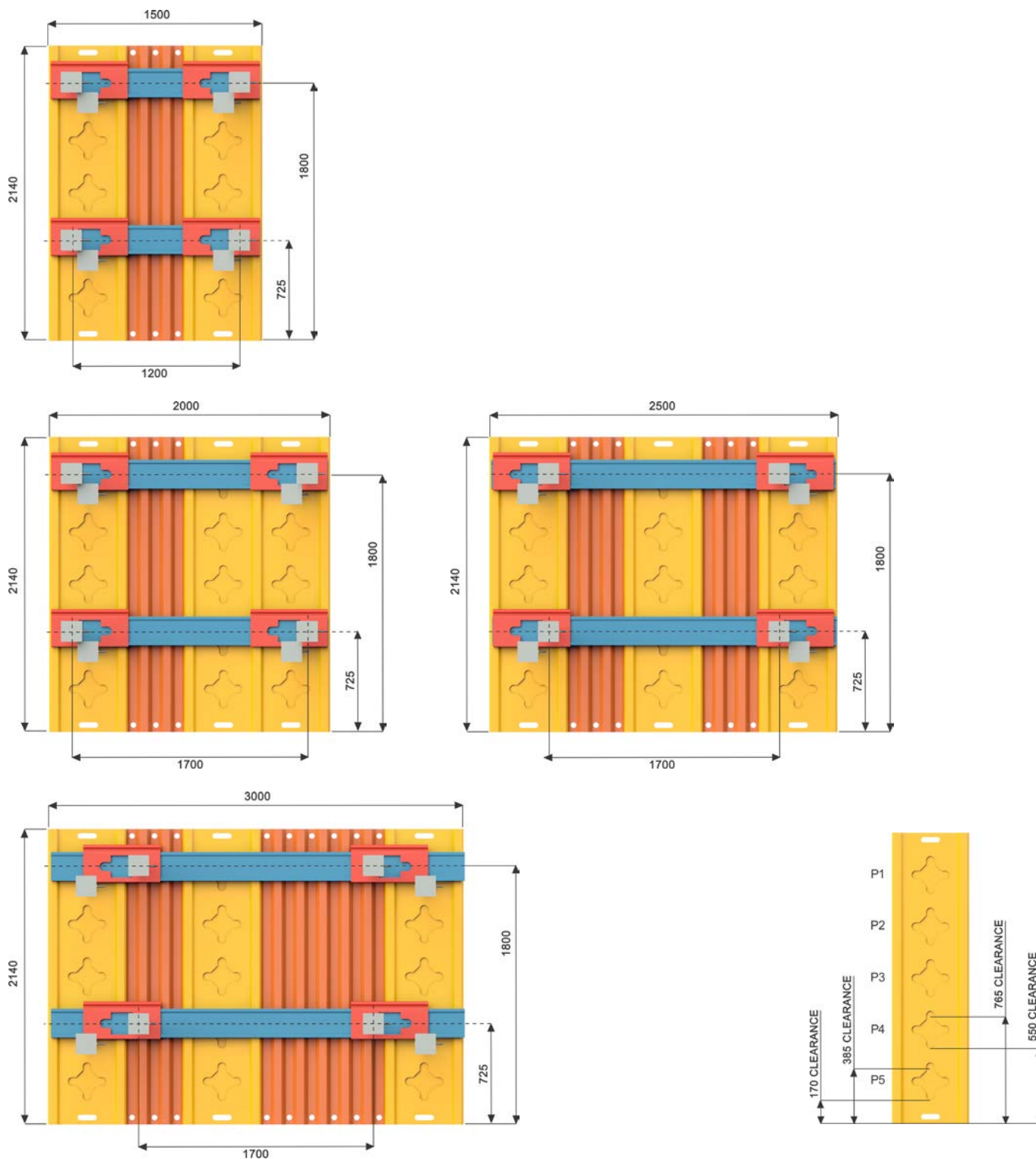
Dimension Schemes: 2.14m Deep

Configuration A



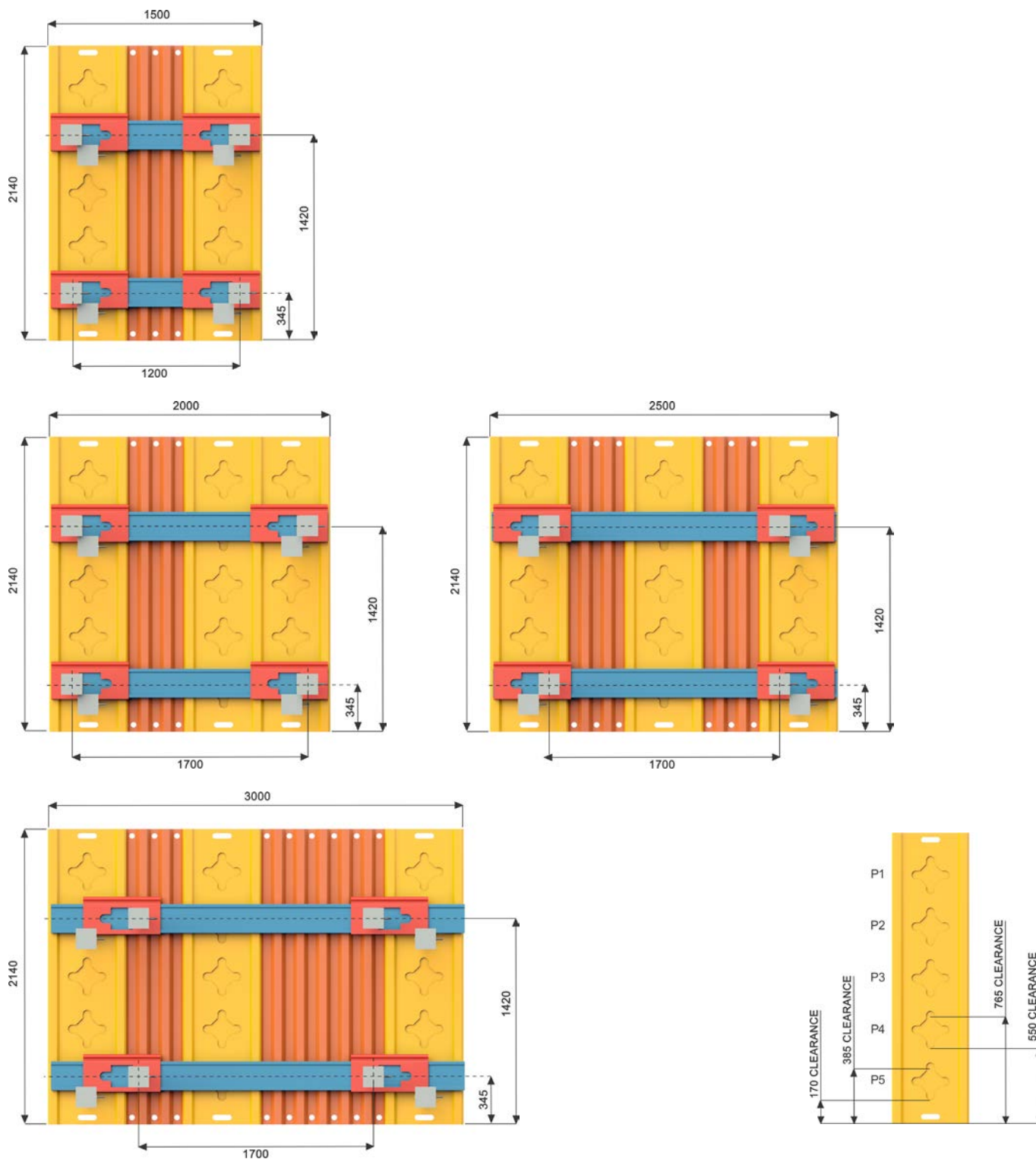
Dimension Schemes: 2.14m Deep

Configuration B



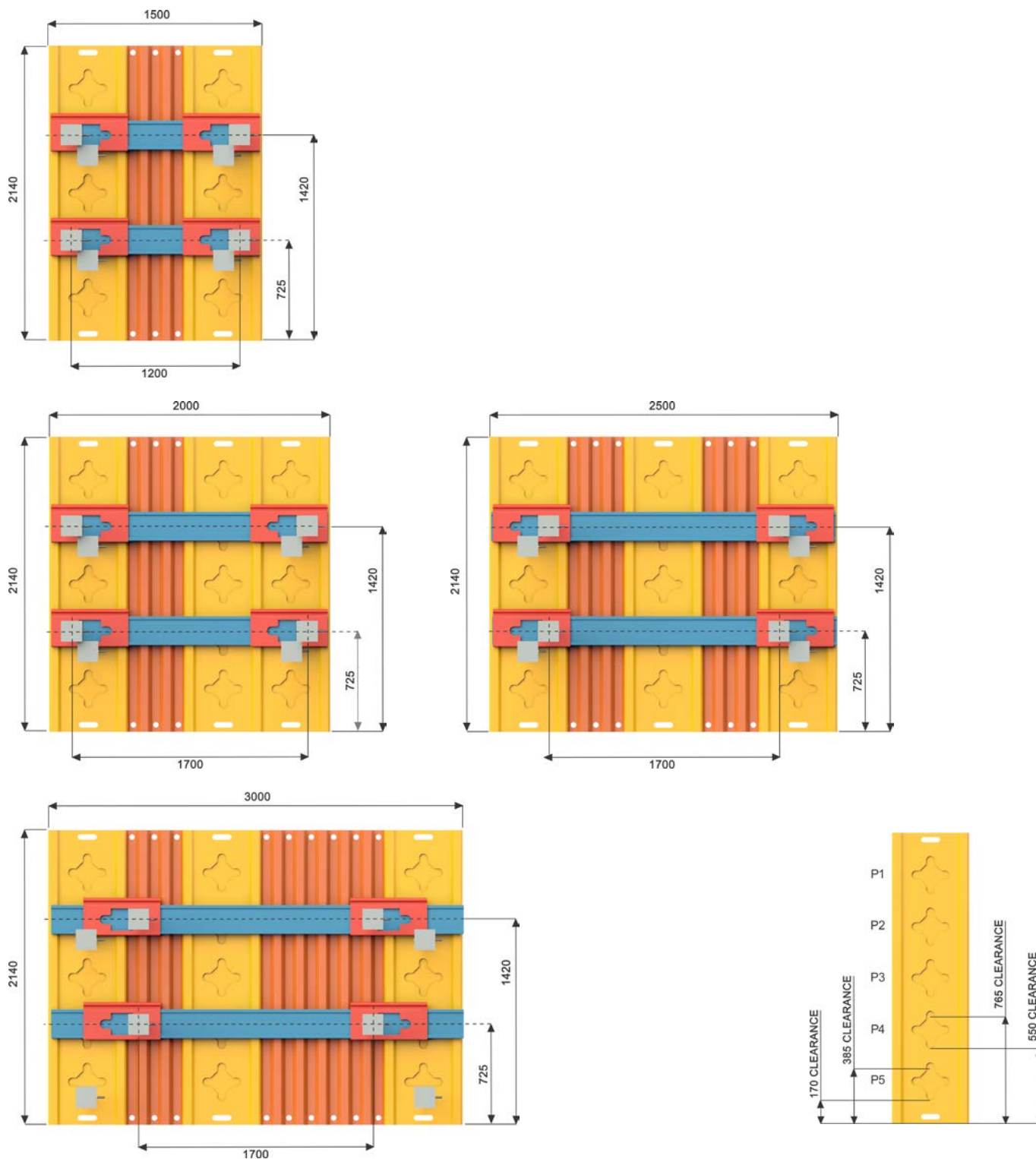
Dimension Schemes: 2.14m Deep

Configuration C



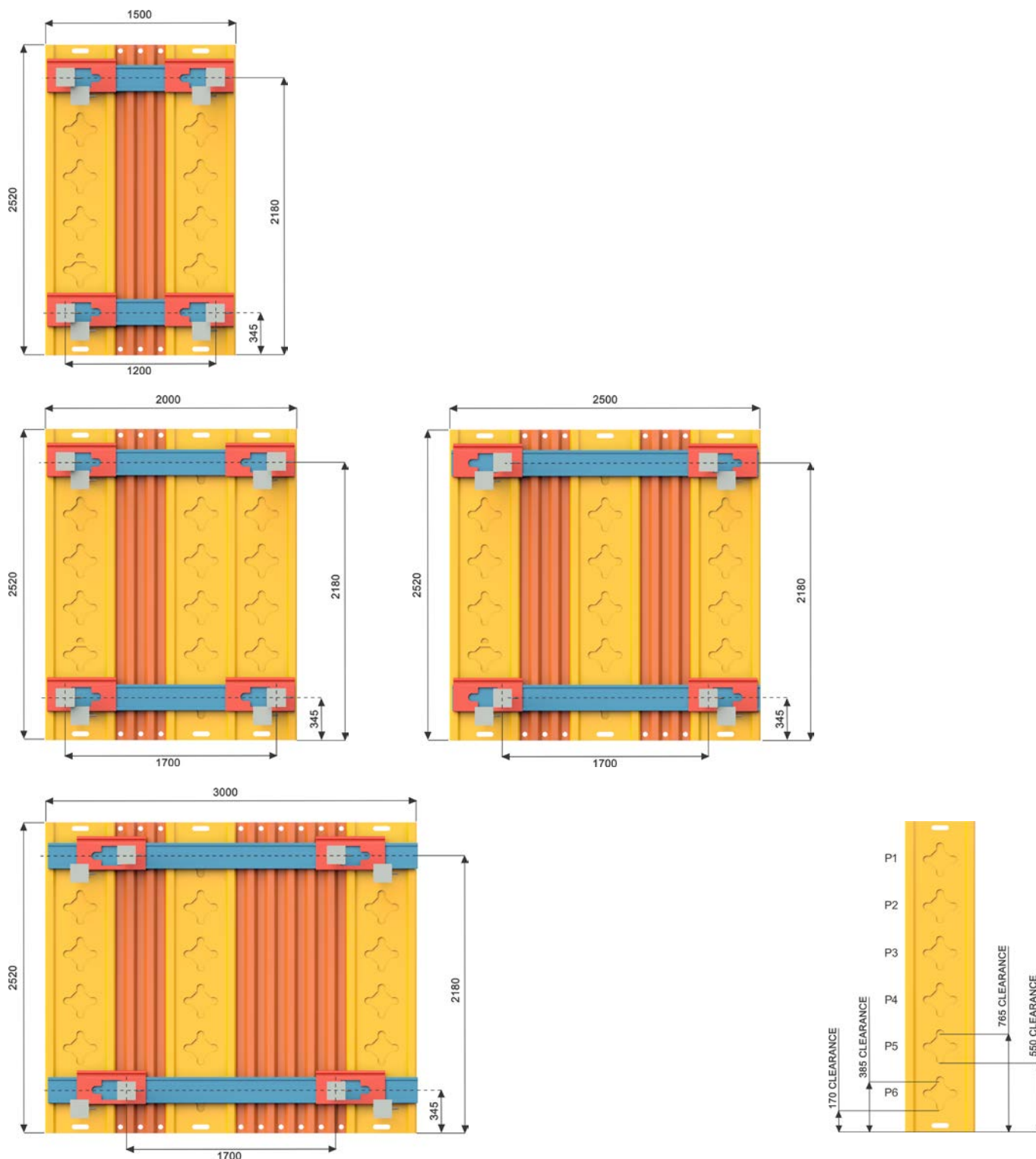
Dimension Schemes: 2.14m Deep

Configuration D



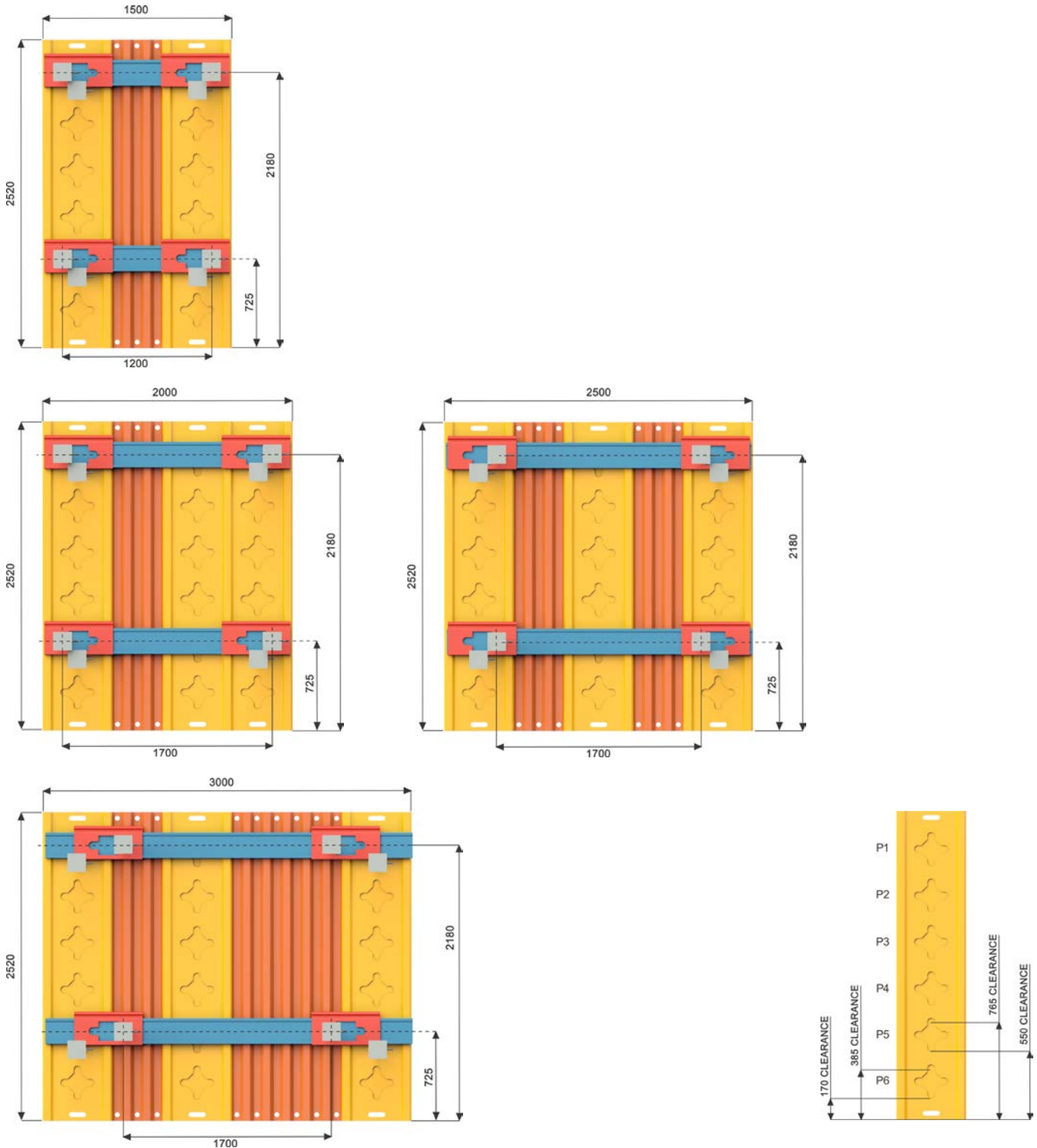
Dimension Schemes: 2.52m Deep

Configuration A



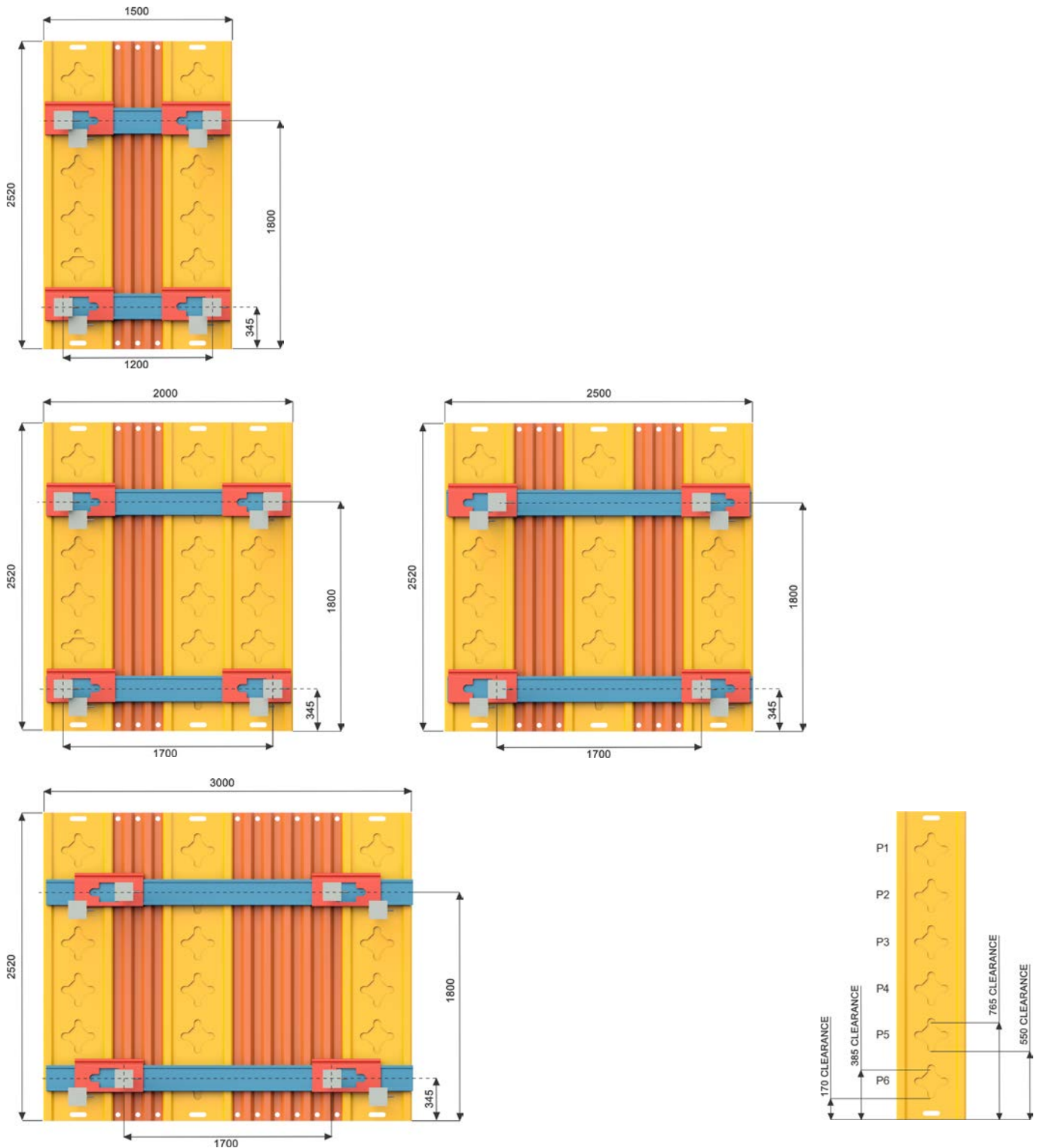
Dimension Schemes: 2.52m Deep

Configuration B



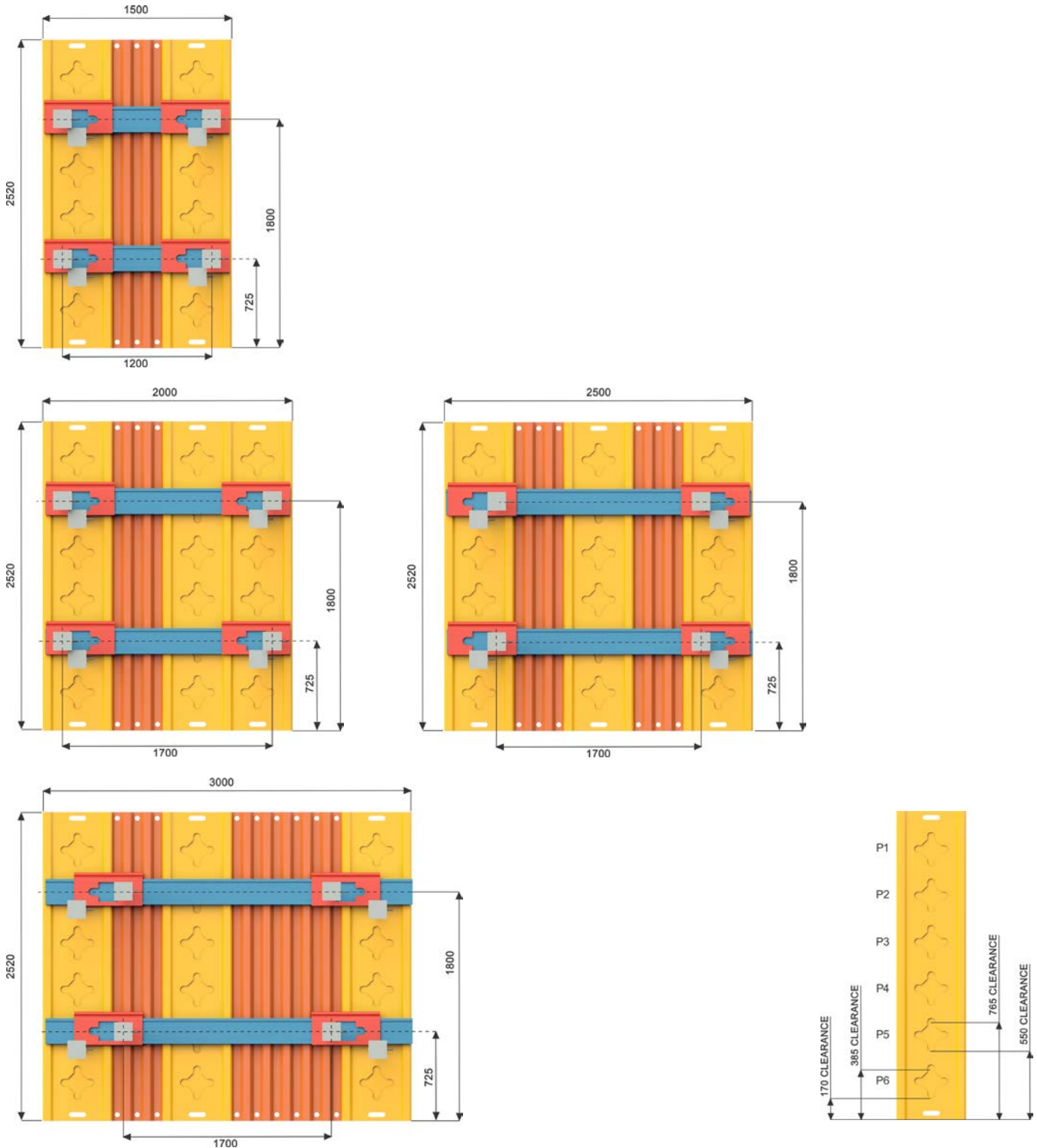
Dimension Schemes: 2.52m Deep

Configuration C

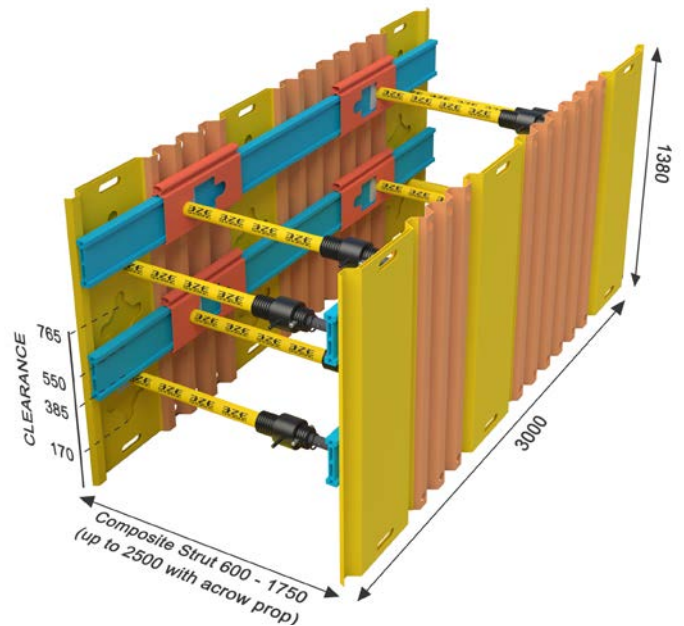
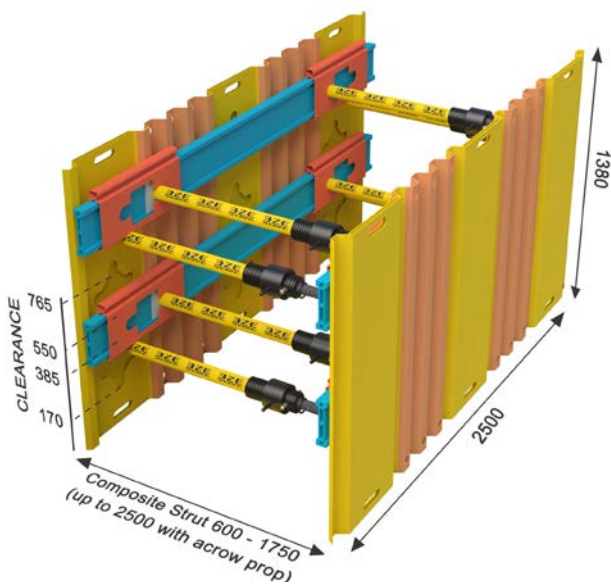
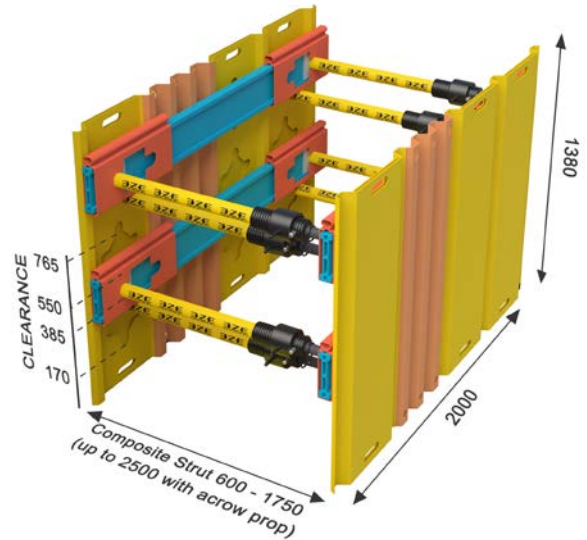
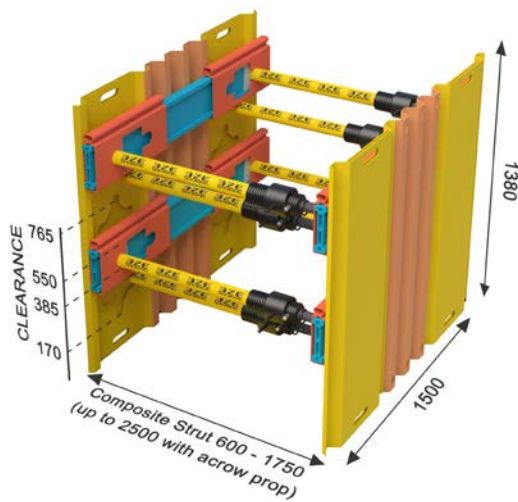


Dimension Schemes: 2.52m Deep

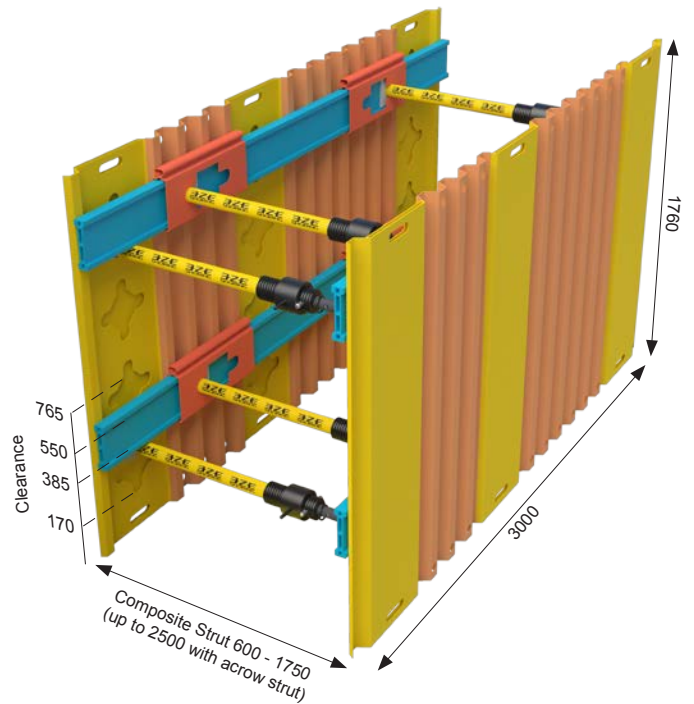
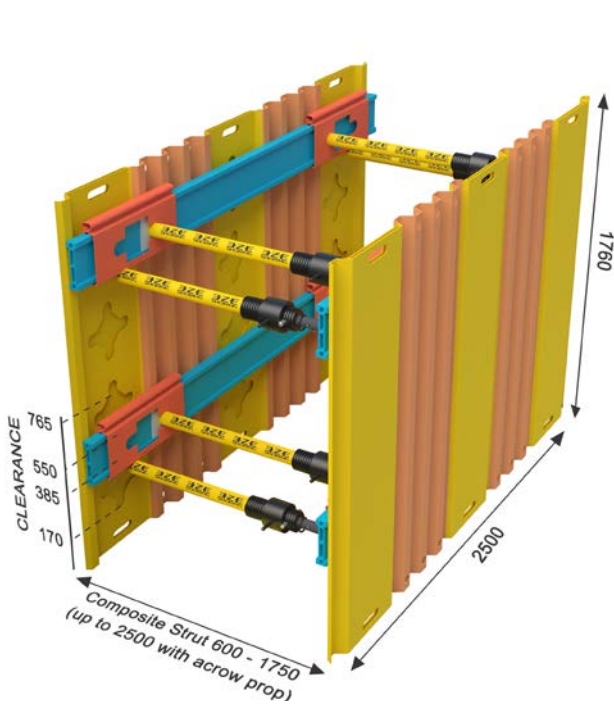
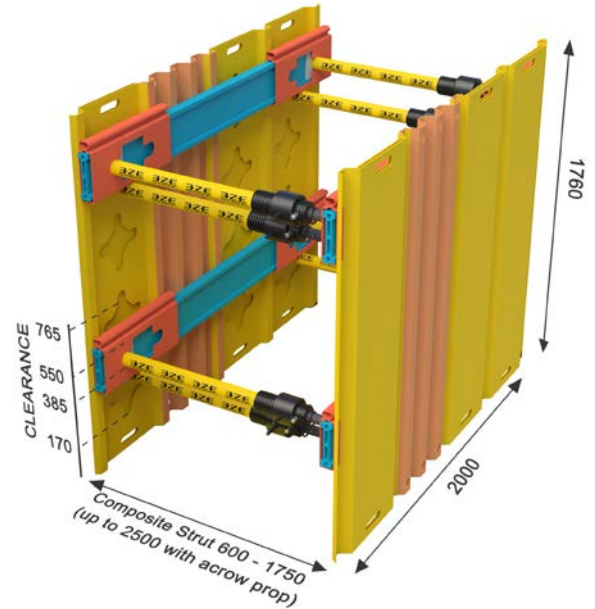
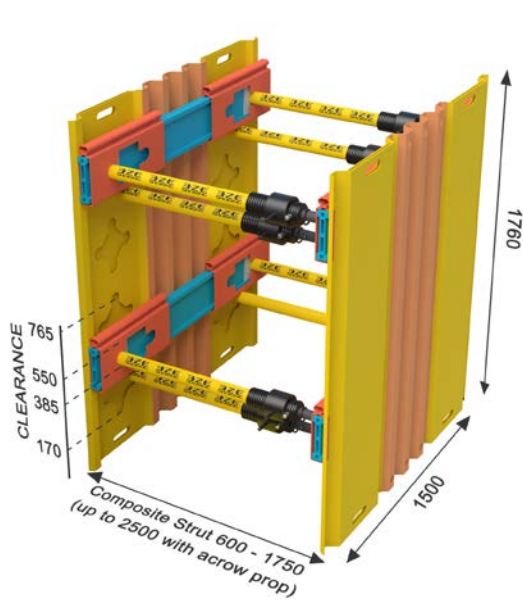
Configuration D



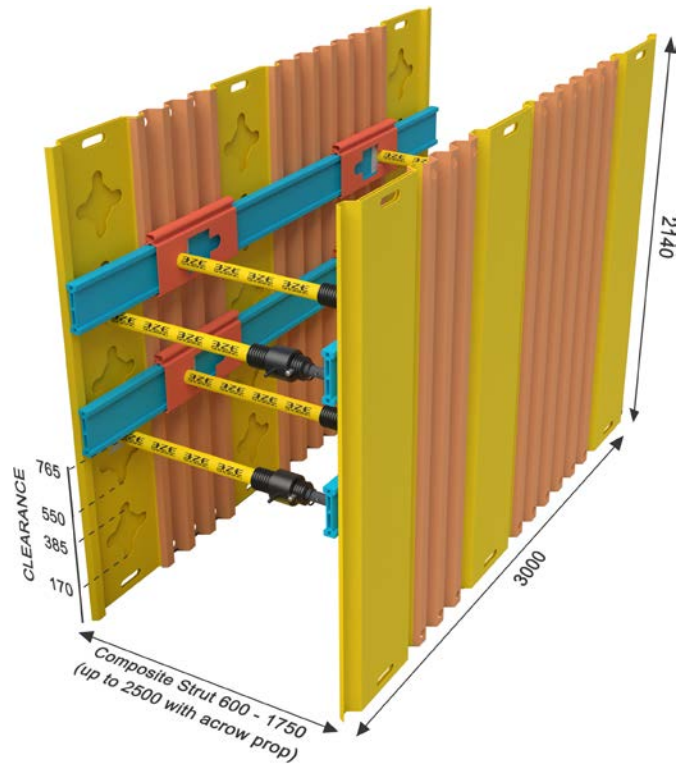
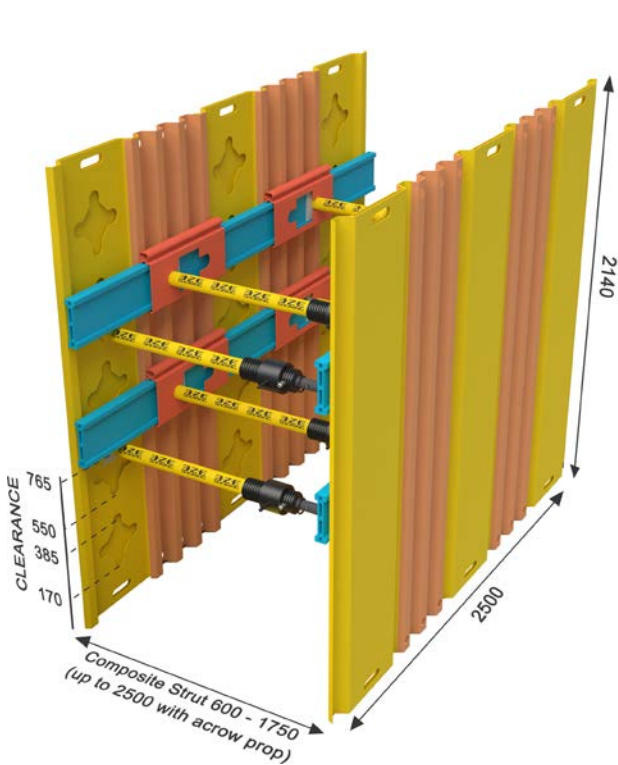
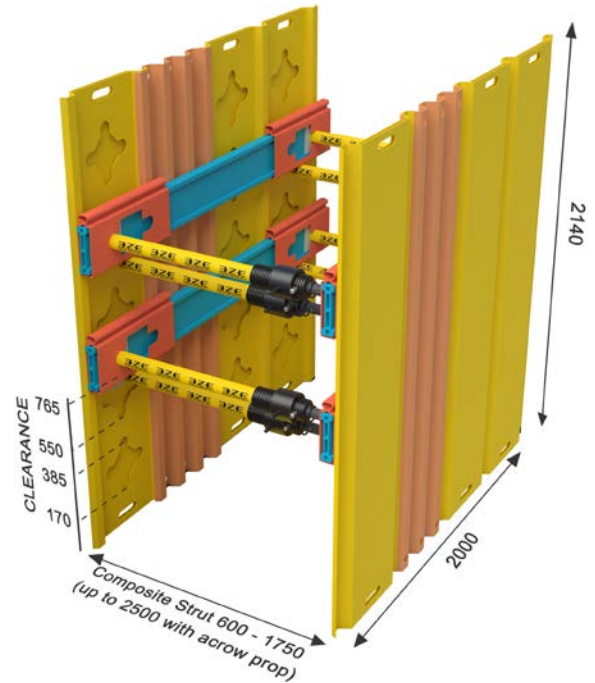
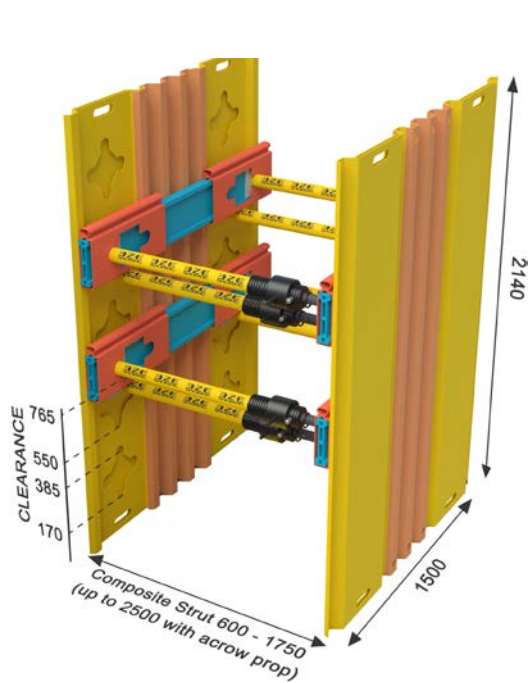
Installation Schematics: 1.38m Deep



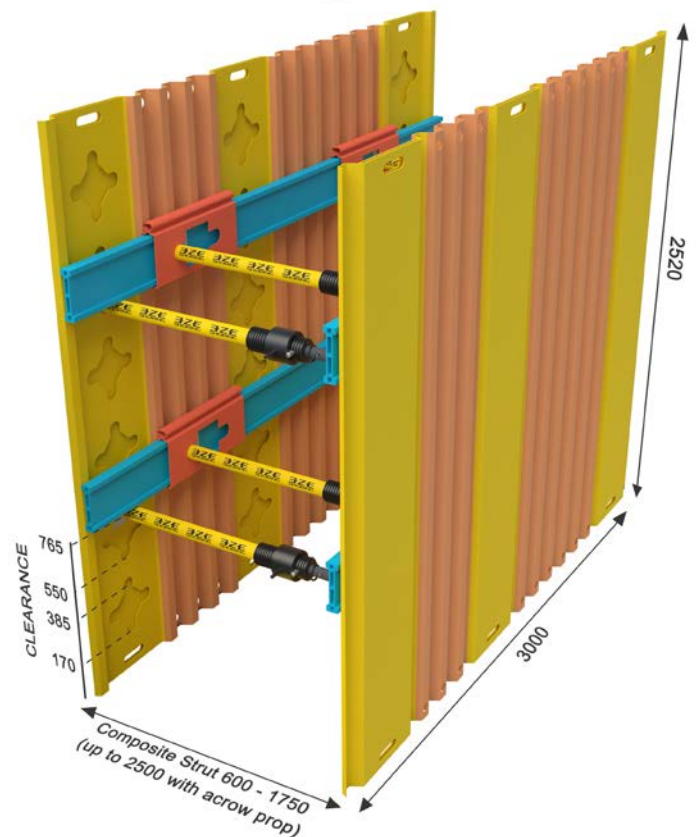
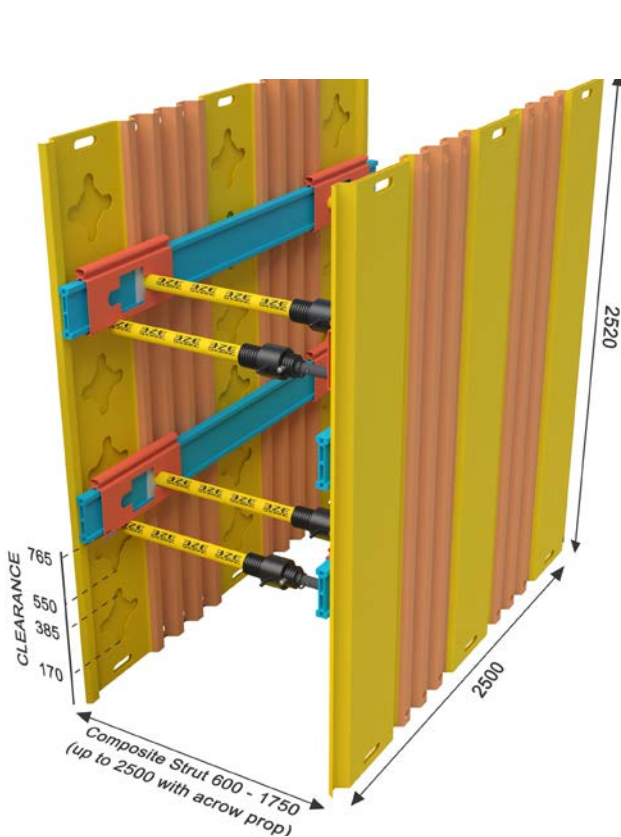
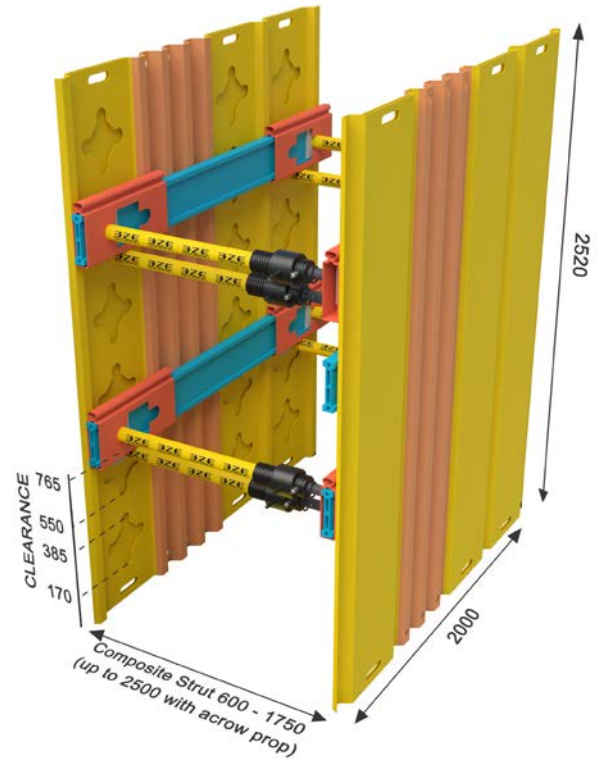
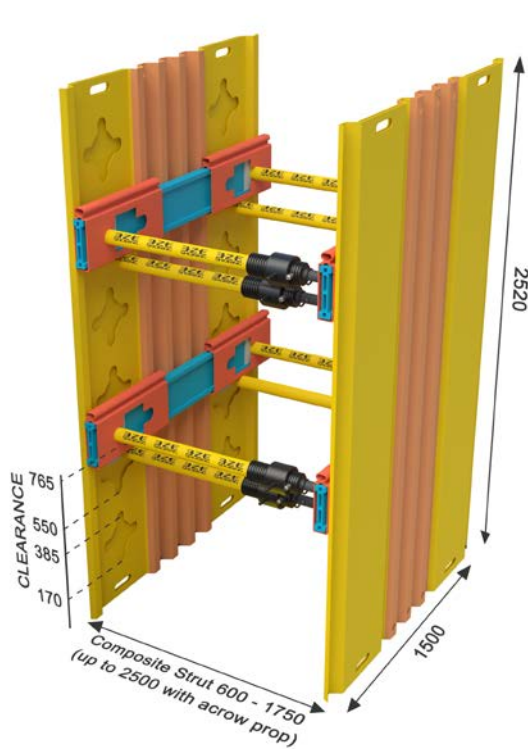
Installation Schematics: 1.76m Deep



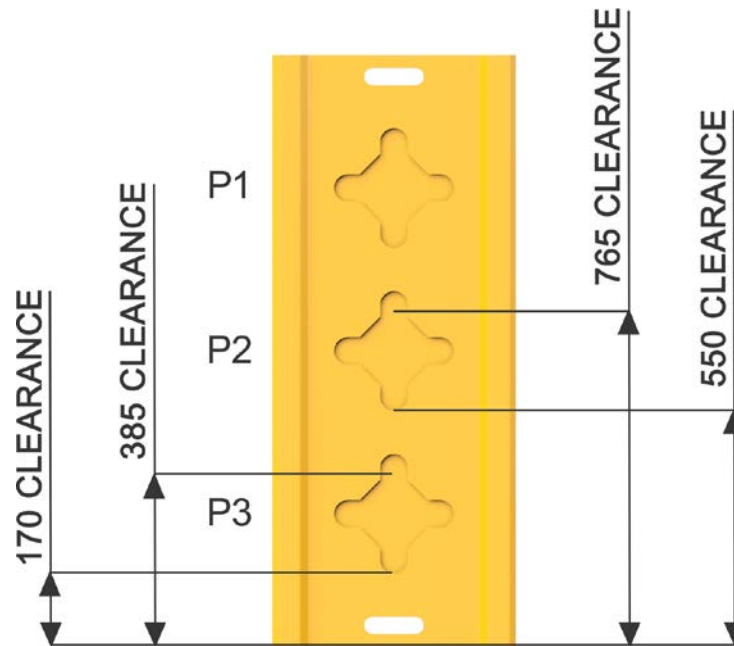
Installation Schematics: 2.14m Deep



Installation Schematics: 2.52m Deep



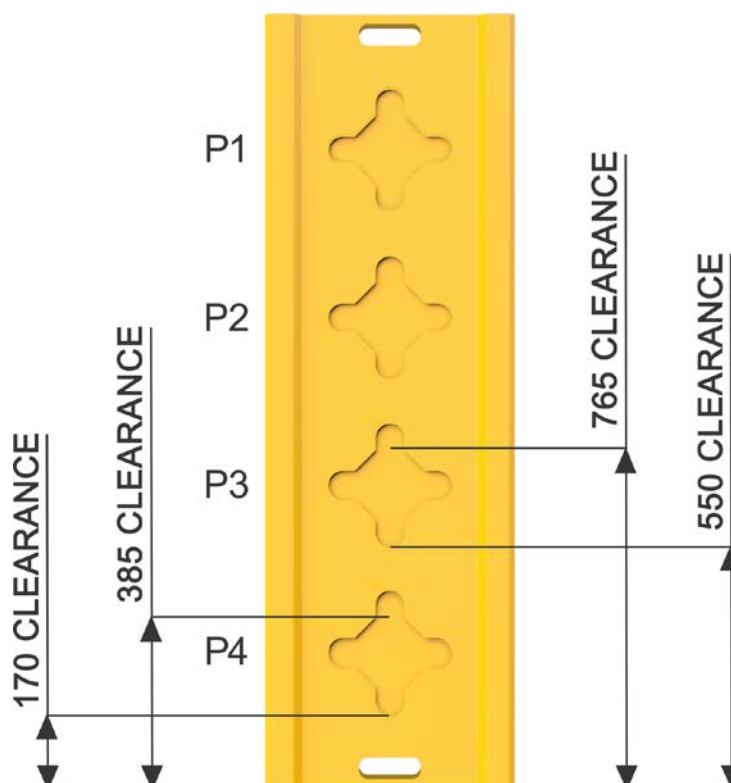
System Configuration: 1.38m Deep



Depth	Config.	Strut positions in EZE Hub Pile					
		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
1380	A	●		●			
	B		●	●			

	System Length			
	1500mm	2000mm	2500mm	3000mm
System Requirements	4 x EZE Hub Pile EZEH1380	6 x EZE Hub Pile EZEH1380	6 x EZE Hub Pile EZEH1380	6 x EZE Hub Pile EZEH1380
	2 x EZE Infill Pile EZEI1380	2 x EZE Infill Pile EZEI1380	4 x EZE Infill Pile EZEI1380	6 x EZE Infill Pile EZEI1380
	4 x EZE Waler EZEW1500	4 x EZE Waler EZEW2000	4 x EZE Waler EZEW2500	4 x EZE Waler EZEW3000
	8 x EZE Slider EZES560	8 x EZE Slider EZES560	8 x EZE Slider EZES560	8 x EZE Slider EZES560
	8 struts required to suit trench width	8 struts required to suit trench width	8 struts required to suit trench width	8 struts required to suit trench width

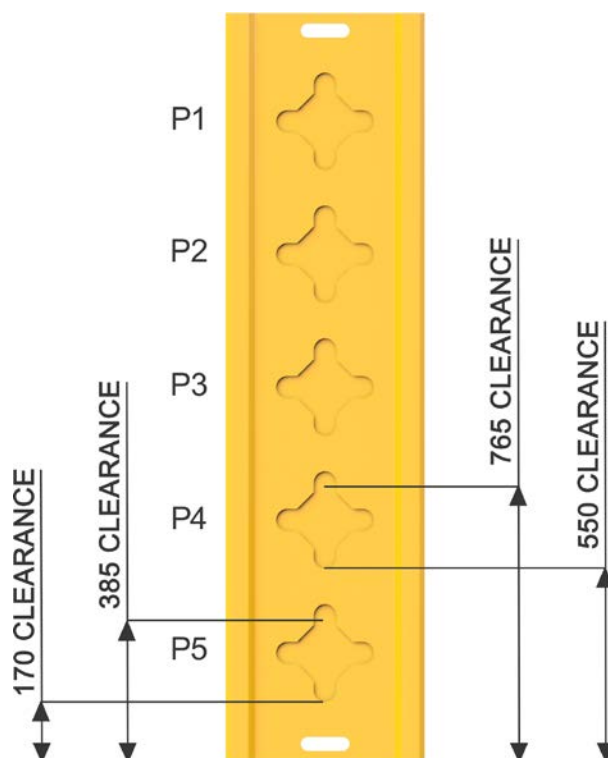
System Configuration: 1.76m Deep



Depth	Config.	Strut positions in EZE Hub Pile					
		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
1760	A	●			●		
	B	●		●			

	System Length			
	1500mm	2000mm	2500mm	3000mm
System Requirements	4 x EZE Hub Pile EZEH1760	6 x EZE Hub Pile EZEH1760	6 x EZE Hub Pile EZEH1760	6 x EZE Hub Pile EZEH1760
	2 x EZE Infill Pile EZEI1760	2 x EZE Infill Pile EZEI1760	4 x EZE Infill Pile EZEI1760	6 x EZE Infill Pile EZEI1760
	4 x EZE Waler EZEW1500	4 x EZE Waler EZEW2000	4 x EZE Waler EZEW2500	4 x EZE Waler EZEW3000
	8 x EZE Slider EZES560	8 x EZE Slider EZES560	8 x EZE Slider EZES560	8 x EZE Slider EZES560
	8 struts required to suit trench width	8 struts required to suit trench width	8 struts required to suit trench width	8 struts required to suit trench width

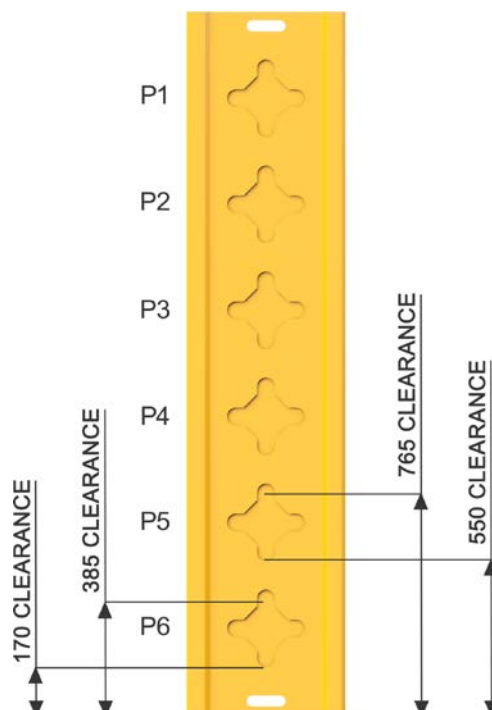
System Configuration: 2.14m Deep



Depth	Config.	Strut positions in EZE Hub Pile					
		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
2140	A	●				●	
	B	●			●		
	C		●			●	
	D		●		●		

	System Length			
	1500mm	2000mm	2500mm	3000mm
System Requirements	4 x EZE Hub Pile EZEH2140 2 x EZE Infill Pile EZEI2140 4 x EZE Waler EZEW1500 8 x EZE Slider EZES560 8 struts required to suit trench width	6 x EZE Hub Pile EZEH2140 2 x EZE Infill Pile EZEI2140 4 x EZE Waler EZEW2000 8 x EZE Slider EZES560 8 struts required to suit trench width	6 x EZE Hub Pile EZEH2140 4 x EZE Infill Pile EZEI2140 4 x EZE Waler EZEW2500 8 x EZE Slider EZES560 8 struts required to suit trench width	6 x EZE Hub Pile EZEH2140 6 x EZE Infill Pile EZEI2140 4 x EZE Waler EZEW3000 8 x EZE Slider EZES560 8 struts required to suit trench width

System Configuration: 2.50m Deep



Depth	Config.	Strut positions in EZE Hub Pile					
		Position 1	Position 2	Position 3	Position 4	Position 5	Position 6
2520	A	●	● Extra strut required				●
	B	●				●	
	C		●				●
	B		●			●	

	System Length			
	1500mm	2000mm	2500mm	3000mm
System Requirements	4 x EZE Hub Pile EZEH2520	6 x EZE Hub Pile EZEH2520	6 x EZE Hub Pile EZEH2520	6 x EZE Hub Pile EZEH2520
	2 x EZE Infill Pile EZEI2520	2 x EZE Infill Pile EZEI2520	4 x EZE Infill Pile EZEI2520	6 x EZE Infill Pile EZEI2520
	4 x EZE Waler EZEW1500	4 x EZE Waler EZEW2000	4 x EZE Waler EZEW2500	4 x EZE Waler EZEW3000
	8 x EZE Slider EZES560	8 x EZE Slider EZES560	8 x EZE Slider EZES560	8 x EZE Slider EZES560
	8 struts required to suit trench width	8 struts required to suit trench width	8 struts required to suit trench width	8 struts required to suit trench width
	Additional 3 struts if using positions 1 and 6	Additional 3 struts if using positions 1 and 6	Additional 3 struts if using positions 1 and 6	Additional 3 struts if using positions 1 and 6

Manufacturing Partner

EXCELLENCE
FOR THE WIN

Exel Composites in brief

A **globally leading composite technology company** that designs, manufactures and markets fiber reinforced plastics products and solutions for demanding applications in various segments and markets

Industrial Applications: Telecommunication, Paper Industry, Electrical Industry, Machine Industry, Transportation Industry

Construction & Infrastructure: BCI, Energy Industry

Other Applications: Cleaning & Maintenance, Sports & Leisure, Other Industries



Customers in over
50
countries

Manufacturing in
6
countries



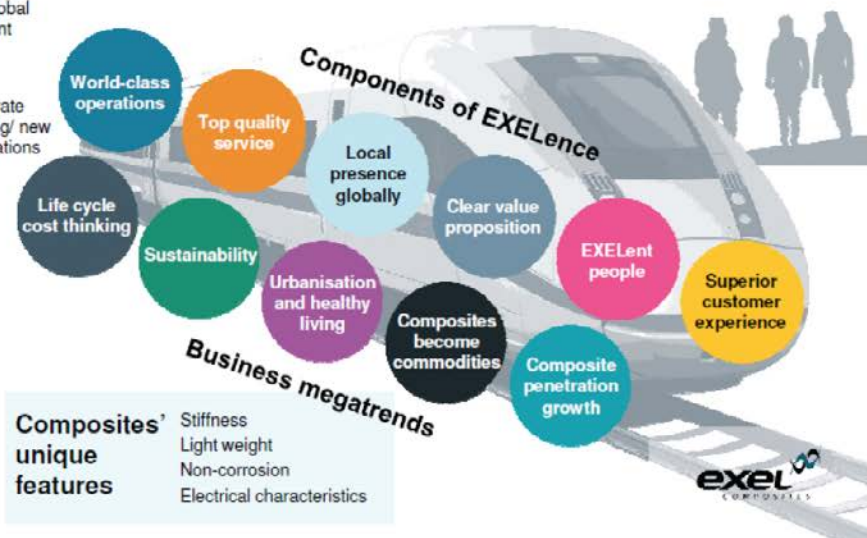
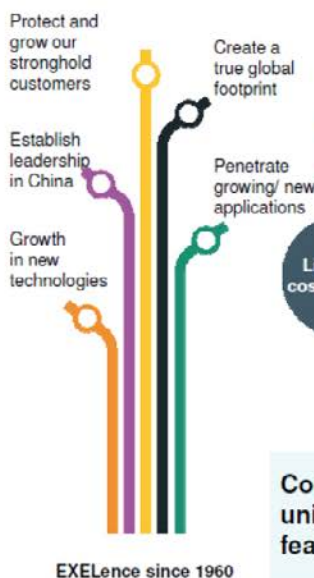
EXCELLENCE
FOR THE WIN

Vision

Exel Composites is an agile, innovative global composite company with world-class operations providing a superior customer experience.



Strategic main directions



Manufacturing Partner

EXCELLENCE
FOR THE WIN

Best quality with
continuous improvement

- Meeting and exceeding customer requirements according to agreed specifications
- Strong technical Support & Design capabilities
- The Exel quality and environmental policy complies with the requirements of the standards ISO 9001:2008 and ISO 14001
- Safety Management System according to OHSAS 18001
- Working according to ISO 26000 for social responsibility



Site Assembly



Figure 1: EZE Hub Pile



Figure 2: Hub Board – sub assembly

Adjust the EZE Struts to the approximate required width of the trench. Stand up two EZE HUB piles. Insert both ends of the strut into the EZE HUB pile recess with the corner of the strut base plate upright.



Figure 3

Rotate the EZE Strut through 45° to locate and lock inside the EZE Hub pile.



Figure 4

Slide the EZE Strut down into position at the bottom of the slot.



Figure 5

Figure 5A

For each EZE Hub pile sub assembly repeat for the lower strut. If the excavation is to be longer than 1.5m, the second pair of hub piles should have the struts placed as per figure 5A.

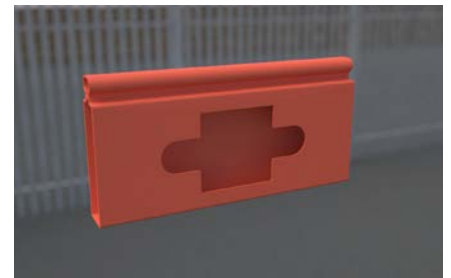


Figure 6: EZE Slider

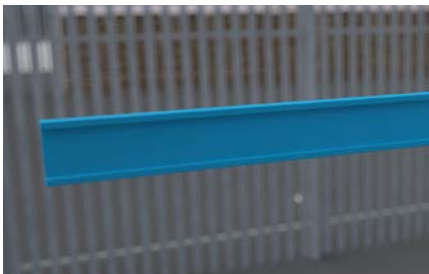


Figure 7: EZE Waler

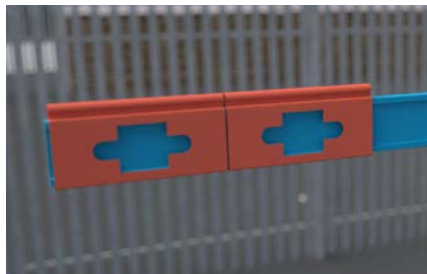


Figure 8

Position two EZE Sliders onto the end of each EZE Waler.

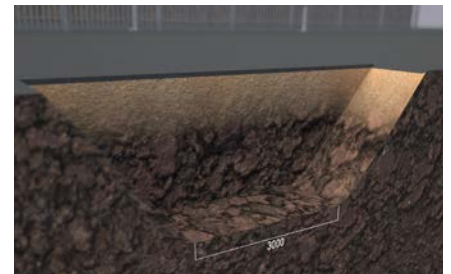


Figure 9

Excavate the trench to the required depth and width. Excavate the ends and batter to a safe angle. Ensure the trench excavation is of suitable length for the 'to be installed' system.

Site Assembly



Figure 10

Lift the EZE Hub pile sub assembly and position at the top of the battered end of the excavation – 2 persons required. With one person either side of the excavation, lower the sub assembly into position.



Figure 11

Operators should be a safe distance from excavation edge, ensure operatives are always in line with the assembly.

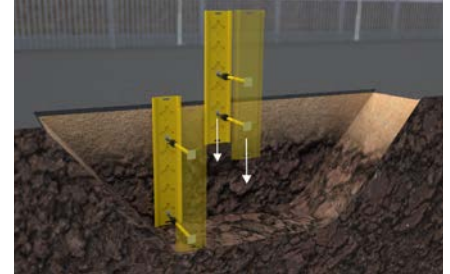


Figure 12

Lift the second EZE Hub pile assembly and place at a distance 500mm apart from the first. Position 2 is approx. 1100mm from the bottom of the battered end.

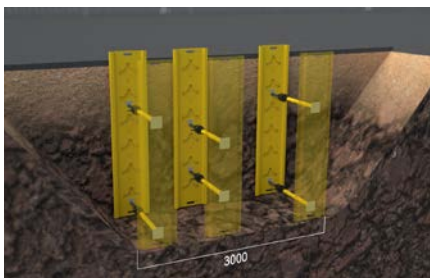


Figure 13

Repeat for the 3rd EZE Hub pile assembly, installation is from the opposite end of the excavation.



Figure 14

Ensure a distance of 3000mm is maintained between the outside of the EZE Hub pile sub-assemblies. Lower the access ladder into the excavation. Secure the ladder to the EZE Hub pile. Once everything is secured, enter the excavation via the ladder. Lightly tighten the EZE Hub pile struts in the 1st two pairs of boards.

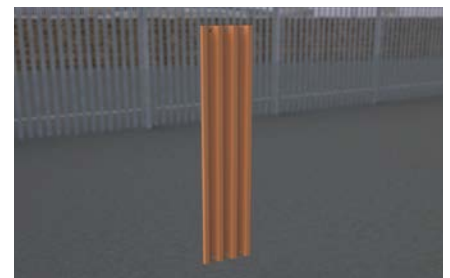


Figure 15: EZE Infill Pile

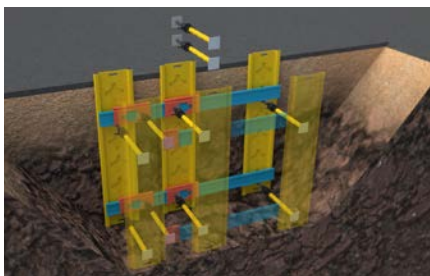


Figure 16

Lower the EZE Waler assembly down to the operative in the excavation, these rest on the top of the EZE Hub assembly. Insert struts into the EZE Sliders and move the slider over the second pair of EZE Hub piles.

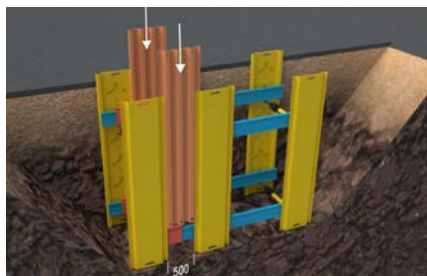


Figure 17

Insert the EZE Infill pile behind the waler on both sides. Remove EZE Struts from 2nd pair of EZE Hub piles to give maximum open working area – Fig 16.

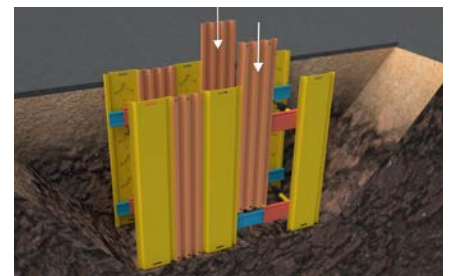


Figure 18

Move the sliders approximately a further 600mm to allow the next pair of EZE Infill piles to be inserted. Note sequence may vary slightly depending upon the installed length of the system.

Site Assembly

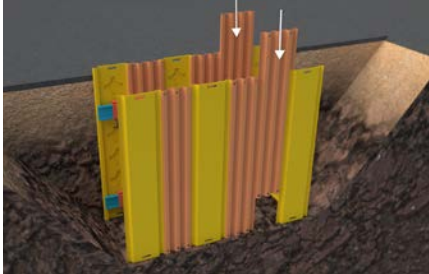


Figure 19

Move slider to the next position (dependant upon system length) and insert the next EZE Infill piles.

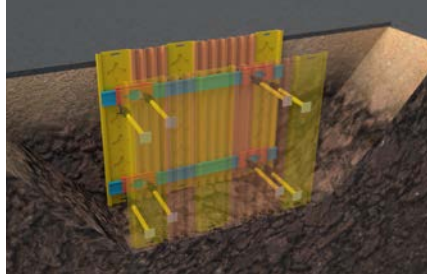


Figure 20

Repeat until all GRP sheets are installed. Tighten the water struts in their final position, ensuring that the maximum spacing between the water struts **does not exceed** 1700mm. Tighten the EZE Hub pile struts to secure the excavation.



Disassembly

Disassemble in reverse order from figure 20. Never enter an unsupported trench, backfilling must be done from ground level.

EZE Shoring

Operating Safely

EZE Shoring is a versatile lightweight, high performance composite shoring system, ideal for reducing manual handling injuries. For use in the construction sector when either hand digging or using a mini excavator, to form a trench in soils that are self supporting.

The high performance composite HUBshore system provides shoring solutions for excavation depths from shallow depths – 620mm up to 2500mm – incorporating EZE Strut to support trench widths ranging from 600 mm to 1750 mm. (Up to 2500 mm with a metallic prop).

Always inspect the products for accidental damage prior to use. Always ensure all struts are correctly inserted prior to use. Do not allow personnel within the trench whilst the excavator is digging. Ensure all personnel are well clear of its operation.

Where ever possible only access and work in the trench between supported HUBshore piles. Never enter via ends/ faces of an unsupported excavation.

Always work from a position of safety. Avoid, working above on an unsupported edge, an unprotected edge or under a suspended load.

Always ensure operatives are safely out of the excavation before removal of units. (Reversal of the installation)

Do not overload the EZE Struts beyond their stated safe working range. Ensure when in their final positions, the piles sits square and vertical with continuous contact against the trench wall.

When inside the trench, operatives should continually monitor the walls for change of conditions such as excessive movement or cracks and water seepage.



For further information contact:

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