

Trench boxes are generally the first choice for the rapid shoring of trench runs in non-urban environments due to the speed and simplicity of installation. In reasonable ground conditions, they are generally suitable for use in trenches up to 4m wide x 6.6m deep, depending on box type, and used where prevention of ground movement is not a key issue. They are often installed longitudinally in multiple units to continuously support a length of trench.

Groundforce offer a wide range of trench box sizes with two basic strut types. The "Multi-Box" and "Premier Box" type of strut is a heavy duty, incrementally adjustable, telescopic strut whereas the "spindle" type uses the more traditional screw thread method of adjustment. Multi-box and Premier-box struts are more suited to wider trench widths. A maximum of two top extension boxes can be added to increase the height of a base box.

Trench widths of between 520mm and 4650mm (inside of box) can be achieved with various combinations of adjustable spindle and extensions.

It is recommended that all trench boxes are used with integral Edgesafe and Laddersafe barrier and access systems.



### Features and benefits

- Simple installation methodology.
- Extension boxes can be quickly added to achieve deeper trenches; up to a maximum to two top boxes.
- Various sizes available to cater for a wide variety of applications.
- Trench boxes may be installed in either a pre-dug trench in stable ground, or by a progressive 'dig & push' method.
- Enables rapid construction of pipe work chambers and interceptors.

### Strut Types

- Multibox incremental telescopic system (mini & standard box).
- Heavy duty incremental telescopic system (mega box & premier box).
- Adjustable spindle system.

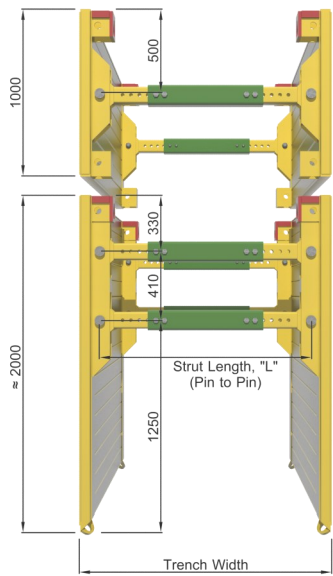


Product Link  
Box Struts - Section 9.5  
Box Ancillaries - Section 9.7

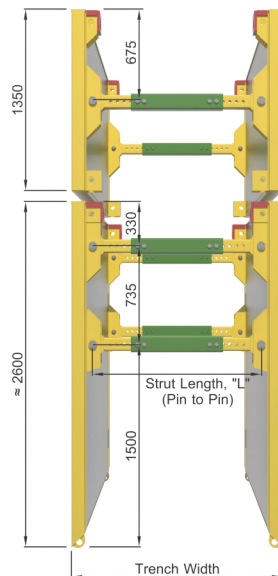


## Technical Specification

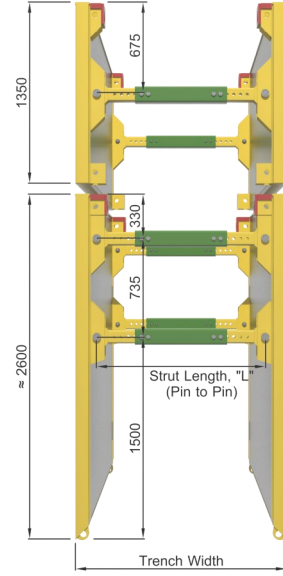
The table and images below states box dimensions, weights, and the various structural parameters for all available Trench Boxes. Design verification can be undertaken by either a simple panel pressure comparison or by a more rigorous bending moment and strut capacity check. (For further details see Box Systems - Basis of design, section 9.1. Strut capacity data can be found in section 9.5 – box spindles & struts). All of the boxes can be used in conjunction with Groundforce end closure panels in applications where full width earth retention across the end(s) of the box is required.



Mini Trench Box



Standard and Mega Trench Box



Premier Trench Box

Specification	Trench Box Type			
	Mini Trench Box	Standard Trench Box	Mega Trench Box	Premier Trench Box
Plate Length (m)	3.0	3.5	5.0	3.5
Plate Height (m)	2.0 (base) 1.0 (top)	2.6 (base) 1.35 (top)	2.6 (base) 1.35 (top)	3.9 (base) 1.35 (top)
Plate Thickness (mm)	60	107	127	105
Weight of Plate (kg)	580 (base) 316 (top)	1042 (base) 616 (top)	1545 (base) 920 (top)	1600 (base) 630 (top)
Maximum Trench Depth (m) <sup>[1]</sup>	4.0	5.3	5.3	6.6
Internal width (mm)	510 - 4310	510 - 4310	903 - 4645	560 - 4682
External width (mm)	650 - 4450	730 - 4530	1157 - 4900	760 - 4882
Clearance below strut (mm)	1190	1440	1400	2455
Clearance between struts (mm)	2500	3000	4525	2930
Strut centres (mm)	2725	3225	4725	3200
Strut length from pin to pin (mm)	410 - 4210	410 - 4210	962-4562	440 - 4562
Allowable plate bowing moment, M1 (kNm/m) <sup>[2]</sup>	30.4	81.6	103.3	55.2
Allowable plate kicking moment, M3 (kNm) <sup>[2]</sup>	43.4	103.4	129.1	453.6
Allowable plate panel pressure (kN/m <sup>2</sup> ) <sup>[2 &amp; 3]</sup>	32.8	35.2	31.8	39.7
Max allowable extraction force per lifting lug (t)	3.0	6.0	12.0	12.0
Allowable strut load (kN) <sup>[4]</sup>	Dependant on strut type used – refer to section 9.5 (box spindles & struts)			

1. Maximum depth is based on 1No. base and 2No. top extensions being connected together.
2. For all above data, the minimum global load (or safety) factor is 1.6.
3. The allowable uniform panel pressure is determined from limiting values of kicking and bowing moments and can be affected by the strut type/ length used within the box make up. Values demonstrated assume the box is combined with spindle struts.
4. Refer to section 9.5 on box struts for more information.