

GRP Composite Trench Covers



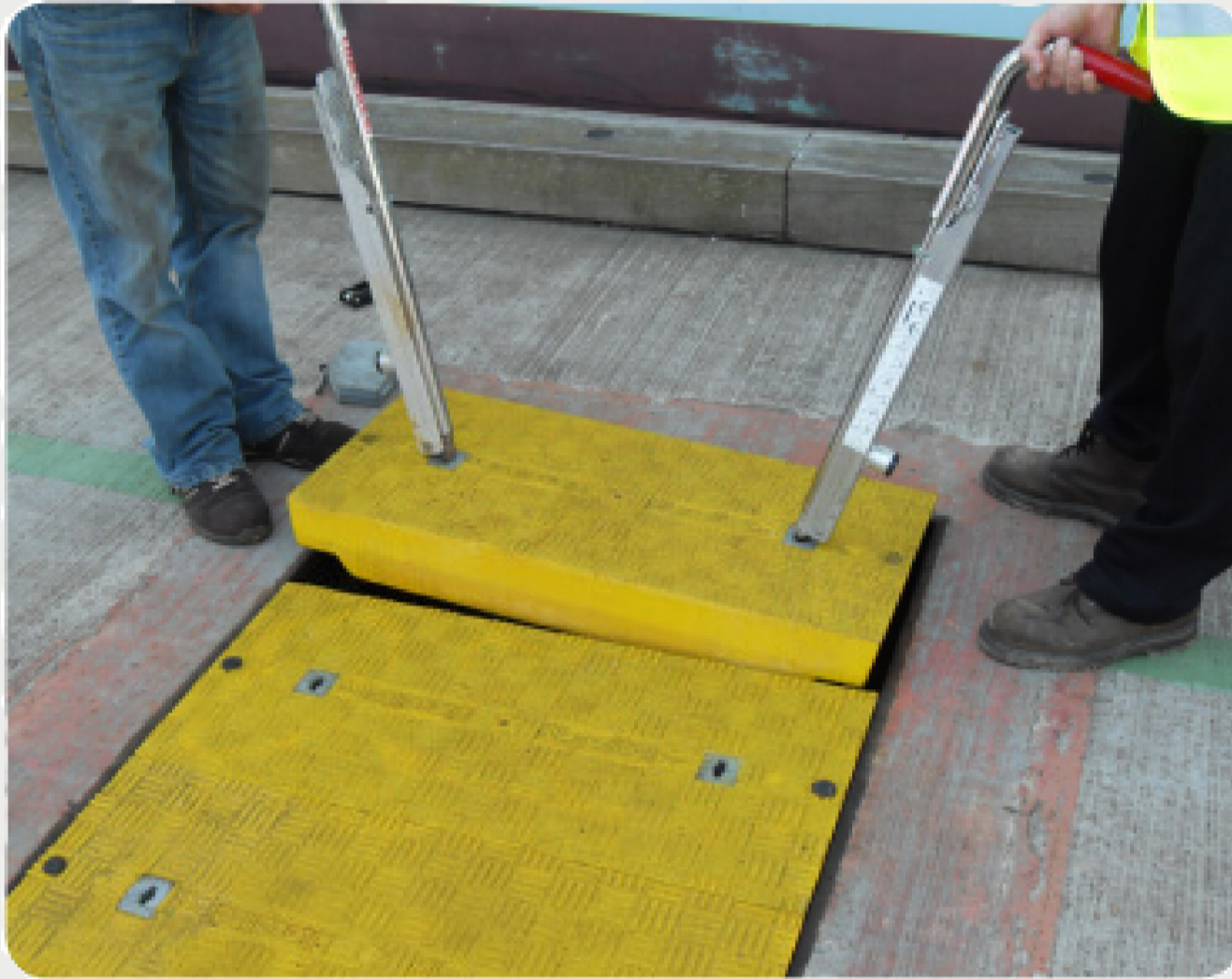
Technical Guide

Table of contents

Contents	Page
Why Choose Fibrelite?	3
Durability / Test Reports / Accreditations / Conductive Options / Lifting Handles	4
Corrosion Resistant / Skid and Heat Resistance / Security	5
Coloured Covers / Frame or Rebate / Configurations / Custom Moulded	6
Industries Using Fibrelite Covers	7
Pre-Cast Concrete Trench Systems	8
Load Ratings from 1.5 Tonnes to 90 Tonnes	9
Frame Installation	10
Rebate Installation	11
Removable Support Beam Instructions	12
F900 (90 Tonnes) Covers	13
E600 (60 Tonnes) Covers	14
D400/H25 (40 Tonnes) Covers	15
C250 (25 Tonnes) Covers	16
US H20 (18 Tonnes, 40,000lbf) Covers	17
B125 (12.5 Tonnes) Covers	18
5 Tonne Covers	19
A15 (1.5 Tonnes) Covers	20

Why Choose Fibrelite?

Fibrelite has been at the forefront of composite quality and innovation since 1980 when we designed the world's first GRP composite manhole cover for the retail petroleum industry. And our high-performance, lightweight and safe-to-lift composite covers – including the unique F900 load-rated trench cover - are now selected by specifiers, architects and engineers worldwide.



Although GRP composite covers are now increasingly preferred to the traditional metal or concrete options - not every composite cover is going to perform to the highest standards year after year.

With a Fibrelite trench cover you can be sure that you have a high performance product created via resin transfer moulding (RTM) to create a durable, monolithic cover that you can fit-and-forget. What's more, each one will have been individually engineered under the watchful eye of our technical teams in our own manufacturing facilities in the UK, USA and Malaysia.



Durability / Test Reports / Accreditations / Conductive Options / Lifting Handles

Durability

Designed as a 'fit-and-forget' product, our GRP composite covers are maintenance-free, durable and very strong as a matter of course.



Our Load Test Reports

All our trench covers are independently tested in accordance with BS EN 124 criteria and not only meet but often surpass the relevant class conditions for deflection under load as demonstrated in the reports. Trench covers supplied for use in the US have also been independently tested to ensure that they meet AASHTO (American Association of State Highway & Transportation Officials) standards..

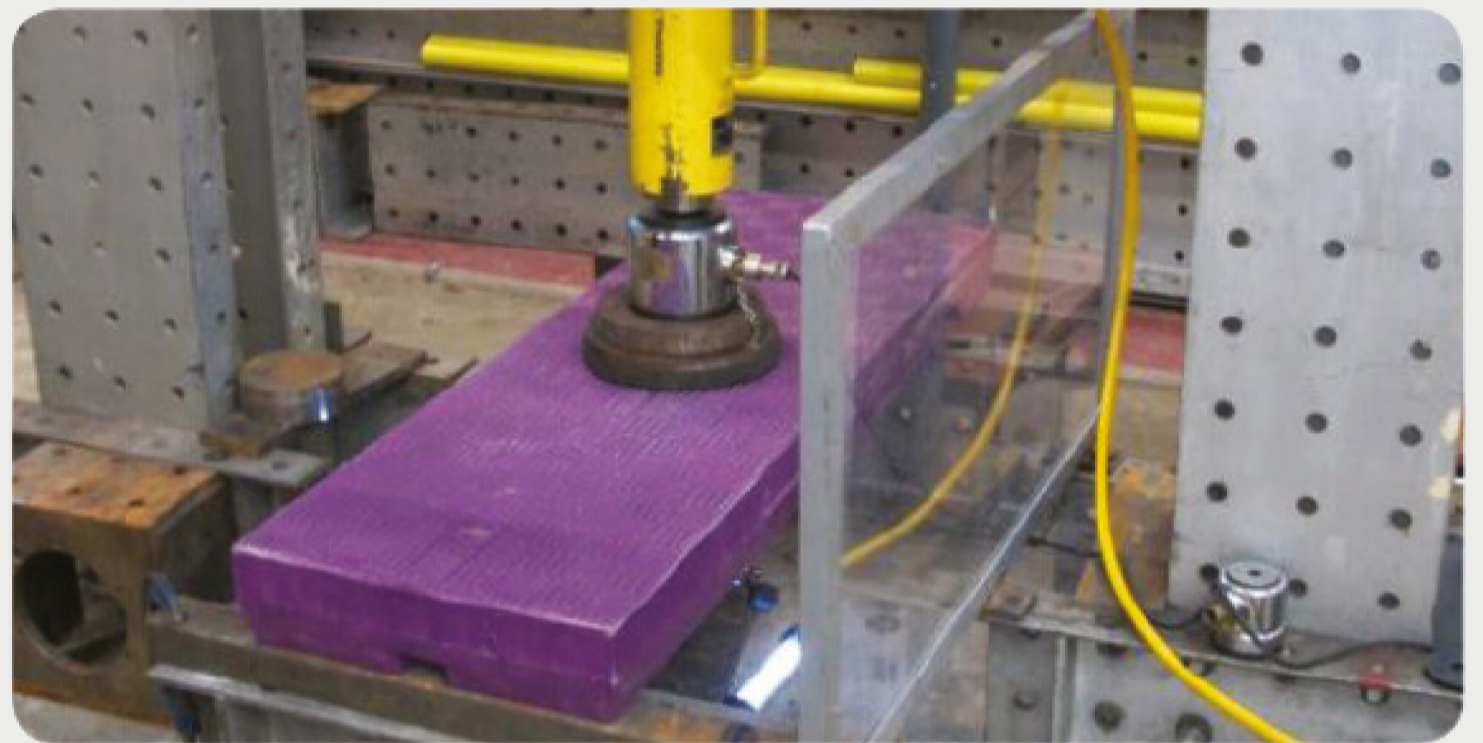


Accreditations

Fibrelite has held accreditation to the ISO quality standard (ISO 9001:2008) and British Standards Kitemark since 1998 and this commitment to product excellence enables us to provide the most comprehensive range of high strength modular and custom-made trench covers with the very best strength to weight ratio available in the market today.

Our covers:

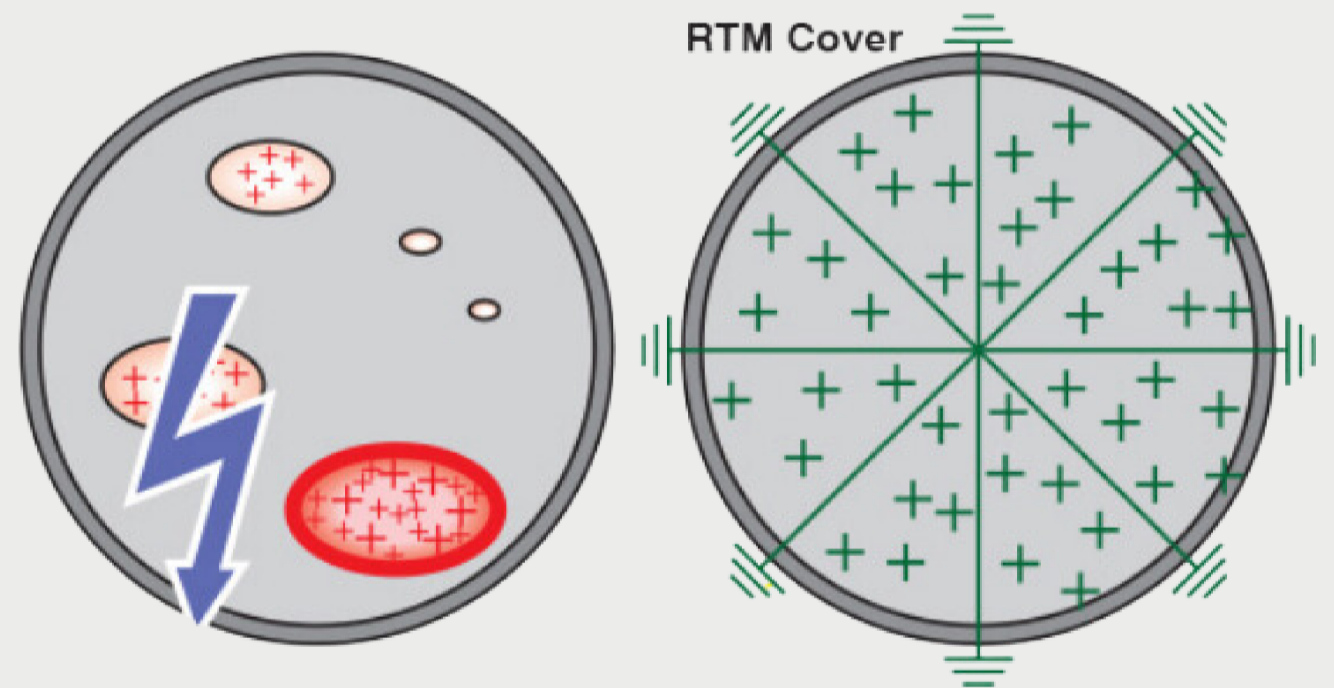
- exceed H20 and H25 load rating standards
- are BS EN 124 compliant
- are BSI Kitemark approved products



Fully Conductive Options

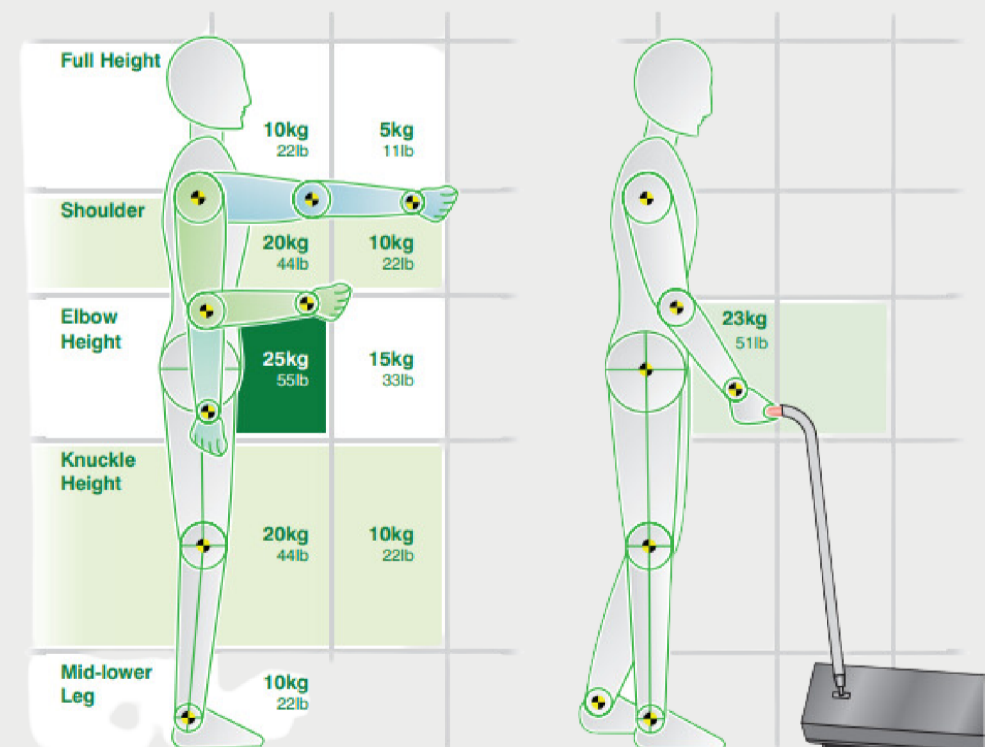
Potential electrostatic discharging can be eliminated by using the "fully conductive" Fibrelite cover which uses a Metalised fibre within the moulding process to achieve electrical continuity across the entire surface of the cover. Such covers exceed the surface resistivity requirements of PAS26.

The standard calls out for a maximum value of 1 KΩ/cm², the Fibrelite cover actually achieves a value of 0.0144 KΩ/cm².



Ergonomically Designed Lifting Handle

As well as being lightweight – typically a third of the weight of an equivalent-size cover produced in metal or concrete - the ergonomically designed lifting aid has the added benefit of eliminating the risk of back injury and crushed fingers.



The Health & Safety Executive recommended load moving capabilities in relation to weight and position.

Fibrelite lifting method with a 1m (40") long C250 load rated trench cover. Weights are halved with a two person lift.

Corrosion Resistant / Skid and Heat Resistance / Security

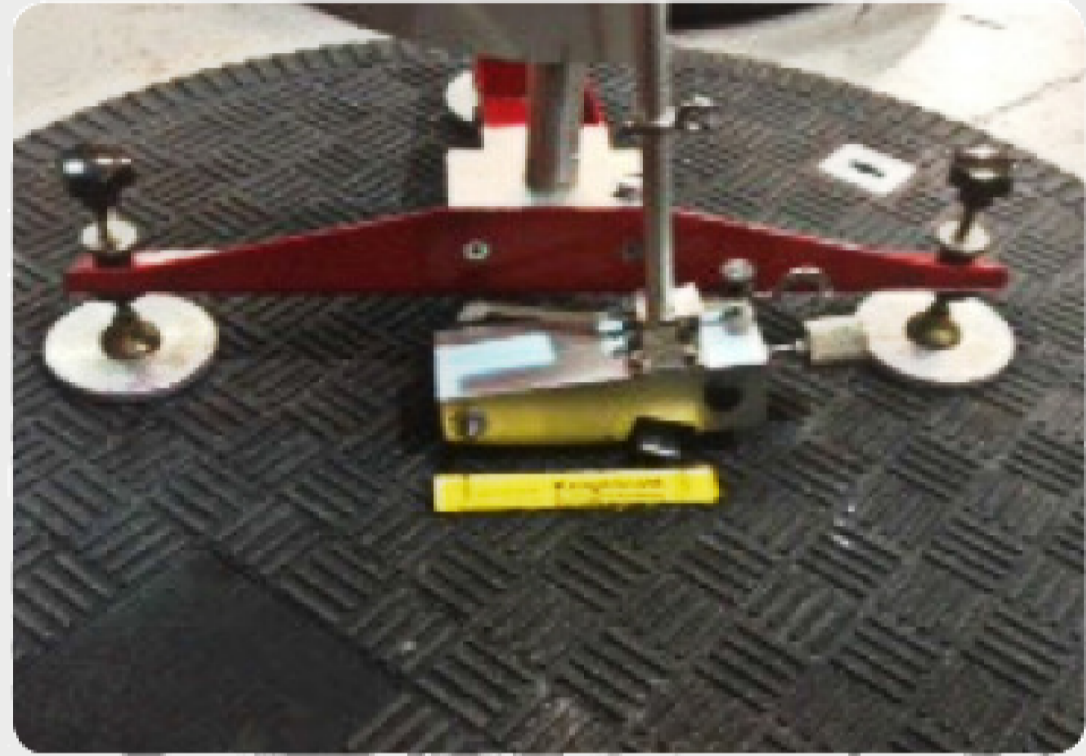
Corrosion Resistance

A prime reason for selecting a composite cover is because of its inherent resistance to corrosion making it an obvious choice where water, wastewater or corrosive liquids are involved. They are also ideal where underground infrastructure requires protection from external corrosive compounds such as salt.



Skid Resistance

Independent wet and dry tests carried out by Devon CC Materials Laboratory showed that Fibrelite trench covers – even when wet - had anti-slip properties equivalent to a modern high grade road surface which far exceeds health and safety advisory limits.



No Risk of Theft

There is no risk of theft with a Fibrelite composite cover as composites have no resale value in the scrap market - so you won't be left with a dangerous, uncovered hole in the ground.



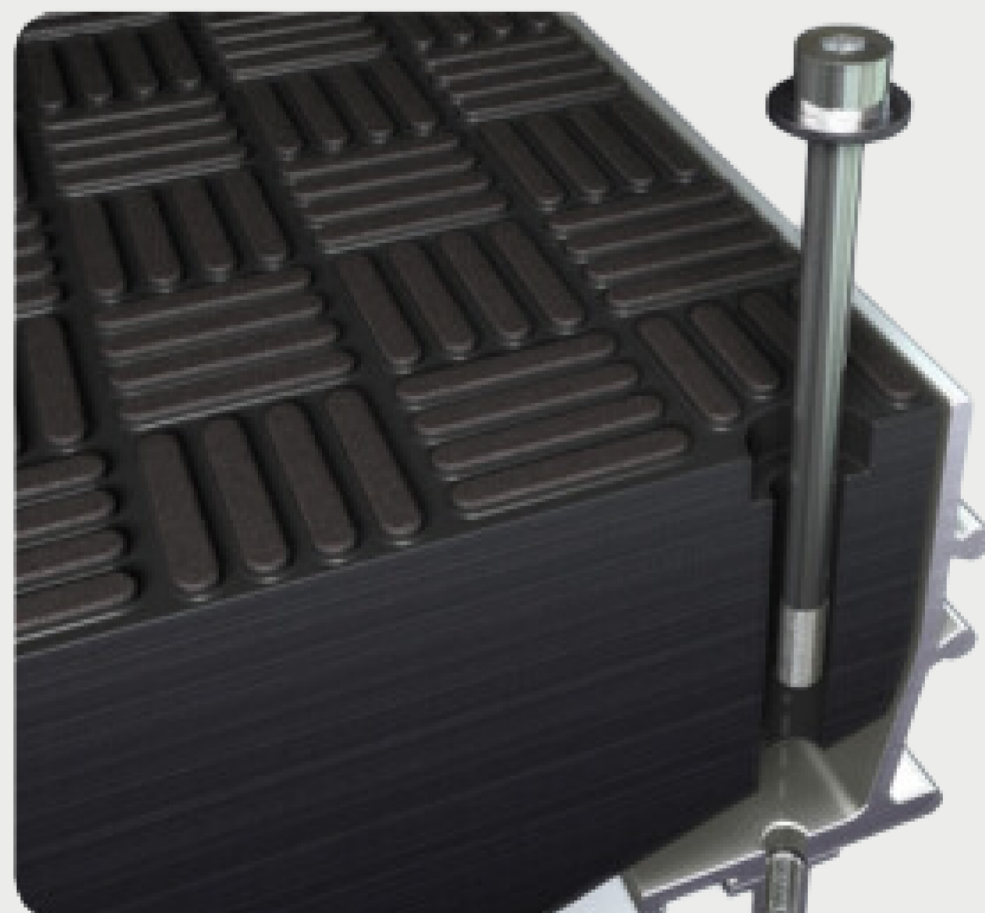
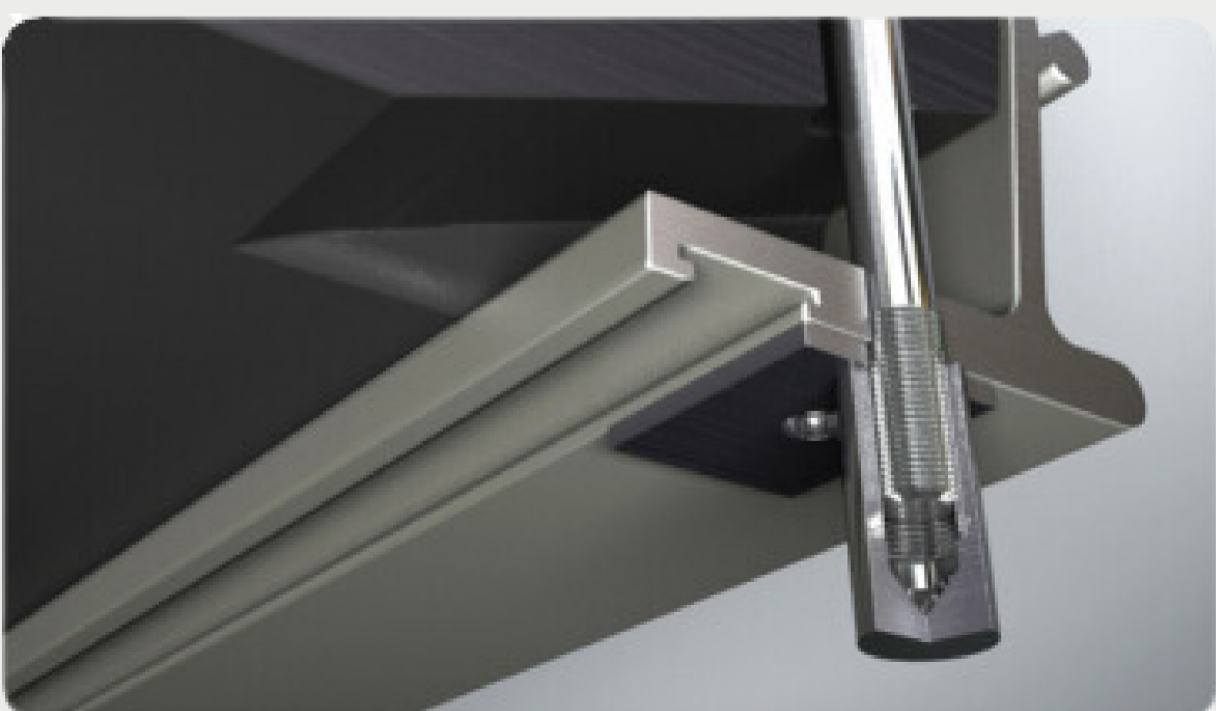
Heat Resistance

The thermal gradient properties of a composite steam cover significantly reduces the heat transfer from a steam vault to the surface of the cover. Typically the surface temperature of a composite cover is only slightly above ambient temperature, even when subjected to extremely hot temperatures on the underside. In fact, the best high-quality Fibrelite steam covers maintain their cool-to-touch properties and ability to support vehicular loads even when pushed to a test temperature 400°F.



Secure

Locks and restraining bolts available for added security.

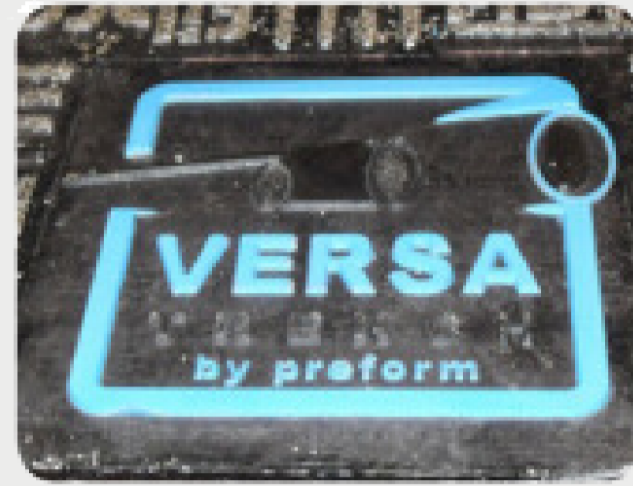


Coloured Covers / Frame or Rebate / Custom Moulded

Coloured Covers for Easy Identification

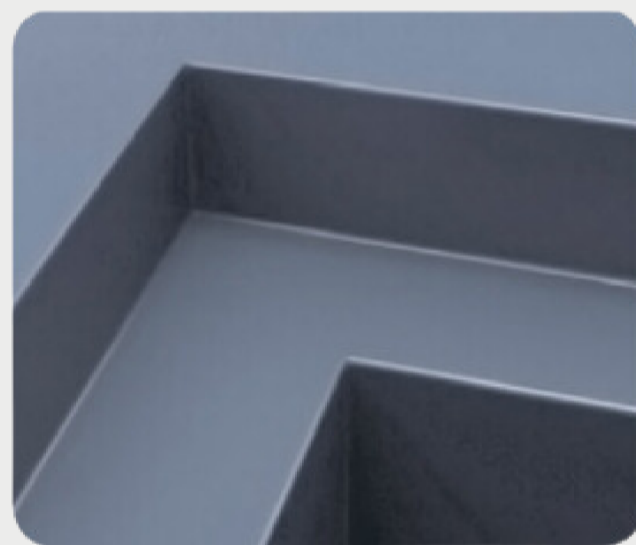
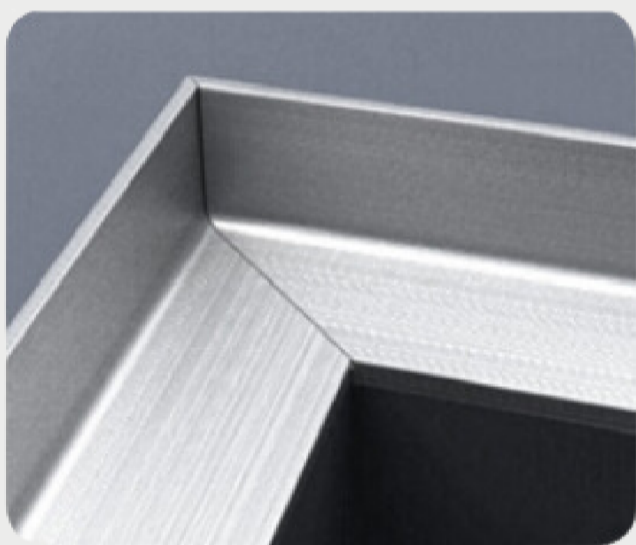
Fibrelite composite covers can also be moulded in virtually any colour or colour-combination and as the pigment is added into the resin during manufacture, there are no problems with the colour scratching or fading over time.

This means that covers can incorporate logos and/or be colour-coded to match a facility's branding or even to identify the specific underground service that can be accessed via a particular cover



Frame or Rebate Installation Energy

Can be installed onto our Specialised frame or existing rebate.

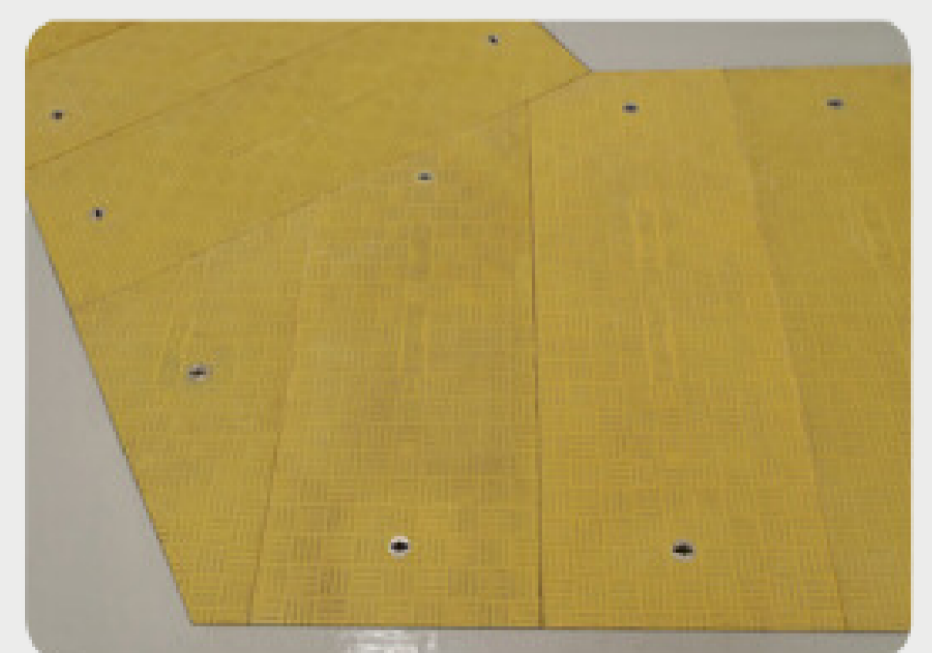
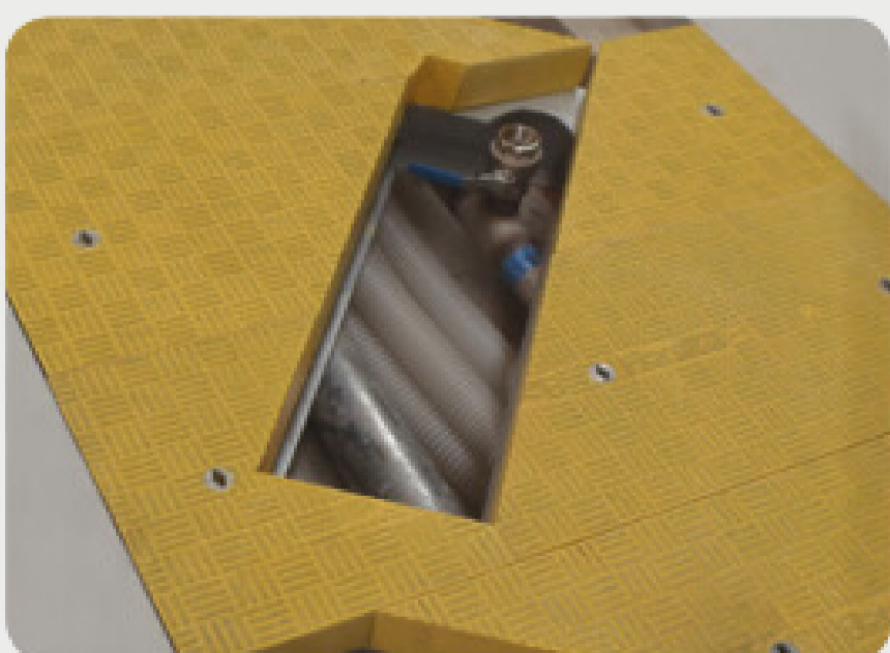
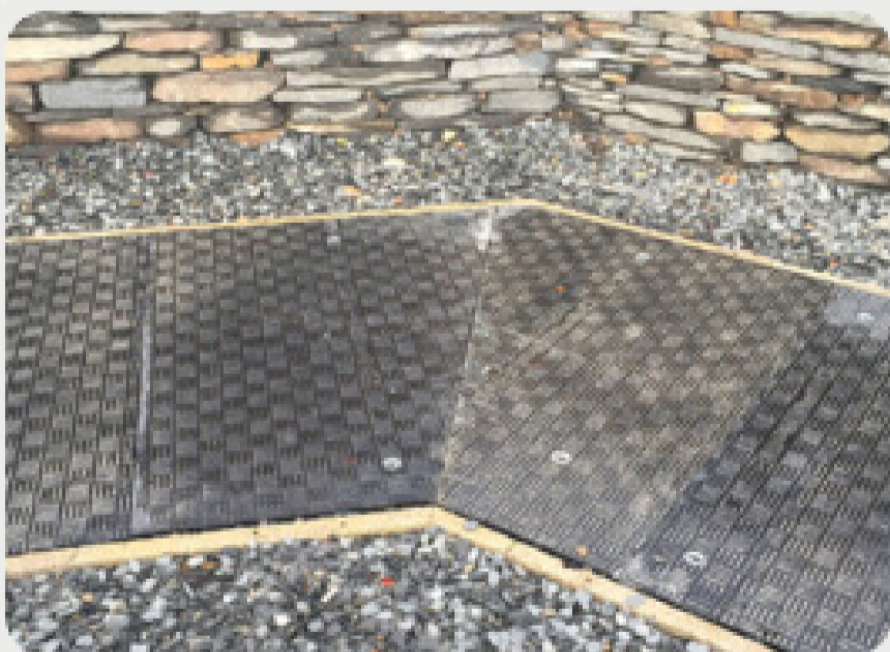


Configurations









Covers can be custom moulded to Accommodate pipework entry, shallow depths with stepped cover profiles, steam and gas release vents, inspection ports and much more.



Fibrelite covers can be moulded and shaped to Accommodate almost any trench opening



Industries Using Fibrelite Covers

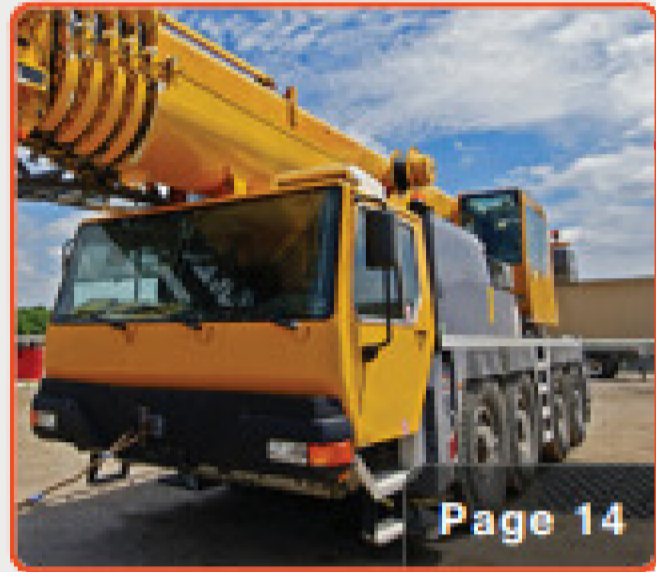
<p>Commercial</p> 	<p>Telecoms Data Centres Financial Centres Offices</p>	<p>Education</p> 	<p>Universities Schools Colleges Training Facilities</p>
<p>Energy</p> 	<p>Power Stations Electric Sub-Stations Gas Sub-Stations Steam Geothermal Mining</p>	<p>Food & Drink</p> 	<p>Processing Storage Grease Pits Vineyards</p>
<p>Leisure</p> 	<p>Arenas Theatres Stadiums Marinas Restaurants Sport Centres Zoos Museums</p>	<p>Manufacturing</p> 	<p>Electrical Mechanical</p>
<p>Military</p> 	<p>Pharmaceutical</p> 		
<p>Public Sector</p> 	<p>Roadways Hospitals Fire Service Police Stations Prisons Court Houses Municipalities</p>	<p>Retail</p> 	<p>Markets Shopping Centres Boutiques Auction Houses</p>
<p>Retail Fuelling</p> 	<p>Space Industry</p> 		
<p>Transportation</p> 	<p>Docks Ports Canals Rail Airports Fleet Fuelling Bus Depots</p>	<p>Water</p> 	<p>Drainage Solutions Treatment Plants Supply Storage Springs Flood Alleviation Transportation</p>

Pre-Cast Concrete Trenches

Due to Fibrelite's unique adjustable tooling arrangement we can provide GRP covering solutions for almost any pre-cast concrete trench layout.



Load Ratings from 3,400lb / 1.5 Tonnes to 202,000lb / 90 Tonnes



Page 14

135,000lb / 60 tonnes

Super Heavy Duty (E600)

For use in areas where high wheel loads are imposed such as loading areas.



Page 16

56,000lb / 25 tonnes

Standard Duty (C250)

For use in car parking lots, gas stations, industrial sites and areas with slow moving traffic



Page 18

28,000lb / 12.5 tonnes

Light Duty (B125)

For use in car parking lots and pedestrian areas where only occasional vehicular access is likely



Page 20

3,400lb / 1.5 tonnes

Super Light Duty (A15)

For use in areas where only pedestrians have access



202,000lb / 90 tonnes

Extreme Heavy Dty (F900)

For use in areas where extremely high wheel loads are imposed such as docks.



Page 13

90,000lb / 40 tonnes

Heavy Duty (HS25/D400)

For use in areas with frequent bus or heavy truck traffic, including carriage ways, hard shoulders and pedestrian areas.

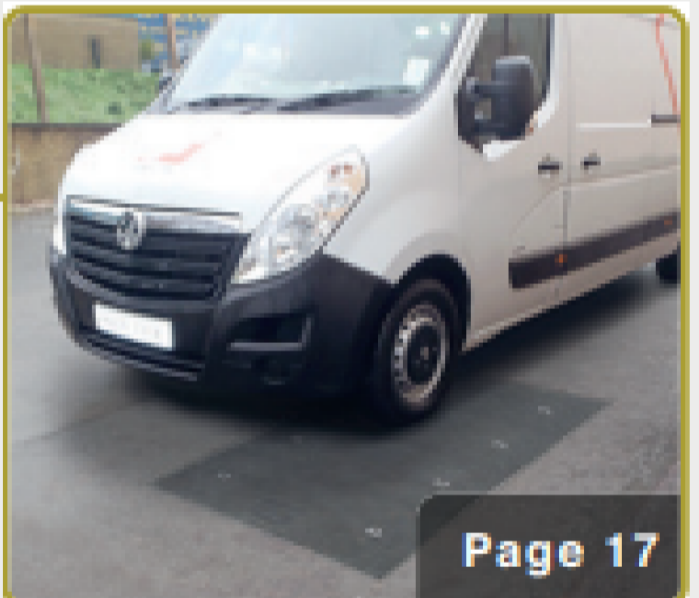


Page 15

40,000lb / 18 tonnes

Standard Duty US (HS20)

for use in traffic service areas as per AASHTO standard



Page 17

11,200lb / 5 tonnes

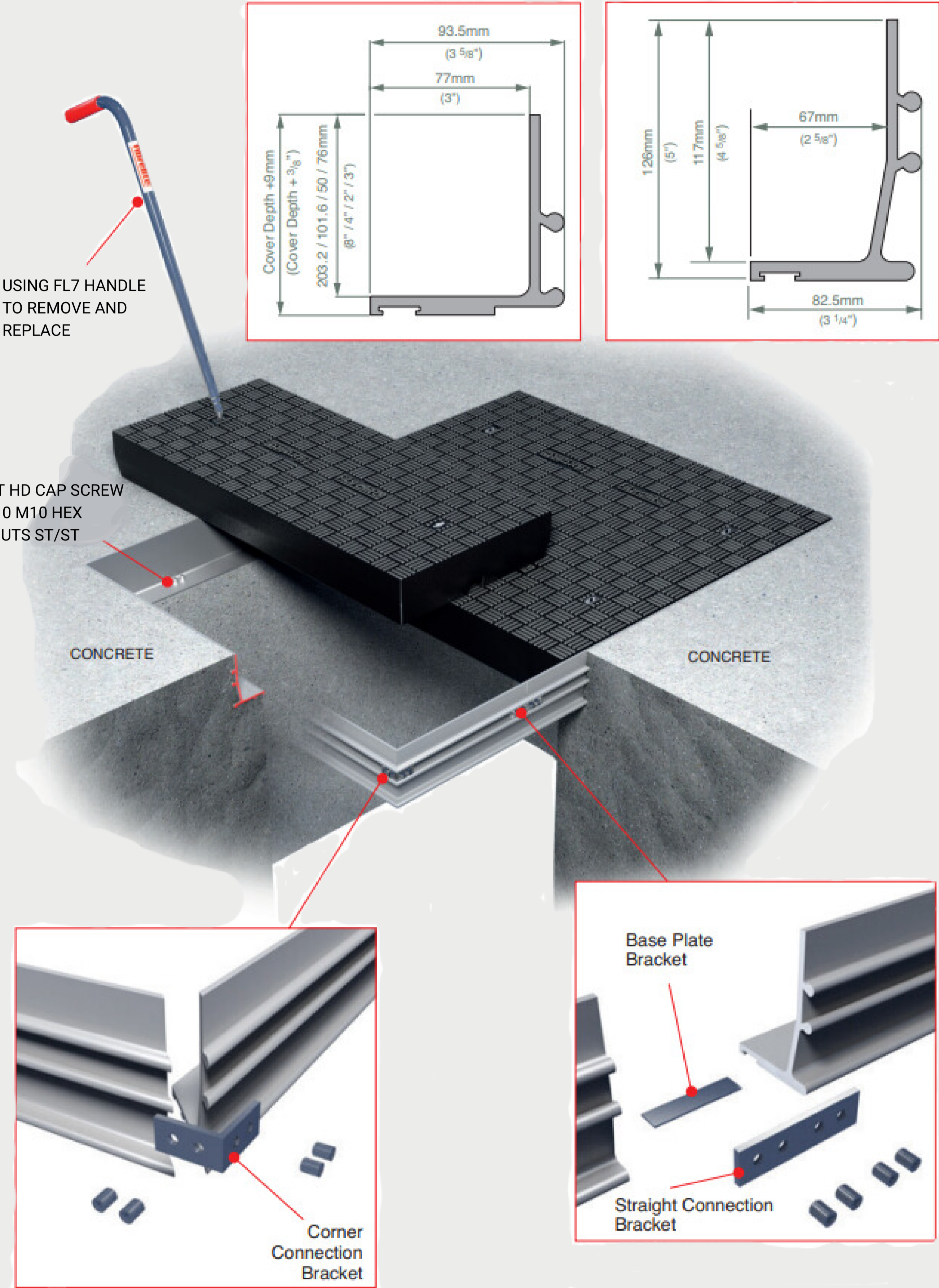
Medium Light Duty

For use in raised curb locations where light vehicular access is a possibility



Page 19

Frame Installations



USING FL7 HANDLE TO REMOVE AND REPLACE

SOCKET HD CAP SCREW
M10 x 10 M10 HEX
LOCK NUTS ST/ST

CONCRETE

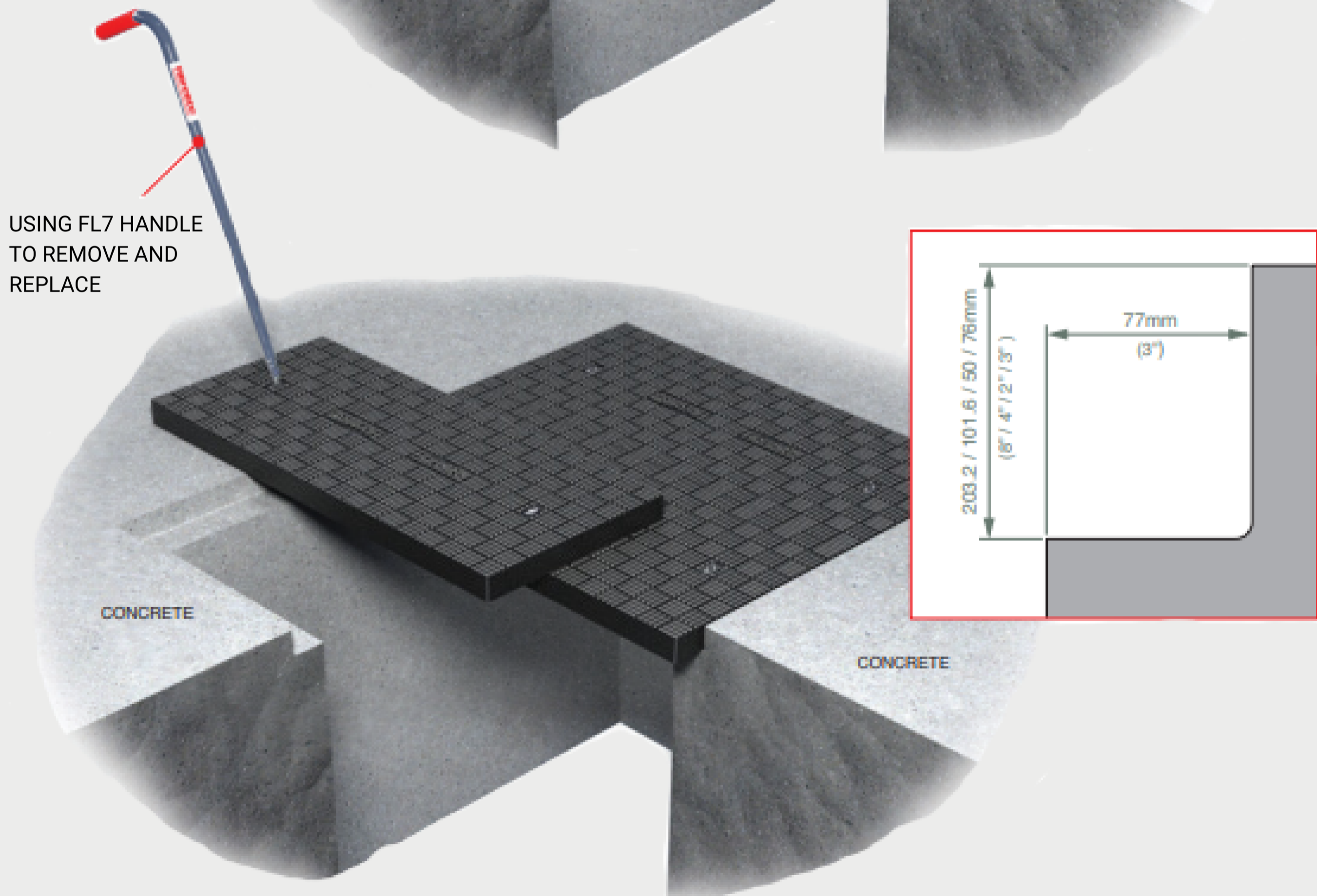
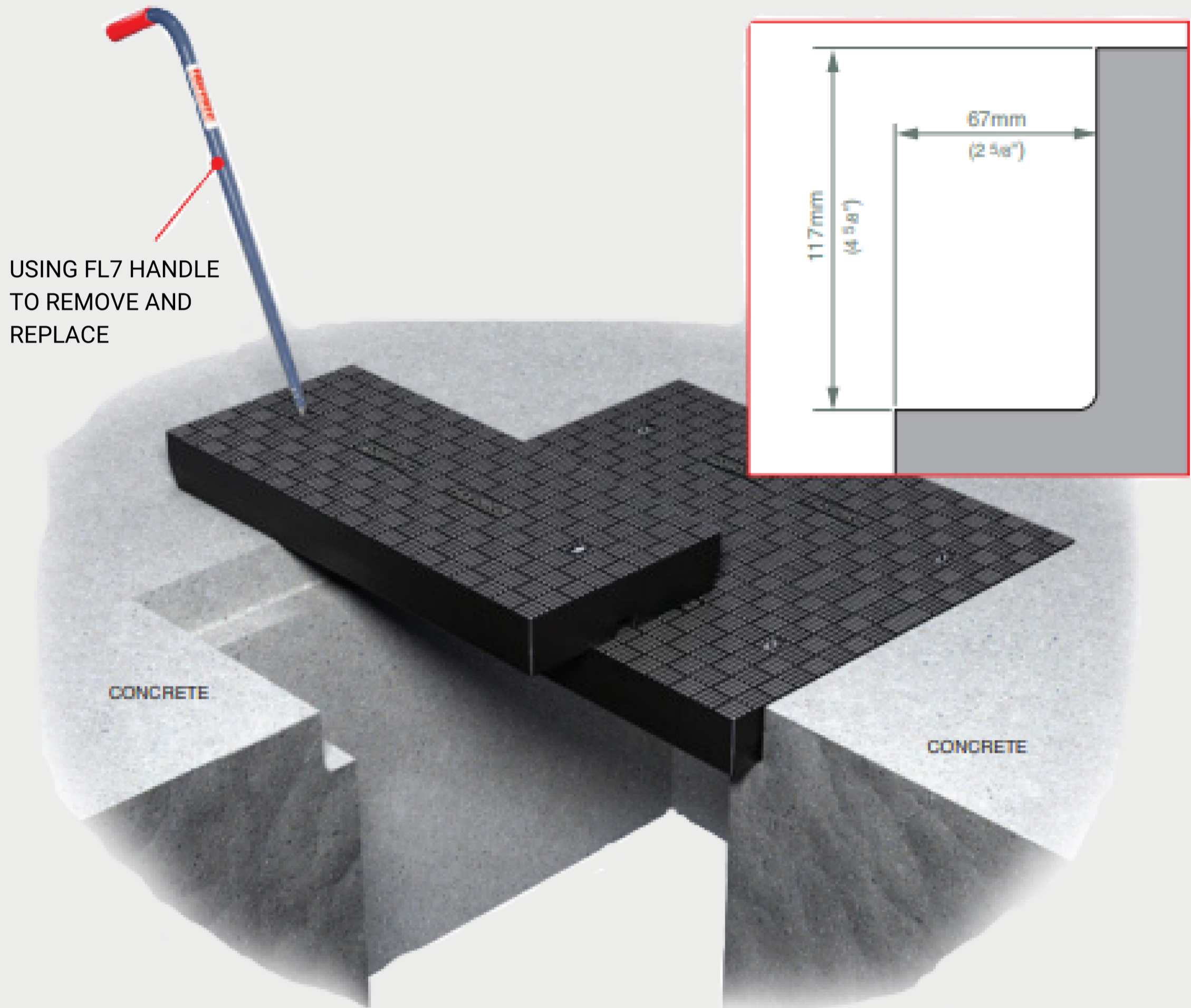
CONCRETE

Corner Connection Bracket

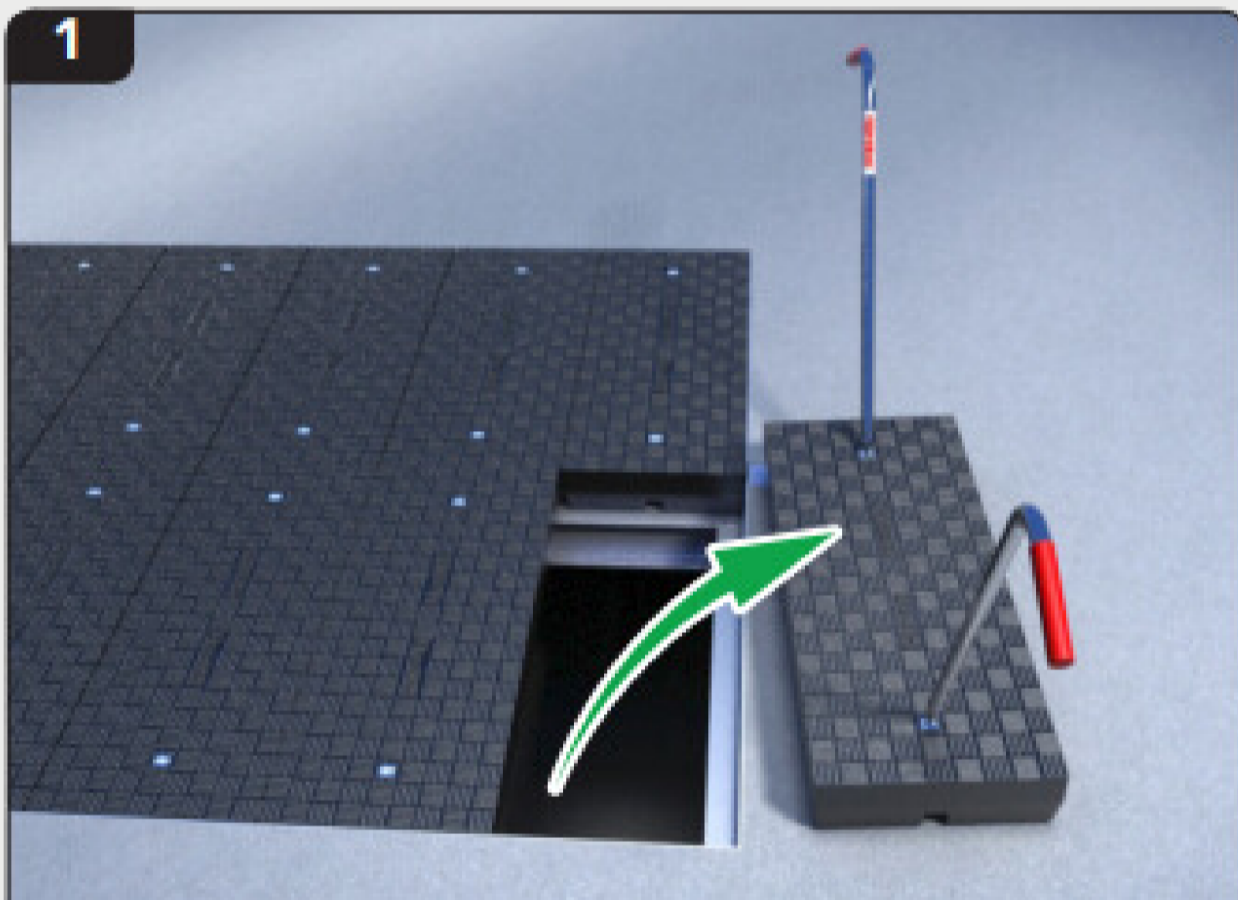
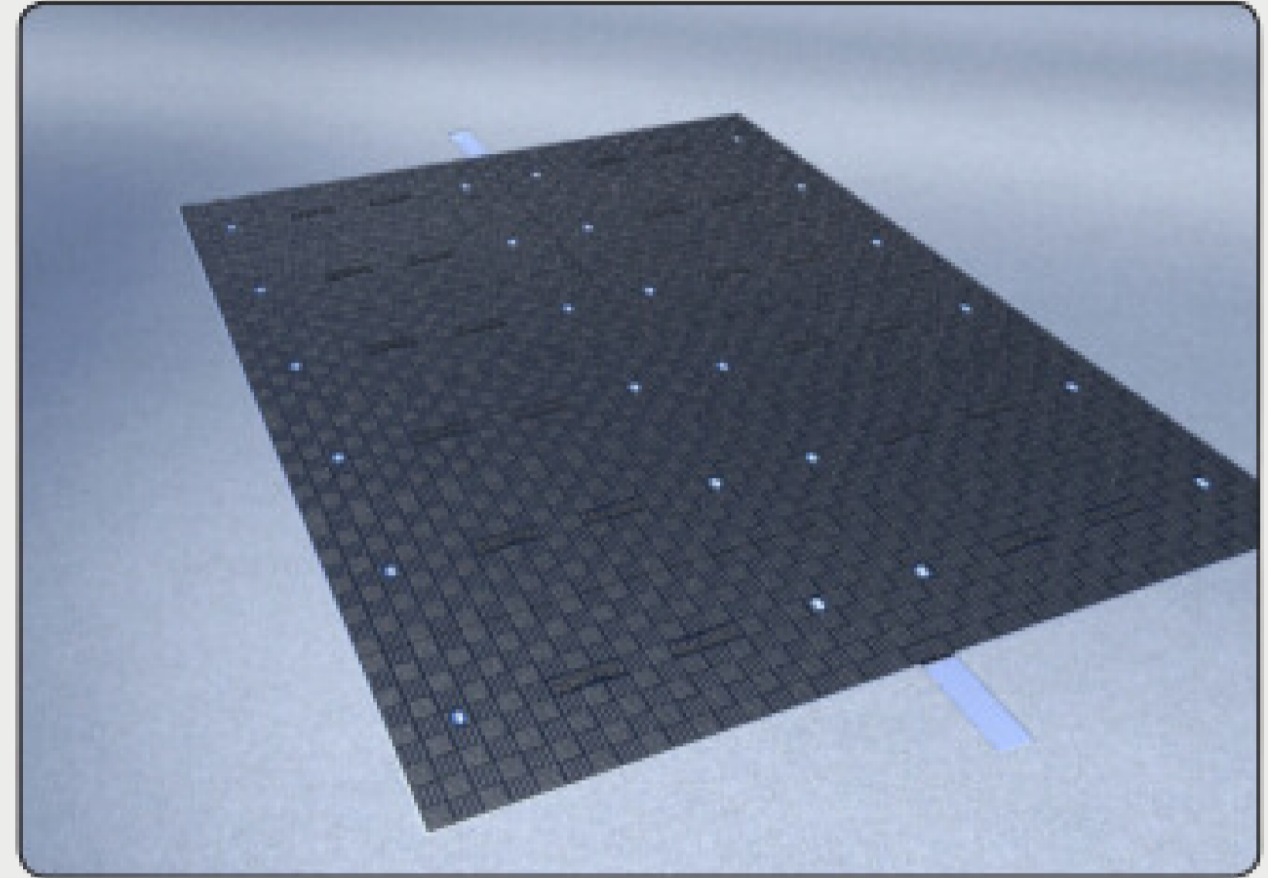
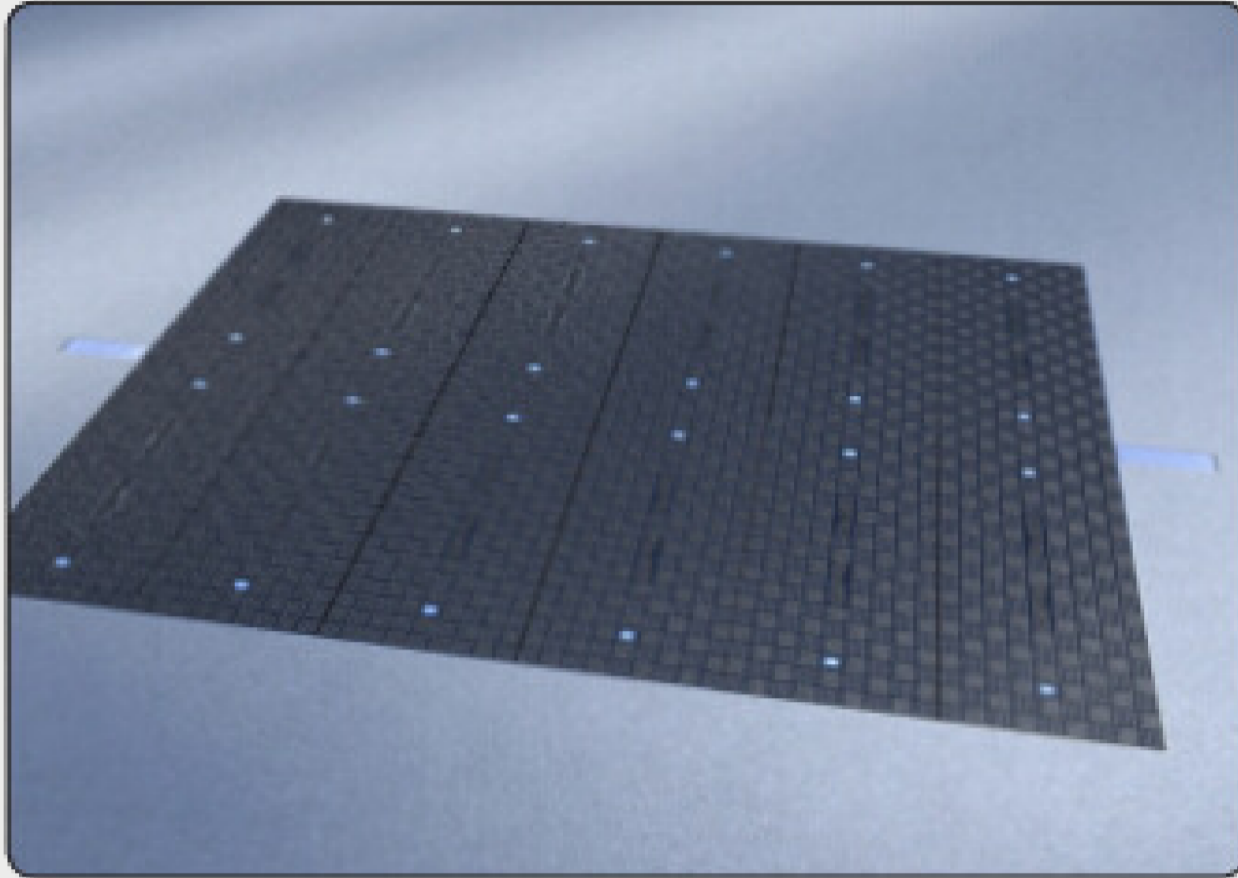
Base Plate Bracket

Straight Connection Bracket

Rebate Installations

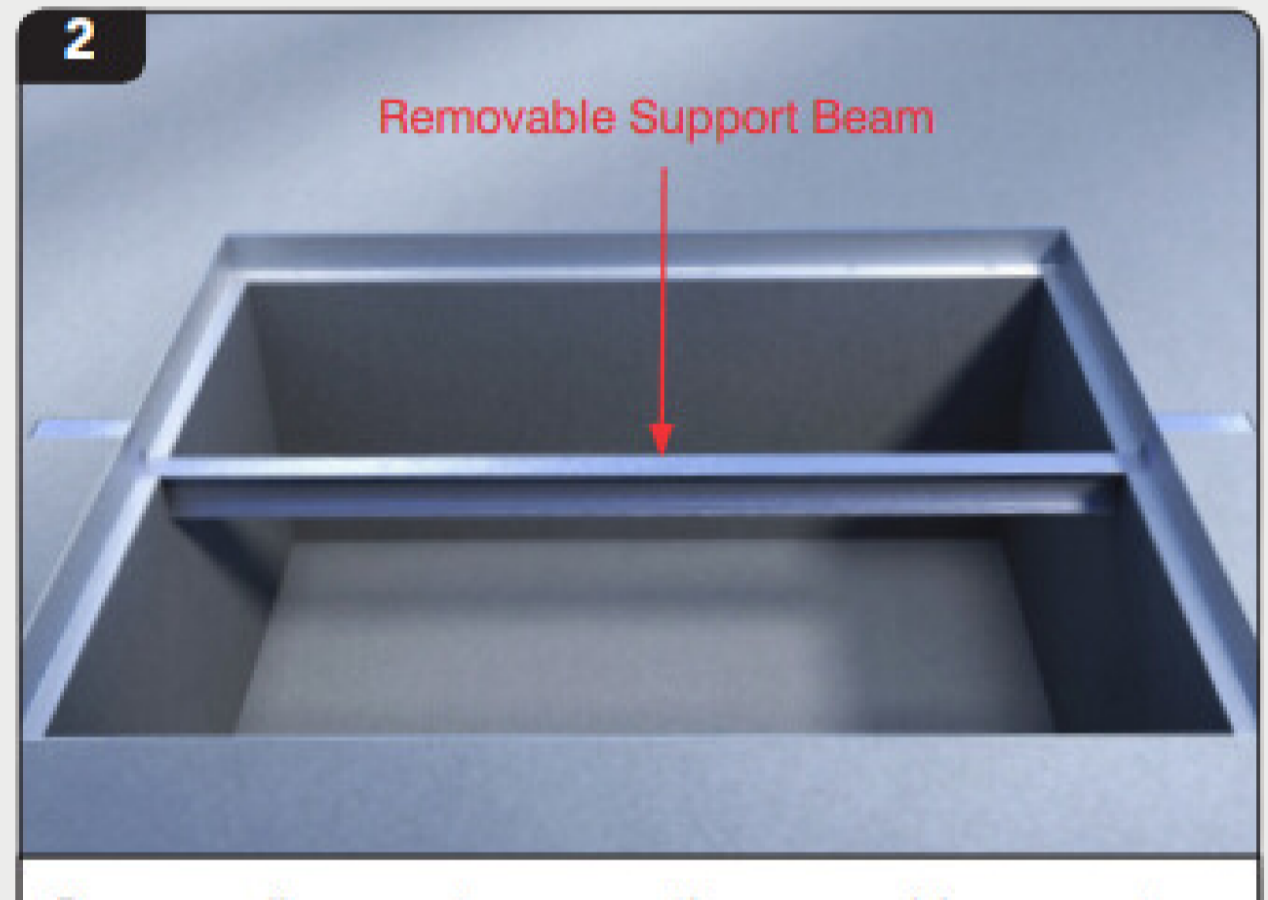


Removable Support Beam Instructions



1

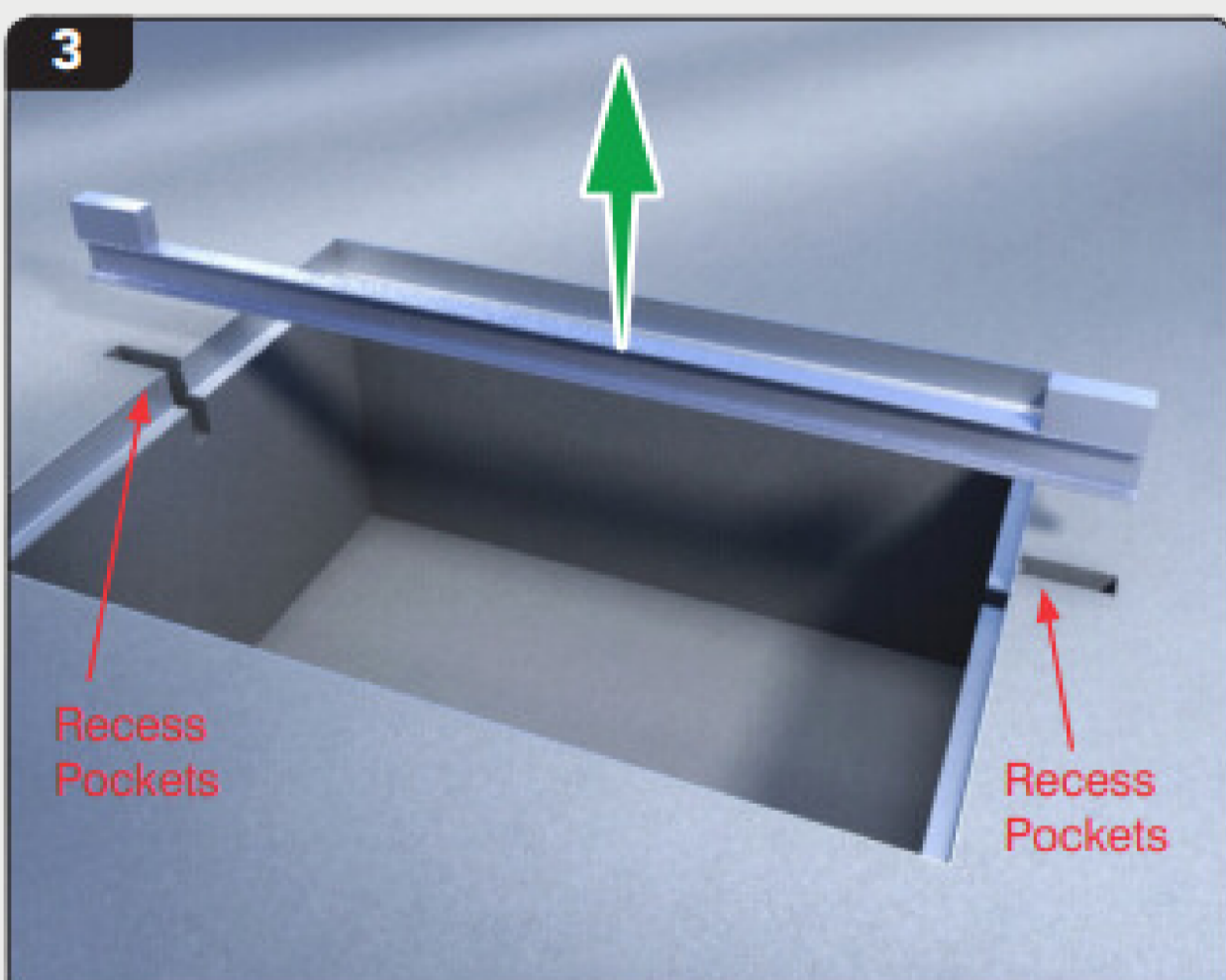
Remove covers.



2

Removable Support Beam

Remove all covers to expose the removable support beam(s).



3

Recess Pockets

Recess Pockets

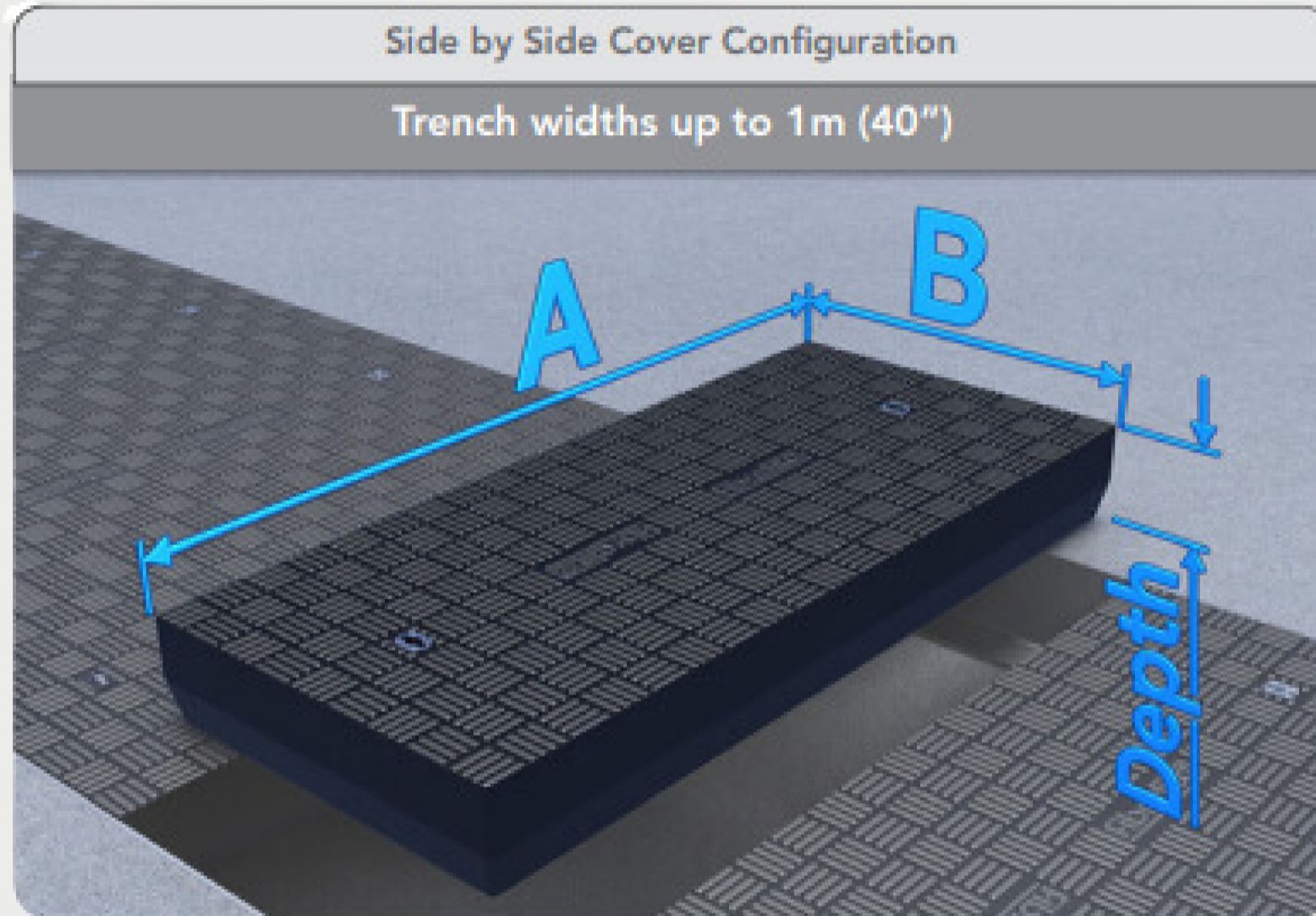
Remove the removable support beam(s) from the recess pockets in the concrete. This must be performed using appropriate lifting equipment.



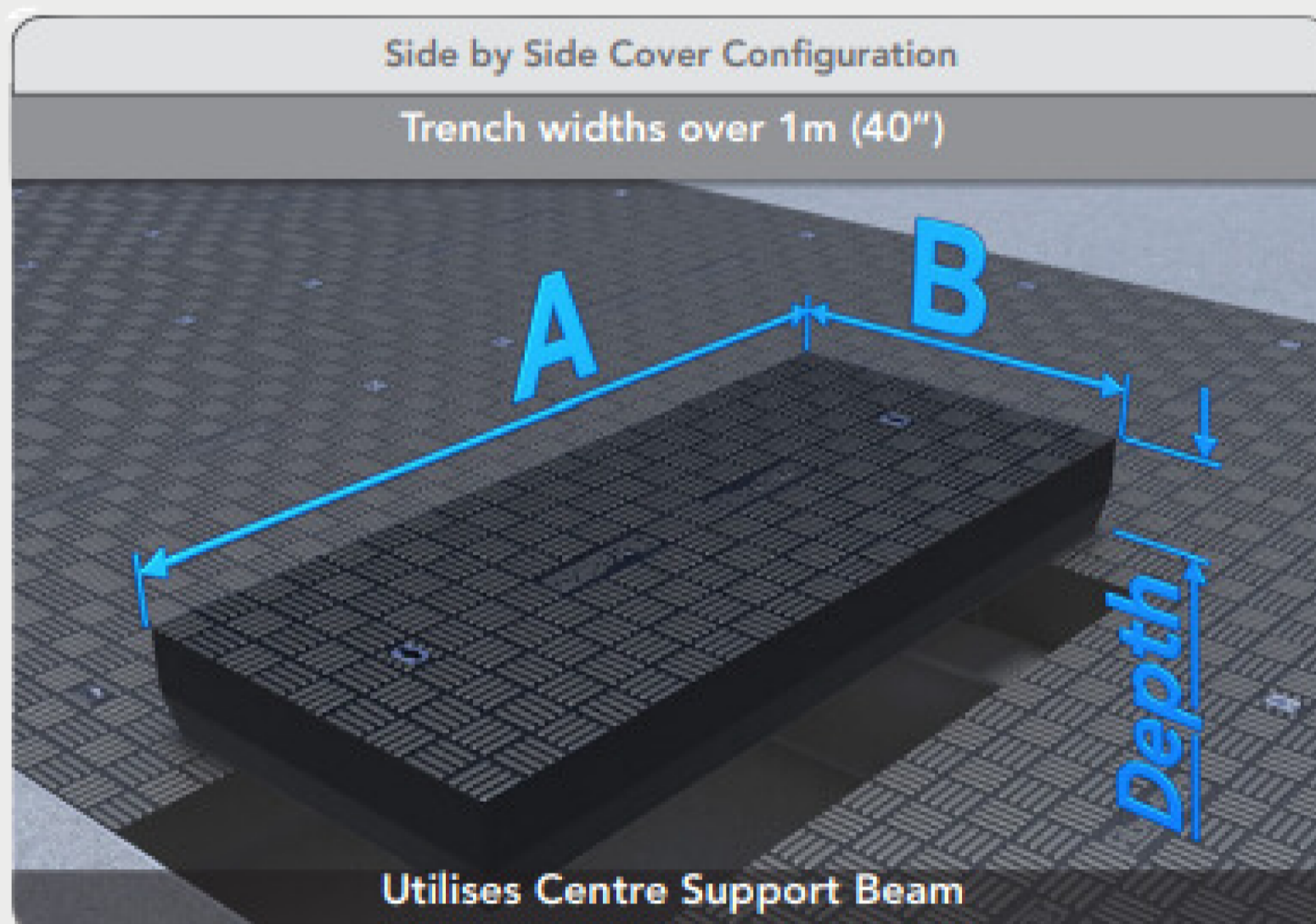
4

Once the removable support beam(s) is removed full working access to the pit/trench is gained.

**Extreme Heavy Duty F900 Trench Covers
202,000lb / 90 Tonnes**

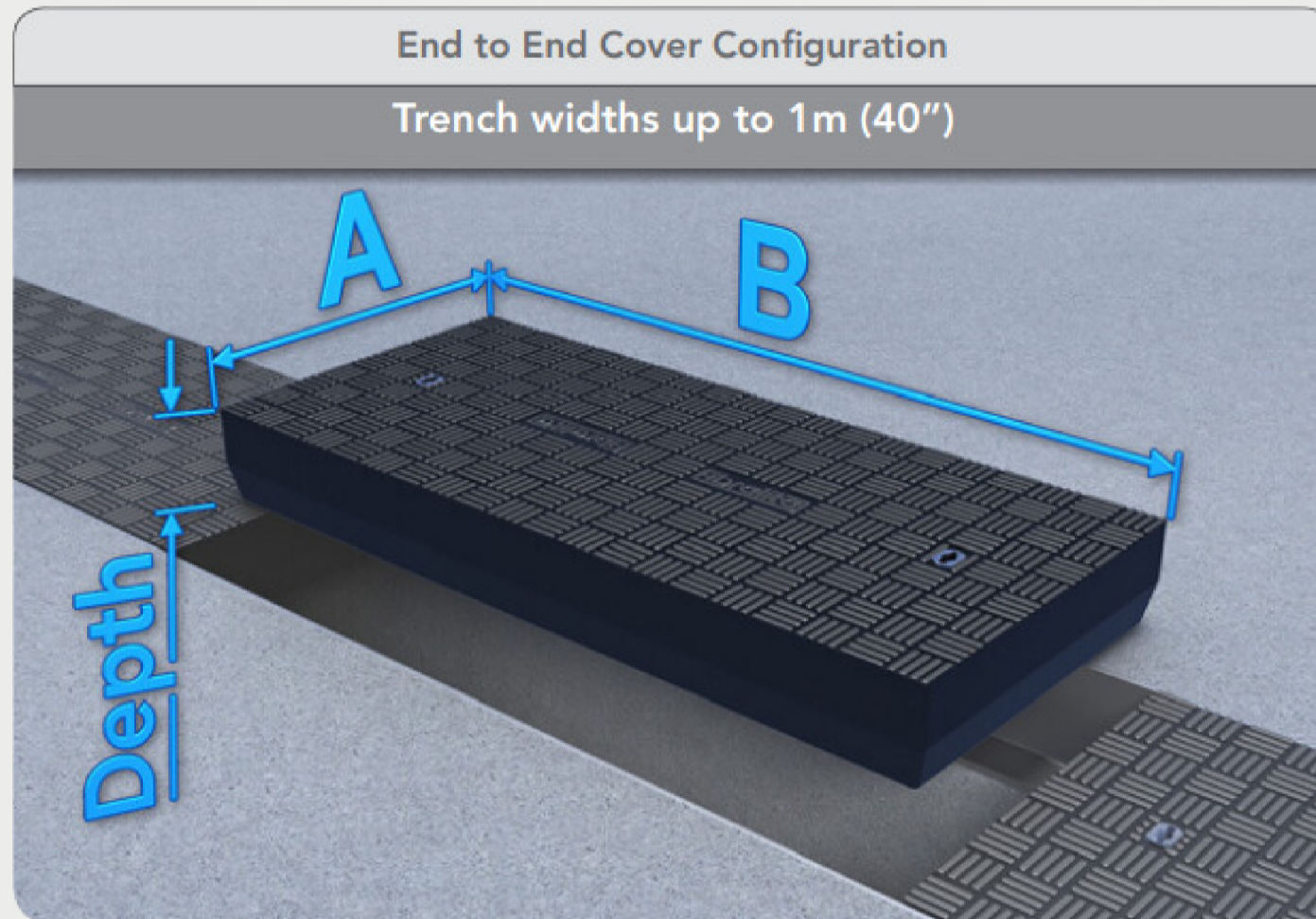


Dim 'A'	Dim 'B'	Depth	Weight
300-1000mm (12"- 40")	450mm (18")	117mm (4 5/8")	160kg/M ² (33 lbs/ft ²)

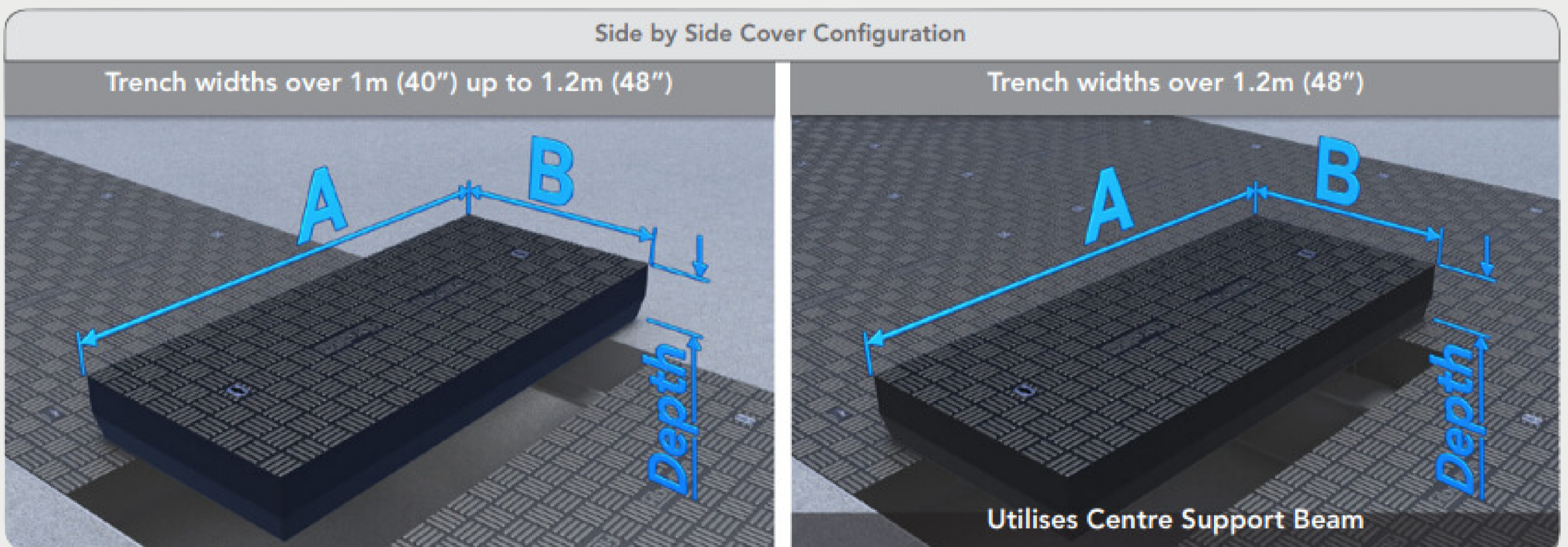


Dim 'A'	Dim 'B'	Depth	Weight
300 - 1000mm (12"- 40")	450mm (18")	117mm (4 5/8")	160kg/M ² (33 lbs/ft ²)

Super Heavy Duty E600 Trench Covers 135,000lb / 60 Tonnes

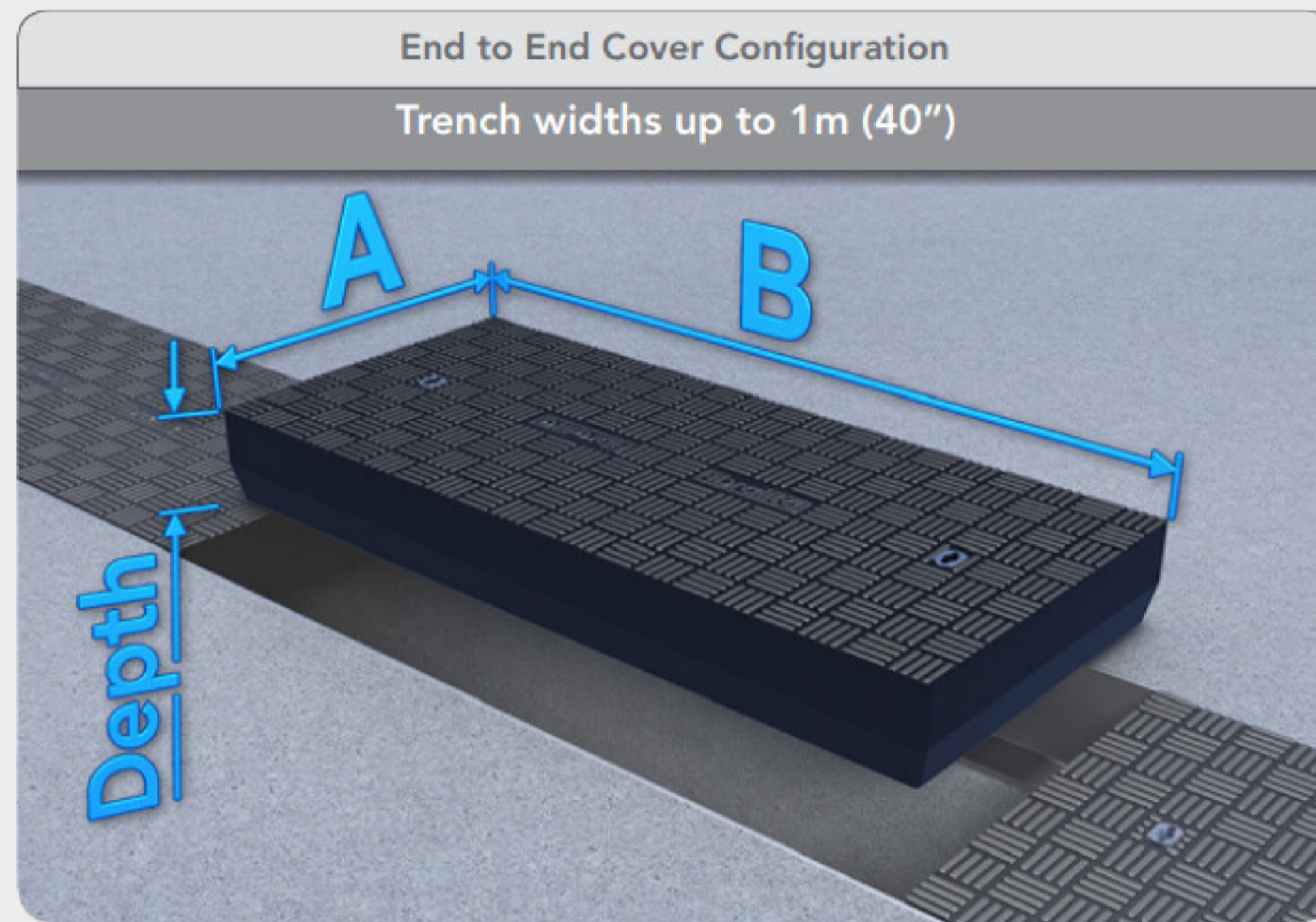


Dim 'A'	Dim 'B'	Depth	Weight
300 - 600mm (12" - 24")	450 - 1200mm (18" - 48")	117mm (4 5/8")	88kg/M ² (18 lbs/ft ²)
650 - 1000mm (14" - 40")	450 - 700mm (18" - 28")	117mm (4 5/8")	95kg/M ² (19 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 500mm (18" - 20")	203.2mm (8")	121kg/M ² (25 lbs/ft ²)

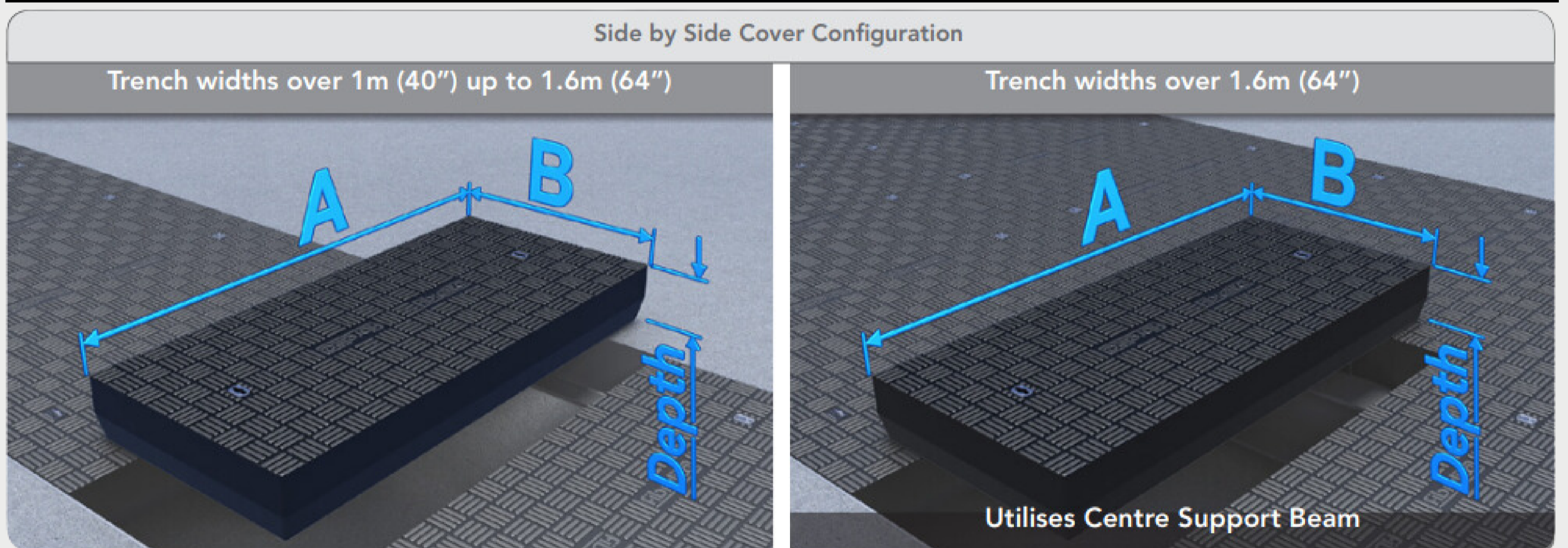


Dim 'A'	Dim 'B'	Depth	Weight
1000-1200mm (40" - 48")	450mm (18")	117mm (4 5/8")	133kg/M ² (27 lbs/ft ²)

Heavy Duty D400/H25 Trench Covers 90,000lb / 40 Tonnes

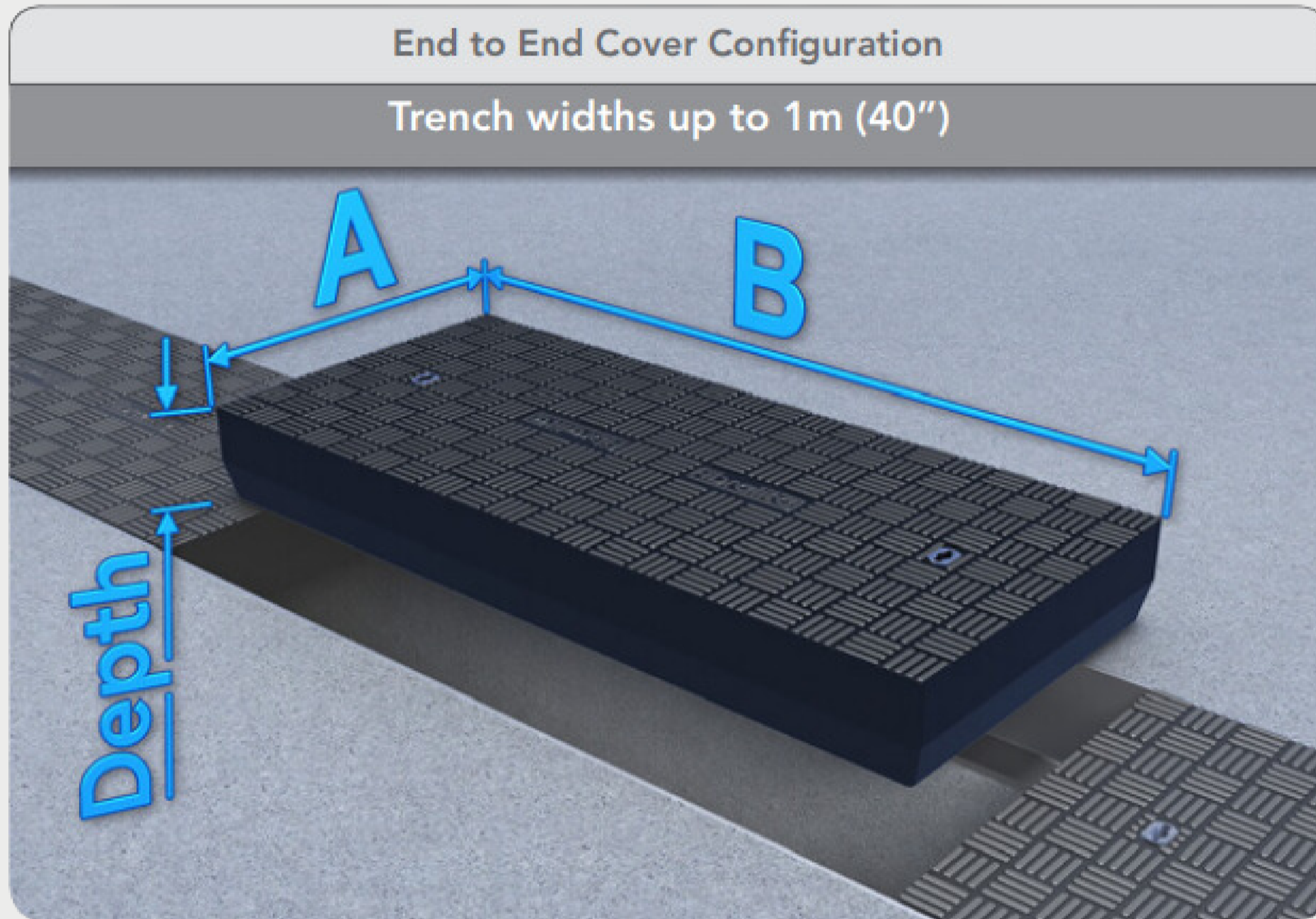


Dim 'A'	Dim 'B'	Depth	Weight
300 - 600mm (12" - 24")	450 - 1600mm (18" - 64")	117mm (4 5/8")	65kg/M ² (13 lbs/ft ²)
650 - 1000mm (26" - 40")	450 - 1000mm (18" - 40")	117mm (4 5/8")	65kg/M ² (13 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 600mm (18" - 24")	203.2mm (8")	96kg/M ² (20 lbs/ft ²)



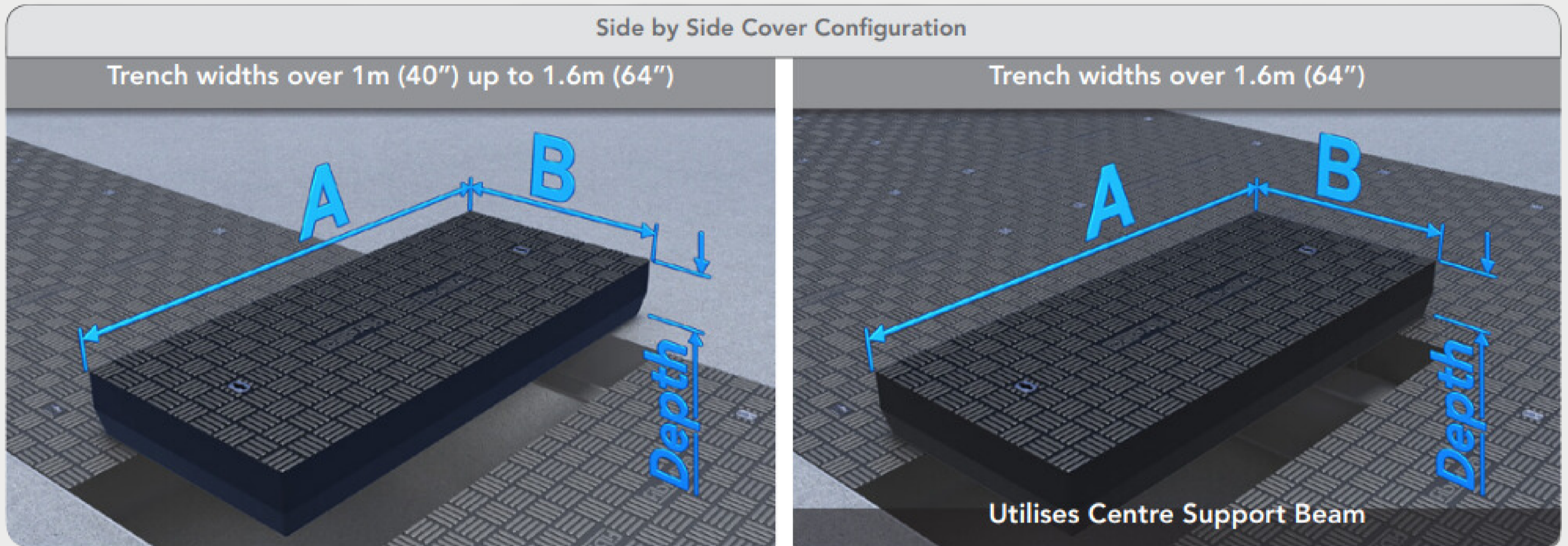
Dim 'A'	Dim 'B'	Depth	Weight
1000 - 1200mm (12" - 24")	450 - 600mm (18" - 24")	117mm (4 5/8")	85kg/M ² (17 lbs/ft ²)
1250 - 1350mm (50" - 54")	450mm (18")	117mm (4 5/8")	100kg/M ² (20 lbs/ft ²)
1400 - 1600mm (56" - 64")	450mm (18")	117mm (4 5/8")	133kg/M ² (27 lbs/ft ²)

Standard Duty C250 Trench Covers 56,000lb / 25 Tonnes



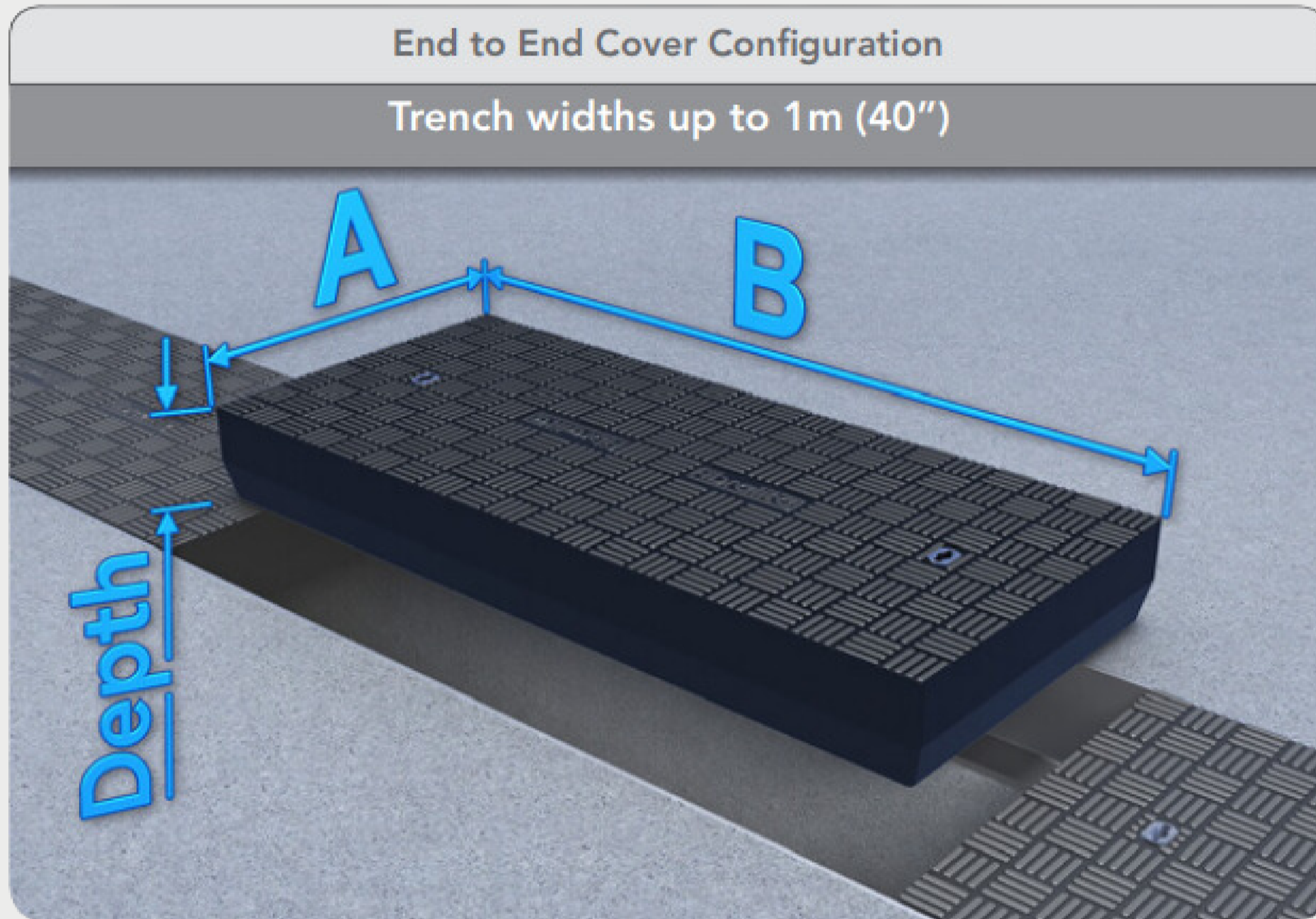
Dim 'A'	Dim 'B'	Depth	Weight
300 - 700mm (12" - 28")	450 - 1800mm (18" - 72")	76mm (3")	48kg/M ² (10 lbs/ft ²)
700 - 1000mm (28" - 40")	900 - 1200mm (36" - 48")	76mm (3")	48kg/M ² (10 lbs/ft ²)
300 - 1000mm (12" - 40")	600 - 1200mm (24" - 48")	101.6mm (4")	46kg/M ² (9 lbs/ft ²)
300 - 500mm (12" - 20")	450 - 1800mm (18" - 72")	117mm (4 5/8")	60kg/M ² (12 lbs/ft ²)
500 - 1000mm (20" - 40")	450 - 1000mm (18" - 40")	117mm (4 5/8")	60kg/M ² (12 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 700mm (18" - 28")	203.2mm (8")	83kg/M ² (17 lbs/ft ²)

Standard Duty C250 Trench Covers 56,000lb / 25 Tonnes



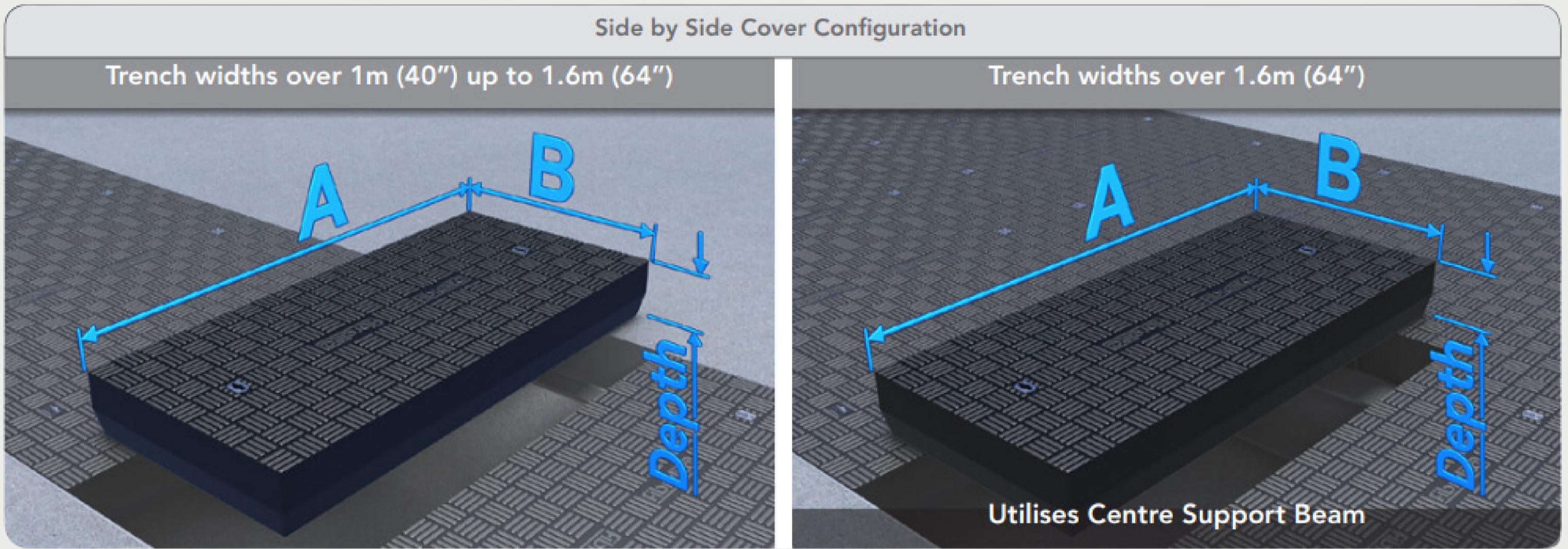
Dim 'A'	Dim 'B'	Depth	Weight
1000 - 1200mm (40" - 48")	450 - 800mm (18" - 32")	117mm (4 5/8")	60kg/M ² (12 lbs/ft ²)
1200 - 1400mm (48" - 56")	450 - 700mm (18" - 28")	117mm (4 5/8")	67kg/M ² (14 lbs/ft ²)
1400 - 1600mm (56" - 64")	450 - 500mm (18" - 20")	117mm (4 5/8")	75kg/M ² (15 lbs/ft ²)
1000 - 1200mm (40" - 48")	450 - 600mm (18" - 24")	203.2mm (8")	83kg/M ² (17 lbs/ft ²)
1200 - 1400mm (48" - 56")	450 - 500mm (18" - 20")	203.2mm (8")	83kg/M ² (17 lbs/ft ²)

Standard Duty US H2O Trench Covers 40,000lb / 18 Tonnes (40,000lbf)



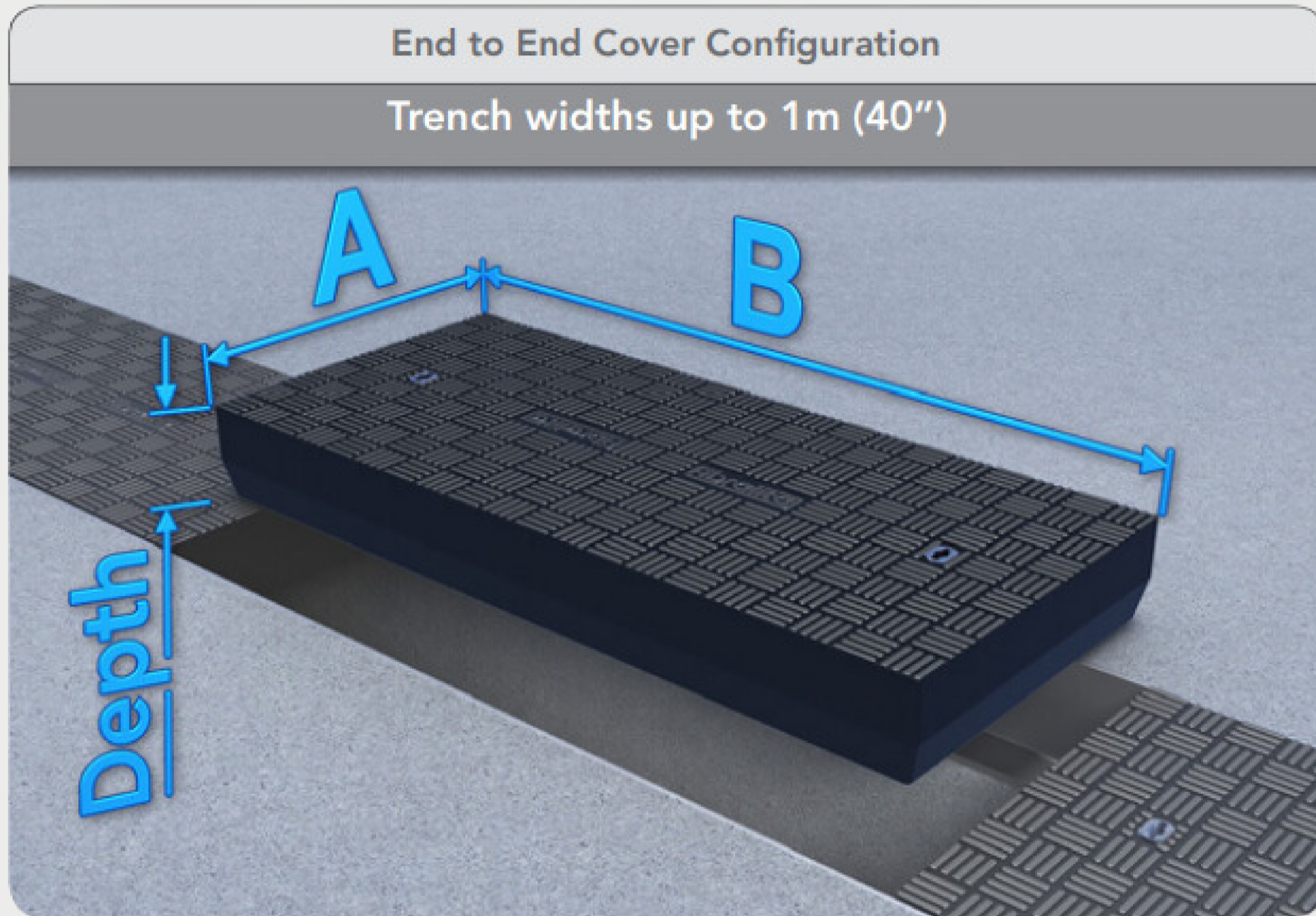
Dim 'A'	Dim 'B'	Depth	Weight
300 - 800mm (12" - 32")	450 - 1800mm (18" - 72")	76mm (3")	44kg/M ² (9 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 1800mm (18" - 72")	101.6mm (4")	40kg/M ² (8 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 1800mm (18" - 72")	117mm (4 5/8")	44kg/M ² (9 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 900mm (18" - 36")	203.2mm (8")	61kg/M ² (12 lbs/ft ²)
300 - 800mm (12" - 32")	450 - 1200mm (18" - 48")	203.2mm (8")	61kg/M ² (12 lbs/ft ²)
300 - 600mm (12" - 24")	450 - 1600mm (18" - 64")	203.2mm (8")	61kg/M ² (12 lbs/ft ²)

Standard Duty US H2O Trench Covers 40,000lb / 18 Tonnes (40,000lbf)



Dim 'A'	Dim 'B'	Depth	Weight
1000 - 1200mm (40" - 48")	450 - 900mm (18" - 36")	101.6mm (4")	55kg/M ² (11 lbs/ft ²)
1000 - 1400mm (40" - 56")	450 - 1000mm (18" - 40")	117mm (4 5/8")	52kg/M ² (11 lbs/ft ²)
1400 - 1600mm (56" - 64")	700 - 1000mm (28" - 40")	117mm (4 5/8")	52kg/M ² (11 lbs/ft ²)
1000 - 1200mm (40" - 48")	450 - 600mm (18" - 24")	203.2mm (8")	61kg/M ² (12 lbs/ft ²)
1200 - 1600mm (48" - 64")	450 - 800mm (18" - 32")	203.2mm (8")	61kg/M ² (12 lbs/ft ²)

Light Duty B125 Trench Covers
28,000lb / 12.5 Tonnes

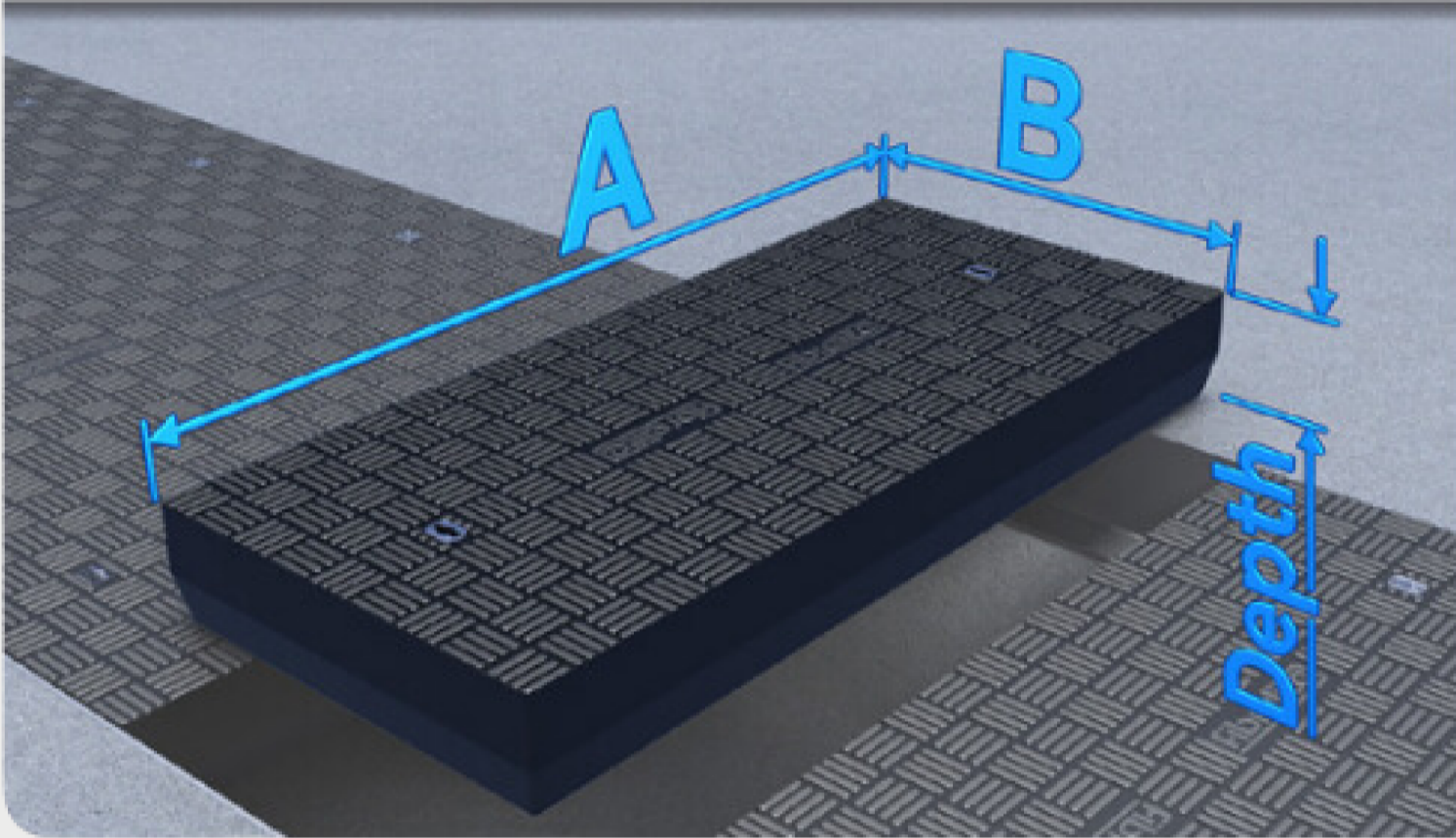


Dim 'A'	Dim 'B'	Depth	Weight
300 - 800mm (12" - 32")	450 - 1800mm (18" - 72")	50mm (2")	35 kg/M ² (7 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 1800mm (18" - 72")	76mm (3")	42 kg/M ² (9 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 1600mm (18" - 64")	101.6mm (4")	42 kg/M ² (9 lbs/ft ²)
300 - 800mm (12" - 32")	450 - 1600mm (18" - 64")	117mm (4 5/8")	43 kg/M ² (9 lbs/ft ²)
800 - 1000mm (32" - 40")	450 - 1400mm (18" - 56")	117mm (4 5/8")	43 kg/M ² (9 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 900mm (18" - 36")	203.2mm (8")	61kg/M ² (12 lbs/ft ²)

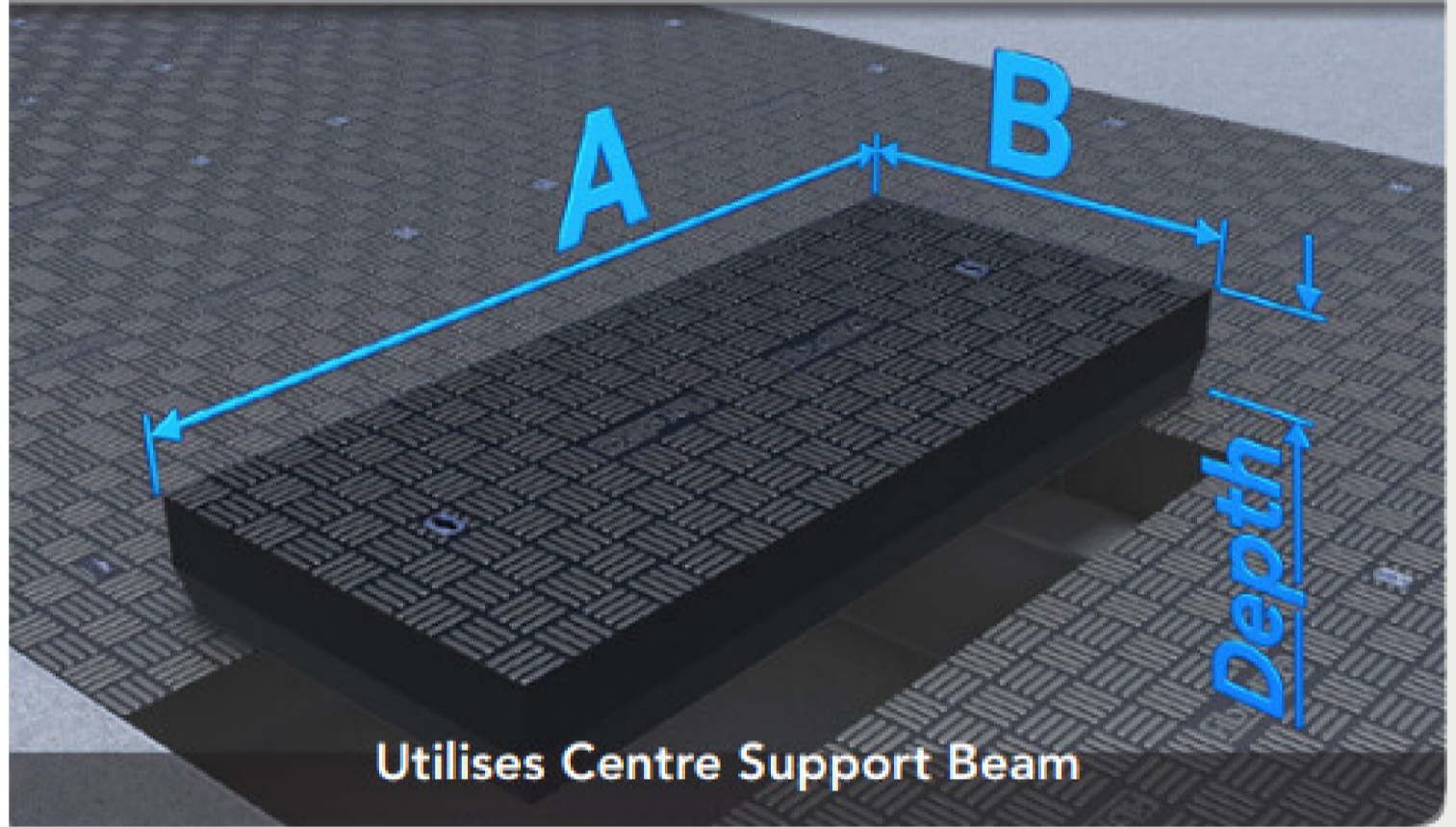
Light Duty B125 Trench Covers 28,000lb / 12.5 Tonnes

Side by Side Cover Configuration

Trench widths over 1m (40") up to 1.6m (64")

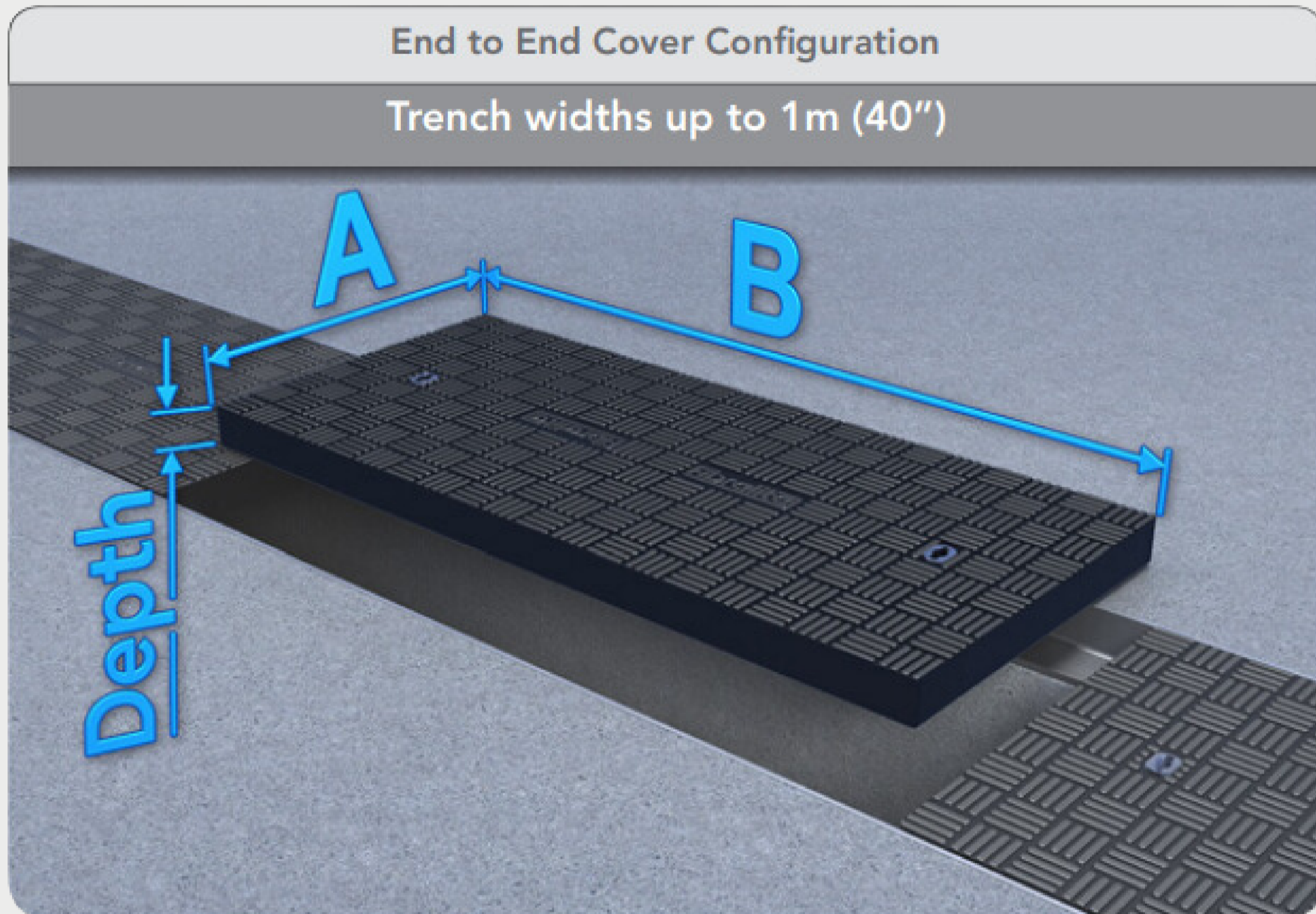


Trench widths over 1.6m (64")



Dim 'A'	Dim 'B'	Depth	Weight
1000 - 1200mm (40" - 48")	450 - 800mm (18" - 32")	76mm (3")	52kg/M ² (11 lbs/ft ²)
1000 - 1500mm (40" - 60")	450 - 800mm (18" - 32")	101.6mm (4")	48 kg/M ² (10 lbs/ft ²)
1000 - 1600mm (40" - 64")	450 - 700mm (18" - 28")	117mm (4 5/8")	53 kg/M ² (11 lbs/ft ²)
1000 - 1800mm (40" - 72")	450 - 600mm (18" - 24")	117mm (4 5/8")	53 kg/M ² (11 lbs/ft ²)
1000 - 1600mm (40" - 64")	450 - 600mm (18" - 24")	203.2mm (8")	61kg/M ² (12 lbs/ft ²)

**Medium Light Duty
11,200lb / 5 Tonnes**

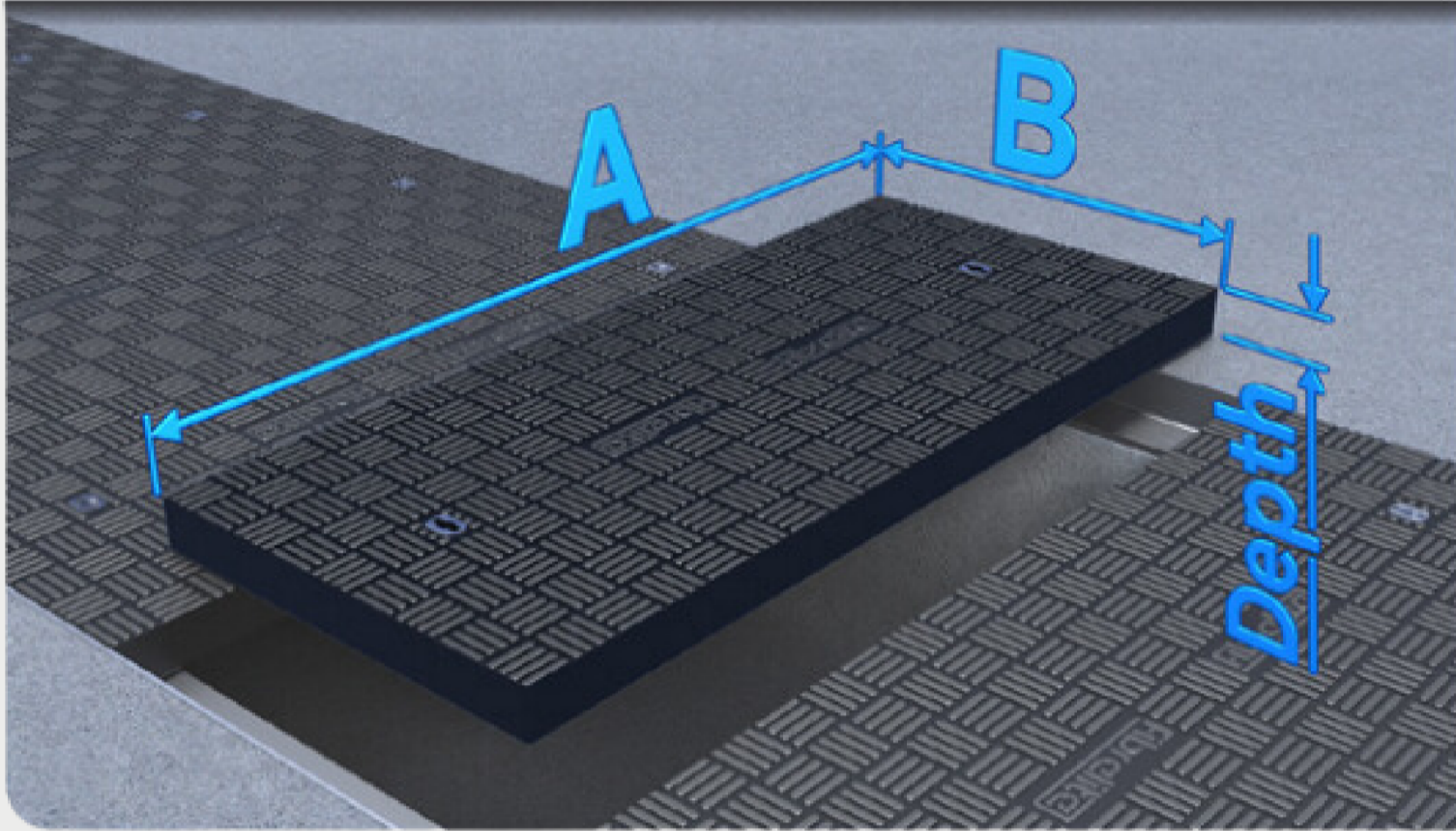


Dim 'A'	Dim 'B'	Depth	Weight
300 - 1000mm (12" - 40")	450 - 1800mm (18" - 72")	50mm (2")	26 kg/M ² (5 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 1800mm (18" - 72")	76mm (3")	30 kg/M ² (6 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 1800mm (18" - 72")	101.6mm (4")	32 kg/M ² (7 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 1800mm (18" - 72")	117mm (4 5/8")	37 kg/M ² (8 lbs/ft ²)
300 - 1000mm (12" - 40")	450 - 120mm (18" - 48")	203.2mm (8")	51 kg/M ² (10 lbs/ft ²)

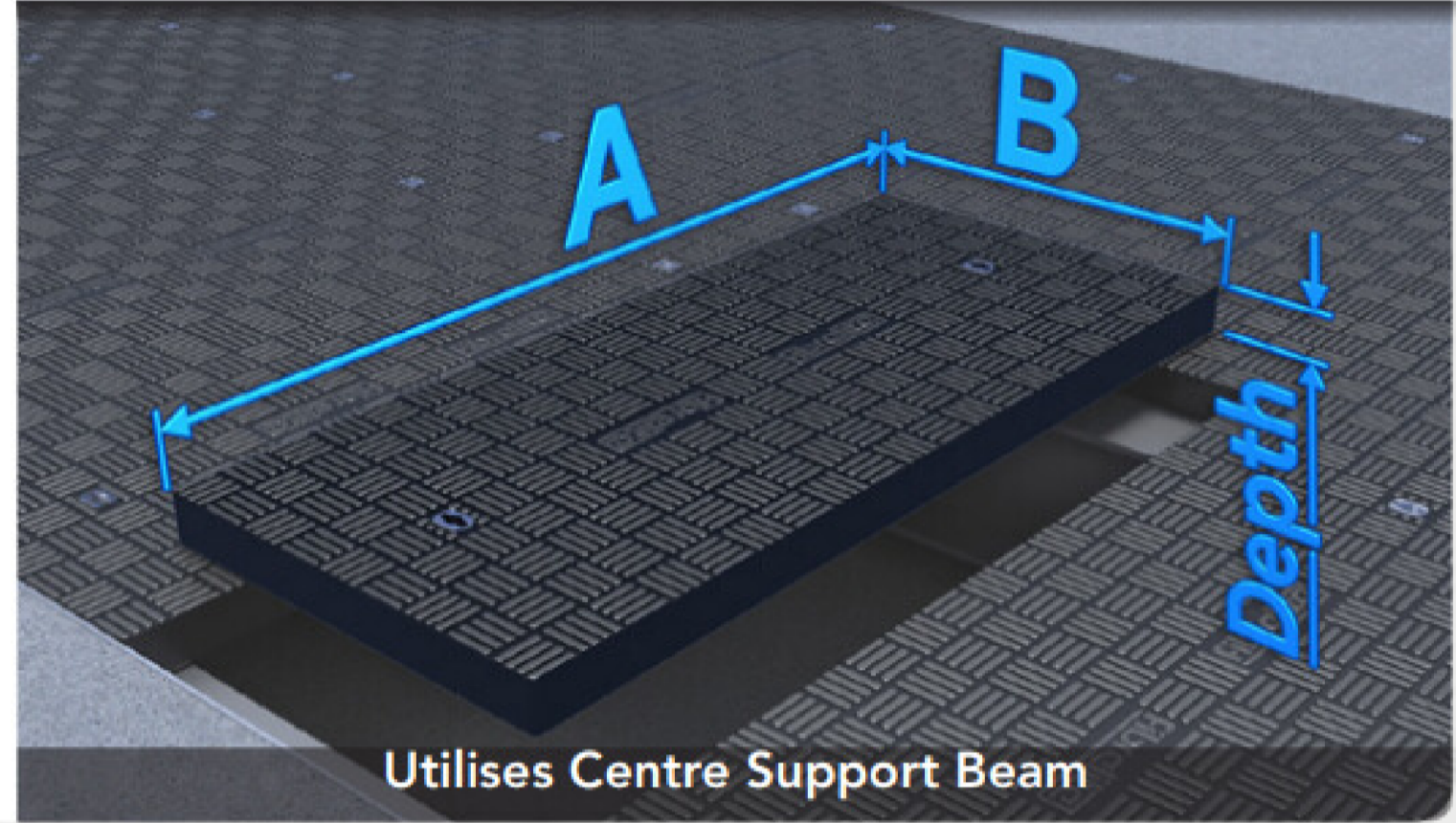
Medium Light Duty 11,200lb / 5 Tonnes

Side by Side Cover Configuration

Trench widths over 1m (40") up to 1.8m (72")

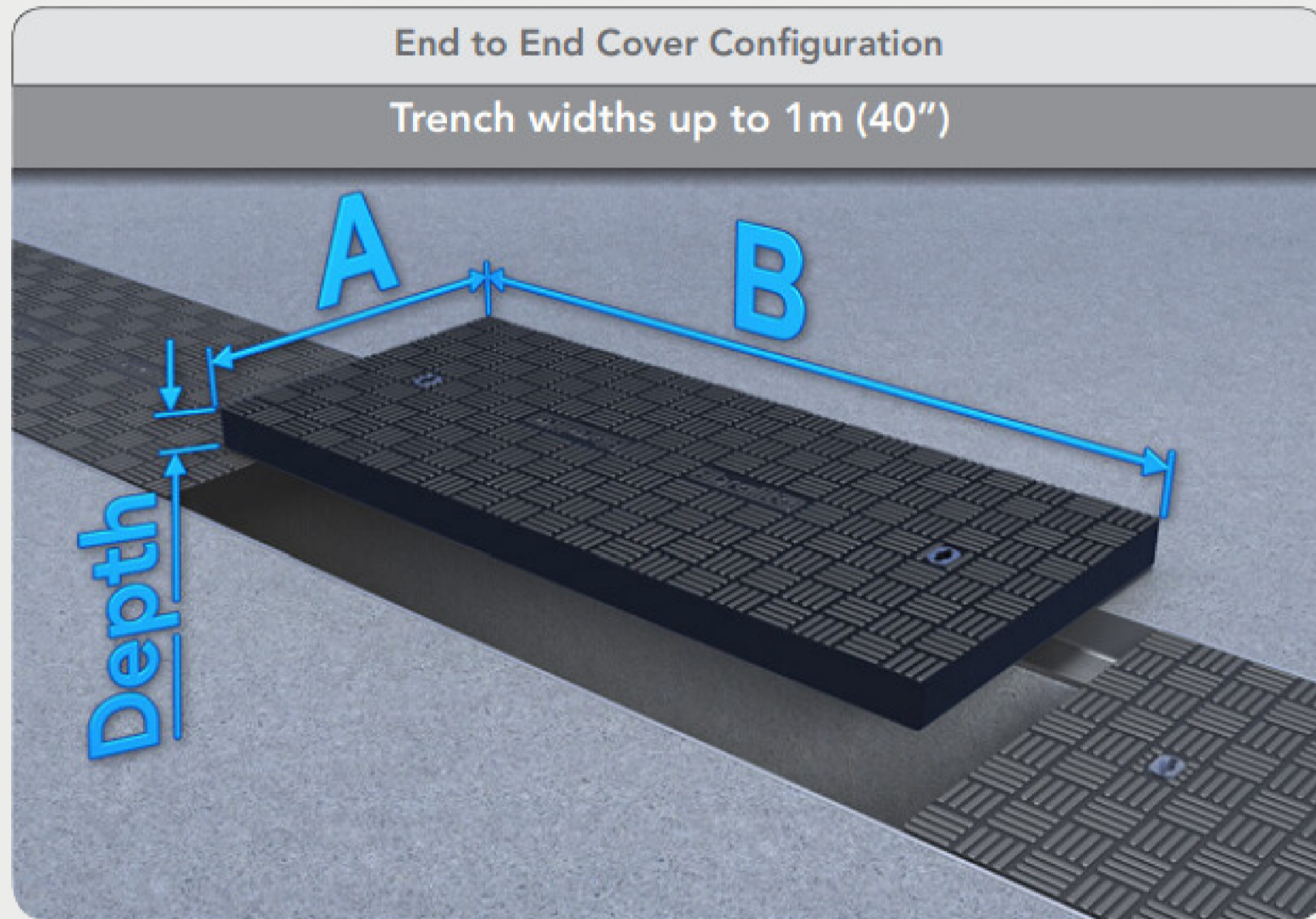


Trench widths over 1.8m (72")

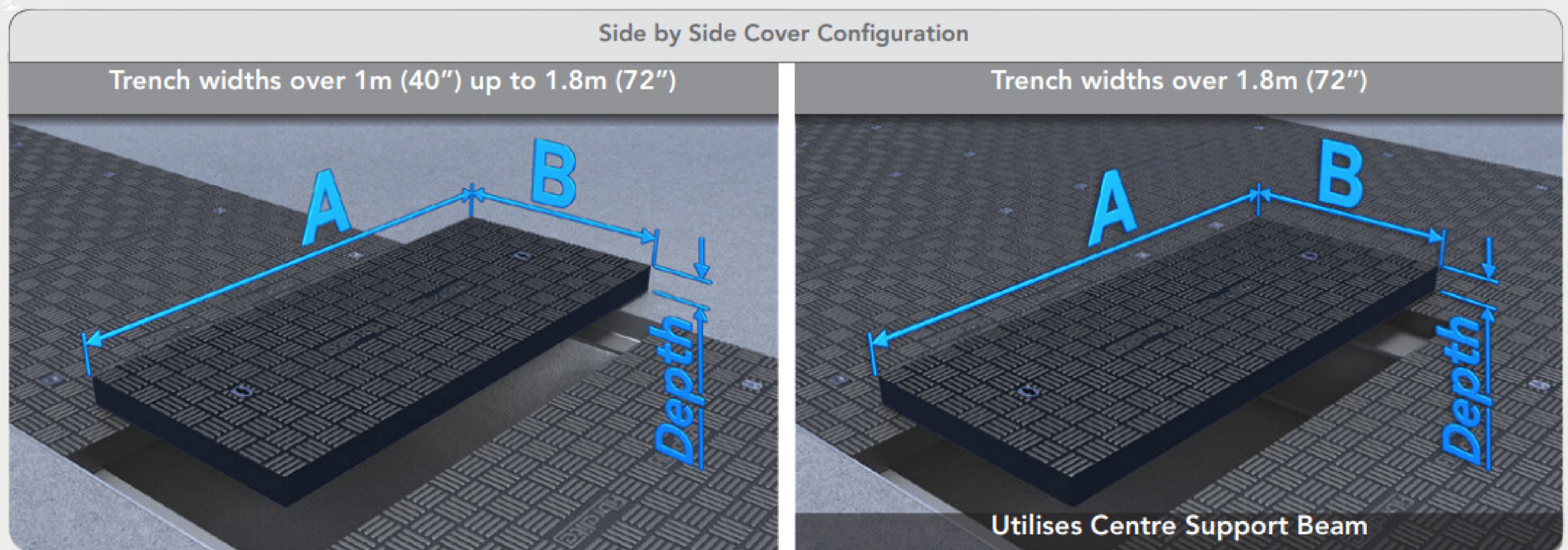


Dim 'A'	Dim 'B'	Depth	Weight
1000 - 1300mm (40" - 52")	450 - 1000mm (18" - 40")	50mm (2")	37kg/M ² (8 lbs/ft ²)
1300 - 1500mm (52" - 60")	600 - 800mm (24" - 32")	50mm (2")	53kg/M ² (11 lbs/ft ²)
1000 - 1600mm (40" - 64")	450 - 1000mm (18" - 40")	76mm (3")	33kg/M ² (7 lbs/ft ²)
1000 - 1800mm (40" - 72")	450 - 1000mm (18" - 40")	101.6mm (4")	32kg/M ² (6.5 lbs/ft ²)
1000 - 1800mm (40" - 72")	450 - 1000mm (18" - 40")	117mm (4 5/8")	35kg/M ² (7 lbs/ft ²)
1000 - 1800mm (40" - 72")	450 - 600mm (18" - 24")	203.2mm (8")	51kg/M ² (10 lbs/ft ²)

Super Light Duty A15 Trench Covers 3,400lb / 1.5 Tonnes



Dim 'A'	Dim 'B'	Depth	Weight
300 - 1000mm (12" - 40")	600 - 1800mm (24" - 72")	50mm (2")	24 kg/M ² (5 lbs/ft ²)



Dim 'A'	Dim 'B'	Depth	Weight
1000 - 1800mm (40" - 72")	300 - 1000mm (12" - 40")	50mm (2")	24 kg/M ² (5 lbs/ft ²)