

The appliance of composite science to underground access covering

ThruBeam[®]

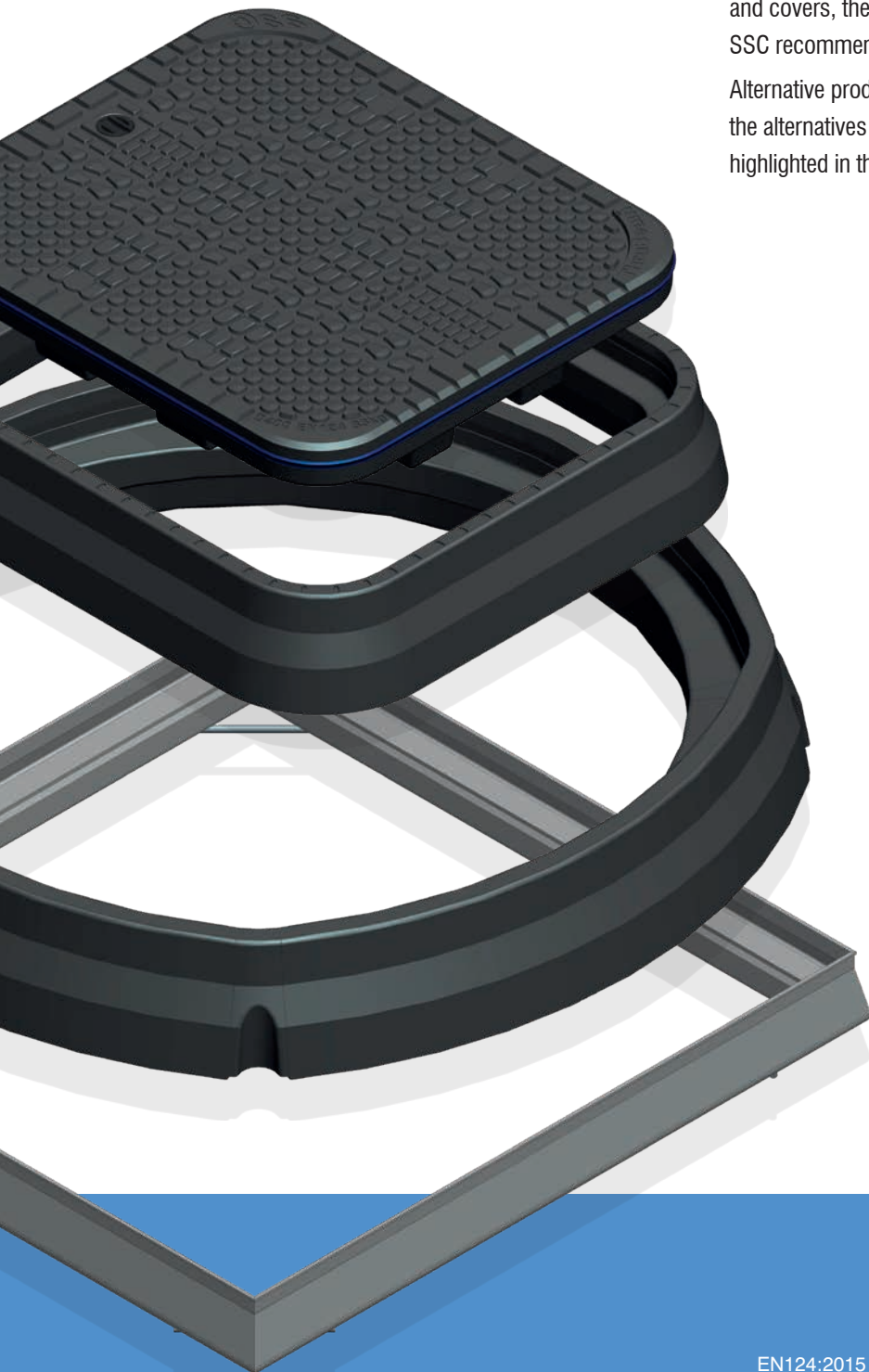
C O V E R S

D400, C250
and B125

**Material Specification
and Installation Guide**

When installing SSC D400, C250 or B125 composite frames and covers, the following specification should be conformed to. SSC recommend Instarmac products for installation of frames.

Alternative products can be used but SSC recommend that the alternatives conform to the standards and characteristics highlighted in this document.



EN124:2015 Class D400 Vehicular Composite Access Covers
EN124:2015 Class C250 Petroleum Composite Access Covers
EN124:2015 Class B125 Composite Access Covers

Material Specification & Installation Guide

EN124:2015 Class D400 Vehicular and C250 Petroleum Forecourt Composite Access Covers

1. Bedding Mortar

Industry Standards: BBA/HAPAS approved. Conforms to HA104/09 and suitable for access covers conforming to BSEN124:2015. Meets with the specifications laid out in the SROH, DRDNI and NRA. Conforms to BT specification LN550.

We recommend Ultracrete Envirobed HA104® or equivalent.

Characteristics:

- Non-shrink
- 15 minute workability
- Can be used in wet/cold weather
- Compressive strength of 51N/mm² in 3 hours
- Tensile strength of 5.8N/mm² in 3hours
- Set time of 30 minutes (temperature dependant)

Remove any old bedding or packing materials, and ensure the substrate is clean and sound. When using Envirobed HA104® the substrate should be wetted down prior to application of the mortar.

Envirobed HA104® should be mechanically mixed as follows; 1 unit of Envirobed powder with 1 unit of Envirobed liquid. The amount of liquid required may be adjusted depending on the required consistency.

Envirobed HA104® should be immediately placed on the supporting structure, allowing a 5mm excess thickness and used within five minutes of mixing.

The SSC frame is lowered into position and placed on the bedding mortar ensuring that it is fully supported and checking that the frame does not overhang the mortar at any point.

Care should be taken to prevent voids in the bedding material under the frame, particularly in the vicinity of the cover seating.

The frame is tamped down into place, ensuring the correct level is obtained. This can be checked by placing a straight edge over the frame and surrounded surface. Exposed surfaces of the bedding mortar around the frame must be float finished, ensuring any voids or loose material is removed and the inside surface pointed to a smooth finish. Once the bedding mortar has achieved sufficient strength the back fill material is placed.

2. Back Fill Flowable Concrete

Industry Standards: BBA/HAPAS Approved. Meets with the specifications laid out in the SROH.

We recommend Ultracrete's QC10 F or equivalent

Characteristics:

- Shrinkage compensated and fibre-reinforced
- Flowable
- 5 -10 minute workability
- Compressive strength 20N/mm² in 1.5 hours
- Flexural strength 6N/mm² final set, Tensile strength 3N/mm² final set
- Set time 10 - 20 minutes (depending on temperature)

For further information relating to our full product range please go to www.thrubeam.co.uk and download the appropriate pdf file.

QC10 F is mechanically or hand mixed by adding the bag of cement to the sand/aggregate and mixed with water until a smooth, flowable consistency is achieved. If a stiffer mix is required, reduce water accordingly until the desired consistency is achieved. *Reduced water will accelerate product set. Remove ponded water. The area to be filled should be wetted and the material placed within 5 minutes of mixing, to 60mm below the required surface fill level, and compacted ensuring no voids are present. The final surface is then rough floated to achieve a textured level surface ready to receive the wearing course.

3. Surface Course and Edge Sealant

Industry Standards: BBA/HAPAS Approved. Meets with the specification laid out in the SROH 2010, SROR 2003 DRDNI and NRA.

For Class 0, 1 and 2 Roads

We recommend Hot Rolled Asphalt (HRA) should be used in accordance with local Department of Transport requirements. ThruBeam covers are suitable for installations with HRA up to a maximum depth of 100mm.

For Class 2, 3 and Road

Hot Rolled Asphalt (HRA), Ultracrete Instant Road Repair® or equivalent. We recommend Ultracrete Instant Road Repair® or equivalent.

Characteristics:

- PSV65
- 10mm graded hard stone
- Excellent workability in all weather conditions
- Instantly trafficable
- 25kg bags or tubs for easy handling

Once the backfill concrete has reached sufficient strength, all horizontal and vertical edges, including the manhole frame should be sprayed with Ultracrete SCJ Seal and Tack Spray ensuring all the surfaces are liberally covered.

The use of Ultracrete Instant Road Repair® is recommended (45mm compacted to 30mm - 2 layers required). Hot lay materials can be used.

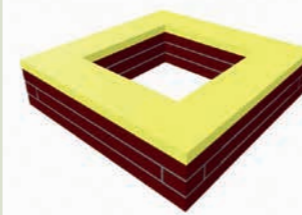
C250 Installation (Additional Notes)

Generally these are either installed into concrete or asphalt/tarmac. One of the key considerations for C250 installations is to ensure care on backfilling around the skirt and sumps. When doing so all backfill materials must be dry and free from debris. The backfill material should be round (pea gravel) and not be sharp in any way to avoid any puncturing of the skirts/sumps.

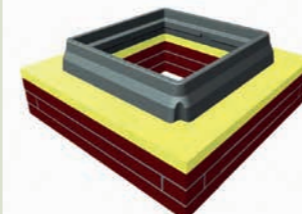
Once backfill has been completed SSC recommends that for a concrete installation the minimum requirement would be 200mm with a maximum of 350mm depth. It also advised to incorporate some steel mesh bar around the frame embedded into the concrete for extra support. (see drawing)

For an asphalt installation then we would recommend a minimum 40mm – (see drawings)

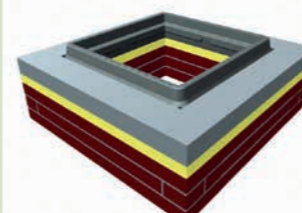
Bedding mortar applied



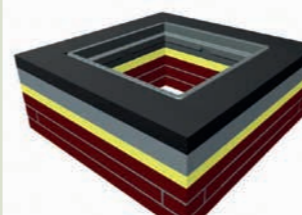
Setting of the frame on the bedding mortar



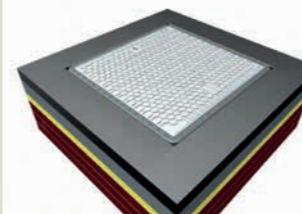
Backfill flowable concrete



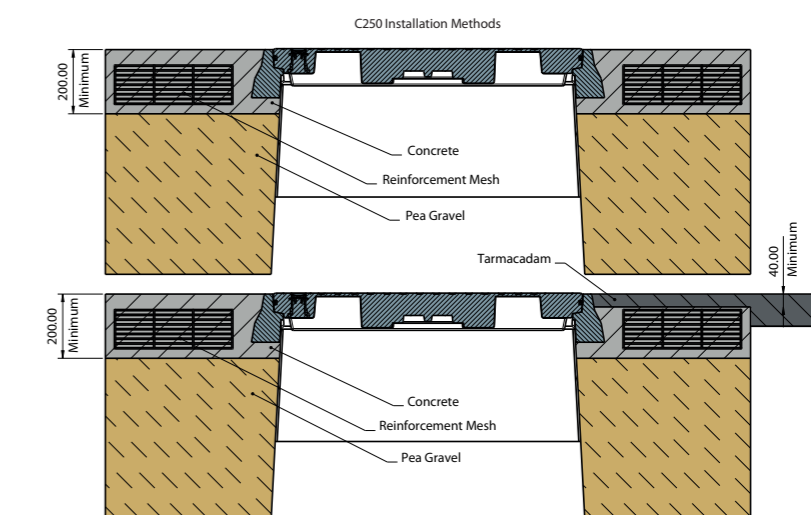
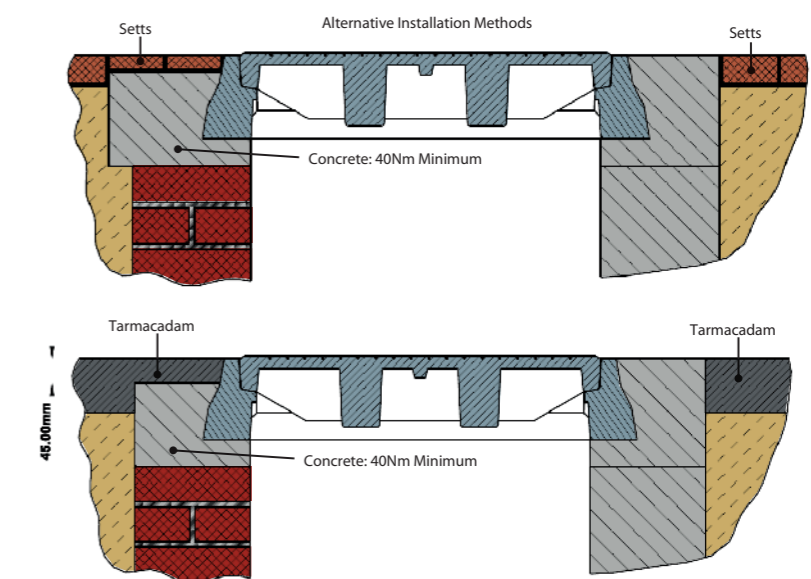
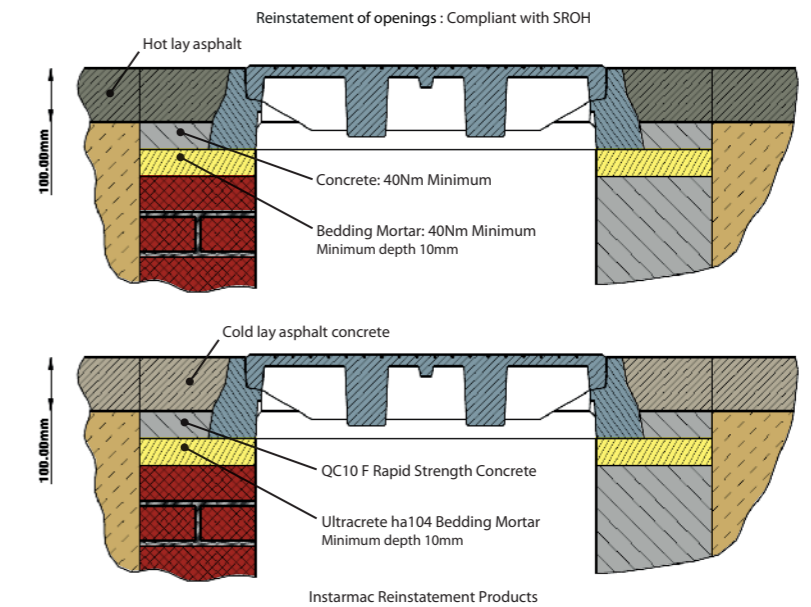
Surface course



Surface course and edge sealant



ThruBeam
COVERS



The frame is to be installed to the appropriate standard/specification for that particular installation. For reference purposes only. This drawing is not a specification.

Material Specification & Installation Guide

EN124:2015 Class B125 Pedestrian Area Composite Access Covers

1. Bedding Mortar

Industry Standards: BBA/HAPAS Approved. Conforms to HA27/04 and suitable for all access covers confirming to BS EN124:2015.

We recommend Ultracrete M60 or equivalent.

Characteristics:

- Excellent workability
- Rapid strength gain
- Compressive strength 22N/mm² in 1 hour (depending on temperature)
- Exceptional bond strength without the use of a primer
- 25kg bags or tubs for easy handling

Remove any old bedding or packing materials, and ensure the substrate is clean and sound. When using Ultracrete M60 the substrate should be wetted down with water prior to application of the mortar. Ultracrete M60 should be mechanically or hand mixed as follows: 25kg of powder is mixed with approximately 3 litres of water until a smooth trowelable mix is achieved.

Ultracrete M60 should be immediately placed on the supporting structure, allowing a 5mm excess thickness and used within five minutes of mixing. The SSC frame is lowered into position and placed on the bedding mortar ensuring that it is fully supported. Care should be taken to prevent voids in the bedding material under the frame, particularly in the vicinity of the cover seating. The frame is tamped down into place, ensuring the correct level is obtained. This can be checked by placing a straight edge over the frame and surrounded surface. Exposed surfaces of the bedding mortar around the frame must be float finished, ensuring any voids or loose material is removed and the inside surface pointed to a smooth finish.

Designs and specifications are subject to alteration, so that continuous improvement can be undertaken.

2. Surface Course (asphalt)

Industry Standards: BBA/HAPAS Approved. Meets with the specifications laid out in the SROH 2010, SROR 2003 DRDNI and NRA.

We recommend, HRA, Ultracrete Instant Road Repair[®], QC6 or equivalent.

Characteristics of Asphalt:

- PSV65
- 6mm graded hard stone
- Excellent workability in all weather conditions
- Instantly trafficable
- 25kg bags or tubs for easy handling
- Black or Red

Once the M60 has reached sufficient strength, all vertical edges of the excavated area, substrate and the manhole frame should be sprayed with Ultracrete SCJ Seal & Tack Spray ensuring all the surfaces are covered. The use of Ultracrete Instant Road Repair[®] is recommended (60mm compacted to 40mm-1 layer required). Hot lay materials can be used.

3. Surface Course (concrete)

Characteristics of Concrete:

- Rapid setting with high early strength gain
- 6mm graded hard stone & specially blended cement powders
- Excellent workability in all weather conditions
- Trafficable within 15 minutes
- 25kg bags or tubs for easy handling
- Shrinkage compensated

Once the M60 has reached sufficient strength, apply QC6 mixed material over a pre-soaked prepared area to a minimum of 10mm and a maximum of 100mm within 4minutes. Firm well into position with a float, or trowel to close up the surface and seal the edges. Key to create an anti-slip surface.



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