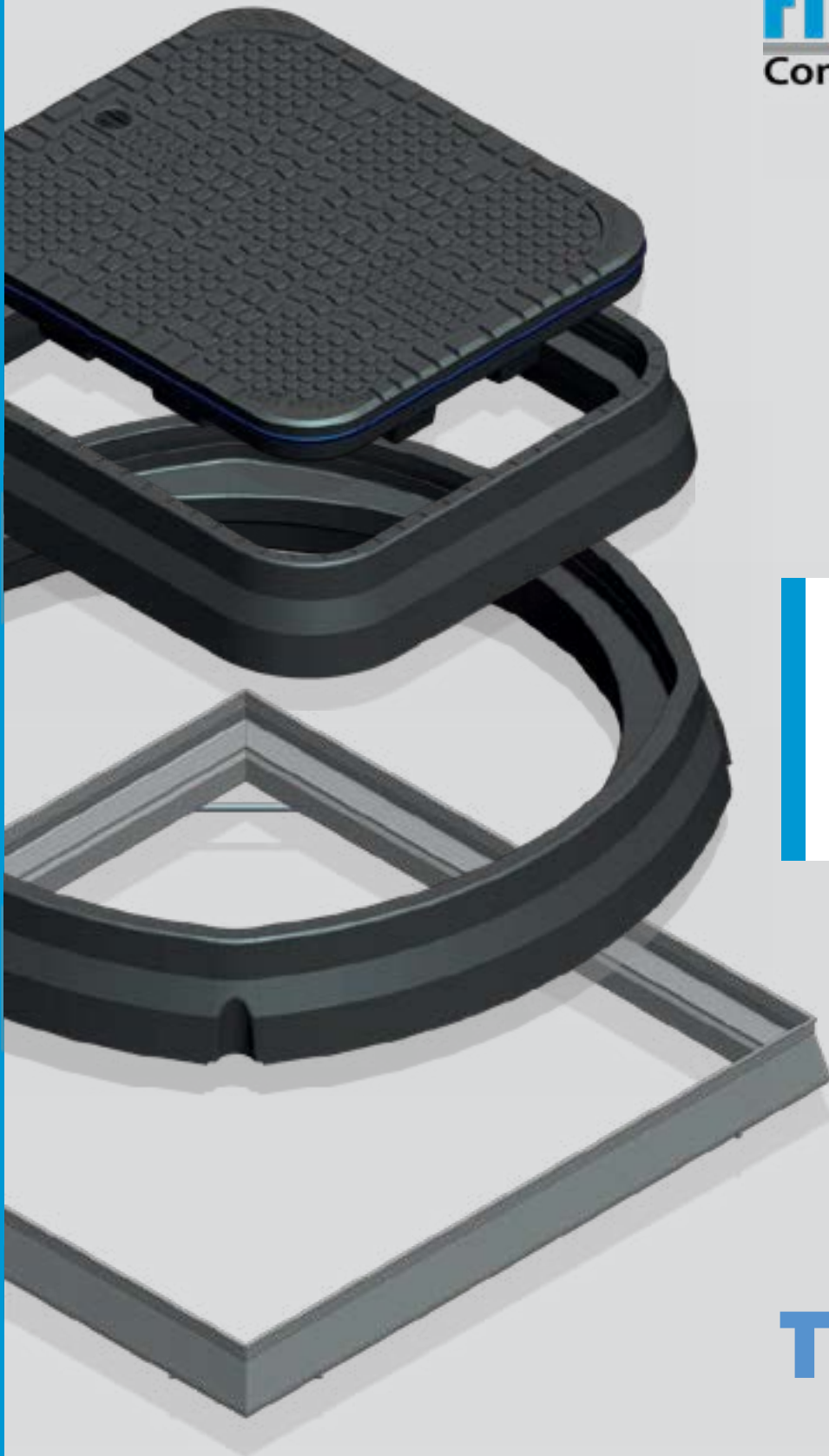


The logo for Fibergrate Composite Structures features the word "Fibergrate" in a bold, blue, sans-serif font, with "Composite Structures" in a smaller, black, sans-serif font below it. The text is enclosed within a thin, grey circular border that is partially open at the top.

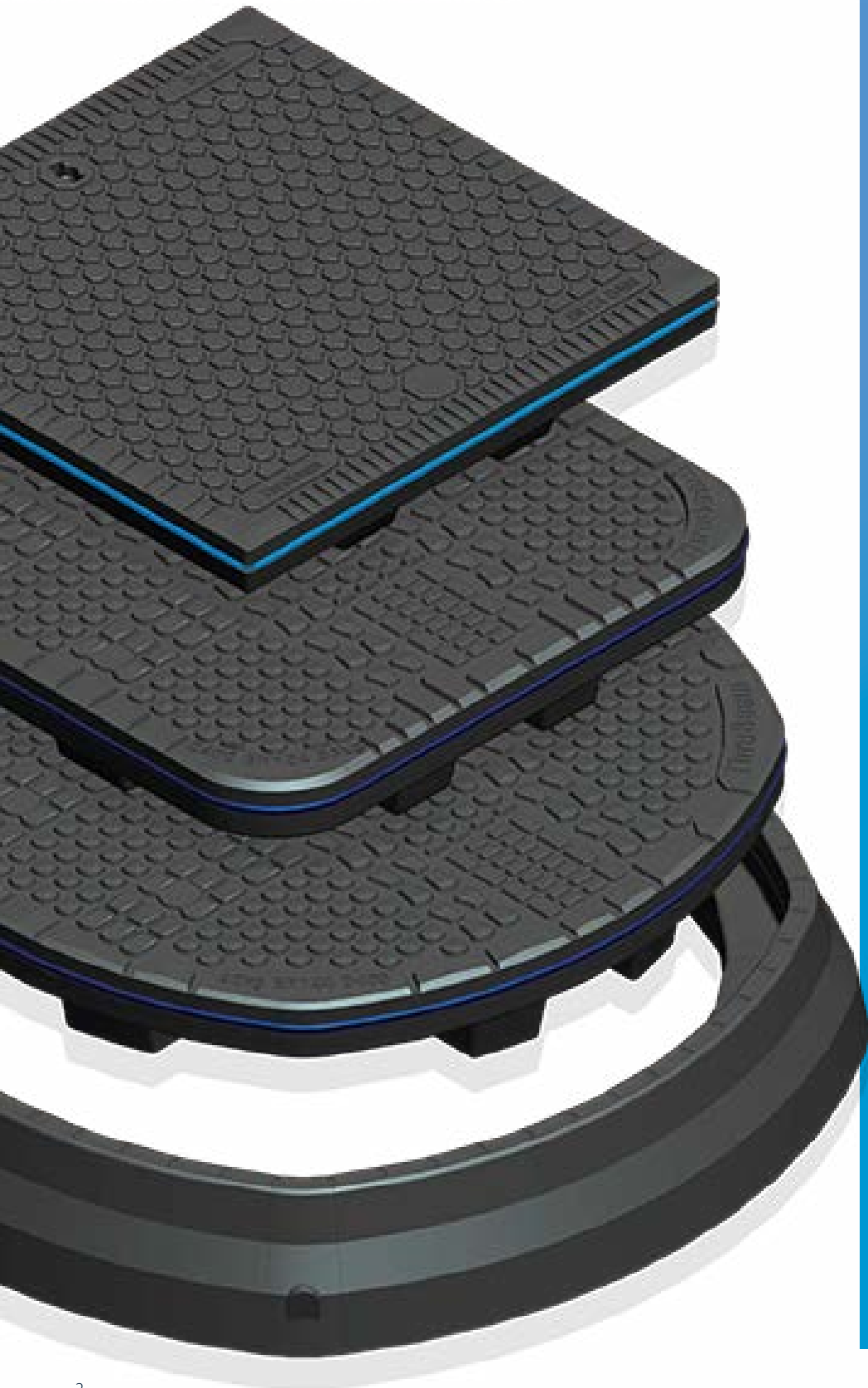
**Fibergrate**  
Composite Structures



**Material  
Specification &  
Installation Guide**

**ThruBeam<sup>®</sup>**  
COVERS

MANHOLE COVERS



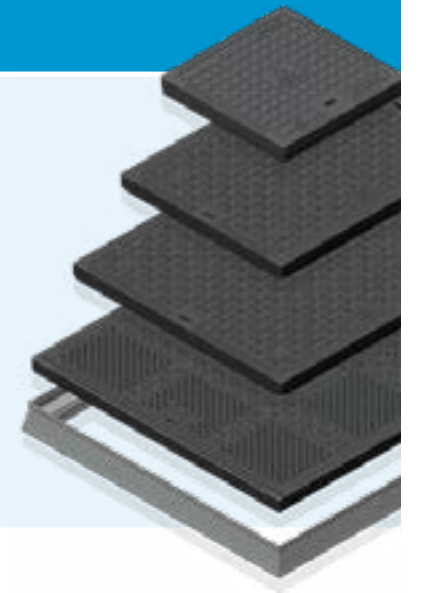
This guide provides the recommended specifications, standards, and installation guidelines for ThruBeam<sup>®</sup> composite covers and frames. Fibergrate recommends that all products, materials, and installation methods used in the field conform to the standards, requirements, and performance characteristics outlined in this guide to help ensure proper installation and long-term system performance.



## TIER 8/TIER 15

Sizes Available:

- 12"
- 24"
- 32"
- 24" X 18"



## H20/H25

Sizes Available:

- 24"
- 30"
- 36"
- 42"



## H40

Sizes Available:

- 24"
- 30"
- 36"
- 42"
- 24" X 28"
- 24" X 36"



# MATERIAL SPECIFICATION & INSTALLATION GUIDE

## Composite Manhole & Access Covers Traffic Rated (H20 / H25 / H40 Equivalent) and Light-Duty Applications

### 1. BEDDING MORTAR (FRAME SEATING)

#### General Requirements:

- Bedding material shall provide full, uniform bearing support beneath the frame.
- Material shall be suitable for vehicular traffic environments where applicable.
- Bedding shall achieve rapid early strength to minimize reopening time.
- Bedding shall be resistant to moisture, freeze-thaw cycling, and de-icing salts where used in exterior installations.

#### Acceptable Materials:

- High-strength polymer-modified repair mortar
- Rapid-setting epoxy or resin-based bedding compound
- High-early-strength cementitious repair mortar

Bedding materials should be selected to meet local DOT, municipal, or project-specific requirements.

#### Installation Procedure:

- Remove existing frame, bedding, and all loose materials.
- Ensure supporting structure (concrete collar or pavement base) is sound, clean, and free of debris.
- Mix bedding material in accordance with manufacturer's instructions.
- Place bedding material to allow approximately ¼ in excess thickness.
- Lower frame into position ensuring:
- Full contact with bedding material
- No voids beneath the frame or seating surfaces
- Tap frame into final elevation, checking level with surrounding surface using a straightedge.
- Finish exposed bedding neatly around frame perimeter.
- Allow bedding to achieve sufficient strength prior to backfilling.

### 2. BACKFILL MATERIAL

#### General Requirements:

- Backfill must provide structural support and load transfer around the frame.
- Material shall prevent voids and settlement.
- Backfill shall be compatible with surrounding pavement or slab.

#### Acceptable Materials:

- Flowable fill (Controlled Low-Strength Material / CLSM)
- High-strength concrete
- Polymer-modified repair concrete

#### Installation Procedure:

- Place backfill material after bedding has achieved initial set.
- Install material evenly around the frame to approximately 2–2½" in below finished surface grade.
- Consolidate material to eliminate air voids.
- Finish surface to receive final pavement or wearing course.

### 3. SURFACE COURSE & EDGE SEALING

#### Asphalt Installations:

- Hot Mix Asphalt (HMA) or approved cold-applied asphalt repair material
- Compact material thoroughly and finish flush with frame surface
- Ensure clean interface between frame and wearing course

#### Concrete Installations:

- Concrete or polymer-modified surface repair material
- Finish surface to a non-slip texture
- Ensure frame remains free to seat properly after curing

### 4. TRAFFIC-RATED INSTALLATIONS (H20 / H25 / H40 EQUIVALENT)

#### Additional Installation Notes:

- Frame shall be set into a reinforced concrete collar where required by local authority or project specifications.
- Concrete collar thickness and reinforcement shall be determined by site conditions and anticipated traffic.
- For H40 (or equivalent heavy-duty traffic) applications, reinforced concrete collar design and installation shall comply with project-specific structural requirements and applicable authority or DOT specifications.
- Ensure:
  - Proper drainage
  - No direct point loading on frame edges
  - Level transition between pavement and cover

### 5. LIGHT-DUTY / PEDESTRIAN APPLICATIONS

#### Installation Guidance:

- Bedding and backfill procedures remain the same as above.
- Reinforcement requirements may be reduced based on load conditions.
- Pay particular attention to surface finish to ensure pedestrian safety and slip resistance.

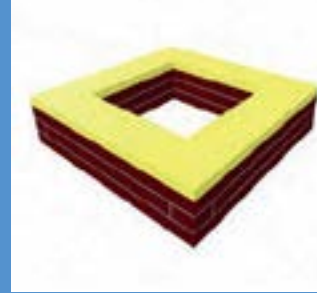
### 6. GENERAL NOTES

- Installation shall be carried out by qualified personnel experienced with access covers and pavement repair.
- Follow all local, state, and project-specific specifications.
- Covers and frames must be installed flush with finished grade.
- Avoid opening cover during curing unless permitted by material manufacturer.
- Final installation shall allow cover to:
  - Open freely
  - Seat fully
  - Remain stable under service loads

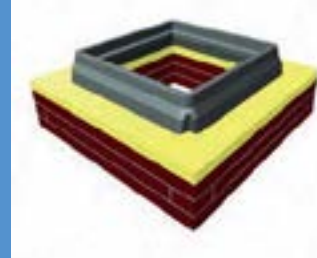
#### Disclaimer

This guide provides general installation recommendations. Final material selection and installation methods remain the responsibility of the installer and design professional, based on site conditions, traffic loading, and applicable US codes and standards.

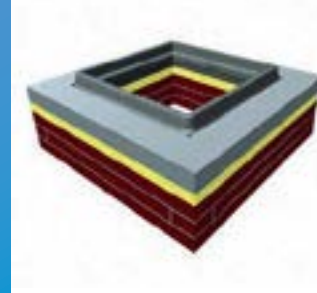
Bedding mortar applied



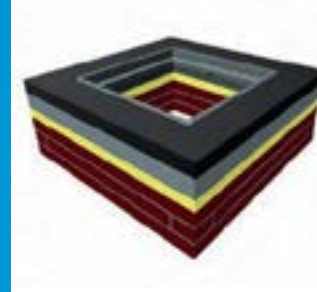
Setting of the frame on the bedding mortar



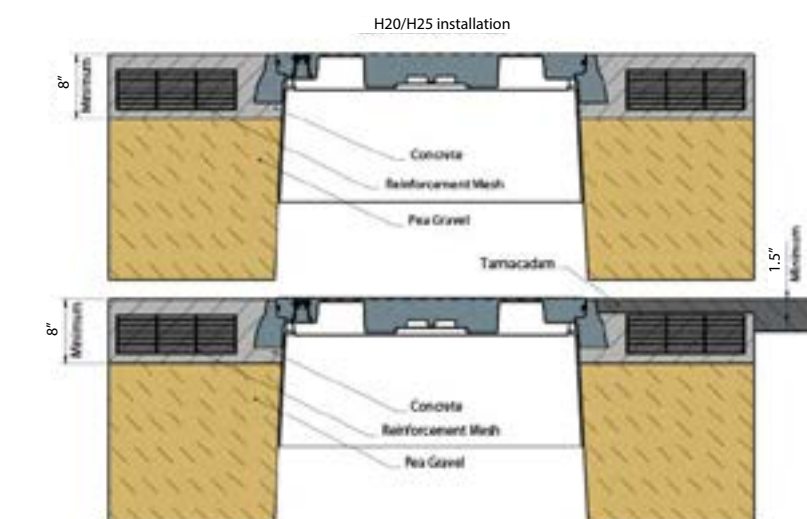
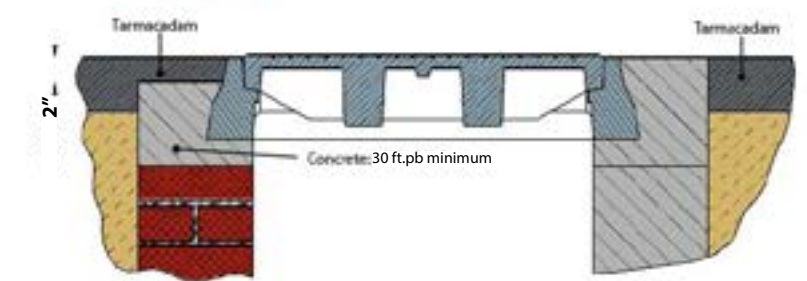
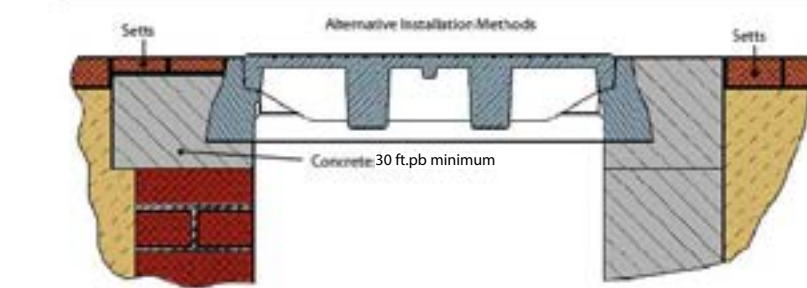
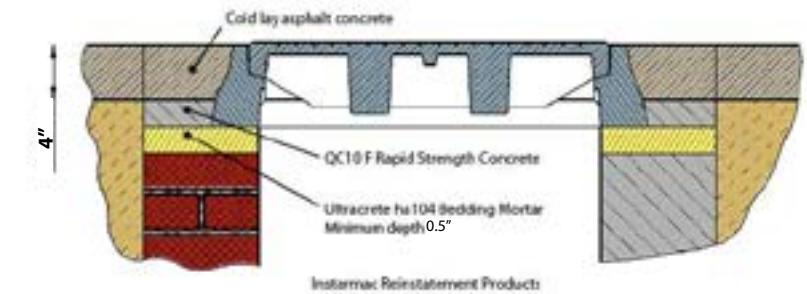
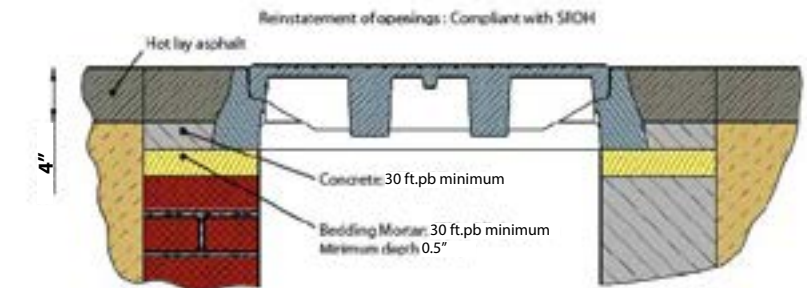
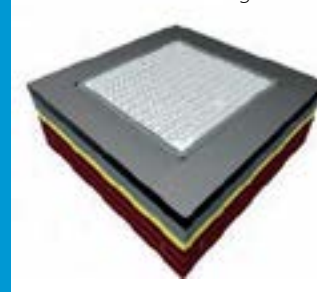
Backfill flowable concrete



Surface course



Surface course and edge sealant



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.

# HANDLING & REMOVAL INSTRUCTIONS

## HOW TO HANDLE COMPOSITE COVERS & FRAMES

Composite covers and frames must be handled differently than metal or metal-and-concrete covers.

- Do NOT throw off the back of vehicles, they are lightweight they should be LIFTED and placed on the ground.
- Do NOT roll or drop covers or frames.
- Frames should be installed using our Installation Guide.
- Care should be taken to ALWAYS clean the seating face of the frame before the cover is inserted.

## ALL COVERS FOR ROAD USE ARE SUPPLIED WITH A SEAL

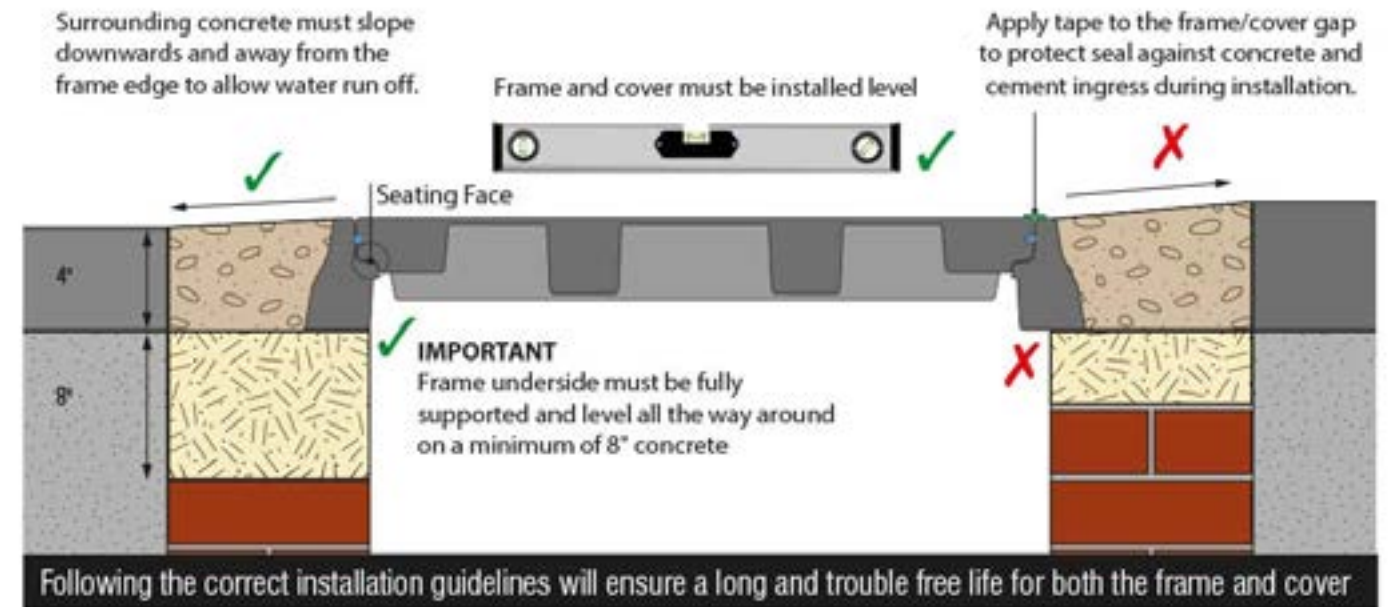
- Ensure that the seal is seated correctly around the cover.
- Make sure the seal is always cleaned before re-inserting the cover back into its frame.
- It is recommended that seals are checked on a regular basis (depending upon how many times the cover is lifted and re-seated).
- Seals can be replaced if required.

## DIP CAP INSERTION AND REMOVAL

- The dip cap can be removed from the cover by inserting the key and then lifting out.
- The O Ring seal should be checked for any deformation after removal and before insertion and cleaned before inserting back into the cover.
- Place the dip cap in the cover hole and stand on the dip cap to ensure complete insertion.
- If there is any damage to the O ring then this can be replaced.



- Frame must be fully supported on a concrete base all the way around.
- Frame must be seated perfectly level.
- Frame and cover seating faces must be thoroughly cleaned before inserting the cover into the frame.



1. To ensure frames are not installed distorted or twisted we advise the cover is placed in the frame when set on mortar and concreted in place.
2. Do not allow cement or concrete to set hard on the surface of the cover and frame during installation.



1. Um sicherzustellen, dass die Rahmen nicht deformiert oder verdreht installiert werden, empfehlen wir, die Abdeckung im Rahmen zu platzieren, wenn dieser in Mörtel eingelegt und betoniert wird.
2. Zement und Beton dürfen während der Installation nicht auf der Oberfläche der Abdeckung und des Rahmens hart werden.



1. Pour vous assurer que les cadres ne sont pas déformés ou tordus, nous vous conseillons de placer le couvercle dans le cadre lorsqu'il est fixé au mortier et bétonné.
2. Ne laissez pas le ciment ou le béton durcir à la surface du couvercle et du cadre lors de l'installation.



1. Para asegurarse de que los marcos no se instalen deformados o torcidos, aconsejamos que la cubierta se coloque en el marco cuando se fije en la argamasa y se emplace en el hormigón.
2. No permita que el cemento o el hormigón se endurezcan en la superficie de la cubierta y el marco durante la instalación.

# COVER REMOVAL

## ONLY USE THE THRUBEAM LIFTING TOOL

DO NOT attempt to lift covers and dip caps with any other tooling device, this will damage the cover, seal and locking mechanism. Evidence of a failure to use the ThruBeam® Seal Breaker Lifting Tool will invalidate the product warranty.



**1** Insert lifting tool into cover lock security plug, turn through 90° anti-clockwise, unscrew and remove.

DO NOT LOSE SECURITY PLUG.



**2** Insert lifting tool into the keyhole and turn the handle through 90° clockwise towards you to automatically disengage the cover lock.



**3** Release the foot plate from the seal breaker lifting tool.



**4** Press down firmly on the foot plate to release the cover from frame.



**5** Fold back the foot plate into the lifting tool and lift cover from frame.



**6** Cover can now be pulled safely back away from the frame.

# COVER REPLACEMENT



Before re-inserting the cover back in its frame, ensure the seating face of the frame and cover is clean and free of any debris or stones. Clean the frame seal with a damp cloth and wipe the inside of the frame thoroughly.



**1** Ensure the lifting tool is inserted and in the position as shown above before pushing cover. Push the cover back into the frame using your foot.

**!** Keep fingers away from cover/frame edge.



**2** Keep the lifting tool inserted and in the above position whilst re-instating the cover back in to the frame. Stamp the cover down firmly to engage seal.

**!** DO NOT use a hammer to aid replacement.



**3** Turn the lifting tool through 90° anti-clockwise to re-engage the cover lock and lift the tool free of the lock housing.



**4** Clean out any debris in the lock housing, check and clean the security plug and seal before re-inserting. Re-insert the cover lock security plug. Turn the security plug clockwise to tighten. A firm finger tight seal will be sufficient.

# REMOVAL & REPLACEMENT INSTRUCTIONS

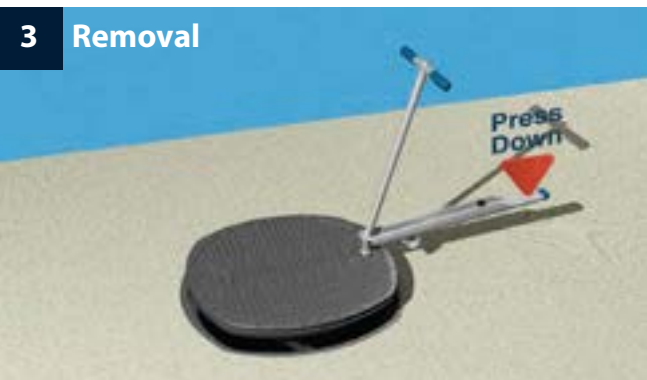
Only remove and replace the cover using our special ergonomic lifting tool with seal breaker. See below for procedure. Do not use any other form of levering device.



Insert the lifting tool into the lock aperture as shown above and turn the handle through 90° clockwise towards you.



With the handles now facing towards you the cover lock is now disengaged and ready to be removed from its frame.



Release the seal breaker from the lifting tool and press down on the foot pedal to release the cover from its frame.

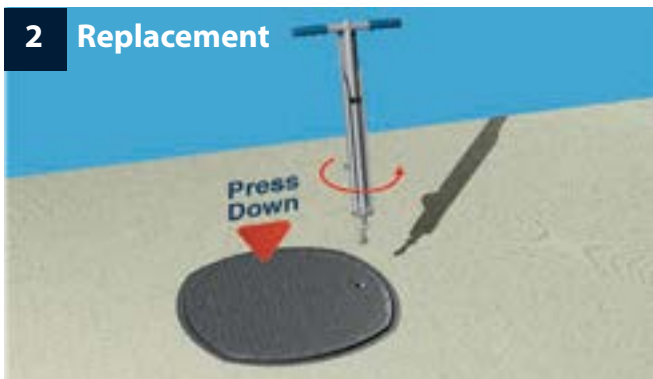


Fold back the seal breaker into the lifting tool. Lift the edge of the cover until free of frame. Pull the cover out of the frame.

**Before re-inserting the cover back in its frame, ensure the seating face of the frame is clean and free of any debris or stones. Always clean the frame seal with a damp cloth and wipe the inside of the frame thoroughly.**



Push back the cover into the frame with the aid of the lifting tool and your foot if necessary. Step down on the cover to re engage the seal.



Turn the lifting tool back through 90° anti-clockwise to engage lock and remove lifting tool.

# CARE & MAINTENANCE GUIDELINES

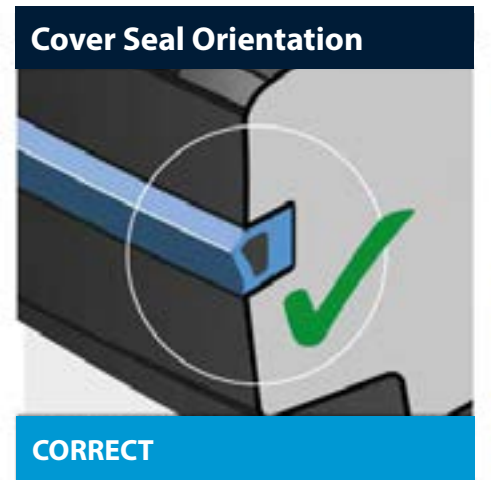
ThruBeam covers and frames can only perform to the highest standards if they are routinely checked and maintained in accordance with our guidelines. Thorough cleaning of seals, frame seating face and cover edges at each lift is essential. Damaged or missing seals and missing key housing security plugs should be immediately replaced. We advise all cover service teams carry a full ThruBeam maintenance kit which contains all the necessary replacement components.



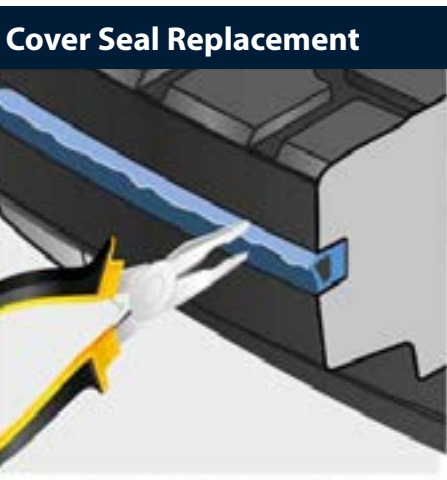
- H20/H25/H40 Kit Contains:**
- x1 Soft Brush
  - x1 Scraper
  - x1 Micro Fibre Cleaning Cloth
  - x1 Multi Purpose Cleaner
  - x6 Key Housing Plugs with seals
  - x1 Cover seal for H40
- Individual maintenance components can be ordered separately.



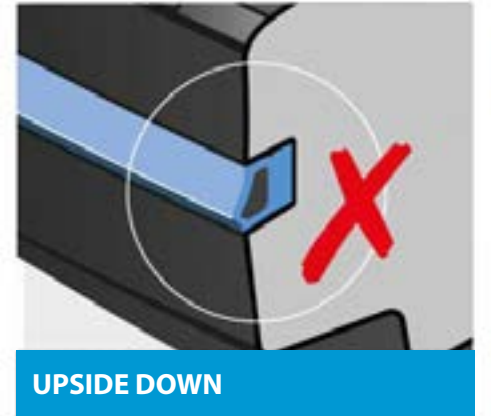
The frame seating face should be brushed and cleaned every time the cover is lifted.



**CORRECT**



Remove damaged seal. Inspect & clean the seal channel with a damp microfibre cloth.



**UPSIDE DOWN**



**Use Rubber Faced Hammer ONLY**

Cover seals and seating faces should be cleaned with a damp microfibre cloth.

Ensuring correct orientation. Taking care, 'gently' tap new seal into position.



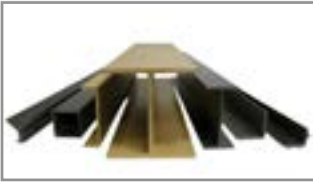
## Fibergrate® Molded Grating

Fibergrate® molded gratings are designed to provide the ultimate in reliable performance, even in the most demanding conditions. Fibergrate offers the widest selection in the market with multiple resins and more than twenty grating configurations available in many panel sizes and surfaces.



## Safe-T-Span® Pultruded Industrial & Pedestrian Gratings

Combining corrosion resistance, long-life and low maintenance, Safe-T-Span® provides unidirectional strength for industrial and pedestrian pultruded grating applications.



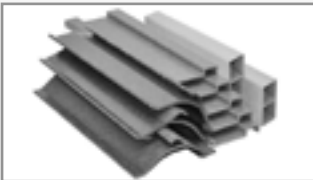
## Dynaform® Structural Shapes

Fibergrate offers a wide range of standard Dynaform® pultruded structural profiles for industrial and commercial use, including I-beams, wide flange beams, round and square tubes, bars, rods, channels, leg angles and plate.



## Dynarail® & DynaRound® Guardrail, Handrail & Ladder

Easily assembled from durable components or engineered and prefabricated to your specifications, Dynarail square tube and DynaRound round tube railing systems and Dynarail safety ladder systems meet or exceed OSHA and strict building code requirements for safety and design.



## Custom Composite Solutions

Combining Fibergrate's design, manufacturing and fabrication services allows Fibergrate to offer custom composite solutions to meet our client's specific requirements. Either through unique pultruded profiles or custom open molding, Fibergrate can help bring your vision to reality.



## Design & Fabrication Services

Combining engineering expertise with an understanding of fiberglass applications, Fibergrate provides turnkey design and fabrication of fiberglass structures, including platforms, catwalks, stairways, railings and equipment support structures.



## Worldwide Sales & Distribution Network

Whether a customer requires a platform in a mine in South Africa to grating on an oil rig in the North Sea, or walkways in a Wisconsin cheese plant to railings at a water treatment facility in Brazil; Fibergrate has sales and service locations throughout the world to meet the needs and exceed the expectations of any customer.