

Elkington

Installation Guide



DURABLE, VERSATILE, ECONOMICAL

Installation Guide

Installation - General Comments

This information is intended only as a guide to best practice installation. The installation procedure will vary depending on the construction of the structure/ pavement, the type of surface finish material and the requirements of the project consultant and contractor.

Further information regarding installation is available from Elkington GmbH.

The responsibility to determine the final method and materials regarding installation of Elkington access covers should be the project consultant and/or contractor.

Some Elkington access covers are water-tight when subject to normal surface water conditions. With water-tight access covers, care should be taken to provide a water-tight seal between the outside frame of the access cover and the adjacent surface material.

If the access cover unit (with frame) is set in place before the adjacent surface finish is installed, then the unit (frame with filled access cover installed as one assembly) should be bedded down to the correct surface finish level. The frame can be haunched with mortar/concrete up to the outside edge of the frame, to prevent any movement or distortion from occurring when the finished floor is laid.

Preparation

Elkington GmbH supplies the cover and frame units ready for installation without any further preparation required to the assembled unit; unless specified by the project consultant.

The site; all equipment and materials, should be pre-prepared for installation in order to avoid delays.

Expansion Joints

If paving units with mortar filled joints are to be installed across a large surface area, then expansion joints may be required at regular intervals within the pavement construction in order to accommodate for lateral movement. This will prevent distortion of access cover frames. The selection, choice and placement of expansion joints is the responsibility of the project consultant and/or contractor.

Expansion joints with a decorative surface finish are available from the general market place. Some manufactures advocate the use of spacers (min width 10mm) placed around the outside edge of the frame; whilst the adjacent floor is installed. These are removed once the floor has hardened and the void between the floor and outside edge of the frame is then applied with the most suitable grout or sealant. This installation detail should be specified by the project consultant.

The choice of whether a mortar, grout or flexible sealant is used between the frame and adjacent floor surface material should be that of the project consultant and/or contractor. If assist-lift access covers are selected, we would recommend that the installer uses a flexible silicone grout between the access cover frame and the adjacent surface material.

For surface materials that are subject to excessive expansion, advice should be sought from the manufacturer regarding type, location, frequency and installation of expansion joints.

Flexible Surface Finish Materials

Elkington access covers with standard installation depth are not suitable for use with an asphalt surface finish. Access covers with a recess greater than 100mm (XPAVE 150 and special custom-made units) can be used for asphalt surfaces; the concrete infill should be at least 70mm deep; with the remaining area filled with asphalt.

Installation - SEFAC & XPAVE Single Cover



*Important Note: The frame (and frame components) should only be concreted in place with the access cover units (concrete filled) already installed within the frame. This is to avoid distortion of the frame; which could prevent the access cover unit from being placed easily into the frame after being installed.

Step 1

Prepare the rebate in accordance with dimensions provided in the product brochure and installation drawings; regarding the various access cover models. The rebate can be formed within the concrete structure when the initial concrete pour takes place (to construct this structure). Alternatively, the access cover assembly (frame with concrete filled cover already in place) can be set in position prior to the main concrete pour to construct the structure; access covers could be cast into the structure when the initial concrete pour takes place.



Image 1 – SEFAC Single



Image 1 – XPAVE Single

Step 2

Remove the recessed cover from the frame; this may require loosening of locking screws on the SEFAC cover. The recessed cover will need to be removed from the frame prior to filling the recess cover with concrete; along with the surface finish material.

SEFAC Cover - Before placing the SEFAC cover within the frame, this should be filled with concrete to a minimum specification of C45/55 (EN206). Any surface finish material should not be deeper than 20mm.

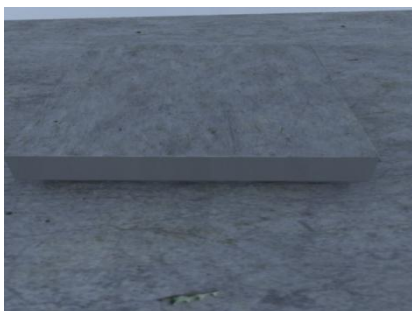


Image 2 – SEFAC Single

XPAVE Cover - Before placing the XPAVE cover within the frame, this should be filled with concrete to a minimum specification of C45/55 (EN206) and to a minimum depth of at least 50mm.

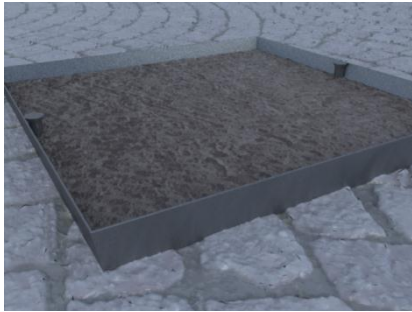


Image 2 – XPAVE Single

Step 3

The concrete within the recessed covers should be allowed to cure for an appropriate period of time.

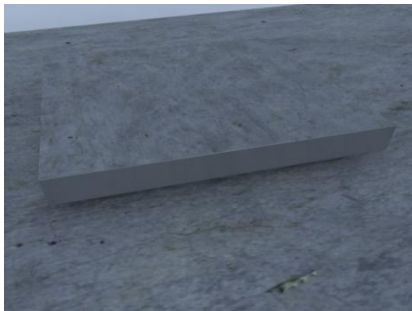


Image 3 – SEFAC Single

XPAVE Cover – Whilst the concrete within the cover is still wet (not cured), the surface finish material (eg block paving units etc) should be placed within the cover and bedded into the wet concrete; to ensure that the paving units are firmly held within the recessed cover. Joints between paving units should be mortar filled.



Image 3 – XPAVE Single

The design loading can only be achieved if the infill concrete is equivalent to the 28 day cube strength of OPC concrete.

Step 4

Place the frame in its position within the rebate; ensuring that the inner edge of the frame is flush with the inner walls of the chamber. The frame should be placed squarely over the chamber/ pit, ensuring that frame does not overhang the edges of the chamber/ pit. The underside of the frame should be fully supported within the rebate by the chamber structure.



Image 4 – SEFAC Single



Image 4 – XPAVE Single

Step 5

Adjust the frame to the desired finished-floor level using metal shims (or other suitable material) in places. The metal ‘concrete keys’ attached to the frame may also need adjustment. If the floor finishes are block pavers, tiles, linoleum, resin surface or other decorative flooring, the top edge of the frame should be flush and level with the finished floor level.

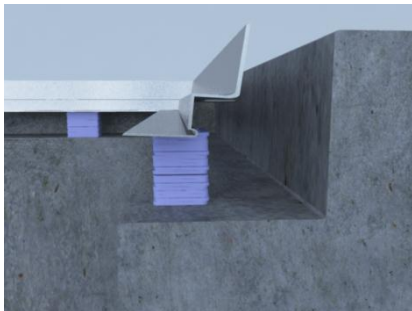


Image 5 – SEFAC Single



Image 5 – XPAVE Single

Step 6

Clean the frame and cover contact surfaces thoroughly to ensure these are free from debris. Place the access cover units (already concrete filled; with paving/surface material included if relevant) within the frame.



Image 6 – SEFAC Single



Image 6 – XPAVE Single

Step 7

Ensure the frame and cover unit have full contact, so that the cover is properly installed within the frame; in order to avoid rocking, movement, distortion and failure.

Step 8

Fill the rebate with concrete; ensuring the concrete reaches all voids (and around concrete ties) with the use of a concrete vibrating rod. The project consultant/ contractor may wish to use epoxy-mortar to fix the frame within the pavement structure. The strength and mix of concrete should be determined by the project consultant and/or contractor. This should be strong enough to take account of the loading and finished surface material apparent.



Image 7 – SEFAC Single



Image 7 – XPAVE Single

The unit (access cover with frame) should be suitably weighted and anchored so that it does not move during concrete pouring.

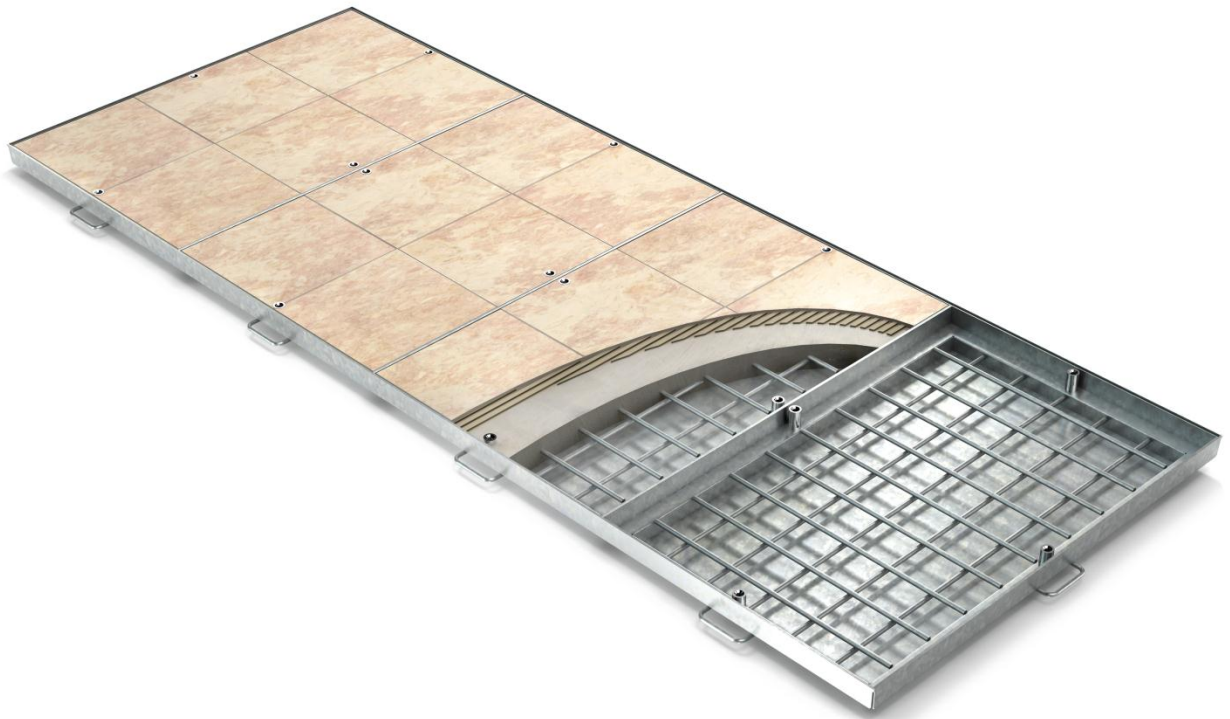
The floor surface and access cover installation should not be trafficked or a load applied until the installation has been allowed to cure adequately. The time for this should be determined by the project team.

Note: Water-Tightness

SEFAC single access covers are supplied with neoprene seals and are locked into position; this achieves a water-tight seal in normal surface water conditions. The concrete infill within the covers should be vibrated and well compacted to assist with providing a water-tight seal.

XPAVE single access covers are not fully water-tight. Covers are supplied without locking screws. To improve water-tightness, silicone sealant can be applied between the cover and frame and also along the contact faces of the cover and frame.

Installation - SEFAC & XPAVE Duct Covers



***Important Note:** The frame (and frame components) should only be concreted in place with the duct (trench) cover units (concrete filled) already installed within the frame. This is to avoid distortion of the frame; which could prevent the duct (trench) cover units from being placed easily into the frame after being installed.

Step 1

Prepare the rebate in accordance with dimensions provided in the product brochure and installation drawings; regarding the various duct (trench) cover models. The rebate can be formed within the concrete structure when the initial concrete pour takes place (to construct this structure). Alternatively, the duct (trench) cover assembly (frame with concrete filled covers already in place) can be set in position prior to the main concrete pour to construct the structure; access covers could be cast into the structure when the initial concrete pour takes place.



Image 1 – SEFAC Duct



Image 1 – XPAVE Duct

Step 2

Remove the recessed duct covers from the frame assembly. This may require loosening of locking screws on the cover units. The recessed duct covers will need to be removed from the frame prior to filling the recessed with concrete; along with surface finish material.

SEFAC Duct Covers - Before placing the SEFAC duct covers within the frame, these should be filled with concrete to a minimum specification of C45/55 (EN206). Any surface finish material should not be deeper than 20mm.

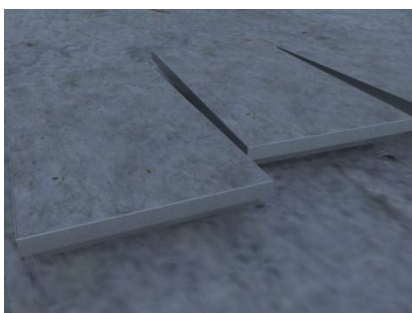


Image 2 – SEFAC Duct

XPAVE Duct Covers - Before placing the XPAVE duct covers within the frame, these should be filled with concrete to a minimum specification of C45/55 (EN206) and to a minimum depth of at least 50mm.

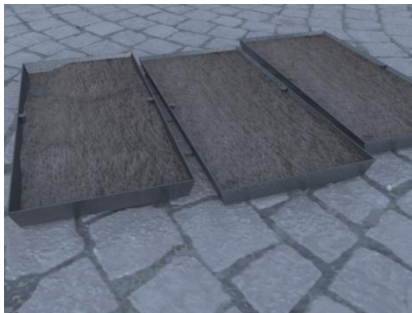


Image 2 – XPAVE Duct

Step 3

The concrete within the recessed covers should be allowed to cure for an appropriate period of time.

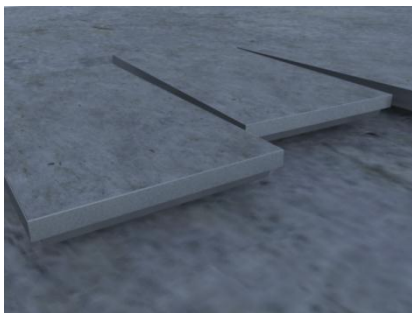


Image 3 – SEFAC Duct

XPAVE Duct Covers – Whilst the concrete within the duct covers is still wet (not cured), the surface finish material (eg block paving units etc) should be placed within the covers and bedded into the wet concrete; to ensure that the paving units are firmly held within the recessed covers. Joints between paving units should be mortar filled.



Image 3 – XPAVE Duct

The design loading can only be achieved if the infill concrete is equivalent to the 28 day cube strength of OPC concrete.

Step 4

Depending on the size and complexity of the duct system, this will either be of a one piece construction or the frame may be supplied in sections. If sectional, frame units can be easily push-fitted together prior to positioning within the trench.

Place the frame assembly in its position within the rebate; ensuring that the inner edge of the frame is flush with the inner walls of the chamber. The frame should be placed over the chamber/ pit, ensuring that frame does not overhang the edges of the chamber/ pit. The underside of the frame should be fully supported within the rebate by the chamber structure.



Image 4 – SEFAC Duct



Image 4 – XPAVE Duct

Step 5

Adjust the frame to the desired finished-floor level using metal shims (or other suitable material) in places. The metal 'concrete keys' attached to the frame may also need adjustment. If the floor finishes are block pavers, tiles, linoleum, resin surface or other decorative flooring, the top edge of the frame should be flush and level with the finished floor level.

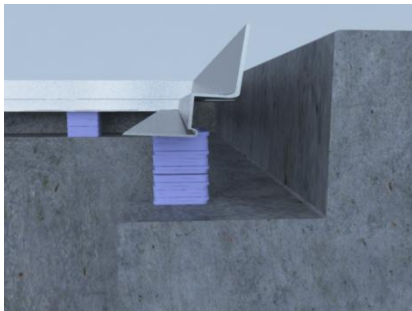


Image 5 – SEFAC Duct



Image 5 – XPAVE Duct

Step 6

Clean the frame and duct cover contact surfaces thoroughly to ensure these are free from debris. Place the duct cover units (already concrete filled; with paving/surface material included if relevant) within the frame.

Cross-Bars (Trimmers) supplied as accessories should also be placed between each duct cover unit.

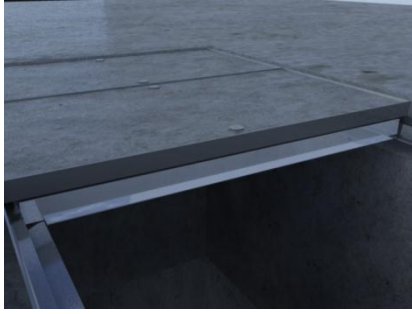


Image 6 – SEFAC Duct

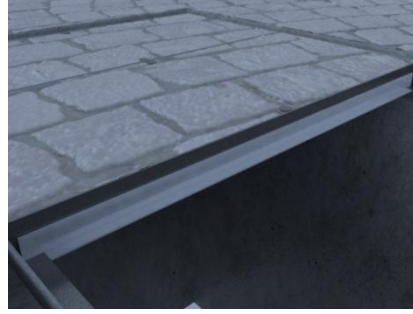


Image 6 – XPAVE Duct

Step 7

Ensure the frame and duct cover units have full contact, so that the cover units are properly installed within the frame; in order to avoid rocking, movement, distortion and failure.

Step 8

Fill the rebate with concrete; ensuring the concrete reaches all voids (and around concrete ties) with the use of a concrete vibrating rod. The project consultant/ contractor may wish to use epoxy-mortar to fix the frame within the pavement structure. The strength and mix of concrete should be determined by the project consultant and/or contractor. This should be strong enough to take account of the loading and finished surface material apparent.



Image 7 – SEFAC Duct



Image 7 – XPAVE Duct

The complete assembly (duct covers, cross bars and frame) should be suitably weighted and anchored so that it does not move during concrete pouring.

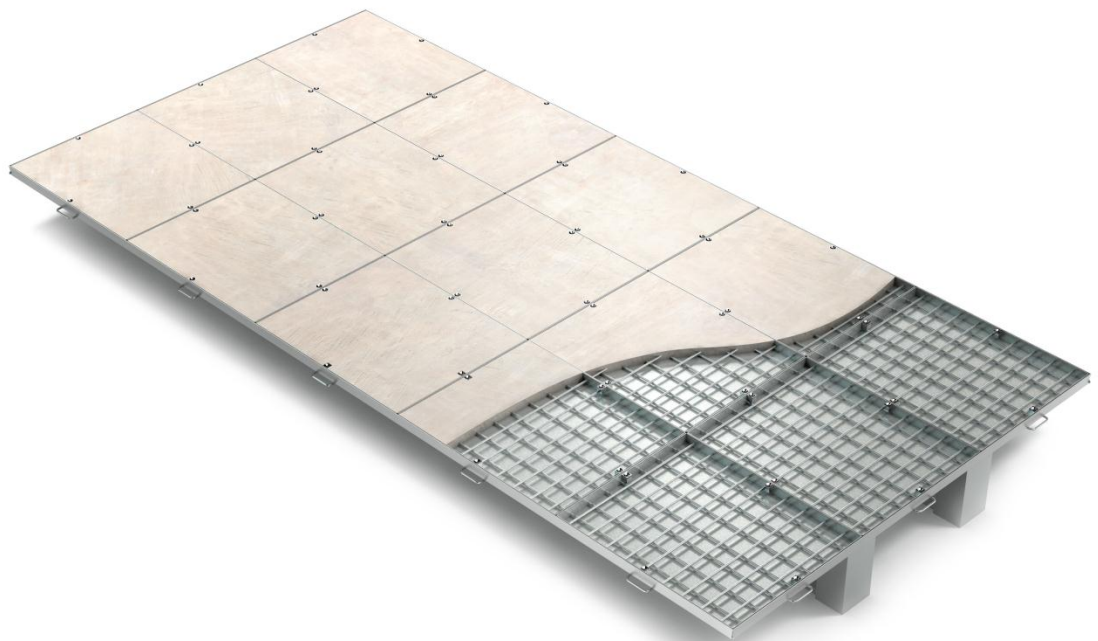
The floor surface and duct cover installation should not be trafficked or a load applied until the installation has been allowed to cure adequately. The time for this should be determined by the project team.

Note: Water-Tightness

Both SEFAC and XPAVE duct (trench) covers are not fully water-tight. To improve water-tightness, silicone sealant can be applied between the duct covers and frame, along all contact faces, between frame joints and between duct covers, cross-bars and support beams.

The concrete infill within the covers should also be vibrated and well compacted to assist with improving water-tightness.

Installation – SEFAC & XPAVE Multi-Span



***Important Note:** The frame, frame components and support beam wall boxes should only be concreted in place with the multi-span cover units (concrete filled) already installed within the frame. This is to avoid distortion of the frame; which could prevent the multi-span cover units from being placed easily into the frame after being installed.

Step 1

Prepare the rebate in accordance with the specific dimensions provided in the product brochure and project installation drawings provided by Elkington GmbH; regarding the various multi-span cover models. The rebate preparation should also take into account location and dimensions regarding support beam wall boxes. The rebate can be formed within the concrete structure when the initial concrete pour takes place (to construct this structure). Alternatively, the multi-span cover assembly (frame with concrete filled covers already in place) can be set into position prior to the main concrete pour to construct the structure; the access cover assembly could be cast into the structure during this initial concrete pour.

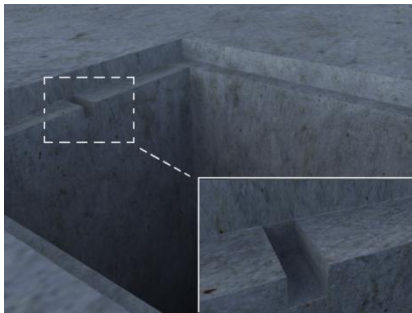


Image 1 – SEFAC Multi-Span

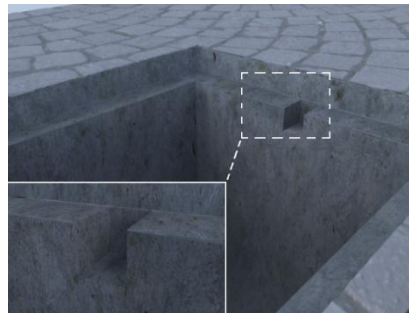


Image 1 – XPAVE Multi-Span

Step 2

Remove the recessed multi-span covers from the frame assembly. This may require loosening of locking screws on the SEFAC cover. The recessed multi-span covers will need to be removed from the frame prior to filling the recessed covers with concrete; along with surface finish material.

For more complex configurations, the frame may be delivered in sections together with beam assemblies and covers.

SEFAC Multi-Span Covers - Before placing the SEFAC multi-span covers within the frame, these should be filled with concrete to a minimum specification of C45/55 (EN206). Any surface finish material should not be deeper than 20mm.

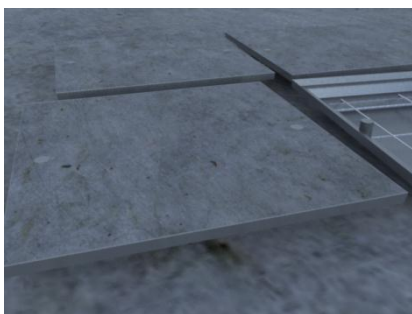


Image 2 – SEFAC Multi-Span

XPAVE Multi-Span Covers - Before placing the XPAVE multi-span covers within the frame, these should be filled with concrete to a minimum specification of C45/55 (EN206) and to a minimum depth of at least 50mm.

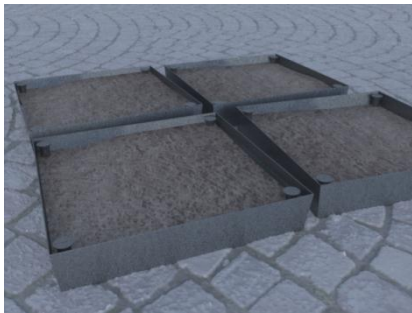


Image 2 – XPAVE Multi-Span

Step 3

The concrete within the recessed covers should be allowed to cure for an appropriate period of time.

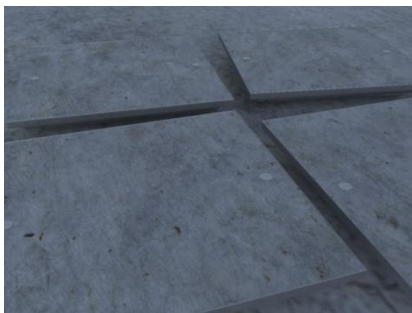


Image 3 – SEFAC Multi-Span

XPAVE Multi-Span Covers – Whilst the concrete within the multi-span covers is still wet (not cured), the surface finish material (eg block paving units etc) should be placed within the covers and bedded into the wet concrete; to ensure that the paving units are firmly held within the recessed covers. Joints between paving units should be mortar filled.

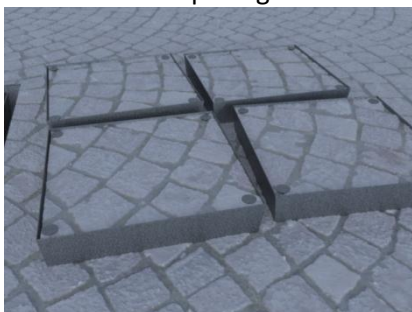


Image 3 – XPAVE Multi-Span

The design loading can only be achieved if the infill concrete is equivalent to the 28 day cube strength of OPC concrete.

Step 4

Depending on the size and complexity of the multi-span system, this will either be of a one piece construction or the frame may be supplied in sections. If sectional, frame units can be easily push-fitted together prior to positioning within the trench.

Place the frame assembly and support beam wall boxes in position within the rebate; ensuring that the inner edge of the frame and wall boxes are flush with the inner walls of the chamber. The frame should be placed over the chamber/ pit, ensuring that frame and wall boxes do not overhang the edges of the chamber/ pit. The underside of the frame should be fully supported within the rebate by the chamber structure.

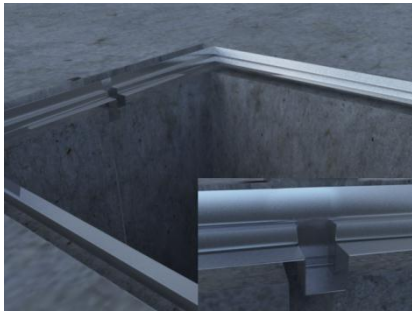


Image 4 – SEFAC Multi-Span

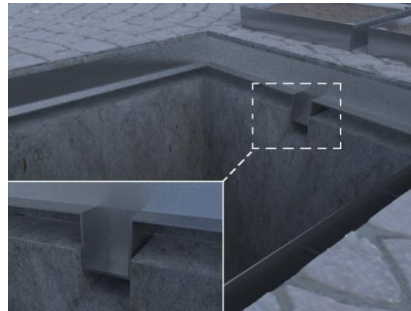


Image 4 – XPAVE Multi-Span

Step 5

Adjust the frame and support beam wall boxes to the desired finished-floor level using metal shims (or other suitable material) in places. The metal ‘concrete keys’ attached to the frame may also need adjustment. If the floor finishes are block pavers, tiles, linoleum, resin surface or other decorative flooring, the top edge of the frame should be flush and level with the finished floor level.

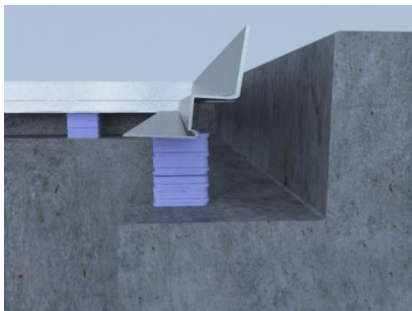


Image 5 – SEFAC Multi-Span



Image 5 – XPAVE Multi-Span

Step 6

Clean the frame, cross-bars, support beam wall boxes and multi-span cover contact surfaces thoroughly to ensure these are free from debris. Place the multi-span units (already concrete filled; with paving/surface material included if relevant), cross bars and support beams within the frame.

Cross-Bars and Support Beams supplied as accessories should be placed within the frame.

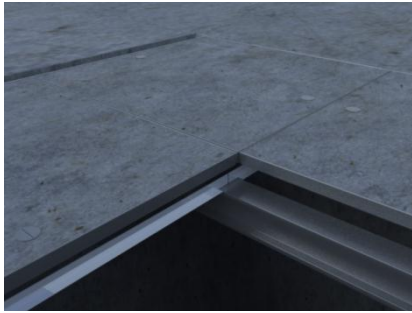


Image 6 – SEFAC Multi-Span

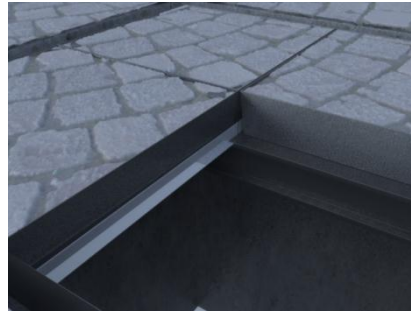


Image 6 – XPAVE Multi-Span

Step 7

Ensure the frame and multi-span cover units have full contact, so that the cover units are properly installed within the frame (supported by beams and cross-bars); in order to avoid rocking, movement, distortion and failure. Larger sized multi-span assemblies may require supporting from below to avoid distortion caused by the weight of the wet concrete infill.

Step 8

Fill the rebate with concrete; ensuring the concrete reaches all voids (and around concrete ties) with the use of a concrete vibrating rod. The project consultant/ contractor may wish to use epoxy-mortar to fix the frame within the pavement structure. The strength and mix of concrete should be determined by the project consultant and/or contractor. This should be strong enough to take account of the loading and finished surface material apparent.



Image 7 – SEFAC Multi-Span



Image 7 – XPAVE Multi-Span

The complete assembly (multi-span covers, support beams and frame) should be suitably weighted and anchored so that it does not move during concrete pouring.

The floor surface and multi-span cover installation should not be trafficked or a load applied until the installation has been allowed to cure adequately. The time for this should be determined by the project team.

Note: Water-Tightness

Both SEFAC and XPAVE multi-span covers are not fully water-tight. To improve water-tightness, silicone sealant can be applied between the multi-span covers and frame, along all contact faces, between frame joints and between multi-span covers and support beams/ cross-bars.

The concrete infill within the covers should also be vibrated and well compacted to assist with improving water-tightness.

Handling & Maintenance

We recommend that access covers and frames are inspected for maintenance at least once every twelve months. The frequency of maintenance should be determined by the client.

For covers with Locking Screws; and Bolt within Lifting Blocks, these should be loosened and/or removed from all lifting points using the appropriate screw-driver or T-Bar Lifting Keys.

The T-Bar Lifting Key should be screwed fully into the threaded insert within the Lifting Block. A mechanical lifting device may need to be used if the cover units (with infill) exceeds a specific weight. This operation should comply with the 'Manual Handling Operations Regulations 1992'.

The cover units should be fully removed from the frame, taking care not to damage the frame and seals.

The seating areas on the frame and cover should be cleaned and the condition of the neoprene seals checked. Neoprene seals can be subject to wear and tear; especially if the cover is opened more regularly. Elkington can supply new replacement neoprene seals if these are required. Please specify the access cover model and dimensions. Information regarding the replacement of seals can be provided.

The frame, underside of the access cover and locking screws/ bolts can be applied with a light maintenance oil or graphite grease if necessary; care needs to be taken to ensure that the maintenance oil/ grease will not have a detrimental effect on the neoprene seals.

Any threaded inserts should be cleaned thoroughly. The covers should then be replaced, securing all screws and bolts. Take care that these are not cross-threaded or over tightened.

Guidance & Design Changes

The design of Elkington access covers is protected by International Patents.

Elkington has taken reasonable care in compiling the information contained in this document. Any recommendation, suggestion, guidance or advice provided regarding the use and installation of Elkington access covers is given without guarantee, as the conditions of using the system are beyond the control of the company. The customer has the responsibility to ensure that the system is 'fit for purpose' regarding its use and that the conditions of use are relevant and suitable.

Elkington reserves the right to make design changes without notice.

This document has been produced by Elkington GmbH

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