

# **Lateral Connections**



Approved options for the most common connections





# **Lateral Connections**

Introducing-

Fernco is the market leader in the development of saddles for lateral connections, used for securely connecting a lateral pipe into a larger diameter main pipe. We can now provide a lateral connection for virtually any application.

- No adhesives, sealant or concrete required
- Eliminates need to pre-order a factory made junction which has a longer lead time
- Reduces material and labour costs
- Increases positioning flexibility
- Can be combined with a product 'add-on' to connect different size laterals
- Small and lightweight, easy to transport and handle for quick installation
- Installation unaffected by weather conditions
- Robust and should not be damaged under normal site conditions

#### Industry sectors







Housing

Construction

Highways







Infrastructure

Repair & Maintenance

Utilities

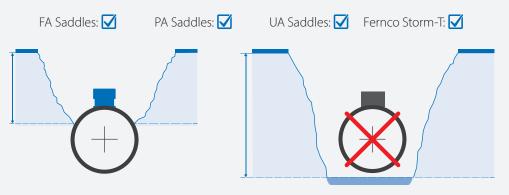


# A change for the better

Fernco saddles carry an abundance of benefits when compared with the methods of installing factory made junctions. Here's some of the big ones – **Cost Saving, Time Saving, Health & Safety...** 

- Excavation time
- No manual digging beneath the pipe
- Pipe bedding and surrounding material can remain unaffected
- Installation time
- Lightweight, no need for lifting equipment to remove pipe and lift junction into place
- One person job

#### Products that don't need to have the pipe bedding removed



# A range that's WRc Approved<sup>™</sup>

The WRc Approved<sup>™</sup> scheme is recognised and established within the construction industry; providing suppliers, buyers and end-users confidence that the products are fit for purpose. The scheme reduces risks in procurement by ensuring quality, performance and installation processes have been tested to the most stringent of requirements.

Fernco can offer a range of lateral connection products which carry the assurance of a WRc approval.  $\gg$ 



\*If rebar is present, Fernco advise that cut sections are given additional protection against water ingress before installing the saddle. \*\*FA150U can connect to larger pipes as an alternative to FA150B if required.

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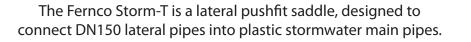
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	PA Saddle	UA Saddle	
ain Pipe oplication	Plastic Sewer DN300-600	Plastic Sewer DN700 and above	
ain Pipe all Thickness	To be advised on enquiry	30-122mm	
teral oplication	160mm PVC (Lateral Pipe Adaptors available to connect different sizes/materials)	All (Fernco coupling required to secure connection)	
Rc Cert ımber	PT/426/0518	PT/518/0722	

#### **Connect into plastic stormwater pipes DN300-600**

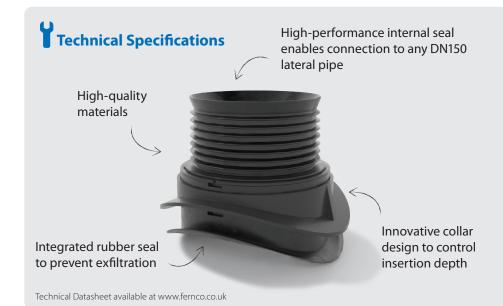
# **Fernco Storm-T**



With an innovative pushfit design, we have created our fastest and most universal saddle to date to ensure the market has an 'off the shelf' solution that keeps installation times and costs to a minimum.

#### **Benefits**

- Tap into any plastic 300-600mm stormwater pipe with just 3 units
- Connect any DN150 lateral pipe
- Multiple depth options to accommodate different pipe brands and profiles
- Designed to match the internal curvature of the pipe
- Tapered to ensure little to no impact on free flowing surface water



#### Fernco Storm-T Range Overview

Product	Wall Thickness Range	Max Host Pipe OD	Drilled Hole Size	Lateral Pipe Size
DN300	5mm - 30.5mm	355mm	177mm (+1mm/-0.5mm)	DN150
DN375-450	5mm - 45mm	540mm	177mm (+1mm/-0.5mm)	DN150
DN500-600	10mm - 60mm	720mm	177mm (+1mm/-0.5mm)	DN150



oth setting system

Internal pushfit rubber for universal connection

Tapered finish inside of the pipe minimises bore intrusion and blockages

#### Fernco Storm-T Saddle Fitting Instructions



- 1. Mark and drill a 12mm pilot hole where the saddle is to be fitted. Core the correct size hole (177mm) into the host pipe. Deburr and clean the hole edges.
- 2. Separate the Fernco Storm-T components (rubber body, plastic collar, plastic insert with lateral seal if applicable). Fold the rubber in half and push into the hole. Pull the rubber upwards until the outer fin engages the internal surface of the pipe (see 2a). Ensure the slots on the rubber are inline with the length of the host pipe.
- 3. Align the tabs on the plastic collar with the external slots on the rubber body. Push the tabs on the collar into the installation slot at the top of the body. Continue to push the collar over the body, the tabs will pass through between each slot until the collar contacts the outer surface of the pipe. Ensure the rubber body is still in contact with the internal surface of the pipe.
- 4. Apply lubricant to the insert (profiled half only). Align the two notches on the central ring of the insert with the arrows on the collar. Push the plastic insert into the rubber body until its outer edge engages the top of the rubber.
- 5. Install the lateral pipe. When using a pushfit rubber sleeve, ensure that the tapered edge on the rubber sleeve does not fold back when the lateral pipe is inserted onto the pipe. Lubricant may be required on the rubber.



## **Connecting into Clay/Concrete DN250+**

# **Unisaddle FA150U**





# The Fernco Unisaddle FA150U is used to connect a DN150 lateral pipe into a larger diameter sewer or surface water clay/concrete pipe.

By using a diamond tipped core bit drill a 172mm hole into the pipe, the saddle is easily installed into clay or concrete from DN250 up to DN450. The saddle will connect to larger pipes providing it has a minimum wall thickness of 27.5mm. A DN150 lateral branch connection can then be installed.

#### **Benefits**

- Lower cost in comparison to junctions
- Accepts a deflection on the lateral pipe of 7°
- Incorporates shear support to withstand a shear load of 25 Newtons per mm nominal pipe diameter
- Lightweight, easy to handle for quick installation

- No need to excavate around the pipe and disrupt the pipe bedding
- Withstands an internal pressure of 1 bar
- Fits any DN150 lateral pipe in conjunction with a Fernco Multibush
- WRc Approved<sup>™</sup>

## Technical Specifications - FA150U



WRC Approved from DN250+

#### Lateral Pipe Multibush Configuration

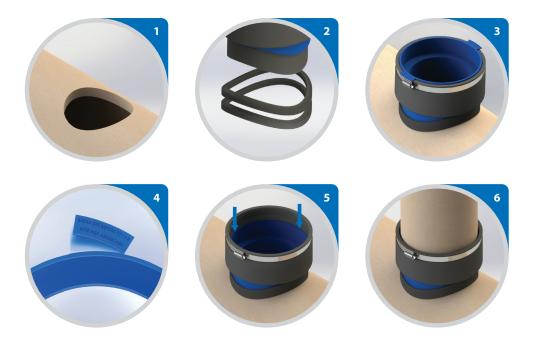
DN150 lateral pipes are available in many different materials, the thickness of these materials means that the outside diameters differ from pipe to pipe. The FA150U saddle has been designed to accept the thickest DN150 pipe on the market, with an outside diameter between 180-190mm. To connect a DN150 lateral pipe with a smaller outside diameter a Fernco Multibush can be used – the foldable bush can be used to fill the gap with 3 thickness configurations: 12mm, 8mm and 4mm.

# Using an FA150U saddle in conjunction with a Fernco Multibush means that any DN150 lateral pipe material can be installed.

		Multibush pr	oduct code: MB150
Lateral Pipe	Multibush Configuration	Lateral Pipe Material	Illustration
160-166mm	12mm Folded	DN150 Quantum, Cast Iron (SMU, SML, Ensign), 160mm PVC	0
170-177mm	8mm Large End	DN150 Ductile Iron, Ultra-Rib. Cast Iron (Drain)	→ <b>(</b> )
178mm	4mm Small End	Supersleve, Twinwall Plastic	→ <b>()</b>
180-190mm	None	Salt Glazed Clay	No bush required

#### **Main Pipe Shim Configuration**

Wall Thickness	Shims Required	Lateral Pipe	Illustration
27.5mm - 40mm	2	Any DN150 pipe (may require multibush, dependent on material)	
40.5mm - 53mm	1	Any DN150 pipe (may require multibush, dependent on material)	0
53.5mm +	None	Any DN150 pipe (may require multibush, dependent on material)	No shim required



- 1. Diamond core a 172mm hole at the selected position into the main pipe. Ensure the pipe wall and surrounding area is clean and free from slurry/debris.
- 2. Use the correct number of shims based on the wall thickness of the main pipe. Refer to the table above for shim configuration.
- 3. Position the saddle in the hole ensuring the contours of the saddle are aligned with the main pipe and the arrows on the rubber body and plastic sleeve line up.



- 4. Break off the tabs from the locking sleeve and push the sleeve into the bore of the saddle.
- 5. Drive the locking sleeve evenly around the circumference until fully locked. It is recommended that a wooden block is used when using a hammer to lock the saddle into position. Add water to ease the locking sleeve into the saddle if required.
- 6. Insert the lateral pipe into the fitted saddle (along with a Fernco Multibush if required) and tighten the clamp band to the recommended torque.

Note: A diamond cored hole of 172mm (+1 / -0mm) should be cored using the correct equipment. Should rebar be exposed, it is recommended that the rebar is sealed prior to installation of the saddle. It is important that the core hole is perpendicular to the pipe.

# Connecting into Concrete DN450 and above Unisaddle FA150B / 200B





The Fernco Unisaddle FA150B is used to connect a DN150 lateral pipe into a larger diameter thick walled sewer or surface water concrete pipe. The FA200B is capable of connecting into the same types of concrete pipes for DN200 lateral pipes & some DN225.

By using a diamond tipped core drill a hole into the pipe at 172mm (for FA150B) or 232mm (for FA200B), the saddle can be easily installed into a concrete main pipe from DN450 with a minimum wall thickness of 50mm. A suitable lateral branch connection can then be installed.

#### **Benefits**

- Lower cost in comparison to junctions
- Incorporates shear support to withstand a shear load of 25 Newtons per mm nominal pipe diameter
- Accepts a deflection on the lateral pipe of 15°
- No adhesives, sealant or concrete required

- Lightweight, easy to handle for quick installation
- No need to excavate around the pipe and disrupt the pipe bedding
- Withstands an internal pressure of 1 bar
- WRc Approved™

## Technical Specifications - FA150B / FA200B

Threaded collar accommodates specific pipe wall thicknesses, making this product universal to many different main pipes

Technical Datasheet available at www.fernco.co.uk



Strong grip on the lateral pipe with a stainless steel 6Nm clamp band (13Nm on FA200B)

Additional infiltration protection

#### FA150B Lateral Pipe Multibush Configuration

DN150 lateral pipes are available in many different materials, the thickness of these materials means that the outside diameters differ from pipe to pipe. The FA150B saddle has been designed to accept the thickest DN150 pipe on the market, with an outside diameter between 180-190mm. To connect a DN150 lateral pipe with a smaller outside diameter a Fernco Multibush can be used – the foldable bush can be used to fill the gap with 3 thickness configurations: 12mm, 8mm and 4mm.

# Using an FA150B saddle in conjunction with a Fernco Multibush means that any DN150 lateral pipe material can be installed.

		Multibush pro	oduct code: MB150
Lateral Pipe	Multibush Configuration	Lateral Pipe Material	Illustration
160-166mm	12mm Folded	DN150 Quantum, Cast Iron (SMU, SML, Ensign), 160mm PVC	0
170-177mm	8mm Large End	DN150 Ductile Iron, Ultra-Rib. Cast Iron (Drain)	→
178mm	4mm Small End	Supersleve, Twinwall Plastic	→
180-190mm	None	Salt Glazed Clay	No bush required

#### FA200B Lateral Pipe Bush Configuration

The FA200B is designed to connect lateral pipes with outside diameters between 222-250mm, which includes a selection of DN200 and DN225 pipes. To ensure the connection of any DN200 pipe with outside diameters below 222mm, Fernco have a range of bushes available to fill the gap.

# Using a FA200B saddle in conjunction with a Fernco Bush means that any DN200 lateral pipe material can be installed.

Pipe o/d	Bush	Lateral Pipe Material	
200 – 208mm	BC21/205	200mm PVC	
210 – 220mm	BC08/232	DN200 Cast Iron (SMU, SML, Ensign)	
222 – 250mm	No Bush Required	DN200 Vitrified Clay, DN200 Ductile Iron, DN225 Quantum DN225 Polysewer Twin	DN225 Polyethylene DN225 Vulcathene DN225 Ultra-rib wall

#### FA Saddle Fitting Instructions



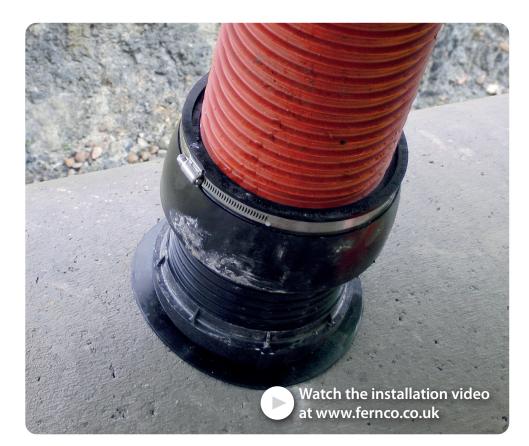












- 1. Diamond core a 172mm hole (232mm for FA200B) at the selected position into the concrete pipe. Ensure the pipe wall and surrounding area is clean and free from slurry/debris and measure the wall thickness.
- 2. Remove the internal locking sleeve from the saddle body. Adjust the threaded collar on the outer sleeve so that the measurement from the bottom of the saddle to the collar seal is 10mm less than the wall thickness of the pipe.
- 3. Position the saddle in the hole ensuring the body does not protrude into the bore of the pipe. This is achieved by placing your hand inside and feeling the inside curvature of the pipe wall.
- 4. Break off the tabs from the locking sleeve and lubricate using water. Place the locking sleeve into the saddle body and line up the arrows. Push the sleeve into the bore of the saddle.
- 5. Drive the locking sleeve evenly around the circumference until fully locked. It is recommended that a wooden block is used when using a hammer to lock the saddle into position.
- 6. Insert the lateral pipe into the fitted saddle (along with a Fernco Multibush if required) and tighten the clamp band to the recommended torque.

Note: A diamond cored hole of either 172mm or 232mm (+1 / -0mm) should be cored using the correct equipment. It is important that the core hole is perpendicular to the pipe.

#### **Connecting into Plastic Sewer Pipes DN300-600**

# **PA Saddles**





The Fernco PA Saddles range is used to connect a 160mm outside diameter lateral pipe into a larger diameter plastic pipe.

By coring a hole at 177mm, the Fernco PA Saddle can be installed into a plastic main pipe from DN300 to DN600. A 160mm PVC lateral branch connection can then be installed. The range boasts a variety of different sizes to cover the most common pipe sizes.

#### Benefits

- Can be used in conjunction with a lateral pipe adaptor to connect any DN100 or DN150 lateral pipe
- Lower cost in comparison to junctions
- Reduces labour time
- Small and lightweight, easy to store and transport

- Position the lateral connection wherever a cored hole can be made
- Withstands internal pressure of up to 0.5 bar
- WRc Approved<sup>™</sup>

# Technical Specifications



## Quick Tip

The PA Saddle will accept a 160mm PVC lateral pipe as standard, however, the saddle can be made universal by adding a Lateral Pipe Adaptor. The adaptor can be installed into the saddle which can branch off to fit a different material DN150 pipe or a smaller DN100 pipe.



#### Lateral Pipe Adaptors for PA Saddles

Product Code	Lateral Pipe Size Suitability
PA110	Suitable for all DN100 pipes with an outside diameter between 110-122mm
PA130	Suitable for all DN100/DN125 pipes with an outside diameter between 121-136mm
PA140	Suitable for all DN100/DN125 pipes with an outside diameter between 130-145mm
PA170	Suitable for all DN150 pipes with an outside diameter between 161-175mm
PA180	Suitable for all DN150 pipes with an outside diameter between 170-192mm
PA200	Suitable for all DN150 pipes with an outside diameter between 190-215mm

**Don't know which PA Saddle you need?** Contact Fernco Technical: 01226 344 100 or technical@fernco.co.uk

#### **PA Saddle Fitting Instructions**



## 4 easy steps

- 1. Using a suitable holesaw, core a hole of 177mm (+1mm/-0.5mm) diameter in the wall of the pipe into which the saddle is to be fitted. It is important that the hole is perpendicular to the pipe and that the holesaw is long enough to cut through the wall in one pass. Remove any burring or flashing from the edges of the hole by using a de-burring tool and wipe the inside surface clean. Apply lubricant to the outer face of the inner sleeve and seal of the saddle.
- 2. Insert the PA saddle into the hole so that the saddle flange sits snugly onto the pipe. When a spacer is required, ensure the spacer is securely positioned onto the rubber seal. The curvature of both the flange and spacer must be in the same orientation (2a).
- 3. Using a 'T' handled 6mm hex key, turn the screws in a clockwise direction alternately by approximately 5 rotations at a time. Continue turning the screws until the underside of the head touches the face of the bolt ring.
- 4. Connect the lateral pipe to the PA Saddle by pushing a 160mm PVC pipe into the saddle inlet. *Note: It is important that the core hole is perpendicular to the pipe.*

Watch the installation video

at www.fernco.co.uk

#### **Connecting into Plastic Sewer Pipes DN700 +**

# **UA Saddles**





#### The Fernco UA Saddle is used to connect a DN150 lateral pipe into a larger diameter plastic pipe.

By coring a hole at 177mm, the Fernco UA Saddle can be installed into a plastic main pipe from DN700 and above. A DN150 branch connection can then be installed using a suitable Fernco coupling.

The Fernco UA Saddles contain spacer rings which are interchangeable depending on the application. Fernco prepare all UA Saddles to order to ensure they are application ready prior to delivery.

#### **Benefits**

- No adhesive, sealant or concrete required.
- Eliminates need to pre-order a factory made junction.
- Reduces costs, whilst increasing installation options.
- Minimises time exposed to live sewers.
- Installation unaffected by weather conditions.
- Lightweight, easy to handle for quick installation.
- Robust and should not be damaged under normal site conditions.

## Technical Specifications

DN150 inlet connectable with the use of a Fernco Coupling

Spacer rings interchanged by Fernco for specific applications

Integrated rubber seal to prevent exfiltration

Technical Datasheet available at www.fernco.co.uk

#### Main pipe requirements

Usage Details	Sizes
Internal Diameter of Main Pipe	700 - 3000mm
Wall Thickness of Main Pipe	25 -125mm
Drilled Hole Size	177mm

#### Common Fernco couplings used to connect DN150 lateral pipes to the UA Saddle

Flexible Couplings Product Code	Lateral Pipe/Size Range
AC1602	110-122
AC1603	121-136
SC165 / DC165	160
SC175 / DC175	165-175
AC1924	170-192

#### **UA Saddle Fitting Instructions**



## 4 easy steps

- 1. Using a suitable holesaw, core a hole of 177mm (+1mm/-0.5mm) diameter in the wall of the pipe into which the saddle is to be fitted. It is important that the hole is perpendicular to the pipe and that the holesaw is long enough to cut through the wall in one pass. Remove any burring or flashing from the edges of the hole by using a de-burring tool and wipe the inside surface clean. Apply lubricant to the outer face of the inner sleeve and seal of the saddle.
- 2. Insert the UA saddle into the hole so that the saddle flange sits snugly onto the pipe. The curvature of the flange must be in the same orientation.
- 3. Using a 'T' handled 6mm hex key, turn the screws in a clockwise direction alternately by approximately 5 rotations at a time. Continue turning the screws until the underside of the head touches the face of the bolt ring.
- 4. Connect the lateral pipe to the UA Saddle by using a suitable flexible coupling.

Note: It is important that the core hole is perpendicular to the pipe.



## **Connecting into smooth wall main pipes**

# **TA Saddles**



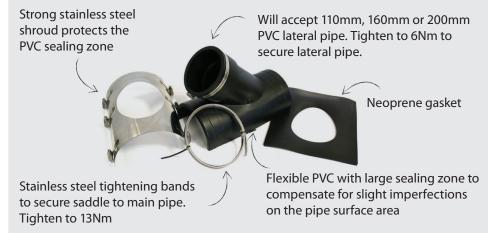
#### The Fernco range of TA Saddles are used to connect 110mm, 160mm or 200mm lateral pipes into a larger diameter smooth wall sewer or surface water pipes.

By making a cored hole (size details in the table on the next page), the Fernco TA Saddle can be installed onto PVC, Clay or Concrete pipes from 160mm to 600mm outside diameter. A 110mm, 160mm or 200mm branch connection can then be installed.

#### **Benefits**

- · Ideal for a quick, low cost solution
- Available for both 45° and 90° lateral connections (TA200 has no 90° option)
- Can be applied to pipes of any wall thickness
- Seal applied on the outside of the pipe preventing infiltration/exfiltration
- Strong stainless steel components

## Technical Specifications



Technical Datasheet available at www.fernco.co.uk

#### TA Saddle Range Overview

Product code*	External diameter of main pipe	Lateral pipe	Hole size into clay/concrete	Hole size into PVC pipe
TA11090	160-400mm	110mm PVC	127mm core bit	127mm hole saw
TA11045	160-400mm	110mm PVC	See note	See note
TA16090	200-400mm	160mm PVC	172 core bit	177mm hole saw
TA16045	200-400mm	160mm PVC	See note	See note
TA20045	300-600mm*	200mm PVC	See note	See note

\*All steel on TA20045 is grade 316 only. / \*45 & 90 in the product code refers to the angle at which the saddle body comes away at. Note: If a 45° entry into PVC is required, the rubber gasket can be used as a template and the hole cut with a suitable saw. If a 45° entry into clay or concrete is required, a suitable drilling rig should be used



TA11045 TA16045 TA20045



#### **TA Saddle Fitting Instructions**

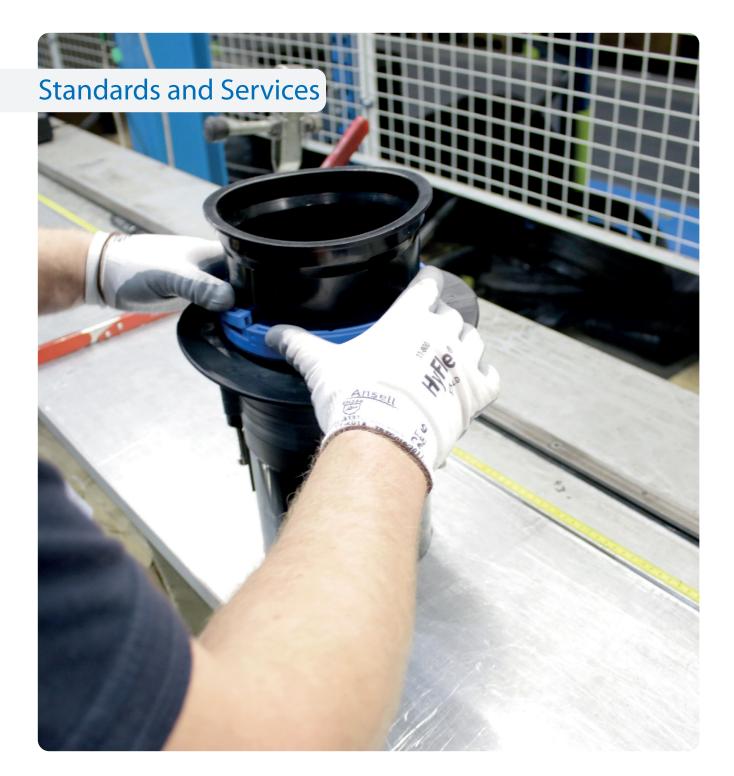


- 1. Excavate sufficient area around the pipe to ensure adequate space for working. Space is needed under the pipe as the securing clamp band will pass underneath. Determine the required position for the saddle and, using the gasket as a template, mark out the hole and the edges of the saddle. Ensure that with the 45° saddle the lateral pipe comes off in the required direction.
- 2. Cut a hole in the pipe along this mark. Ensure that the hole allows the saddle to make full contact with the surface of the pipe.
- 3. Clear off any excess material from the drilling that could cause the saddle not to sit correctly.
- 4. Remove any swarf or flashing from the edges of the hole using the deburring tool supplied with the installation kit. This should include the internal edges as any swarf or flashing present may inhibit the installation of the saddle. Spalling around the hole on concrete and clay pipes is expected but must be repaired if the spalling extends beyond 20mm from the edge of the hole.



- 5. Position the gasket and saddle over the hole using the edge markings previously applied and ensure that the stainless steel saddle is located correctly and centrally onto the PVC product. When fitting pipes at the large end of the product range, the saddle will need to be pushed down to make contact with the pipe surface.
- 6. The perforated bands supplied are suitable for fitting around a pipe with a 400mm (TA110 and TA160 ranges) or 600mm (TA200 product) outside diameter. It may be necessary to cut down the bands to a length to suit the actual outside diameter of the main pipe (cut parallel to the direction of the perforations in the band). The table supplied is a guide to the required band lengths.
- 7. Drive all the bands into the housings located along one edge of the stainless steel saddle. Drive through until the strap starts to show beneath the hexagon head. Hold the saddle in the correct position and slide the bands under the pipe and drive them into the housings on the other side of the stainless steel saddle. Again continue until the band starts to show under the hexagon head. Check the position of the gasket, PVC saddle and stainless steel cover and then evenly tighten all clamps to the required torque. (13Nm)
- 8. Position the lateral pipe into the saddle and tighten this clamp band to 6Nm.
- 9. Replace and compact the bedding material under and around the pipe. Recheck the clamps meet the required torque. Any part of the saddle that is not protected by a stainless steel shroud should be backfilled with care to protect against deformation or puncturing from backfilling material. For example, carefully casting the exposed PVC in concrete before backfilling should suffice. Then backfill with a suitable material.

Note: It is important that the core hole is perpendicular to the pipe.





# Fernco are committed to manufacturing products to the highest of standards.

To demonstrate and enforce this, the Company implement a Quality Management System which complies with the requirements of ISO 9001:2015.

This results in a Saddles range with near zero defect or failure risk, when installed correctly. When Fernco combines quality with a culture of innovation the customer benefits from products and services that add real value to their businesses.



#### Need it tomorrow? Not a problem.

Fernco offer a unique service and delivery combination, which allows us to react to our customers needs. Chose from either our standard 2-3 day delivery or next day delivery on a pre 10:30am or 12pm drop, either to site or a local builders' merchant. If it's a real emergency give us a call to see if we can arrange a same day delivery: **01226 340 888** 

You're in safe hands with our **Technical Team** 

Rob, **Technical** Manager

**&** 01226 344 100

Have you seen our full range of products? Visit www.fernco.co.uk













Please contact us if you'd like more information:

Endeavour Works, Newlands Way, Valley Park,







