



FP M^cCann

PrecastConcreteDrainageSystems



Jacking & Microtunnelling Products



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FP McCann provides an extensive range of concrete pipes and fittings. All products are manufactured from high quality raw materials and are sulphate resistant.

- FP McCann jacking pipes enable pipe installation where the opening of trenches is neither practical nor cost effective.
- They provide an environmentally suitable solution.
- FP McCann jacking pipes are made from dense, durable, steel cage reinforced, sulphate resistant concrete having a minimum strength of 50N/mm²
- They are manufactured in accordance with BSEN 1916 and BS 5911-1 and certified by Quality Assessment under the Kitemark Scheme and BS EN ISO 9002.



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Visit our website on: www.fpmccann.co.uk

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FP McCann is the trading name of F.P. McCann Limited, incorporated in Northern Ireland, Registration Number N.I.13563.

- Features of FP McCann jacking products include
 - self-lubricating joint gasket
 - built-in handling system with an extensive range to suit most machines and shields

high quality jacking pipes providing modern solutions in today's markets

Questions and Answers on Pipe Jacking

Q. What is pipe jacking?

A. Pipe jacking is a technique for the installation of underground pipes, ducts and culverts with minimal environmental disruption. Jacking pipes can also act as conduits for other utilities like gas, electricity and telecommunications.

Q. How does it work?

A. Tunnelling excavation, by machine or by hand, takes place between two shafts or caissons whilst specially designed pipes are pushed through the ground by powerful jacks.

Q. Why is pipe jacking used?

A. Primarily to install water and sewerage systems where the opening of trenches is impractical; for example in environmentally sensitive areas, under railways, motorways, rivers, canals, buildings and in crowded urban sites.

Q. What are the cost advantages?

A. Jacking is cost effective when compared with deep open cut methods and other forms of tunnelling. It offers low maintenance costs, speed and safety of installation with fewer joints, smooth internal finishes and improved flow characteristics without the need for secondary linings required by some segmental systems.

Q. What are the environmental advantages?

A. Minimum excavation means less disturbance, less pollution, less noise, fewer lorry movements and a reduction in the need for costly traffic diversions and delays. There is a reduced risk of settlement, damage or movement to other structures and services.

Q. What types of concrete jacking pipe are there?

A. Pipes with steel collars are manufactured to BSEN 1916 and BS 5911-1. Steel collar pipes incorporate an accurately rolled collar manufactured from BSEN 1025 2004 S2753 mild steel. They can be used on both machine dug and hand dug drives.

Q. What is meant by microtunnelling?

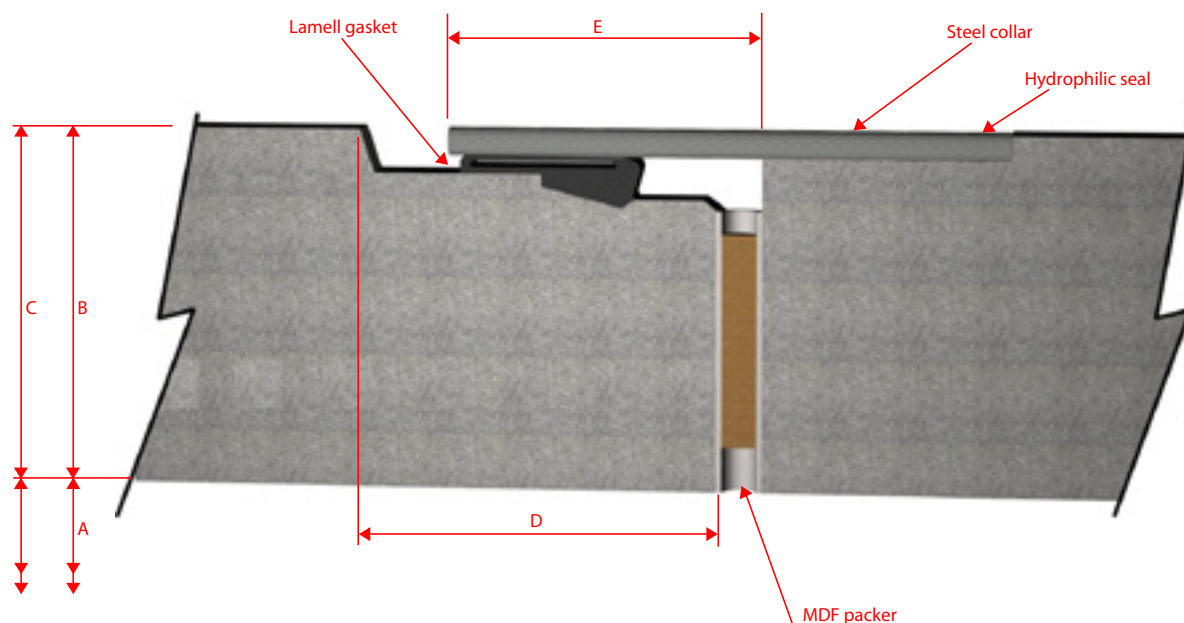
A. Generally refers to non-man entry sizes installed by machine, though some consider it to include larger pipes installed by remote control methods.



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Steel collar joint



DN* mm	Pipe		Bore Diameter A mm	Wall Thickness B mm	Outside Diameter C mm	Spigot Length D mm	Socket Length E mm	Recess (Lead Pipe only) F mm	Crush Test Loads	
	Length Metres	Weight Kg approx							Proof Load kN/m	Maximum Load kN/m
450	1.2	410	450	75	604	115	110	-	36	54#
600	1.2	600	585	87.5	764	115	110	-	48	72#
600	2.0	1000	585	87.5	764	115	110	-	48	72#
900	2.5	2200	900	100	1100	115	110	1060	72	108
1000	2.5	2550	980	110	1200	115	110	1160	72	120
1200	1.2	1540	1200	115	1430	130	125	1390	96	144
1200	2.5	3200	1200	115	1430	130	125	1390	96	144
1350	2.5	3900	1350	125	1600	130	125	1560	112	168
1500	2.5	4900	1500	140	1780	130	125	1740	120	180
1800	2.5	6500	1830	155	2140	135	125	2100	145	216
1950	2.35	8170	1950	190	2330	135	125	2290	160	240
1980	2.5	8000	1980	175	2330	135	125	2290	160	240
2100	2.5	7850	2080	165	2410	135	125	2370	160	240
2400	2.5	11100	2425	200	2825	145	140	2785	200	300

Short length pipes

Short length pipes in some of the sizes shown above can be manufactured to order.

FP McCann is always interested in adding to the above range, and would be pleased to discuss the supply of any sizes not shown.

* The nominal sizes shown take account of current and future European standard sizes.

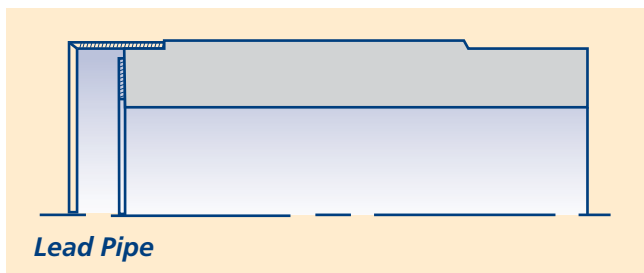
These items are not covered by BSEN 1916 and BS 5911 Part 1 but have been designed using the same criteria.

Lead Pipes

Lead pipes are located at the front of the drive. It is standard practice to fit a steel shield over the lead pipe in every hand dug drive providing protection to miners and facilitating steering. Machine dug drives do not usually require a lead pipe as the contractor can adapt the machine to fit over a standard pipe spigot.

Special characteristics

- A flat end instead of a spigot - 600mm long by 20mm deep rebate.
- Joint gaskets are not supplied as standard with lead.



Grout Sockets or Lubrication Holes

Designed to reduce friction during jacking, lubricating or grout sockets can be cast into standard pipes to suit customer requirements. They are normally 1 1/4" BSP steel sockets fitted with plugs. Conical non-return valves are supplied as standard. The ratio of pipes with grout sockets to standard pipes varies depending on ground conditions. A guide is one pipe in every three, or one in every five.

Table showing standard configurations of grout sockets.

Pipe Diameter mm	Number	Location
900 1800	2 holes per pipe	
1950 - 2400	3 holes per pipe	

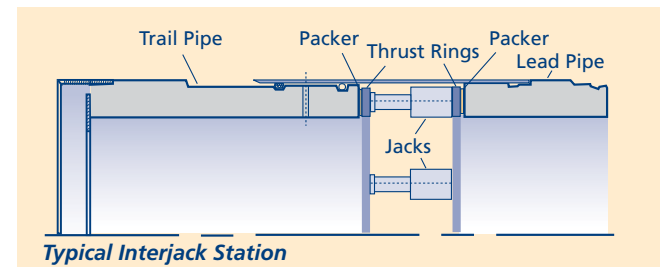
Packers

It is important that suitable packing material be used between adjacent pipes to ensure even stress distribution and load transfer. We recommend medium density fibre board (MDF). FP McCann can supply and fix packers at works

although the contractor usually supplies and fixes them on site prior to pipe installation. It is important that packers are fitted in the correct position. (See page 7)

Intermediate Jacking Stations (Interjacks)

Interjacks are frequently installed on drives where the jacking forces required exceed the capability of the pipe or the jacks. Installing interjacks relieves pressure on the whole drive length by first pushing the section of pipes in front of the interjack using jacks installed within the interjack itself; the rear section of pipes is then pushed by the main jacks.



Each interjack station comprises two pipes, a lead and a trail, with a steel can or shield which is either cast integrally with the lead pipe - a fixed can, or fitted round the pipe separately - a loose can. The interjack trail pipe is common to both fixed and loose can types. Choice of interjack type is usually left to the contractor's preference.

Fixed Can Interjacks

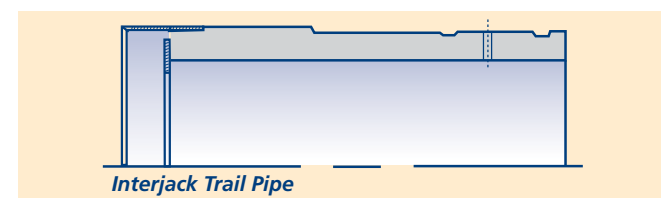
These are used with steel collar pipes. FP McCann provides the lead pipe with the can already fitted. It then becomes the contractor's responsibility to fit suitable steel thrust rings, packers and jacks inside the can.

Loose Can Interjacks

Generally used with in-wall jointed pipes and have a lead pipe with a short 300mm by 20mm recess in place of the socket. The contractor provides the can as well as the thrust rings, packers and jacks.

Interjack Trail Pipes

Recognisable by their long 1400mm by 20mm rebate instead of the normal spigot. Two recesses are located towards the end of the rebate to take special sealing rings provided by FP McCann. Lubrication points are positioned between the recesses.



Easi-lift Handling System



Available on pipes from DN 900 to DN 2400

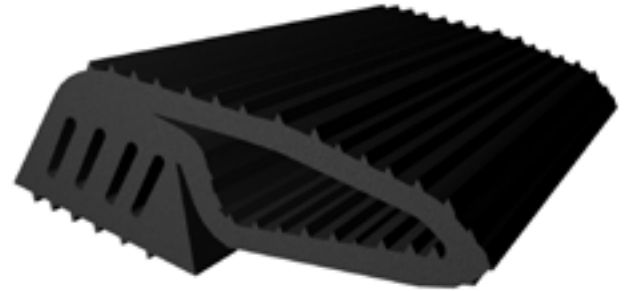
To assist the contractor in adopting a safe working method for lowering heavy pipes into deep, confined spaces, all FP McCann standard jacking pipes from DN 900 are supplied with the Easi-lift system.

Galvanized lifting anchors are cast into the pipe wall and couple with certified lifting shackles and chains to provide a safe, speedy and accurate system of off-loading, stacking and placing. Anchors are positioned below the outside diameter of the pipe to avoid any potential to snag or plough.

- **Safe-**
Easi-lift ensures a positive horizontal lift every time, no weight balancing is required.
- **Accurate-**
pipes can be lowered down deep shafts and onto the jacking cradle in one smooth, easy operation.
- **Time saving -**
lifting eyes are engaged and disengaged by rotation in a few seconds.
- **Cost saving -**
eliminates the purchase of cumbersome slings and reduces the risk of damage to pipes.
- **No leaks-**
through lifting holes which need sealing.

Lamell is a fast, efficient, easy-to-fit pipe joint seal. Incorporating an innovative, self-lubricating SBR gasket, the Lamell seal is ideal for use in wet conditions.

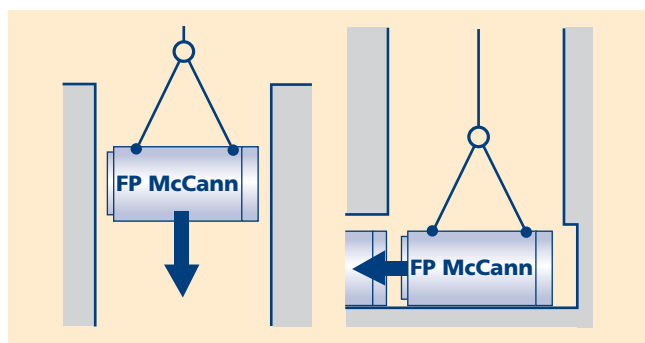
Lamell provides a reliable, flexible, water-resistant seal requiring no additional lubrication.



Pipes for Special Requirements

FP McCann jacking pipes are designed to meet all normal in-service conditions. There are, however, situations which demand special consideration. FP McCann can offer a number of options to help combat more extreme conditions.

- **Additional cover to reinforcement** beyond the British Standard minimum 15mm. This acts as a sacrificial layer where aggressive effluent or attrition is anticipated, so prolonging the life of the pipe.
- **Stainless steel collars** to suit ground or effluent conditions.
- **Alternative mix designs** to suit ground or effluent conditions.
- **Protective coatings or linings** to suit ground or effluent conditions.
- **Special strength pipes** with increased reinforcement.
- **Secondary seals** can be provided if requested.



Note: special requirements or non-standard products should be ordered in advance of their anticipated delivery dates.

FP McCann Concrete Jacking Pipe Installation

Handling and Jointing - General

FP McCann jacking pipes are robust and should arrive on site in good condition.

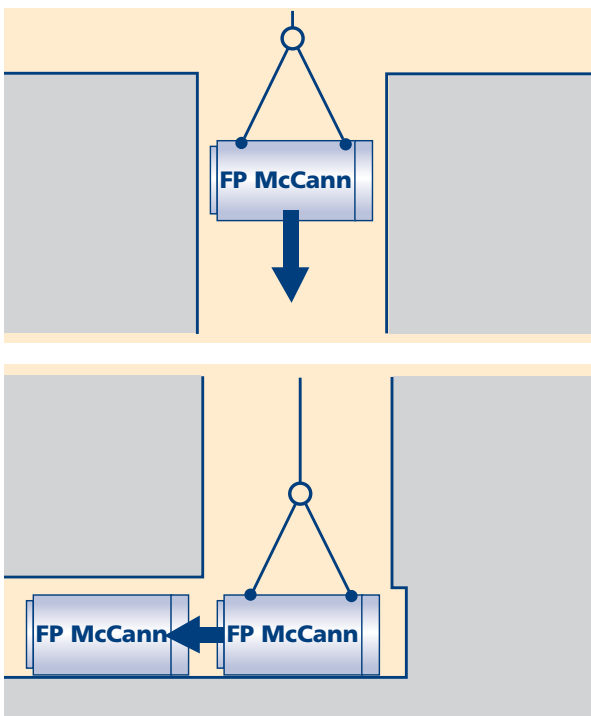
Care in handling is simply a matter of common sense.

Do take extra care with the joints.

- Lifting appliances should be capable of smooth hoisting, lowering and travelling with the heaviest pipe and must satisfy the required safety regulations.

Easi-Lift Handling System

This is the simplest, safest and most efficient way of handling FP McCann jacking pipes, DN 900 and above. Place the lifting eyes over the cast-in anchors and rotate ensuring the lugs on each eye are pointing towards the centre of the pipe before commencing the lift.



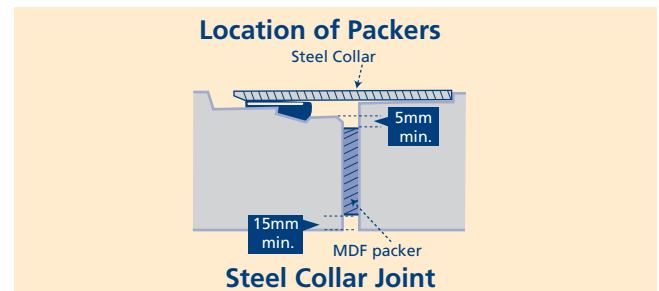
If easi-lift is not used then:

- Webbed slings should be used to handle pipes round the barrel rather than through the bore. Should slings be used through the bore, pipe ends must be protected from chafing. Wire ropes and chain slings are not recommended.
- Pipes should be stacked on firm, level ground. The bottom layer must be securely chocked and the height of the stack should not exceed two metres.
- Store rubber rings and gaskets away from strong sunlight and frost.

Packers

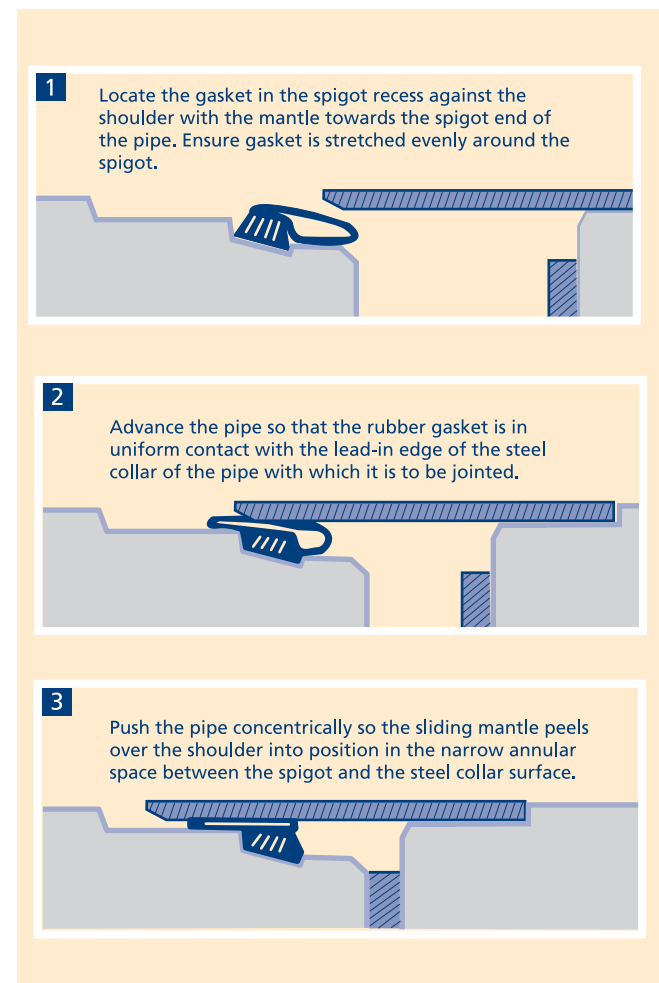
It is preferable to fit packers just prior to jointing as they remain clean and dry and are less likely to work loose.

It is important they are fitted concentrically and should be offset from the pipe faces as per the minimum dimensions shown below, especially the inside bore.



Jointing using the Lamell Seal

Prior to placing ensure the gasket and the joint surfaces are clean. Lubrication is not required and **MUST NOT** be applied.



Note: the mantle is tough but can be damaged by sharp implements. Care should be taken to handle and store gaskets correctly.

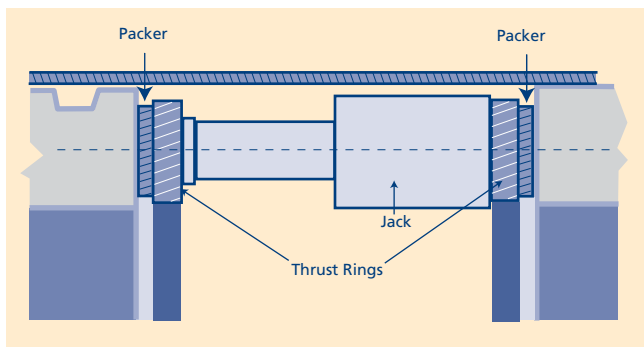
FP McCann Concrete Standard Interjack Installation

It is assumed that:

- all preparatory work will have been completed before the installation of the interjack, ie. drilling and fixing of brackets, fixing of segmented thrust rings and hydraulics.
- the jacks are securely restrained so they will not become misaligned during use.

IMPORTANT

The hydraulic jacks must be positioned so that their centre line is the same as that of the pipe wall. All thrust rings should be of adequate stiffness to prevent joint loading.



Typical position of jacks relative to pipe wall

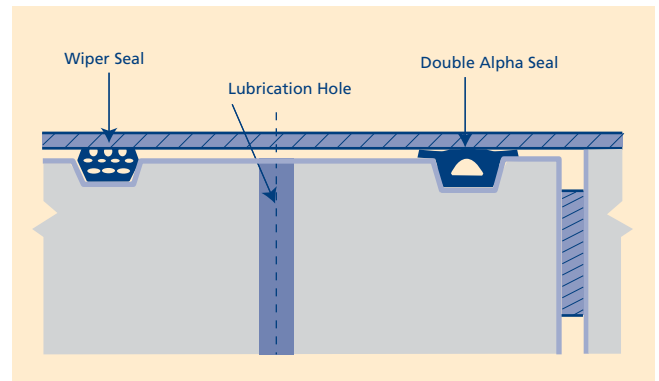
Assembling a Fixed Can Interjack

1. When installing the lead pipe into the drive a suitable spacer must be inserted into the can to provide adequate clearance between it and the pit thrust ring.

IMPORTANT

No Load should be applied to the end of the steel can.

2. Fit the seals to the interjack trail pipe ensuring that they are fitted in the correct position to maintain a watertight seal. Lubrication points (usually 3/4" BSP) are provided between the two seals to allow effective lubrication.



Typical sealing arrangement of fixed and loose can interjack

3. Lubricate the two parts of the interjack station. Both the inside of the steel can and seals must be liberally coated. Use FP McCann lubricant. Petroleum lubricants must not be used as this will cause degradation of seals.
4. While jointing ensure the trail pipe is offered up squarely and neither of the two gaskets are displaced during assembly. During use the interjack station must be continuously lubricated by maintaining a minimum pressure of 5psi (0.4 bar) between the seals, preferably by automatic systems.
5. If the final location of the seals is in doubt, the trail pipe must be withdrawn and the procedure repeated.

Assembling a Loose Can Interjack

Follow the previous 5 steps, remembering the steel can is added separately and is usually supplied by the contractor.

Note: Standard interjack stations are designed to withstand an internal pressure of 0.07N/mm². We cannot guarantee performance at pressures above this figure. It is not normally possible to fit Interjack pipes with the Easi-Lift handling system.

Jacking Loads

FP McCann jacking pipes are designed to meet the requirements of British Standard 5911 Part 1 and European Standard BSEN 1916. The Maximum Jacking Force (Fjmax *) which can be applied to a pipe is determined by the pipe strength, the configuration of the thrust ring and the tunnel alignment i.e. the angular deflection between pipes.

The maximum load decreases as angular deflections occur during jacking. Should deflection exceed that which can be accommodated by the packer, the maximum load decreases significantly. The figures below are for guidance only. For further assistance, contact FP McCann technical department.

* It is important to note that the table indicates the loads for which each pipe was designed and does not include any safety factor used by the contractor (Refer clause 5.3.4 BS EN 1916)

Maximum design loads - (tonnes)

Pipe Nominal Size mm	Pipe I/D mm	Pipe O/D mm	Packer Depth mm	Packer Thickness mm	Angular Deflection				
					0**	Angle Varies ***	0.25	0.5	1.0
					degrees	degrees	degrees	degrees	degrees
450	450	604	33	12	111	56	56	56	35
600	585	764	46	15	200	100	100	86	52
900	904	1100	56	15	365	183	183	117	73
1000	980	1200	66	15	468	234	234	141	86
1200	1200	1430	68	18	581	291	252	156	95
1350	1350	1600	78	18	749	375	298	186	112
1500	1500	1780	93	18	994	497	365	227	134
1800	1830	2140	110	18	1427	714	461	287	166
1950	1950	2330	145	18	2029	1015	612	373	203
1980	1980	2330	130	18	1832	916	556	343	192
2100	2076	2410	122	18	1790	895	534	332	188
2400	2425	2825	150	18	2573	1287	687	419	225

** the load must be perpendicular to the joint face (no deflection and all jacking forces perfectly square)

*** There is angular deflection but there is no joint gap i.e. any deflection being taken up within the packer

Haulage Load Quantities

Table showing quantities per 24.5 tonne load

In-wall joint 2.5m long			Steel collar joint 2.5m long					
Nominal Diameter mm	Approx number of pipes metres		Nominal Diameter mm	Approx number of pipes metres		Nominal Diameter mm	Approx number of pipes metres	
900	8	20.0	900	11	27.5	1950	3	7.5
1050	6	15.0	1000	9	22.5	2100	3	7.5
1200	5	12.5	1200	7	17.5	2400	2	5.0
1500	4	10.0	1350	6	15.0			
1800	3	7.5	1500	5	12.5	600	24	48.0
2000	2	5.0	1650	4	10.0	675	21	42.0
2400	2	5.0	1800	3	7.5			
1.2m long			1.2m long			450	60	72.0
900	17	20.4	1200	15	18.0	600	40	48.0

Conditions of Sale

- 1 Interpretation
 - 1.1 In these Conditions:

"Customer" means a person to whom the Company supplies, or contracts for the supply of goods;

"Goods" means the goods which the Company is to supply in accordance with these Conditions;

"Company" means F.P. McCann Limited whose Head Office is situated at Knockloughrim Quarry, 3 Drumard Road, Magherafelt, BT45 8QA, Northern Ireland;

"Conditions" means the standard conditions of sale set out in this document and (unless the context otherwise requires) includes any special terms and conditions agreed in writing between the parties;

"Contract" means any contract for sale of Goods by the Company.
 - 1.2 The headings in these Conditions are for convenience only and shall not affect interpretation.
- 2 Orders
 - 2.1 Orders accepted by the Company are accepted on these Conditions to the exclusion of all other conditions including any the Customer purports to apply to any purchase order, confirmation or order, specification, delivery note or other document or which might otherwise have been relied upon by the Customer whether in negotiation or at any stage in the dealings between the parties in respect of any Goods. Any Contract (whether, for example, by an exchange of correspondence or over the telephone) shall be subject to these Conditions.
 - 2.2 In the event of inconsistency between these Conditions and any other apparent Contract term, these Conditions shall apply except where a change to these Conditions is expressly agreed to in writing and signed by an authorised representative of the Company. Any representations about the Goods, shall have no effect unless expressly agreed in writing and signed by an authorised representative of the Company.
 - 2.3 Each order placed by the Customer shall be deemed to be an offer by the Customer to purchase Goods subject to these Conditions.
- 3 Specifications
 - 3.1 The quantity, quality, description of and specification for the Goods shall be those set out in the Customer's order (if accepted by the Company) provided always that the acceptance by the Company shall only be valid if an order acknowledgment is sent to the Customer.
 - 3.2 The Company reserves the right to make any changes in specification of Goods required to conform with any applicable safety or other statutory requirements or, where Goods are to be supplied to the Company's specification, which do not materially affect their quality or performance.
 - 3.3 No order which has been accepted by the Company may be cancelled by the Customer except with the agreement in writing of the Company and on terms that the Customer shall indemnify the Company in full against all losses (including loss of profit), costs (including cost of all labour and materials used), damages, charges and expenses incurred by the Company as a result of cancellation.
- 4 Prices
 - 4.1 The price of Goods shall be the Company's quoted price or where no price has been quoted (or a quoted price is no longer valid), the Company's current price at the date of dispatch of the order.
 - 4.2 All prices quoted are valid for 21 days only or until earlier acceptance by the Customer, after which time they may be altered by the Company without giving notice to the Customer.
 - 4.3 If at any time after the acceptance of an order any duty or tax of any kind whatsoever shall be levied by the Government or other authority, or any duty or tax in existence at the date of acceptance of the order shall be increased and such duty or tax or increased duty or tax shall be payable by the Company, the amount of such duty or tax or the increase in duty or tax, as the case may be, shall be borne by the Customer and shall be repaid by the Customer to the Company as an increase in the price.
 - 4.4 The price is exclusive of any applicable insurance, customs and Value Added Tax and other duties which the Customer shall be additionally liable to pay to the Company.
- 5 Terms of Payment
 - 5.1 Unless otherwise agreed, accounts are strictly net and payment in full must be made within 30 days from the date of invoice notwithstanding that where delivery is on a consignment basis full delivery may not have taken place and property in the Goods has not passed to the Customer. Settlement discount, where agreed by the Company, may be deducted only where the account is paid within 30 days of the date of invoice irrespective of whether the total order has been executed or not. Accounts are due and should be paid to F.P. McCann Ltd, Knockloughrim Quarry, 3 Drumard Road, Magherafelt, BT45 8QA, Northern Ireland.
 - 5.2 If the Customer fails to make a payment on a due date then without prejudice to any other right or remedy available to the Company, the Company shall be entitled to:
 - (a) cancel the Contract or suspend any further deliveries to the Customer;
 - (b) appropriate any payment made by the Customer to such of the Goods for goods supplied under any other contract between the Customer and the Company as the Company may think fit (notwithstanding any purported appropriation by the Customer);
 - (c) charge interest on overdue accounts at the rate of 3% above the Bank of England Base Rate for sales in Pounds Sterling or 3% above the Euro Repo Rate for sales in Euros; and
 - (d) use any legal means deemed appropriate to recover any amounts owing by the Customer and then recoup the costs associated therewith from the Customer.
 - 5.3 The Customer shall make all payments to the Company without any deduction whether by way of set-off, counterclaim, discount, abatement or otherwise.
- 6 Delivery
 - 6.1 Any time named by the Company for delivery shall mean the time of delivery at the Company's works and time required for transit is additional. When goods are offered for delivery to site the Company's obligation is to deliver to the nearest hard road to site, it is the Customer's responsibility to off-load without any undue delay to the Company's lorry.
 - 6.2 Delivery ex-stock is intended to convey that the goods are in stock at date of quotation, and such delivery is offered subject to the goods being available on receipt of the order. Where a period is named for delivery and such period is not extended by mutual consent in writing, the Customer shall take delivery within that period.
 - 6.3 The Customer's signature on any delivery note, or other documentation presented for signature in connection with a delivery, shall be evidence of the receipt by the Customer of the delivery and that the amount of Goods specified on the delivery note have been delivered and the Goods are in good condition and undamaged by transit.
 - 6.4 If the Company delivers to the Customer a quantity of Goods (where such Goods constitute materials delivered in bulk) of up to 10% more or less than the quantity ordered, the Customer shall not be entitled to object to or reject the Goods or any of them by reason of the surplus or shortfall and shall pay for such Goods at the pro rata Contract rate.
 - 6.5 All illustrations, drawings and other information issued by the Company in catalogues, price lists, advertisements, or any other publications, must be regarded as approximate representations only, except where otherwise specified. Weights, dimensions, measurements, capacities and all other particulars of the Goods are stated by the Company in good faith as being approximately correct and are given as accurately as circumstances permit but are not taken as conclusive. Defects in quality or dimensions in any delivery shall not be a ground for cancellation of the remainder of the order.
 - 6.6 Time for delivery shall not be of the essence unless previously agreed by the Company in writing.
 - 7 Notification of rejection, partial loss, damage etc.
 - 7.1 The Company must be notified in writing of any claim to reject the Goods within three days of such goods being delivered if such claim is to be considered.
 - 7.2 The Company (and where appropriate the carrier) must be notified in writing of a claim for damage to or partial loss of the Goods within three days of delivery.
 - 7.3 Goods supplied by the Company will only be replaced if the Company is satisfied that they were defective in material or workmanship upon delivery.
 - 8 Return of Goods
 - 8.1 Goods shall not be returned to the Company's works unless an arrangement has been made with the Company to that effect and receipt by the Company at its works or sales office or returned goods shall not be deemed to be evidence of any agreement to cancel an order nor an admission of any defect in such goods. Goods will only be exchanged or credited (where agreed by the Company) subject to a handling charge, if in good, clean and saleable condition, and returned to the Company carriage paid giving date of invoice or purchase. A further charge will be made for cleaning where necessary. Specially-made goods cannot be credited in any circumstances.
 - 9 Passing of Property
 - 9.1 Ownership of the Goods shall not pass to the Customer until the Company has received in full (in cash or cleared funds) all sums due in respect of the Goods and all other sums which are or which become due to the Company from the Customer on any account.
 - 9.2 Until ownership of the Goods has passed to the Customer, the Customer must:
 - (a) hold the Goods on a fiduciary basis as the Company's bailee;
 - (b) store the Goods (at no cost to the Company) separately from all other goods of the Customer or any third party in such a way that they remain readily identifiable as the Company's property;
 - (c) not destroy, deface or obscure any identifying mark or packaging on or relating to the Goods;
 - (d) maintain the Goods in satisfactory condition insured on the Company's behalf for their full price against all risks to the reasonable satisfaction of the Company. On request the Customer shall produce the policy of insurance to the Company; and
 - (e) hold the proceeds of the insurance referred to in this condition on trust for the Company and not mix them with any other money, nor pay the proceeds into an overdrawn bank account.
 - 9.3 The Customer may resell the Goods before ownership has passed to it solely on the conditions that any sale shall be effected in the ordinary course of the Customer's business at full market value and any such sale shall be a sale of the Company's property on the Customer's own behalf and the Customer shall deal as principal when making such a sale.
 - 9.4 The Customer's right to possession of the Goods shall terminate immediately if:
 - (a) the Customer has a bankruptcy order made against it or makes an arrangement or composition with its creditors, or otherwise takes the benefit of any Act for the time being in force for the relief of insolvent debtors, or (being a body corporate) convenes a meeting of creditors (whether formal or informal), or enters into liquidation (whether voluntary or compulsory) except a solvent voluntary liquidation for the purpose only of reconstruction or amalgamation, or has a receiver and/or manager, administrator or administrative receiver appointed (either in court or otherwise) of its undertaking or any part thereof, or a resolution is passed or a petition presented to any court for the winding up of the Customer or for the granting of an administration order in respect of the Customer, or any proceedings are commenced relating to the insolvency or possible insolvency of the Customer; or
 - (b) the Customer suffers or allows any execution, whether legal or equitable, to be levied

Conditions of Sale

on its property or obtained against the Customer suffers or allows any execution, whether legal or equitable, to be levied on its property or obtained against it, or fails to observe/perform any of its obligation under the Contract or any other contract between the Company and the Customer, or is unable to pay its debts as defined by the Insolvency (Northern Ireland) Order 1989 (or any equivalent legislation applicable to the Customer) and the Customer grants the Company, its agents and employees an irrevocable licence at any time to enter any premises where Goods are or may be stored in order to inspect them, or, where the Customer's right to possession has terminated, to recover them.

10 Limitation of Liability

10.1 The following provisions set out the entire financial liability of the Company (including any liability for the acts or omissions of its employees, agents and sub-contractors) to the Customer in respect of both any breach of these Conditions and any representation, statement or tortious act or omission including negligence arising under or in connection with the Contract.

10.2 All warranties, conditions and other terms implied by statute or common law (save for the conditions implied by section 12 of the Sale of Goods Act 1979) are, to the fullest extent permitted by law, excluded from the Contract.

10.3 Nothing in these conditions excludes or limits the liability of the Company

- (a) for death or personal injury caused by the Company's negligence; or
- (b) under section 2(3), Consumer Protection Act 1987; or
- (c) for any matter which it would be illegal for the Company to exclude or attempt to exclude its liability; or
- (d) for fraud or fraudulent misrepresentation

10.4 Subject to condition 10.2 and condition 10.3

- (a) the Company's total liability in contract, tort (including negligence or breach of statutory duty), misrepresentation, restitution or otherwise, arising in connection with any actual or alleged defect in the Goods shall be limited to the direct cost of replacement of such of the Goods as are defective (but for the avoidance of doubt the direct cost shall not include removal, recovery or extraction of the defective Goods or the relaying of the replacement Goods); and
- (b) the Company's total liability in contract, tort (including negligence or breach of statutory duty), misrepresentation, restitution or otherwise, arising in connection with the performance or contemplated performance of the Contract shall be limited to the Contract price; and
- (c) the Company shall not accept any liability whatsoever in contract, tort (including negligence or breach of statutory duty), misrepresentation, restitution or otherwise, arising in connection with the provision by the Company of technical assistance in relation to the installation, use or performance of the Goods; and
- (d) the Company shall not be liable to the Customer for any pure economic loss, loss of profit, loss of business, depletion of goodwill or otherwise, in each case whether direct, indirect or consequential, or any claims for consequential compensation whatsoever (howsoever caused) which arise out of or in connection with the Contract

10.5 The Company shall not be liable for any breach by it of these Conditions (which breach will be subject to the limitation of liability provisions in these Conditions) unless the Customer notifies the Company within 7 days of the date on which it became aware, or ought upon diligent enquiry to have become aware, of such breach and unless after receiving such notice the Company is given a reasonable opportunity of remedying the alleged breach.

10.6 The Company shall not be liable to the Customer for any loss (including loss of profit), costs, damages, charges or expenses caused directly or indirectly by any delay in the delivery of the Goods (even if caused by the Company's negligence), nor will the Company be deemed to be in breach of the Contract by reason of any delay in performing, or any failure to perform any of the Company's obligations in relation to the Goods, if the delay or failure was due to any cause beyond the Company's reasonable control.

10.7 Without prejudice to the generality of the foregoing, the following shall be regarded as causes beyond the Company's reasonable control:

- (a) act of God, explosion, flood, tempest, fire or accident;
- (b) war or threat of war, sabotage, insurrection, civil disturbance or requisition;
- (c) acts, restrictions, bye-laws, prohibitions or measures of any kind on the part of government, parliamentary or local authority;
- (d) import or export regulations or embargoes;
- (e) strikes, lock-outs or other industrial actions or trade disputes (whether involving employees of the Company or a third party);
- (f) difficulties in obtaining raw material, labour, fuel, part of machinery; and
- (g) power failure or breakdown of machinery.

10.8 The Company shall be under no liability in respect of any defect in Goods arising from any drawing, design or specification supplied by the Customer or resulting from the installation of the Goods.

10.9 The Company shall not be responsible for any direct loss or damage and any indirect or consequential loss or damage (including any loss of income, loss of profits or loss of interest or opportunity) arising from any breach by the Customer of these Conditions and the Customer will fully and effectively indemnify the Company on demand against any such loss that it suffers whether directly or as a result of a claim against it by any third party.

11 Insolvency of Customer

11.1 Without prejudice to common law and statutory rights relating to stoppage in transit, and rights in respect of any antecedent breaches, if the Customer fails or is unable to comply with, or perform any of the terms of the Contract, or commits any act of bankruptcy, or shall suffer any execution or distress to be levied on his goods or being a company shall enter into liquidation whether compulsory or voluntary (save for the purposes of reconstruction or amalgamation) or shall have a Receiver appointed, then the Company shall have the right forthwith to determine the Contract.

12 Assignment

12.1 The Customer shall not be entitled to assign the Contract or any part of it without the Company's prior written consent.

12.2 The Company may assign the Contract or any part of it to any person, firm or company.

13 Notice

13.1 Any notice required or permitted to be given by either party to the other under these Conditions shall be in writing addressed to that other party at its principal place of business or such other address as may at the relevant time have been notified pursuant to this provision to the party giving the notice.

14 Waiver

14.1 Failure or delay by the Company in enforcing or partially enforcing any provision of the Contract will not be construed as a waiver of any of its rights under the Contract. Any waiver by the Company of any breach of, or any default under, any provision of the Contract by the Customer will not be deemed a waiver of any subsequent breach or default and will in no way affect the other terms of the Contract.

15 Third Party Rights

15.1 Neither the Company nor the Customer intend that any term of this Contract will be enforceable by virtue of the Contracts (Rights of Third Parties) Act 1999 by any person that is not a party to it.

15.2 If any provision of these Conditions is held by any competent authority to be invalid or unenforceable in whole or in part the validity of the other provisions of these Conditions and the remainder of the provision in question shall not be affected thereby. Each right or remedy of the Company under the Contract is without prejudice to any other right or remedy of the Company whether under the Contract or not.

16 Dispute Resolution

16.1 Any dispute or difference arising out of or in connection with a contract for the supply of goods by the Company, whether on a supply-only basis or not, may be referred to adjudication as a construction contract in accordance with the provisions of the Construction Contracts (Northern Ireland) Order 1997,

16.2 If any difference or dispute arising out of or in connection with a contract for the supply of goods by the Company cannot be finally resolved under the adjudication procedure referred to in Clause 16.1, it shall be referred for final settlement by a single arbitrator sitting in Northern Ireland under the Rules of the Chartered Institute of Arbitrators. Such arbitrator shall be appointed (in default of agreement) by the President for the time being of the Chartered Institute of Arbitrators, and such reference shall be deemed a submission to Arbitration in accordance with the Arbitration Act 1996 or any statutory modification or re-enactment thereof for the time being in force.

17 Applicable Law and Jurisdiction

17.1 These Conditions shall be governed by and construed in accordance with the law of Northern Ireland and the Northern Ireland Courts shall have exclusive jurisdiction over all differences and disputes which shall arise between the Company and the Customer.

18 Entire Agreement

18.1 These Conditions together with the Company's order acknowledgement contain the entire agreement between the parties in respect of the Goods and supersede any previous agreements, arrangements, undertakings or proposals, written or oral between the parties. In agreeing to these Conditions, the customer confirms that he has not relied on any representation other than those expressly stated and agrees that he shall have no remedy in respect of any misrepresentation that has not been made expressly in these Conditions or on the Company's order acknowledgement.

Microtunnelling & Jacking Pipes Checklist

ORDER & DELIVERY DETAILS

Customers Name: _____

Contract Name: _____

Delivery Address: _____

Site Contact: _____

Site Telephone: _____

Delivery Requirements/Restrictions _____

Main Pipe Details

Nominal ID: _____ Joint Type: Steel Collar/ _____

Outside Diameter: _____ Pipe Length: _____

Are lifting chains and eyebolts required? _____

Pipe Accessories

Grout Holes:

Size eg 1.25"BSP _____ No. of holes (eg No per pipe) _____

Frequency (eg every third pipe) _____ Position (eg ___ & ___ o'clock) _____

Special Pipes

No of Lead Pipes _____

Dimensions of of Recess# _____

No. of Interjack Lead Pipes _____

Type of Interjack Lead (Fixed Can/Loose Can) _____

No. of Interjack Trail Pipes _____

Dimensions of Recess# _____

if different from manufacturers standard

Sales, Orders & Despatch

When ordering you may be asked for the following:

General

- Your name, address, and telephone number
- Project name
- Job detail with materials required listed (as accurate as possible)

Delivery Details

- Delivery address must be given on all orders
- Site Contact must be given for the driver (with a contact mobile)
- Any delivery restrictions or special conditions must be made clear when ordering (deliveries are generally on 40ft flat trailers pulled by artic units)
- If a bulk order is received, the products required first must be highlighted

Additional Information:

A trade account must be set up with FP McCann before any goods can be despatched, trade application forms are available from any of the sales offices below or can be downloaded from www.fpmccann.co.uk

FP McCann products are available through a nationwide network of builders merchants or direct from FP McCann.

For further enquiries, please contact our sales team on:

Ireland & Scotland

N. Ireland Sales

T: 028 7954 9045

M: 07764 204479

Ireland Sales

T: +44 (0) 28 7954 9036

M: 00353 863 858 204

Scotland Sales

T: 028 7954 9041

M: 07709 457699

England & Wales

Northern Region

T: 01530 240061

M: 07889 123349

Midlands & North Wales

T: 01530 240056

M: 07850 234136

Eastern Region

T: 01530 240054

M: 07850 574690

Southern Region & South Wales

T: 01530 240051

M: 07702 192822

Office Hours

8am - 5pm (Monday - Friday)

Technical Assistance

Contact FP McCann Quality on:

England & Wales T: 01530 240000 F: 01530 240013

N. Ireland, Ireland & Scotland T: +44 (0) 28 7964 2558 F: +44 (0)28 7954 9993

For Technical Reference:

FP McCann Jacking Brochure Available

Visit the Concrete Pipeline Systems Association (CPSA)

"Complete Technical Guide"

Reference can also be made to WRC's Sewers for Adoption 6th edition and Civil Engineering Specification for Water Industry 6th edition

Additional Information can be attained by:

Visit the CPSA website at: www.concretepipes.co.uk

Visit the Pipe Jacking Association website at: www.pipejacking.org

