

Introduction and Background

The purpose of this procedure is to ensure that all parties are aware of their various legal and contractual requirements and to confirm the safe construction, testing and commissioning arrangements for new mains and services installed in Scotland.

The safety of all staff on site involved with the construction, testing and commissioning water mains and services is important to Scottish Water. All staff involved should be aware that their actions and quality of workmanship with the construction, testing and commissioning of new mains is directly linked to Public Health of both existing and future Scottish Water customers being supplied by the new infrastructure.

Scottish Water has a statutory duty to provide a 'wholesome' supply of water as defined in the Water Supply (Water Quality) Regulations which is regulated by the DWQR Drinking Water Quality Regulator in Scotland.

To enable Scottish Water to meet their water supply and water quality obligations the Developer & UCP shall satisfy the requirements of Scottish Waters in accordance with SW DOMS documentation, SW HCOP, Water for Scotland and The Water Connections Code for Scotland.

The UCP shall produce and maintain procedures to satisfy all regulatory requirements with respect to the laying of water mains and or services.

Pre-start meetings are an opportunity to ensure that all the required information has been exchanged between Scottish Water the Developer and their appointed UCP to correctly install, test and commission new mains and services for providing a wholesome drinking water supply to SW customers.

All works shall be constructed strictly in accordance with the design drawing which has been submitted by an accredited WIRS designer to Scottish Water and which has been assessed and approved by Scottish Water.

Prior to any construction work for new mains and services commencing on site a completed self-lay agreement shall be in place before a pre-start site meeting is arranged.

The pre start meeting shall be organised by the Developer and or their appointed UCP. Scottish Water will arrange this meeting within 5 business days from receipt of the request.

The meeting shall be attended by the Developer / Ground Worker / UCP and Scottish Water staff to go through the requirements of SW using its pre start check list and to finalise arrangements and discuss any variations in the programme or approved design.

The UCP is responsible for keeping the Developer informed about the works as they progress and confirming sign-off arrangements.

The UCP is also responsible for issuing Scottish Water Company with the details of their self-lay work programme and any other required notifications.

The Developer and the UCP are both responsible for ensuring that all aspects of the approved designs of new water mains and service pipes meet the current regulations, standards and legal requirements. If these are not met for the constructed self-lay works, Scottish Water is under no obligation to adopt the new water distribution system or allow the connection of the new water mains and communication pipes.

Health and Safety

Construction Design and Management (CDM) Regulations 2007

Under the CDM Regulations 2007, the developer has client responsibilities for the new mains and services constructed on their site, these responsibilities include:

- The selection and appointment of a competent CDM co-ordinator.
(Where the works are notifiable under the Regulations.)
- The selection and appointment of a competent principle contractor.
- The provision of a suitable construction phase plan prior to commencement.
- The provision of suitable welfare facilities.

The Developer shall also be responsible for ensuring that all works are properly constructed in accordance with the following documentation CDM / SW Hygiene Code of Practice / Scottish Water DOMS / Water for Scotland.

Pre Start Meeting

The Developer / UCP shall give at least ten working days' notice to Scottish Water before construction of the Works commences.

A pre-start site meeting shall be organised by the Developer and or their appointed UCP.

The meeting shall be attended by the Developer / Ground Worker / UCP and a Scottish Water Field Service Adviser to confirm the approved design drawing version number used for construction.

All mains and services shall be constructed strictly in accordance with the design drawing which has been submitted by an accredited WIRS designer to Scottish Water and which has been assessed and approved by Scottish Water.

During the pre-start meeting the following areas will be discussed and agreed:

- **Health and Safety obligations.**

Exchange relevant health and safety and CDM information.

Risk assessment & Method statements

Evidence that staff involved with construction of mains and service pipes have relevant medical assessment documentation to work on water main laying, including valid EU skills National Hygiene Training and DOMS cards training.

- **SW HCOP & DOMS requirements.**

Issue a hyperlink to SW DOMS and make it that the Developer / UCP are responsible to get them? SW should create an electronic pack of SW documents to issue and close the loop hole and remove the excuse they did not have or know their responsibilities. I.e. Hygiene Code of Practice, The Water Connections Code for Scotland, Track Inspection etc

- **Site induction requirements.**

Scottish Water staff shall be given a site induction by the developer immediately upon arrival on site. Scottish Water staff shall sign in and out at the site office when on site.

- **Programme of onsite work with proposed / expected start dates.**

Confirmation of the various construction phases required and number of visits to complete construction of the main laying and service laying.

- **Water Quality Issues & Turn Over of water supplies.**

When the developer's build program results dead legs or the number of new services connected is not producing sufficient demand and turn-over of water within the main or where adequate turnover throughout a new network cannot be achieved to protect water quality, the connection of the self-laid main should be delayed until there will be adequate demand or arrangements are made with Scottish Water for the new network to be regularly flushed. The cost of regular flushing may be chargeable to the Developer/UCP.

Note: Where adequate turnover throughout a new network cannot be achieved to protect water quality, the connection of the self-laid main should be delayed until there will be adequate demand or arrangements are made with Scottish Water for the new network to be regularly flushed. The cost of regular flushing may be chargeable to the Developer/UCP.

The Developer / UCP should submit sufficient information to Scottish Water before any new main is connected, to enable Scottish Water to establish that adequate future turnover in the new network will be achieved to safeguard water quality. The reasonable cost of any flushing that may be required to maintain water quality, following connection of the main, may be recoverable from the Developer / UCP until such time as the development demand is sufficient.

- **Contestable & Non Contestable work**

The designer shall provide all the information, drawings and schedules etc., needed for the works to be constructed to Scottish Water specification.

This should detail the extent of the Contestable works and staged works boundaries and provide confirmation on the Non contestable work which is the responsibility of Scottish Water.

Operation of any apparatus i.e. valves and hydrants on the live distribution network is prohibited. If any new main is connected to the live network that has new or existing customers being supplied then SW staff shall be the only authorised operators of the network.

- **The point of connection and entry point to the site and route of the new water main.**

Agree the point of connection to the live distribution network and initially discuss draft DOMS IAF. Confirm if the point of connection will require a Complex or Non Complex shut and the Impact to existing customers.

- **Material of pipework (i.e. barrier or plastic)**

All materials and products must comply with Regulation 31 of the Water Supply (Water Quality) Regulations 2000 and the Water Supply (Water Fittings) Regulations 1999.

The UCP should keep accurate records during construction.

The UCP should have an auditable system in place to trace materials from specification, purchase, through to delivery and use on site.

The UCP shall submit a schedule of products and substances proposed to be used for the works to Scottish Water for prior approval.

- **A designated area for the safe storage of pipes and fittings.**

Pipes and fittings must be transported and carefully stored on site, off the ground, to avoid entry of dirt or vermin. All pipes must be supplied with close-fitting end caps where feasible and these must remain in place until the pipe is laid. All pipes and fittings (and in particular plastic types) must be kept clear of fuel oils. If any materials, pipes or fittings are found to be contaminated these should be discarded.

- **Line and levels**

The line and level shall be clearly set out on site in accordance with the final approved design drawing. The line and level to the back edge of the footpaths and or service strips are clearly defined. A kerb line or other identification of the limits of the roads or footpaths is in place and the proposed line of the main is clear and free from obstructions to create a safe working environment.

- **Trench specification & National Joint Utilities Group (NJUG) guidance.**

The line and level of water mains and any other utility services in the vicinity of the water mains or service pipes have been considered to ensure there is no conflict and they are installed in accordance with NJUG guidelines. All excavated soil is placed a minimum of 1m away from edge of trench and surplus soil removed.

To enable future repairs & maintenance, a minimum clearance of 300mm must be maintained. If any water main or service pipes are installed next to any other utilities within this 300mm clearance distance the developer will be recharged for any diversionary works where this cannot be achieved.

- **Laying Mains in Contaminated Ground**

If the actual soil conditions on site are found to differ from those allowed for in the approved design drawings, No further construction shall take place until the design is re-evaluated and approved by the Scottish Water. Confirmation on Barrier pipe to be used for both mains and service pipe.

If the site has already been deemed as contaminated, the mains and service pipes installed by the developer / UCP must be in either WRAS approved barrier pipe (preferred option) or wrapped ductile iron. Service pipes are either WRAS approved barrier pipe (preferred option) or plastic coated underground copper.

- **Pipe Jointing**

Continuous lengths of pipe shall be used and joints kept to a minimum. SW requires butt fusion or mechanical joints to be used in preference to electrofusion jointing. Please note that only fluid couplings shall be used for Barrier Pipe jointing, no butt fusion to be carried out.

- **Warning Tape and Detectable Mesh**

All new water mains installed on site shall have both types of warning tape / mesh. Detectable Mesh or tracing tape shall be laid below the main with a warning marker tape installed at a depth of 300mm above the crown of the pipe with Detectable Mesh or tracing tape shall be laid below the main.

Joints between successive rolls of tape should be made by removing the insulation from the tracing wires and using a mechanical connector.

SW will issue copy of Marker tape documentation requirements.

- **Site scaffolding**

The area around any main for service connection must be free from any obstructions such as skips, scaffold and building materials. The proposed line of the main shall be clear and free from obstructions to create a safe working environment.

- **Temporary Building Supplies and Disconnections**

All necessary precautions should be undertaken to avoid causing damage to or interference with either the flow and or pressure to the existing water supply to the live distribution network.

Sewers should also have precautions in place on site to ensure that debris, silt, mud, etc. do not enter the existing sewer system or any new sewer system being installed as part of the new development

- **Water Supplies for testing and commissioning mains.**

Only mains drinking water supplies shall be used using a 25mm SW licensed stand pipe shall be used. The Developer and the UCP must be aware to the precautions that should be taken to neutralise any chlorinated water prior to its discharge into watercourses, or onto farmland.

- **Service pipe ducting.**

A duct must be provided for all services where the main is on the opposite side of the road.

Service pipe road crossing ducts shall be installed by the developer / ground worker in the positions shown on the approved design drawing.

The ducting should be 100mm blue thermoplastic pipe and installed at a minimum depth of 750mm below the finished surface level and at right angles to the main.

The position of the ducts must be clearly marked at both ends.

Service pipes crossing major roads and junctions should be installed in a duct to allow ease of replacement and any future upsizing. Service pipes within a duct should be laid as a continuous, un-jointed length of pipe.

- **Communication Pipes & Service Pipe Connection**

Communication pipe connections on to the main shall be located at a minimum spacing of 250mm apart. Communication pipes shall be individually ducted crossing the carriageway.

The service pipe duct shall be and sealed as it enters the property and the service pipe should not rest on brickwork, As per Scottish Water Bylaws documentation diagram?

Service pipes should be laid at 90 degrees from the main and in straight runs and should not cross neighbouring plots. Service pipes are not permitted to run down the public footpath or highway.

- **Position of boundary boxes and internal plumbing**

The developer will be responsible for ensuring that all hydrant, valve and boundary stop cock chambers, installed, are vertical and their frames and covers are at the correct level to meet the finished surface levels.

- **Service connection types and confirmation of boundary box positions.**

The area around the service connection must be free from any obstructions such as skips, scaffold and building materials. Boundary boxes should not be installed in driveways parking areas or areas where vehicle crossovers. Ideally the entire Service Pipe i.e. Supply Pipe & Communication Pipe runs at 90 degrees from the main to the entry point of the foundations, however, the Communication Pipe must be at 90 degrees from the main to the boundary stop cock.

No Communication pipes are allowed to run along the public footpath.

The UCP should instruct the Developer about the apparatus that has been installed and the need to protect any street furniture including covers, lids, frames and chambers, until such time as the street is fully constructed. The UCP should also instruct the Developer of the need to provide Scottish Water and for fire hydrants, the Fire Scotland, access to all chambers and associated fittings.

Where boundary boxes (waterproof type) are used on contaminated sites they must comply with WIS-4-37-01, be watertight and shall have gunmetal connection fittings that are able to accept either Protectaline or plastic coated copper pipes.

- **Site permits.**

- **Aborted works / Additional Costs**

SW may charge a fee when a visit to your site is aborted due to your act or omission.

The amount of the abortive charge / fee is set with SW self-lay code of practice.

- **Geo Tagged Photos**

SW requires certain elements of the construction and commissioning of new mains and services to be geo tagged photographed for validation and compliance with its relevant documentation and approved design drawing for the site.

All Geo tagged photos must be clearly dated and time stamped with the site name and location.

- **Any other site specific information.**

I.e. Traffic management requirements.

Once the pre start meeting has taken place – and any issues resulting from the pre-start meeting have been satisfactorily resolved, with all necessary payments and documents have been received by Scottish Water, and the agreement has been signed by all parties involved.

The Developer / Ground Worker / UCP shall agree, confirm and sign off their knowledge and acceptance they will be compliant with SW documentation and compliance with their statutory requirements for supplying a clean wholesome supply of water to its customers.

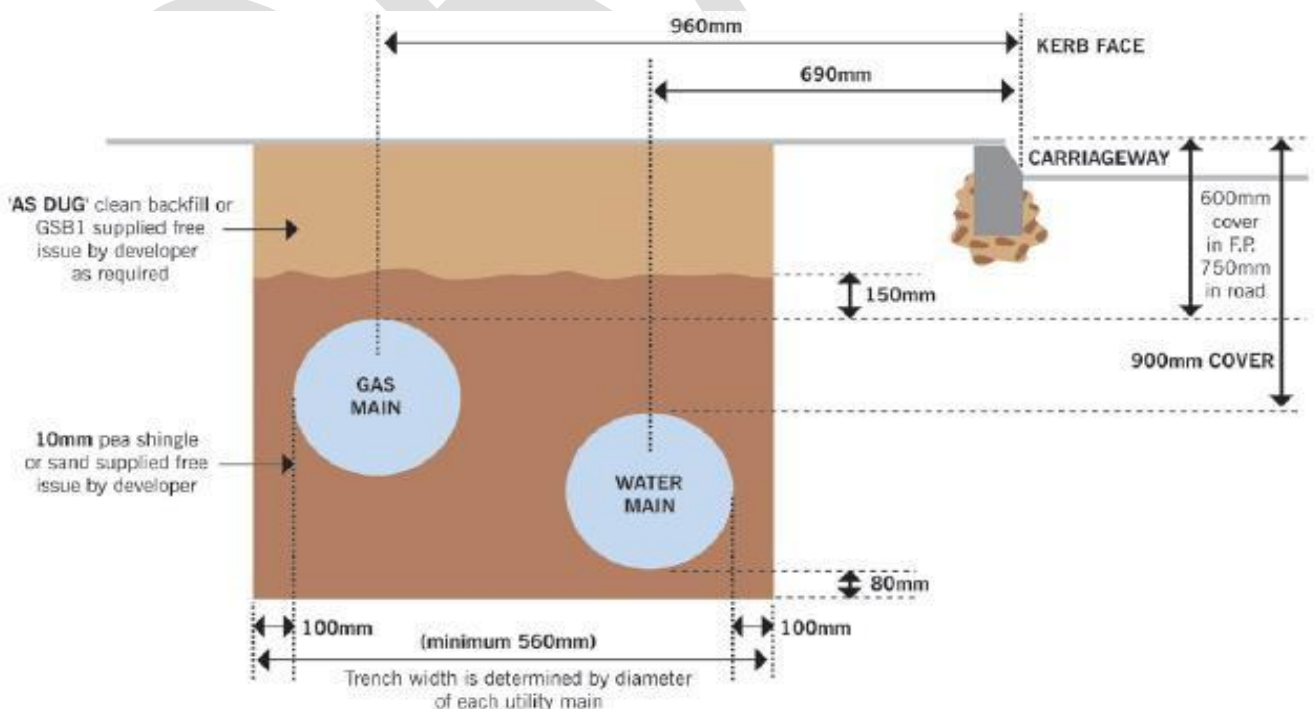
Scottish Water will sign the UCP's Notification of Commencement of Main laying Form to indicate that Scottish Water authorisation has been given for main laying to commence on site.

A copy of the signed notification will be returned to the Developer and the UCP.

The UCP **MUST** not commence with any main laying or service laying unless they are in possession of a signed notification Commencement of Main laying form.

On-site liaison and site visits will continue throughout the various construction stages.

Any non-conformance with Scottish waters specification will result in the formal notification of unsatisfactory work and the work having to be stopped, all in accordance with the Formal Agreement.



WIRS Ground Workers Policy Statement

WIRS accreditation is important to a UCP as this allows them to work on and connect to Scottish Water Assets, which also allows a UCP to carry out the work within their own contracts for adoption by Scottish Water.

UCP recognises that where ground workers are engaged in preparation of excavations, laying ducts and subsequent backfill and reinstatement of water infrastructure trenches for new water main installations, requirements must be adhered to, as set out within the WIRS Requirements Document (V5 – August 2014).

Our policy takes cognisance of where ground-workers are utilised in relation to the following:

- The specifications for ground workers when excavating, laying ducts, laying allowable infrastructure and subsequent backfill;
- All work carried out by ground workers shall comply with all specifications such as Water for Scotland (3rd Edition).
- An audit programme set out to ensure ground workers carrying out work to specification (Water for Scotland (3rd Edition) and appropriate codes of practice (HSG 47))
- Requirement to present to the WIRS Supervisor at pre-start meeting;
- Requirement to cross reference with the WIRS Supervisor, named in the contract, in advance of works
- WIRS Supervisor will undertake the responsibility to ensure activities undertaken by ground workers are to relevant industry standards
- New water mains will only be installed in trenches excavated adjacent to permanent features such as new kerb haunching or edge of roadway whereby checks can readily be carried out to verify line and level.

The Company, as a Utility Connection Provider (UCP) shall liaise with the WIRS Supervisor, at pre-start meetings, to ensure that the work undertaken on site is to the required standards and specifications.

Where there is a failure in ground workers meeting the required specifications, the UCP shall duly meet with the WIRS Supervisor of the ground workers and request that the defects are rectified to the required standards

Under the section 3.4 Construction of Water Mains (Water for Scotland 3rd Edition) the following will specifically apply to ground workers

General Construction

The works shall be completed against approved drawings and specification

The excavation, pipe bedding and reinstatement of trenches shall be completed within reasonable time.

Where ground workers are installing pipeline marker tape it shall be laid approximately 250mm to 300mm above the crown of the pipe with suitable backfill used, be made from blue PVC or polythene mesh and be at least 150mm wide.

Where marker tape containing a wire is used secure joins in the wire marking tape shall be made and ends of wire marking tape shall be exposed within a suitable valve or fire hydrant chamber just below the cover level.

Where surface boxes are installed by ground workers they must be installed to ensure the boxes are at the finished surface level.

Excavation

Where ground workers are involved with excavation of trenches for the purpose of installing new water mains, the ground shall be adequately supported as required dependent upon ground conditions at site.

Where excavated materials are suitable for re-use they will remain on site and be stored a safe distance away from the excavation as to avoid un-due loading on the sides of the trench.

Where trenches are excavated to 1 metre in depth excavated material for re-use shall be stored a minimum of 2 metres from the edge of the trench.

Excavations will be carried out in accordance with UK recognised good practice for excavations inclusive of, but not limited to BS 6031, BS 6164, Report R097 'Trenching Practice' published by CIRIA, Technical Note TN95 'Trenching Practice' published by CIRIA

Excavated material for disposal off site shall be classified as controlled waste under the terms of the Environmental Protection Act 1990 and shall be disposed of according to the appropriate method statement.

All excavation works carried out by ground workers will be carried out safely and operate against safe digging best practice as set out within HSG (Health & Safety Guidance Document) 47 - Avoiding Danger from Underground Services.

Pipe Bedding & Backfill

Where ground workers are infilling pipe bedding, this shall be of a suitable granular material and/or as-excavated material, and comply with WIS (Water Industry Standard) 4-08-02. The infill for pipe bedding will be installed over the entire width of the trench to a depth of 100 to 300 mm prior to laying pipe marker tape.

Suitable infill pipe bedding (sand/pea gravel) shall be to a depth of 250mm above the crown of the pipe and compacted across the width of the trench at depths of 150mm.

Remaining backfill of the trench will be carried out to avoid uneven loading of the buried water infrastructure.

Where ground workers backfilling a trench on the roadway this will be carried out in accordance with the specifications as set out by the Highways Authority

Hard-core used by ground workers to backfill the trench shall be clean, hard, durable material graded from 200mm to 20mm and free of unsuitable materials

Where ground workers are using previously excavated material to backfill the trench, the material shall be uniform and readily compactable. Ground workers will have to comply with requirements as set out within Specification for Road Openings in the Highway (3^d Edition).

Ground workers must comply with Water for Scotland (3rd Edition) specification, Appendix G, associated with carrying out pipe bedding and backfill and must ensure that the position and depth of the water infrastructure is not altered during the backfilling and compaction process.

Summary

The UCP will ensure that ground workers carrying out excavation, pipe bedding, backfill of water infrastructure trenches, do so as set out within the WIRS requirements and Water for Scotland (3rd Edition).

UCP will exercise their powers as an UCP where applicable, to ensure ground workers complete satisfactory standards of work. Where work activities are not of a suitable standard the UCP will request that the work is rectified by the ground workers to the required standards and specifications.

The minimum List of SW DOMS Documents for issue to Developer & UCP for compliance.

SW Hygiene Code of Practice

Water For Scotland Edition 3

DOM-WN-PRC-00000110	NEW MAINS (Customer Connections) AND MAINS REHABILITATION
NEW MAINS - APPROVAL TO CONNECT	
DOM-WN-PRC-00000101	GENERAL REQUIREMENTS FOR HYGIENE
DOM-WN-PRC-00000106	DISINFECTION OF WATER MAINS AND SERVICE PIPES
DOM-WN-PRC-00000314	COMMISSIONING / DECOMMISSIONING WATER MAINS
DOM-WN-PRC-00000318	SCOTTISH WATER ACCESS TO LIVE NETWORK
DOM-WN-PRC-00000319	HYDRANT STANDPIPE HIRE PROCEDURE
DOM-WN-PRC-00000331	DISINFECTION METHODOLOGY
DOM-WN-PRC-00000332	SAMPLING FROM A HYDRANT
DOM-WN-WIN-00000302	ISOLATION OF A WATER NETWORK
DOM-WN-WIN-00000303	HYDRANT OPERATION
DOM-WN-WIN-00000306	VALVE OPERATION
DOM-WN-CHA-00000001	MCL 2633 DISINFECTION AND DE-CHLORINATION CHARTS
DOM-WN-CHA-00000002	MCL 2814 - Swabbing, Disinfecting, Dechlorination Proforma
DOM-WR-FOR-00000101	MCL 2628 IMPACT ASSESSMENT FORM
DOM-WR-FOR-00000101 ?	Hydrostatic Pressure Testing
DOM-WI-WIN-00000201	PREVENTION OF CONTAMINATION DURING CONSTRUCTION
DOM-WI-WIN-00000202	COMMISSIONING OF MAINS
DOM-WI-WIN-00000203	ACTIONS FOLLOWING COMMISSIONING FAILURE
DOM-WI-WIN-00000204	CONNECTION TO THE LIVE NETWORK
DOM-WI-WIN-00000205	ABANDONING OF WATER MAINS AND FITTINGS
DOM-WI-WIN-00000206	LAYING OF MAINS IN POTENTIALLY CONTAMINATED GROUND

Added in Developer Ops paper work issued to UCP for the various stages.

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Record of Changes and Amendments

Document Section/ Reference Number	Document / Section Title	Version Number	Date	Archived Document / Section	Text Affected	Archived Document / Section Replaced By

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