



Product Catalogue

Easements

Product Integration Guide

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				By	Date	By	Date
0	Tich Mhlanga	25/01/10	Initial Draft				
1	Tich Mhlanga	12/03/10	Document Revised to incorporate peer review comments	Stewart Evans (SE) Guy Gregory (GG)			
2	Tich Mhlanga	09/04/10	Update following comments by GG and SE	GG, SE			
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7	Chris Peel	05/07/11	Updated flowchart to incorporate development land	Alan Fox / Sean McCarthy	05/07/11	ASF	Jul 11
8	Tich Mhlanga	23/09/11	Table 1 and Table 2 revised. Note on water main depths in peat added.	Chris Peel, (CP), John Wilkes (JW), GG	23/09/11		
9	Tich Mhlanga	15/11/11	Note on mineral rights added and non preference of lift and shift clauses stated	CP,JW, GG	15/11/11		
10	Chris Peel	11/07/12	Update British standards ref	GG			

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1 INTRODUCTION

The purpose of this document is to make it easy to integrate the easement product into a design solution. The first part of the document introduces the product and gives guidance on its applicability and selection. The latter part of the document provides detailed information on how to integrate the Product into a project solution and indicates which interfaces need to be taken into account when applying the product.

2 PRODUCT DESCRIPTION

The 'product' may simply be described as follows:

A review and standardisation of easement widths.

2.1 Product Core

The following elements comprise the core of the product; these do not change in the integration of the product into a project.

- For pipes laid at nominal depth (0.9m cover) in arable or grazing land, the recommended easement widths should not be altered.

2.2 Product Interface

These elements require more detailed design and adjustment for project-specific requirements.

- When pipes are laid deeper than nominal depth, especially in built up areas, consider increasing the easement width to protect the pipe and reduce the risk of damage to properties should the pipe fail. (See Table 1)
- When the pipe is operating at pressures in excess of 10 bar, engineering judgement should be exercised so as to ensure the easement provided accords adequate protection to the pipe.
- The pipe material, pipe bedding and pipe jointing mechanism should be considered when specifying easement widths.
- Where pipes are laid in adverse ground conditions, engineering judgement should be exercised and increase the pipe easement width as appropriate.

3 PRODUCT APPLICATION AND SELECTION

This 'product' is applicable to all new Anglian Water pipes laid in private land.

3.1 Application

The 'product' is suitable for the following applications:

- Raw Water pipes
- Potable water pipes
- Foul water gravity sewers and rising mains
- Surface water gravity sewers and rising mains
- Final effluent pipes from sewage treatment works
- Sludge or slurry pipes from sewage treatment works
- Process water pipes from sewage treatment works

This 'product' or guidance is not suitable in the following applications:

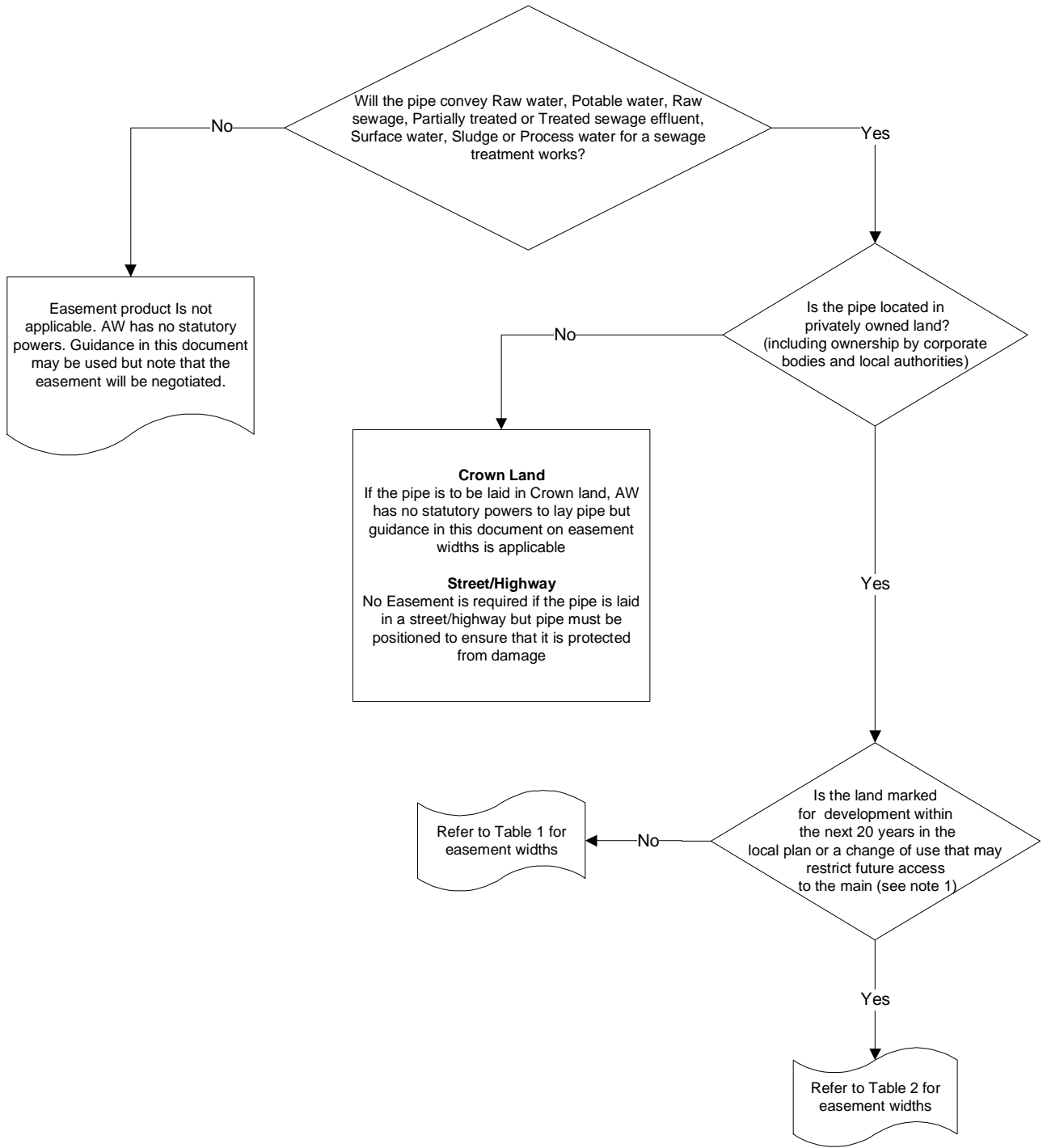
- Above ground pipes
- Pipes in public land such as streets and roads.
- Brine Pipelines
- Sludge pipes from water treatment works.

Anglian Water does not have statutory powers as a water undertaker to lay brine and sludge pipes from water treatment works.

3.2 Selection

The selection matrix below should be utilised to specify easement widths.

Easement Selection Matrix



Notes
 1. Consultation with Savills is required along with reviewing the local / county council growth plans for housing and development and County Mineral plans to assess future land use.
 2. Where adverse ground conditions such as sands or where the pipe will be below the water table, consult a geotechnical expert and consider increasing the easement as the pipe will require more protection

Table 1: Proposed Easement Widths

Pipe Nominal Diameter (mm)	Easement Width (m)
DN ≤ 149	4.0
DN150 – DN249	4.0
DN250 – DN449	5.0
DN450 – DN599	6.0
DN600 – DN749	7.0
≥DN750	7.0

Table 2: Extended Easement Widths

Pipe Nominal Diameter (mm)	Easement Width (m)
DN ≤ 149	4.5
DN150 – DN249	6.0
DN250 – DN449	6.0
DN450 – DN599	9.0
DN600 – DN749	9.0
≥DN750	12.0

NOTE: The recommended easement widths are based on nominal depth of cover (0.9m) to pipes. The Engineer must consider widening easements where pipes are laid deeper than nominal depth. Water mains laid in peat are required to be at 1.1m deep and therefore wider easement widths, in proportion to the increased depth, should be specified

The recommended easement widths above are based on pipes with either end load resistant joints, unlikely to be dislodged by tree roots or those carrying fluids under gravity flow or with pressure less than half the pipe rated pressure. Where conditions are different from the ones under which these recommendations are made, deviation from these recommendations may be necessary. These factors relate to the pipe jointing mechanism and the development potential of the land in which the pipe is being laid.

(a) Pipe jointing mechanism

The pipe jointing mechanism has an influence on the safety and integrity of the installed pipe as some joints can be dislodged by tree roots. Butt fusion welded Polyethylene pipes or pipes with end load resistant joints offer the safest installed pipe system. Where push fit joints or couplings with no end-load restraint are used, engineering judgement should be used to ensure the easement specified will accord the required protection to the pipe. The easement widths in Table 1 above are based on trees which grow to a girth of between 30 and 60cm at maturity in accordance with the recommendation of Table 3 in BS5837:2012 (Trees in Relation to Construction – Recommendations). Where trees that grow to a larger girth at maturity are likely to be planted, consideration should be made to specify a wider easement width than the minimum given in Table 1 above in accordance with Table 3 in BS5837:2012.

(b) Development Potential

If the pipe is being installed in a built up area, there is a need to ensure it is protected from building foundation loading as well as to ensure building foundation safety in the event of a failure of the pipe. Engineering judgement needs to be exercised to specify an easement width that will ensure the protection of the installed pipe the easement recommended in Table 2 should be utilised. Conversely, in areas unlikely to be developed such as Special Protection Areas (SPA) and Sites of Special Scientific Interest (SSSI), the minimum easement widths recommended in Table 1 will suffice.

4 PRODUCT INTEGRATION

By following the selection criteria in section 3 above, the designer will deal with some of the considerations to be made in selecting and integrating this 'product' to a project. These considerations are the product conveyed by the pipe, ground conditions and whether or not the pipe is being installed in a built up area. Additional considerations need to be made to effectively integrate this 'product' into any given project.

(a) Offsetting easement from pipe centre-line

Occasionally, there are instances where a pipe is laid within land with development potential which land is adjacent to a street/road. The easement, if taken equidistant from the pipe centre-line, would result in the sterilisation of high value private land. In such a case, consideration should be made to offset the easement more towards the street/road to minimise the area of easement taken from the private land. Another example would be when a new pipe is being laid parallel to an existing pipe already benefiting from an existing easement, the easement for the new pipe may be offset to minimise the additional easement to be obtained so far as the designer ensures access and protection requirements for both mains are satisfied.

(b) Two or more water mains in one easement

Where two or more mains are laid in parallel or in close proximity, one easement can be specified which accounts for the overlap of the two easements and will not necessarily have to be the arithmetic sum of the individual easements for each pipe, provided the pipes are sufficiently close so as to allow an overlap of the easements.

(c) Replacement or renewal of a pipe with an existing easement

Like for like pipe replacements or renewals should not give rise to any change in easement arrangements unless the pipe size is being altered upwards resulting in the need for a wider easement than the existing. Where applicable, only the additional easement width need be considered for compensation. This is subject to evidence of the historic easement arrangements being produced by the business.

(d) Sharing easements with other utility providers

Often, our pipes are laid parallel to other utilities such as gas pipes which require the same or greater protection. There is scope to share or utilise the whole or part of the easement obtained by the other utility operator. Liaison would need to be carried out with the other utility provider bearing in mind that some easement arrangements involve an annual rental as opposed to the one-off payment principle in the AW business. The designer should involve the Legal Services Department to ensure AW's interests and rights are protected.

(e) Mineral rights

Under Schedule 14 of the Water Industry Act 1991, a mineral rights owner may give Anglian Water 30 days notice of their intention to work their mineral rights. Anglian water would then be required to relocate, at our expense, the pipe/asset affecting the mineral exploration. This could also involve compensation to the mineral rights owner for losses associated with not working the mineral rights. Engineers should therefore avoid laying pipes in land subject to mineral rights as far as they are aware. Refer to Law briefing located on HAWK at <G:\AW Documents\Publish\Legal\SW\Minerals.doc>