

# Isolation of Sewers and provision for future extension of Sewers

## Technical Addendum SEW TA SEW-03-Revision 1

Sewerage Code of Australia – MRWA Edition Version 2.0

### 1. Background

In South East Water's district, there have been incidents where isolation plugs have been found within the sewerage network after Acceptance of Works of newly constructed sewers had been confirmed. South East Water introduced a number of mandatory requirements and recommended procedures for plug insertions and temporary isolation of live sewer systems from 1 September 2016.

To enable compliance with South East Water's mandatory requirements for isolation of sewers, careful consideration is required during the design phase to ensure adequate structures and facilities are provided at temporary end of lines and pipe stubs. This Technical Addendum sets out South East Water's temporary isolation requirements and additional requirements for design for future sewer extensions.

### 2. Sewer Isolation Requirements

South East Water have the following mandatory requirements for the method of isolation:

- Inflatable plugs are only permitted to be used to isolate a sewer for a single period not exceeding 48 hours. Multiple periods of isolation at the same location using an inflatable plug will not be permitted during construction and testing.
- Mechanical plugs are required for temporary isolation of sewers where isolation will exceed 48 hours.
- U-plates must be used for all education points (i.e. inflatable or mechanical plugs are not permitted for education purposes).
- Where plugs cannot or are not used to isolate sewers the sewer extension, South East Water approval must be obtained to undertake the work under live sewer conditions.
- Work on live sewerage assets can only be undertaken by relevant South East Water accredited contractors.

The following mandatory requirements apply for the use of any plug within South East Water's live sewer system:

- When using plugs in live sewers, a Live Sewer request form noting the plug insertion must be lodged through the Manage Developer Works system within PropertyConnect.
- Once an approved Access Permit Number (ie: Q number) is obtained, a Live Sewer Contractor must request an Asset Entry Number from the South East Water Network Operations Centre.

- When the plug insertion is completed, the South East Water Network Operations Centre must be contacted to close the Asset Entry Number.
- The Live Sewer request form must also be completed through the Manage Developer Works system within Property Connect by entering the Asset Entry Number used to carry out the works.
- When the plug is being removed another Live Sewer request form must be lodged for the plug removal and the same steps followed to complete the work as above.
- All plugs shall be permanently identified with the Contractors name.
- All plugs must be appropriately secured and tethered. This may include the plug being tied off to the top stepiron or ladder in the nearest maintenance hole and upstream plugs being tommed off.
- When plugs are inserted in sewers (whether it is live or not), the plug should be temporarily tagged with South East Water project number and individual plug identification.
- A register of plugs inserted must be maintained on site in the project folder and then submitted to South East Water with the Construction Verification and prior to Acceptance of Works being granted. The register shall contain the following information:
  - Plug ID
  - South East Water Project Number
  - Project Name
  - Location of plug insertion (eg. MH HBM22-26 D/S)
  - Date of insertion
  - Time of insertion
  - Accredited Key Personnel supervising insertion
  - Date of removal
  - Time of removal
  - Accredited Key Personnel supervising removal

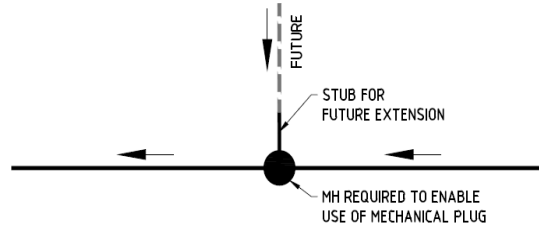
### 3. Design Requirements

When designing sewer works which include temporary end of lines and/or pipe stubs for a future extension, designers shall give consideration to the works required to isolate the sewer to enable construction of the future extension.

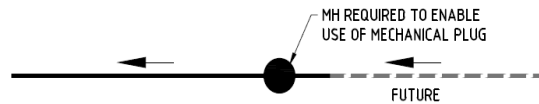
- All live sewers will require isolation to facilitate the extension of the sewer. The only exception is for short extensions being done under live sewer conditions where this method is approved by South East Water.
- South East Water require that the first pipe is connected directly to the temporary dead end (including stubs) and then extension laid in an upstream direction. Construction of the extension prior to connection with a pipe connector is not permitted without prior South East Water approval.
- Inflatable plugs will only be feasible where extension or connection works can be constructed in a short timeframe (ie under 48 hours) and can be installed within all types of maintenance structures (e.g. Example 3).
- Mechanical plugs and U-plates require more room for installation and removal from ground level and can only be used inside a maintenance hole. As such where mechanical plugs or U-plates will be required, the design shall provide a maintenance hole at this location (e.g. Example 1 and 2).
- Maintenance holes may need to be nominated in lieu of maintenance shafts and chambers by the designer to allow for compliant isolation methods during future extension. This is consistent with note 8 of MRWA-S-300 that enables larger structures to be nominated over the minimum structure where appropriate.
- The location and number of downstream connections which could be live at the time of extension works should be considered. Where no live connections are present, it may be

possible to isolate the sewer further downstream from the connection point at an existing maintenance hole subject to prior South East Water approval (e.g. Example 4).

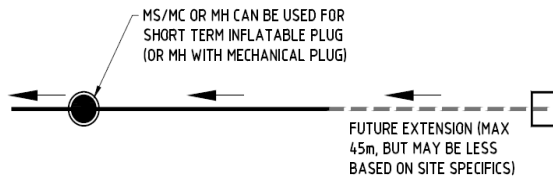
## 4. Design Examples



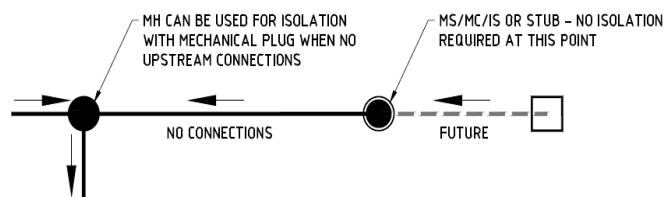
EXAMPLE 1 - STUB FOR FUTURE CONNECTION (FROM SIDE)



EXAMPLE 2 - FUTURE STRAIGHT THROUGH EXTENSION



EXAMPLE 3 - FUTURE SHORT EXTENSION WHERE AN INFLATABLE PLUG MAY BE SUFFICIENT



EXAMPLE 4 - USE OF DOWNSTREAM MH TO ISOLATE EXTENSION WHEN NO UPSTREAM CONNECTIONS (SOUTH EAST WATER REVIEW & APPROVAL REQUIRED IN THESE CASES)