Department of Design and Construction

STANDARD CONSTRUCTION OPERATING PROCEDURE

Division of Infrastructure
Bureau of Construction

SCOP..... : 15 - 004G

CATEGORY.. : CONSTRUCTION
Subcategory : New Sewer Pipe Crack Policy

SUBJECT: ESVP/RCP SEWER PIPE CRACK POLICY

Keywords ..... : Construction, Sewer Pipe, Cracks

Supersedes..... : N/A
Supplements..... : 06-006G
Sheet..... : 1 of 6

APPROVED: _____
Associate Commissioner, Thomas Foley, P.E.

Issue Date..... : December 10, 2015

Effective immediately, please find the attached standard protocol to be followed if cracks are present after the installation of new sewer Extra-Strength Vitrified Pipe (ESVP) and Reinforced Concrete Pipe (RCP).

The following protocol should be discussed with the contractor at the Critical Phase Meeting prior to the commencement of pipe installation.

Attachment

CIRCULAR AND LONGITUDINAL CRACK(S) IN ESVP SEWER

(a) Fixing circular and longitudinal cracks less than 10" long (LESS THAN 4 cracks from MH to MH) cracks -not leaking- in ESVP sewer:

1) The Director of Construction will write a standardized crack letter (as attached) to the contractor directing to remove/replace cracked pipe at "No Additional Cost to the City". Upon receiving a response from the contractor to repair cracks, then they must:
2) If on concrete cradle, excavate from outside and fully encase with 4000 psi concrete (*Standard Sewer Specification Section 2.08*) from outside 3 feet (longitudinally) on each side of crack.
3) Pressure test to 8 PSI. If pressure test holds, leave it.
4) If pressure test fails, inject chemical grout meeting ASTM F2301-03 and pressure test again to hold 8 to 10 PSI and re-video.
5) If the pressure test fails after grouting, the contractor is required to repair cracks using either of the following approved DEP spot line methods (*Infrastructure Point Repair System, Link Pipe System and/or Perma Liner*). The contractor is required to submit method of their choice for a review by the Director of Construction. This response will then be reviewed and/or approved by the Director of Construction

(b) Fixing the following types of cracks in ESVP sewer on concrete cradle/encasement:

- Irregular structural circular/leaking/differential settlement cracks
- Fractured longitudinal cracks longer than 10"
- Numerous (4 or more circular cracks in a run)

1) Write a standardized crack letter as attached to the contractor directing them to remove/replace cracked pipe or line MH to MH using a method complying with specification section 50.71.1
2) Upon receiving a response from the contractor to repair cracks using MH to MH lining methods, the Director of Construction will write a response to the contractor requesting to submit that lining method complying with specification for a review at "No Additional Cost to the City". This response will then be reviewed and/or approved by the Director of Construction.
3) If the Director of Construction finds that the cracks (regardless of number) are severe and cannot be corrected through approved lining procedure or the slope of the sewer pipe will be adversely altered due to the severe differential settlement, then the Director will inform the contractor to remove the pipe from existing MH to MH.

CIRCULAR AND LONGITUDINAL CRACK(S) IN RCP SEWER

(a) Fixing hairline and open cracks/breaks in RCP sewer on concrete cradle/encase in concrete

1) The Director of Construction will write a standardized letter to the contractor directing them to follow procedure outlined below:
2) Hairline circular cracks or longitudinal cracks (not leaking), encase sewers 3 feet on each side of crack (if not installed during installation) with 4000 psi and re-video after six months to see cracks healed.
3) Leaking crack(s) encase 3 feet on each side of crack from outside with 4000 psi concrete and re-video to see leak stopped. If leak did not stop, spot line the sewer using either of the following approved DEP method (*Infrastructure Point Repair System, Link Pipe System and/or Perma Liner*).
4) In case of open crack(s) or break(s), write a standard letter directing to remove/replace cracked pipe or line MH to MH using a method complying with lining specification section 50.71.1
5) Upon receiving a response from the contractor to repair cracks using MH to MH lining methods, the Director of Construction will write a response to the contractor requesting to submit that lining method complying with specification for a review at "No Additional Cost to the City". This response will then be reviewed and/or approved by the Director of Construction.

As some of you are already aware, a successful demo of the two new methods of sewer "point repair" systems **("Infrastructure Point Repair System" and "Link Pipe System" by Earth Repair Inc.)** was completed on 4/14/2011 in Rockaways part of Queens. It was witnesses and approved by representatives from both DDC and DEP. These two new methods of sewer point repair in addition to the already approved **"Perma Liner" method** shall be used for all future projects wherever sewer pipes with localized cracks are encountered. Please inform your staff of this new development.

Department of Design and Construction

Dr. Feniosky Peña-Mora
Commissioner

Eric C. Macfarlane, P.E.
Deputy Commissioner
Infrastructure

Thomas Foley, P.E.
Associate Commissioner
Construction Management

October 20, 2015

Re: Contract Reg. #
Crack Notification Letter

Dear:

The following tables list the deficiencies in the newly constructed sanitary and storm sewers, which must be corrected prior to starting final restoration and granting final acceptance on the above project. All deficient sewers must be removed, replaced and re-televised.

10" & 12" ESVP SEWERS

Location	No. of Cracks	Run Length (LF)	Encase	Remarks	Date Inspected
			Yes	Circumferential fracture @ 251 LF	4/02/14
			Yes	Circumferential crack @ 24 & 51 LF	4/02/14
			Yes	Circumferential crack @ 171.6 LF	6/03/14
			Yes	Circumferential crack @ 80.4 LF	5/07/15
			Yes	Circumferential crack @ 176	4/08/14

24" & 30" RCP SEWERS

Location	No. of Cracks	Run Length (LF)	Encase	Remarks	Date Inspected
			Yes	Circumferential crack @ 63 LF	5/07/15
			Yes	Longitudinal crack @ 8 LF	9/17/14

38"x24" RCP ELLIPTICAL SEWERS

Location	No. of Cracks	Run Length (LF)	Encase	Remarks	Date Inspected
			Yes	Longitudinal crack @ 52 LF	9/17/14
			Yes	Circumferential crack @ 172.5 LF	9/17/14

If you wish to use any of the DEP approved methods or any other alternate method for correcting deficiencies, please submit either method of your choice to this office for a review and acceptance. Please be advised that the above work will be done at no additional cost to the City. If you have any questions, please call me at.

Sincerely,

Director,
Infrastructure/Construction

cc:
Construction Support Unit

DDC99-1-505

Department of Design and Construction

Dr. Feniosky Peña-Mora
Commissioner

Eric C. Macfarlane, P.E.
Deputy Commissioner
Infrastructure

Thomas Foley, P.E.
Associate Commissioner
Construction Management

August 26, 2015

Re: Contract Reg. #
Cracks in New Sewers

Dear:

This is in response to your letter dated August 18, 2015, requesting to consider your proposed means and methods for fixing cracks at the locations listed below.

As agreed at the progress meeting held on August 25, 2015, the area around the cracked pipes is to be excavated and a concrete encasement is to be installed 3 feet on each side of the cracks. The crack in the 12" ESVP storm sewer shall be grouted from inside and must withstand a minimum pressure level in accordance with ASTM F2304-03. Also, upon encasing the crack in the 30" RCP storm sewer, a re-television inspection will be performed after six months in order to determine if the pipe is acceptable or if further action is necessary. An appropriate temporary deduction will be made until such inspection. This temporary deduction will be released with "guarantee release of retainage monies" payment.

Location	No. of cracks	Run Length (LF)	Encased	Remarks	Date Inspected
				Irregular crack Close to MH # 9	4/01/2015
				Irregular crack At 44.5' @ joint	4/01/2015

Please be advised that the above work will be done at no additional cost to the City. If you have any further questions regarding the above, please contact me at

Very truly yours,

Director
Infrastructure/Construction

cc:
Construction Support Unit

DDC99-1-506