Supplementary Material

Table S1 National standards for Sewer system management in China

Category	Name	Number	Implementation date	Publication department
Planning and Design	Code for design of irrigation and drainage engineering	GB 50288-1999	1999/8/1	General Administration of Quality Supervision of People's Republic of China Ministry of Housing and Urban-rural Development
	Code of Urban Wastewater Engineering Planning	GB 50318-2000	2001/6/1	General Administration of Quality Supervision of People's Republic of China Ministry of Housing and Urban-rural Development
	Structural design code for special structures of water supply and waste water engineering	GB 50069-2002	2003/3/1	Ministry of Housing and Urban-rural Development
	Structural design code for pipelines of water supply and waste water engineering	GB 50332-2002	2003/3/1	Ministry of Housing and Urban-rural Development
	Code for seismic design of outdoor water supply sewerage gas and heating engineering	GB 50032-2003	2003/9/1	Ministry of Housing and Urban-rural Development
	Code for design of building water supply and drainage	GB 50015-2003	2010/4/1	Ministry of Housing and Urban-rural Development
	Technical code for water supply and sewerage of urban	GB 50788-2012	2012/10/1	Ministry of Housing and Urban-rural Development
Construction and Acceptance	Code for construction and acceptance of water and sewerage structures	GB 50141-2008	2009/5/1	Ministry of Housing and Urban-rural Development
	Code for acceptance of construction quality of water supply drainage and heating works	GB 50242-2002	2002/4/1	Ministry of Housing and Urban-rural Development General Administration of Quality Supervision of People's Republic of China
	Code for construction and acceptance of water and sewerage pipeline works	GB 50268-2008	2009/5/1	Ministry of Housing and Urban-rural Development
Material	Concrete and reinforced concrete sewer pipes	GB/T 11836-2009	2009/11/5	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China
	Cast iron pipes、fittings and accessories with flexible joint sewerage for drainage	GB/T 12772-2008	2009/5/1	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China
	Test methods of concrete and reinforced concrete drainage and sewer pipes	GB/T 16752-2006	2006/12/1	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China
	Unplasticized polyvinyl chloride (PVC-U) pipes with a cellular core for drainage	GB/T 16800-2008	2009/5/1	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China
	Unplasticized polyvinyl	GB/T	2008/9/1	General Administration of Quality

chloride (PVC-U) structure wall pipline system for underground soil waste and drainage - Part 1: double wall corrugated pipes	18477.1-2007		Supervision of People's Republic of China Standardization Administration of People's Republic of China
Unplasticized polyvinyl chloride (PVC-U) structure wall pipeline system for underground soil waste and draindge—Part 2:Ultra-Rib pipes	GB/T 18477.2-2011	2012/7/1	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China
Unplasticized polyvinyl chloride (PVC-U) structure wall pipeline system for underground soil waste and drainage—Part 3:Bilayer and hollow-wall construction with axial hollow pipes	GB/T 18477.3-2009	2010/3/1	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China
Unplasticized poly(vinyl chloride)(PVC-U)pipes for non-pressure buried drainage and sewerage systems	GB/T 20221-2006	2006/10/1	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China
Rubber seals - Joint rings for water supply drainage and sewerage pipelines - Specification for materials	GB/T 21873-2008	2008/10/1	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China
Elastomeric seals - Requirements for materials for pipe joint seals used in water and drainage applications - Thermoplastic elastomers	GB/T 21874-2008	2008/10/1	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China
Unplasticized poly (vinyl chloride) (PVC-U) pipes for soil and waste discharge inside buildings	GB/T 5836.1-2006	2006/8/1	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China
Unplasticized poly(vinyl chloride)(PVC-U)fittings for soil and waste inside buildings	GB/T 5836.2-2006	2006/8/1	General Administration of Quality Supervision of People's Republic of China Standardization Administration of People's Republic of China

Note: *T after slash means Recommended Standard, the rest standards are mandatory*

Table S2 Industry standards for sewer system management in China

Name	Number	Implementation date	Publication department
Cast-iron sluice gates for water supply and sewerage	CJ/T 3006-1992	1993/7/1	Ministry of Housing and Urban-rural Development
Screw lift pumps for water supply and sewerage	CJ/T 3007-1992	1993/7/1	Ministry of Housing and Urban-rural Development
General specification of slow closure type check valve for water supply and sewerage	CJ/T 154-2001	2002/6/1	Ministry of Housing and Urban-rural Development
Work coupling type cast iron pipe and fittings for building drainage	CJ/T 177-2002	2003/6/1	Ministry of Housing and Urban-rural Development
Air admittance valves for building drainage systems	CJ 202-2004	2005/6/1	Ministry of Housing and Urban-rural Development
Unplasticized polyvinyl chloride (PVC-U) and glass microsphere composite pipes for drainage	CJ/T 231-2006	2006/11/1	Ministry of Housing and Urban-rural Development
High density polyethylene pipes and fittings for drainage inside buildings	CJ/T 250-2007	2007/10/1	Ministry of Housing and Urban-rural Development
Direct buried gate valves for water supply and drainage	CJ/T 262-2007	2008/1/1	Ministry of Housing and Urban-rural Development
Steel reinforced spirally wound Polyethylene(PE)drainage pipe	CJ/T 270-2007	2008/5/1	Ministry of Housing and Urban-rural Development
Technical specification of electrical & automation engineering for city drainage system	CJJ 120-2008	2008/9/1	Ministry of Housing and Urban-rural Development
Technical specification of wastewater engineering for town and village	CJJ 124-2008	2008/10/1	Ministry of Housing and Urban-rural Development
Polypropylene pipe and fitting for drainage inside buildings	CJ/T 278-2008	2008/11/1	Ministry of Housing and Urban-rural Development
Technical specification of metal pipe work for building drainage	CJJ 127-2009	2009/9/1	Ministry of Housing and Urban-rural Development
Technical specification for safety of urban sewer maintenance	CJJ 6-2009	2010/7/1	Ministry of Housing and Urban-rural Development
Plastics inspection chambers for sewerage in municipal engineering	CJ/T 326-2010	2010/8/1	Ministry of Housing and Urban-rural Development
Spirally wound steel reinforced polyethylene pipes with double plain wall for underground sewer	CJ/T 329-2010	2010/8/1	Ministry of Housing and Urban-rural Development
Technical specification for buried plastic pipeline of sewer engineering	CJJ 143-2010	2010/12/1	Ministry of Housing and Urban-rural Development
High density polyethylene (HDPE) sewer pipes for trenchless installation	CJ/T 358-2010	2011/8/1	Ministry of Housing and Urban-rural Development
Components for same-floor drainage system in buildings	CJ/T 363-2011	2011/8/1	Ministry of Housing and Urban-rural Development
Metal reinforced Polyethylene(PE)spirally corrugated pipe for underground sewer	CJ/T 225-2011	2011/10/1	Ministry of Housing and Urban-rural Development
Technical specification for plastic pipeline for building drainage	CJJ/T 29-2010	2011/10/1	Ministry of Housing and Urban-rural Development
Technical specification for public SPA pool water supply and drainage engineering	CJJ 160-2011	2012/3/1	Ministry of Housing and Urban-rural Development
Technical requirement of automatic monitor system for city drainage	CJ/T 252-2011	2012/5/1	Ministry of Housing and Urban-rural Development
General technological specification of decanter for sewage treatment	CJ/T 388-2012	2012/5/1	Ministry of Housing and Urban-rural Development
Technical specification for composite pipeline engineering of building drainage	CJJ/T 165-2011	2012/6/1	Ministry of Housing and Urban-rural Development
Sound-insulating polypropylene pipes and fittings for drainage	CJ/T 273-2012	2012/8/1	Ministry of Housing and Urban-rural Development
Technical specification for inspection and evaluation of urban sewer	CJJ 181-2012	2012/12/1	Ministry of Housing and Urban-rural Development
Fauceting cast iron pipes and fittings with flexible joint for building drainage	CJ/T 178-2013	2013/10/1	Ministry of Housing and Urban-rural Development

Resilient-seated gate valves for water supply and drainage service	CJ/T 216-2013	2013/10/1	Ministry of Housing and Urban-rural Development
Helical corrugated steel pipe for drains	CJ/T 431-2013	2013/10/1	Ministry of Housing and Urban-rural Development
Low-noise unplasticized poly (vinyl chloride) (PVC-U) pipes for waste discharge inside building	CJ/T 442-2013	2014/3/1	Ministry of Housing and Urban-rural Development
Technical specification for application of plastics manholes and inspection chambers for sewerage	CJJ/T 209-2013	2014/6/1	Ministry of Housing and Urban-rural Development
Technical Specification for trenchless rehabilitation and renewal of urban sewer pipeline	CJJ/T 210-2014	2014/6/1	Ministry of Housing and Urban-rural Development
Technical specification for rain drainage system of building roof	CJJ 142-2014	2014/7/1	Ministry of Housing and Urban-rural Development
Sealed board pipe stopper of sewer pipe for the air test	CJ/T 473-2015	2015/9/1	Ministry of Housing and Urban-rural Development
Butterfly valves for water supply and drainage	CJ/T 261-2015	2016/1/1	Ministry of Housing and Urban-rural Development
Technical specification for maintenance of sewers & channels and pumping stations in city	CJJ 68-2016	2017/3/1	Ministry of Housing and Urban-rural Development

Note: *T after slash means Recommended Standard, the rest standards are mandatory*

Table S3 Sewer rehabilitation cases with trenchless technologies applied from Chinese references and official website news

Number	Location	Method	Reference
Case 1	Suzhou	Liner Inversion CIPP	Xu [1]
Case 2	Shanghai	Pipe bursting	Ding [2]
Case 3	Sanya	Spiral wound lining	Huang [3]
Case 4	Baoding	Internal steel sleeve	Ding et al. [4]
Case 5	Jinan	Liner Inversion CIPP	Lou et al. [5]
Case 6	Changsha	Liner Inversion CIPP	Hu [6]
Case 7	Shanghai	CIPP spot repair	Mao and Wang [7]
Case 8	Beijing	Liner Inversion CIPP	Zhang and Wang [8]
Case 9	Chengdu	CIPP spot repair	Zheng et al. [9]
Case 10	Wuxi	Liner Inversion CIPP	Ruan et al. [10]
Case 11	Guangzhou	Pull-in Ultraviolet Light Cured Liners	Zhang [11]
Case 12	Beijing	Pull-in Ultraviolet Light Cured Liners	Wang [12]
Case 13	Tianjin	Spiral wound lining	Wang and Zhao [13]
Case 14	Tianjin, Youyi Road	Pull-in CIPP	Lv [14]
Case 15	Tianjin, Taifeng Road	Pull-in CIPP	
Case 16	Wuxi, Xinhong Road	Internal steel sleeve	Liu and Liang [15]
Case 17	Wuxi, Taibo Street	Internal steel sleeve	
Case 18	Guangzhou	Polyurethane spraying	Zhang et al. [16]
Case 19	Guangzhou	Pull-in Ultraviolet Light Cured Liners	Zhang et al. [17]
Case 20	Wuxi	Liner Inversion CIPP	Zhu et al. [18]
Case 21	Shanghai	Liner Inversion CIPP	Cheng et al. [19]
Case 22	Shanghai	Liner Inversion CIPP	Bai et al. [20]
Case 23	Tianjin	CIPP spot repair	Zhang [21]
Case 24	Shaoxing	Liner Inversion CIPP	Li and Xu [22]
Case 25	Tianjin	Liner Inversion CIPP	Duan et al. [23]
Case 26	Suzhou	Internal steel sleeve	Huang et al. [24]
Case 27	Hangzhou	Liner Inversion CIPP	Lu [25]
Case 28	Qinzhou	Slip lining	Huang [26]
Case 29	Shanghai, Shuicheng Road	Liner Inversion CIPP	Gao et al. [27]
Case 30	Shanghai, Xingguo Road	Liner Inversion CIPP	
Case 31	Hangzhou, Xihu District	Pipe bursting	
Case 32	Hangzhou, Fuxing Road	Spiral wound lining	
Case 33	Shanghai, Shuicheng Road	Stainless steel foam sleeve	
Case 34	Shanghai, Liuzhou Road	Stainless steel foam sleeve	
Case 35	Shanghai, Central section	Stainless steel foam sleeve	
Case 36	Xiamen, Tong'an District	Pull-in Ultraviolet Light Cured Liners	Lin [28]
Case 37	Shanghai, Qingpin Road	Fold-and-reformed lining	Lin [29]
Case 38	Guangzhou, 623 Road	Spiral wound lining	Guan et al. [30]
Case 39	Shenzhen, Baoyuan Road	Liner Inversion CIPP	Zhang et al. [31]
Case 40	Shanghai, Chuansha Road	Liner Inversion CIPP	Zhang [32]
Case 41	Shenzhen	Pull-in Ultraviolet Light Cured Liners	Feng [33]
Case 42	Tianjin, Hedong District	Liner Inversion CIPP	Rui and Cui [34]
Case 43	Shenzhen, Xingnan Road	Pipe bursting	Zang et al. [35]
Case 44	Nanjing, Jianye District	CIPP spot repair	Tao et al. [36]
Case 45	Wuhan	Slip lining	Qiu et al. [37]
Case 46	Suzhou, Guangzhou Road	Pull-in Ultraviolet Light Cured Liners	Yi [38]
Case 47	Shanghai, Nenjiang Road	Liner Inversion CIPP	Chen [39]
Case 48	Shanghai, Yunling Road	Liner Inversion CIPP	
Case 49	Shanghai, Pudong District	Internal steel sleeve, Grouting	Wang [40]
Case 50	Shanghai, Baiyang Road	Liner Inversion CIPP	Zheng [41]
Case 51	Shanghai, Zhongyuan Community	Spiral wound lining	
Case 52	Guangzhou, Zhuhai District	Grouting	
Case 53	Shanghai, Fujian Road	Liner Inversion CIPP	
Case 54	Shanghai, Beiqu Road	Liner Inversion CIPP	
Case 55	Guangzhou, Huacheng Street	Pull-in Ultraviolet Light Cured Liners	Guan [42]
Case 56	Beijing, Beijing Zoo	Spiral wound lining	
Case 57	Shanghai	Stainless steel foam sleeve	
Case 58	Quanzhou, Yongchun County	Stainless steel foam sleeve	
Case 59	Guangzhou	CIPP spot repair	
Case 60	Changzhou, Dongfang	Stainless steel foam sleeve	Xinhuanet [43]

	Road		
Case 61	Changzhou, Qishuyan	Stainless steel foam sleeve, Slip lining	
Case 62	Changzhou	CIPP spot repair	
Case 63	Hohhot	——	Chinapipe net [44]
Case 64	Shijiazhuang, Youyi Street	Liner Inversion CIPP	Chinadaily [45]
Case 65	Lishui	Liner Inversion CIPP	Lishui news [46]
Case 66	Beijing, West District	Pull-in Ultraviolet Light Cured Liners	Chinapipe net [47]
Case 67	Shenzhen	——	Shenzhen news [48]
Case 68	Ningbo	Pull-in Ultraviolet Light Cured Liners	China Ningbo net [49]
Case 69	Hefei, Shouchun Road	Liner Inversion CIPP	Hefei news [50]
Case 70	Shanghai, Hunan Road	Liner Inversion CIPP	Sohu news [51]
Case 71	Shanghai, Hongqiao	Liner Inversion CIPP	Thepaper news [52]
Case 72	Yuyao, Kaifeng Road, Tanjialing Road, Xinximen Road	Liner Inversion CIPP Stainless steel foam sleeve	Yuyao news [53]

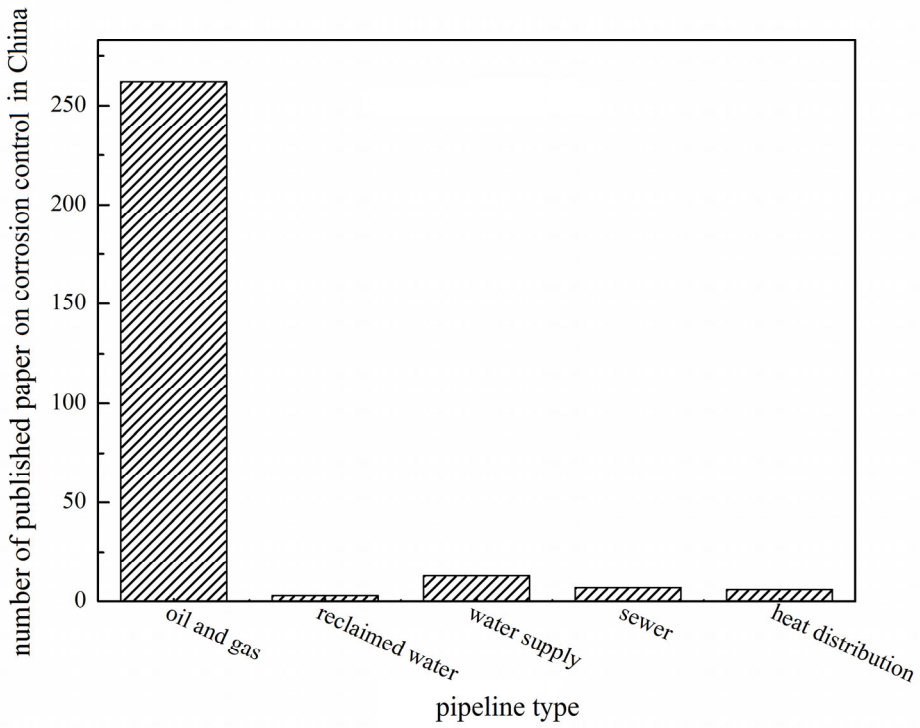

Fig.S1 Number of paper published on corrosion control for different pipeline types
Note: the results are from China National Knowledge Infrastructure (CNKI) website by searching “pipeline corrosion control”, “pipeline corrosion mitigation”, etc. [54]

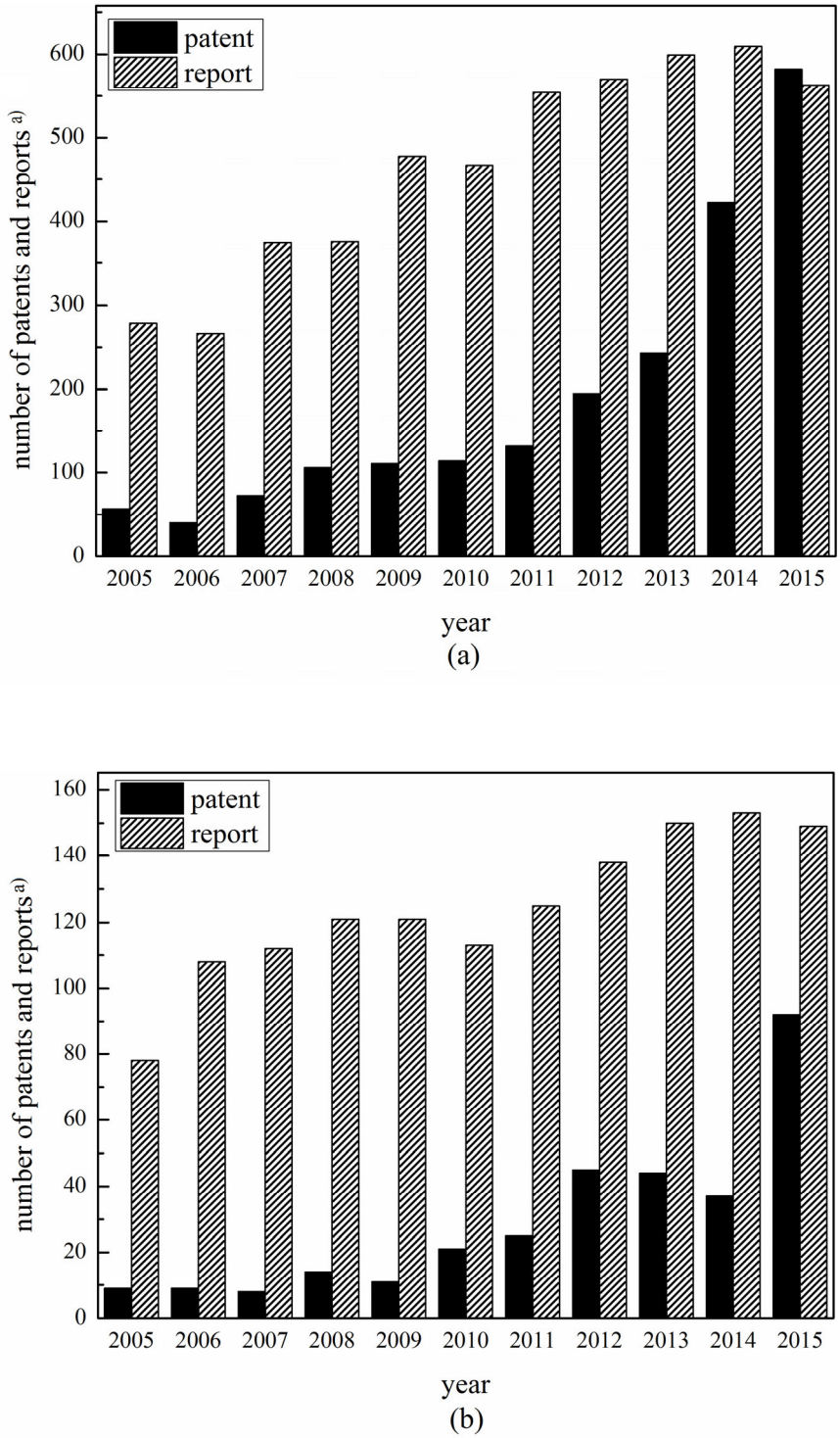

Fig. S2 (a) numbers of reports and patents of sewer network inspection from 2005–2015; (b) numbers of reports and patents of sewer trenchless renewal from 2005–2015

Note: a) the results are from China National Knowledge Infrastructure (CNKI) website by searching "sewer inspection", "sewer rehabilitation", "trenchless technology", etc. [54]

References

1. Xu C. Application of CIPP Overturn Lining Technique to Restore Sewage Pipes without Excavation. China Water & Wastewater, 2006, 22 (12): 99–101 (in Chinese)
2. Ding X F. Construction technology of trenchless pipe bursting for big calibre sewer line replacement project. Building Construction, 2010, 32 (3): 197–199 (in Chinese)
3. Huang L B. Discussion on the spiral wound lining pipe application in sewage pipe maintenance and reforming, 2009, 35 (36): 181–182 (in Chinese)
4. Ding Q T, Zheng G Y, Liu C L. Application of internal expanding loop technique in repairing pipe joint. Water & Wastewater Engineering, 2009, 35 (2): 104–106 (in Chinese)
5. Lou G W, Tao X, Yang B. Application of CIPP method for sewer rehabilitation of Baotu spring in Jinan. China Municipal Engineering, 2012, (3): 49–51 (in Chinese)
6. Hu S. The Application of CIPP inversion technology in Liuyang drainage pipeline rehabilitation project. Chinese and Overseas Architecture, 2007, (8): 88–90 (in Chinese)
7. Mao W H, Wang F. Trenchless Repair of Urban Drainage Pipeline with Partial Resin Curing Method. Public Utilities, 2010, 24 (6): 44–46, 48 (in Chinese)
8. Zhang S Y, Wang Z Y. Application of CIPP inversion lining technique for sewer rehabilitation without excavation. Beijing Water, 2010, 3: 34–37 (in Chinese)
9. Zheng S, Bai H Q, Ji Y, Li Y H. Application of trenchless method for reconstruction after earthquake. Sichuan Architectural, 2011, 31 (5): 227–229 (in Chinese)
10. Ruan L F, Liu G, She B C, Zhang W L. Application of inversion CIPP method for sewer rehabilitation. Urban Roads Bridges & Flood Control, 2014, (7): 273–276 (in Chinese)
11. Zhang G C. Applied Research of Trenchless Rehabilitation Technique for Drainage Pipeline in Guangzhou. Municipal Engineering Technology, 2014, 32 (2): 113–117 (in Chinese)
12. Wang Y. Discussion and Application of UV Lining Repair in Drainage Pipe Network Reconstruction. Municipal Engineering Technology, 2016, 34 (3): 123–126 (in Chinese)
13. Wang G, Zhao Z B. Application of Lining Repair Technology with Water in sewer rehabilitation. China Water & Wastewater, 2014, 30 (16): 133–135 (in Chinese)
14. Lv Z X. Process Selection of the Trenchless Lining Rehabilitation of Drainage Pipelines in TEDA. Pipeline Technology and Equipment, 2012, (2): 40–42 (in Chinese)
15. Liu G, Liang T. Application of steel lining local repair technology in drainage pipeline repair. China Water & Wastewater, 2015, 31 (22): 119–122 (in Chinese)
16. Zhang W H, Guan A F, Zhou L, Liang H. Application of Polyurethane Artificial Spraying Method in Non - excavation Repair of Drainage. Geological Science and Technology Information, 2016, 35 (2): 95–99 (in Chinese)
17. Zhang H B, Guan A F, Liu T J, Zhang G X. Application of Ultraviolet Light Cured Liners for sewer rehabilitation. Water & Wastewater Engineering, 2015, 41 (2): 103–106 (in Chinese)
18. Zhu J Q, Liu Y, Liu G, Qi L T. Application of linear inversion CIPP for small diameter sewer repair. China Water & Wastewater, 2015, 31 (18): 116–118 (in Chinese)
19. Cheng J, Bao Y Q, Lv Y P, Yin G L, Xie S, Mo Z L. Application of CIPP in preventive reinforcement of drainage pipeline. Urban Roads Bridges & Flood Control, 2015, (10): 196–200 (in Chinese)
20. Bai W, Li H Z, Chen W B, Tang X. Research and Application of Robots in Sewer Pipes. Environmental Science and Management, 2012, 37 (9): 45–50 (in Chinese)
21. Zhang J. Discussion on the sewer inspection and assessment methods. Water & Wastewater Engineering, 2011, (S1): 418–420 (in Chinese)
22. Li Y M, Xu X G. Application of the technology of non-excavation in drainage channel emergency reparation. City and Town Water Supply, 2010, (2): 87–90 (in Chinese)
23. Duan K, Shi Z L, Pang M. Discussion on trenchless repair technology of buried drainage pipeline and its engineering application. Special Structures, 2016, 1, 24 (in Chinese)
24. Huang C, Wang Y T, Huang T Y, Qin F J, Chen X. Evaluation and maintenance analysis of the sewer system of the Gusu district of Suzhou. Water & Wastewater Engineering, 2015, (3): 98–102 (in Chinese)
25. Lu R B. Application of CIPP inversion lining technique in drainage pipeline. Municipal Engineering Technology, 2015, (2): 155–157 (in Chinese)
26. Huang W. Application of Trenchless Reinforcement Corrugated Pipe Trenchless Repair Technology. Jiangxi Building Materials, 2015, (15): 79–80, 82 (in Chinese)
27. Gao H B, Zhang Q X, Zhang A J, Zhang H. Application of trenchless inspection and rehabilitation technology in sewer engineering. City & House, 2015, (4): 120–124 (in Chinese)
28. Lin X W. Application of UV–curing technology in sewage pipeine repair at Tongbing Road, Xiamen. Municipal Engineering Technology, 2015, (5): 117–118, 121 (in Chinese)
29. Lin M B. Inspection and analysis of sewer pipelines in old city zone of Fuzhou city and discussion of the trenchless rehabilitation techniques chooses. Fujian Architecture & Construction, 2014, (5): 59–62 (in Chinese)
30. Guan A F, Wang H P, Liu T J, Zhang H B. Inspection and trenchless repair technologies for drainage pipeline in Guangzhou. Water & Wastewater Engineering, 2014, 40 (1), 97–101 (in Chinese)
31. Zhang Y, Liu J, Qiu P. Application of CIPP method for sewer rehabilitation. China Water & Wastewater, 2014, 30 (4): 106–108 (in Chinese)
32. Zhang W W. Discussion on application of Liner Inversion Cured-in-place Pipe method for sewer rehabilitation in Chuansha Road. Urban Roads Bridges & Flood Control, 2014, (3): 91–94 (in Chinese)
33. Feng H X. Application of CIPP Ultraviolet Curing Technology in Sewage Pipeline Repair. China Water & Wastewater, 2014, 30 (16): 136–138 (in Chinese)
34. Rui Z Y, Cui H T. Application of CIPP Repair Technology in Pipeline Engineering. Technological Pioneers, 2013, (2): 10–11 (in Chinese)

35. Zang C, Dong Y G, Li B. Discussion on technical problems in application of pipe-bursting method on pipeline replacement. Water & Wastewater Engineering, 2013. 39 (8): 110–113 (in Chinese)
36. Tao X, Lou G W, Yang B. Instructions on sewer rehabilitation directed by Closed–circuit Television. China Municipal Engineering, 2012, (2): 54–55 (in Chinese)
37. Qiu W X, Li D, Hu Z G. Un–excavated pipeline service: introduction and summary. Water & Wastewater Engineering, 2004, 30 (9): 92–95 (in Chinese)
38. Yi Z S. Research on urban drainage pipeline trenchless rehabilitation technology. Dissertation for the Master Degree. Beijing: China University of Geosciences, 2012 (in Chinese)
39. Chen J J. The trenchless technology in drainage works applied research. Dissertation for the Master Degree. Shanghai: Tongji University, 2008 (in Chinese)
40. Wang J L. Study on application of internal steel sleeve technology for repairing sewage pipe. Management of Municipal Facilities, 2008, (1): 45–47 (in Chinese)
41. Zheng R D. The applied research on CCTV inspection technique and assessment for sewer in Shanghai. Dissertation for the Master Degree. Shanghai: Tongji University, 2006 (in Chinese)
42. Guan A F. Technical guide for trenchless rehabilitation engineering of urban sewer pipeline. China architecture & building press, Beijing, China, 2016 (in Chinese)
43. Xinhuanet. Application of trenchless technology in Changzhou sewer network. 2015. Available online at http://www.js.xinhuanet.com/2015-01/21/c_1114082627.htm (in Chinese) (accessed by December 31, 2016)
44. Chinapipe net. 2016. http://www.chinapipe.net/news/2016/50964.html (in Chinese) (accessed by December 31, 2016)
45. Chinadaily. 2014. Available online at http://www.chinadaily.com.cn/hqgj/jryw/2014-03-25/content_11463109.html (in Chinese) (accessed by December 31, 2016)
46. Lishui news. 2014. Available online at http://news.lsnews.com.cn/system/2014/09/01/010544461.shtml (in Chinese) (accessed by December 31, 2016)
47. Chinapipe net. 2015. Available online at http://www.chinapipe.net/news/2015/41295.html (in Chinese) (accessed by December 31, 2016)
48. Shenzhen news. 2014. Available online at http://sztqb.sznews.com/html/2014-12/11/content_3090175.htm (in Chinese) (accessed by December 31, 2016)
49. China Ningbo net. 2013. Available online at http://news.cnnb.com.cn/system/2013/11/12/007900857.shtml (in Chinese) (accessed by December 31, 2016)
50. Hefei news. 2015. Available online at http://news.hf365.com/system/2015/10/19/014758661.shtml (in Chinese) (accessed by December 31, 2016)
51. Sohu news. 2004. Available online at http://news.sohu.com/20041026/n222686482.shtml (in Chinese) (accessed by December 31, 2016)
52. Thepaper news. 2016. Available online at http://www.thepaper.cn/newsDetail_forward_1465834 (in Chinese). (accessed by December 31, 2016)
53. Yuyao news. 2016. Available online at http://yynews.cnnb.com.cn/system/2016/03/27/011373502.shtml (in Chinese) (accessed by December 31, 2016)
54. China National Knowledge Infrastructure. 2016. Available online at http://epub.cnki.net/kns/brief/default_result.aspx (in Chinese) (accessed by December 31, 2016)