

ISO 21051:2020 (E)

Construction and installation of ductile iron pipeline system

Contents

	Foreword
1	Scope
2	Normative references
3	Terms and definitions
4	Occupational safety and health requirements
5	Materials in contact with water intended for human consumption
6	Input control, transport, handling and storage of pipeline components and inspection
6.1	Input control
6.2	Transport, handling and storage and inspection of pipeline components
6.2.1	Transport
6.2.2	Handling
6.2.2.1	General
6.2.2.2	Pipes in bundled condition
6.2.2.3	Pipes in loose condition
6.2.3	Storage
6.2.3.1	General
6.2.3.2	Storage of non-bundled pipes — Parallel stacking
6.2.3.3	Storage of non-bundled pipes — Pyramid stacking
6.2.3.4	Storage of non-bundled pipes — Square stacking
6.2.3.5	Storage of gaskets
6.2.4	Inspection
7	Coating and lining repairs
7.1	General
7.2	Repair external coating
7.2.1	General
7.2.2	Repair procedure
7.3	Repair cement mortar lining
7.3.1	General
7.3.2	Repair procedure cement mortar lining
8	Cutting of pipes and ovality correction
8.1	Cutting of pipes
8.1.1	General
8.1.2	Pipe cutting tools
8.1.3	Chamfering of cut edge
8.1.4	Repair of damaged lining and coating
8.2	Ovality correction
9	Site preparation and pipe trenches
9.1	Trench width
9.2	Trench excavation and minimum depth of cover
9.2.1	General
9.2.2	Minimum depth of cover
9.2.3	Regulations
10	Pipeline protection
10.1	General

- 10.2 Site applied polyethylene sleeving
- 11 Laying of pipes
 - 11.1 Precautions at site before laying
 - 11.1.1 General
 - 11.1.2 Preparation before pipe laying and jointing
 - 11.2 Construction of pipe trenches
 - 11.2.1 General
 - 11.2.2 Bedding
 - 11.2.2.1 General
 - 11.2.2.2 Suggested bedding materials
 - 11.2.2.3 Backfilling and compaction
 - 11.2.3 Trench types
 - 11.2.4 Soil types
 - 11.3 Safety, protection of property and structures
- 12 Push-in joints, jointing and anchoring
 - 12.1 Preparations before jointing
 - 12.2 Push-in joints
 - 12.2.1 General
 - 12.2.2 Push-in joint assembly for the pipes
 - 12.2.2.1 Steps for jointing
 - 12.2.2.2 Jointing methods
 - 12.2.3 Jointing of push-on fittings
 - 12.2.4 Jointing of fittings by jointing tackle (assembler)
 - 12.2.5 Jointing of fittings by winch method
 - 12.2.6 Maximum joint deflection and laying length
 - 12.2.7 Inspection of the joint
 - 12.2.8 Dismantling of Joint
 - 12.3 Mechanical joints
 - 12.3.1 General
 - 12.3.2 Mechanical joint assembly for pipes
 - 12.4 Flanged Joints
 - 12.4.1 General
 - 12.4.2 Flange bolting tightening sequence
 - 12.4.3 Maximum bolt tightening torque
- 13 Functional features and installation of valves
 - 13.1 Installation of valves
 - 13.1.1 General
 - 13.1.2 Air valves
 - 13.1.3 Scour valves or drain valves
 - 13.1.4 Isolation valves
 - 13.1.5 Hydrants
 - 13.1.6 Surge limiting equipment
- 14 Restrained joints and thrust blocks
- 15 Cleaning, hydraulic testing and commissioning of pipeline and pipeline components
 - 15.1 Cleaning
 - 15.2 Hydraulic testing
- 16 Flushing and disinfection
- 17 Service connections
 - 17.1 General
 - 17.2 Conventional type service connection
 - 17.3 External seal type connection
 - 17.4 Saddle for ductile iron pipes for distribution network
- 18 Supporting pipes
 - 18.1 General
 - 18.2 Support for above ground installation
 - 18.3 Maximum span for river crossing

- 18.4 Laying of ductile iron (DI) pipes in hilly terrain
- 18.4.1 General
- 18.4.2 Pipe line anchoring on slope
- 18.4.3 Basic precaution during trenching and bed preparation for pipes on slope
- 18.4.4 Additional precautions during laying in a hilly and rocky terrain
- 18.4.5 Precaution in snow bound areas

19 Railroad and highway crossings

Annex A (normative) Site applied polyethylene sleeving

- A.1 General
- A.2 Basic precautions
- A.3 Encasement by use of polyethylene tube
- A.4 Encasement by use of polyethylene sheet
- A.5 Encasement by use of barrel sleeve and joint sleeve
- A.5.1 General
- A.5.2 Barrel sleeving
- A.5.3 Joint sleeving
- A.5.4 Sleeving of fittings

Page count: 57