

ENVIRONMENTAL PROTECTION



ENVIRONMENTALLY FRIENDLY

Ductile Iron Pipe is manufactured using recycled iron and steel. The composition remains constant since each molten charge (batch) is spectrometer measured to ensure elemental conformity. The production of Ductile Iron Pipe does not release contaminants into the earth's environment.

INTERNAL COATING

Unless otherwise specified, all Ductile Iron Pipe is furnished with cement-mortar lining conforming to ANSI / AWWA C104/A21.4. The application of a seal coat to the cement-mortar lining is optional and must be requested.

The cement-mortar lining prevents tuberculation of the pipe by creating a high pH condition at the pipe wall. The seal coat provides a barrier between soft or acidic waters and the cement-mortar lining.

Additionally, cement-mortar linings create a hydraulically smooth flow surface inside the pipe, resulting in less friction and thus, less head loss. Cement-mortar lined Ductile Iron Pipe provides a Hazen William's flow coefficient, or "C" value of 140 - a realistic value that is maintained over the life of the pipe.

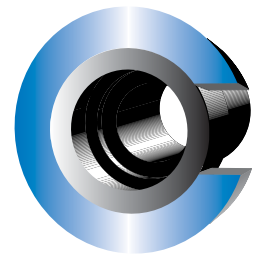
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There is no doubt that the life expectancy of Ductile Iron Pipe is a direct function of its environment. Fortunately, the majority of soil/trench environments are not harmful to iron pipe as has been witnessed over centuries. Most water departments now have the experience and expertise to identify aggressive soil conditions. This is a major step in determining the locations, where it is necessary, to protect Ductile Iron Pipe. Polyethylene encasement is a very reliable and cost effective method of protection, which has been used successfully for over 40 years.

EXTERNAL COATING

All Ductile Iron Pipe is supplied with an asphaltic shop coating which is sufficient for the majority of installations. There are, however, certain areas where highly aggressive soil conditions are encountered, and the use of additional external corrosion protection is warranted. In these cases, 8 mil-thick polyethylene encasement, in accordance with ANSI / AWWA C105/A21.5, is recommended. This standard also includes, in the appendix, the 10 point soil evaluation procedure recommended to be used to determine potentially corrosive environments.

The polyethylene encasement prevents corrosion by acting as an unbonded film, preventing direct contact of the pipe with the corrosive soil. It also effectively reduces the electrolyte available to support corrosion activity to the moisture that might be present in the thin annular space between the pipe and the polyethylene film. Once the corrosive nature of this moisture is depleted, it enters a state of equilibrium and a uniform, non-corrosive environment remains around the pipe.



Cement-mortar lining in 24" (600mm) diameter pipe.



Ductile Iron Pipe installed with 8 mil polyethylene encasement in aggressive soil conditions.