



Grade of Iron: 60-42-10

Minimum tensile strength60,000 psi
 Minimum yield strength.....42,000 psi
 Minimum elongation10 percent

Impact Test

Impact tests are made on at least one sample machined from the pipe wall during each operating hour to ensure the desired toughness in the finished pipe. Notched Charpy impact tests are performed in accordance with ASTM E23, except that specimen size is 0.500" by full thickness of the pipe wall. The corrected acceptance value for this test is a minimum of 7 ft-lb for tests conducted at 70°F ± 10°. Low-temperature impact tests are made from at least 10% of the test pipe to ensure compliance with a minimum corrected value of 3 ft-lb for tests conducted at -40°F ± 2°F.

Hydrostatic Test

As specified by AWWA C151, each pipe is subjected to a hydrostatic test of not less than 500 psi with the pipe under the full test pressure for at least 10 seconds. Suitable controls and recording devices are provided so that the test pressure and duration are positively controlled. Any pipe that leaks or does not withstand the test pressure is rejected.

For even greater assurance of pipe quality, each 30" and larger AMERICAN

Ductile Iron pipe is hydrostatically tested to 75% of yield strength of the metal, based on the nominal thickness of the pipe. As an example of the higher test pressures this dictates, each length of 30" diameter ductile iron pipe, Class 150 (the lightest class produced), 0.34" nominal wall, is tested to 669 psi. See Table No. 3-2 for a listing of AMERICAN's hydrostatic tests on 30" and larger pressure class pipe. Contact AMERICAN if higher test pressures are desired.

Hardness Test

Hardness tests of pipe samples are routinely made to further ensure the quality of the final product.

MARKING PIPE

The weight, class or nominal thickness, and casting period are shown on each pipe. AMERICAN's identifying mark, the year in which the pipe is produced, and the letters "DI" or "DUCTILE" are cast or stamped on the pipe. When specified on the purchase order, initials not exceeding four in number are stamped on the pipe. All marks are on or near the bell.

WEIGHING PIPE

Each pipe is weighed before the application of any lining or coating other than the asphaltic coating. The weight is painted on the outside of the bell end.

**AMERICAN Ductile Iron Pipe
 Hydrostatic Proof Test Pressures
 30"-64" Pressure Classes**

Table No. 3-2

Size in.	Outside Diameter in.	Pressure Class									
		150		200		250		300		350	
		Wall Thickness in.	Test Pressure psi	Wall Thickness in.	Test Pressure psi	Wall Thickness in.	Test Pressure psi	Wall Thickness in.	Test Pressure psi	Wall Thickness in.	Test Pressure psi
30	32.00	0.34	669	0.38	748	0.42	827	0.45	886	0.49	965
36	38.30	0.38	625	0.42	691	0.47	773	0.51	839	0.56	921
42	44.50	0.41	580	0.47	665	0.52	736	0.57	807	0.63	892
48	50.80	0.46	570	0.52	645	0.58	719	0.64	794	0.70	868
54	57.56	0.51	558	0.58	635	0.65	711	0.72	788	0.79	865
60	61.61	0.54	552	0.61	624	0.68	695	0.76	777	0.83	849
64	65.67	0.56	537	0.64	614	0.72	691	0.80	767	0.87	835

These pressures produce a 31,500 psi stress in the pipe wall (which is equal to 75% of the 42,000 psi minimum yield strength for ductile iron pipe) based on outside diameter and total standard thickness. Test pressure = 2 x T x 31,500 / O.D.