

DUCTILE IRON PIPES

The centrifugally cast ductile iron pipes recently developed, along with iron fittings are made from a material produced by treating molten iron of suitable composition with magnesium. By adding magnesium based alloy to the molten metal, a uniform distribution of nodular carbon graphites in the casting is ensured which improve its properties of high mechanical strength without losing the resistance to corrosion and good casting qualities in the grey iron.

The pipes are suitable for hydraulic working pressure up to 40 kg/cm² dependent on diameter, being subjected at works to a hydrostatic proof test pressure of 1 1/2 times the recommended maximum working pressure. They can resist impact without damage, be used in locations where high stress concentration are anticipated and can be produced with reduced thickness of metal. In 1954 Japan started commercial marketing of ductile iron pipe. Today besides Japan it is produced and used in many countries of Europe and America.

Ductile iron has excellent properties of machinability, impact resistance, high wear and tear resistance, high tensile strength, ductility and corrosion resistance. It is strong, both the inner and outer surfaces are smooth, free from lumps, blister and scars. These pipes are free from cracks. Ductile pipes stand up to hydraulic pressure tests are required by service regulations. These pipes are approximately 30 % lighter than conventional cast iron pipes. The use of ductile iron pipes in water mains may lead to saving in cost of water supply project.