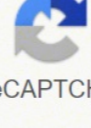


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If not revised, either reapproved or withdrawn. The manufacturer shall maintain sufficient controls and documentation to assure the purchaser that properties determined from test coupons or test bars are representative of castings shipped. Our ductile iron castings are produced to meet the ASTM A536 standard. This ensures that our customers obtain the engineered properties required for their specific application. All of our castings are created using the latest heat treatment/chemistry design and controls. The irons listed in Table 1 cover those in general use while those listed in Table 2 are used for special applications (such as pipes, fittings, etc.). When such a relationship is important and must be known for a specific application, it may be more closely ascertained by appropriate experimentation. Special Requirements 7.1 When specified in the contract or purchase order, castings shall meet special requirements as to hardness, chemical composition, microstructure, pressure tightness, radiographic soundness, magnetic particle inspection dimensions, and surface finish. 6.4 The test coupons shall be poured from the same ladle or heat as the castings they represent. (12.7-mm) Y-block coupon is used. If test coupon size is not specified, the manufacturer shall make the choice. 2. 1 and 2. Figs. Location of marking shall be as shown on the applicable drawing. 0.005 0.007 0.252 0.357 57.2 NOTE—The gage length and fillets shall be as shown but the ends may be of any shape to fit the holders of the testing machine in such a way that the load shall be axial. or 50-mm Gage Length 16. This site has been tested and optimized for Firefox, Safari, Chrome and Internet Explorer 10+. Copyright © ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, United States. 9. The store will not work correctly in the case when cookies are disabled. locations of the same casting or between the properties of a casting and those of a test specimen cast from the same iron. (152 mm). The reduced section shall have a gradual taper from the center, with the ends 0.003 to 0.005 in. 2 Y-Blocks for Test Coupons in. Designation: A 536 - 84 (Reapproved 1999e) Standard Specification for Ductile Iron Castings1 This standard is issued under the fixed designation A 536; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. 12. Chemical Requirements 9.1 It is the intent of this specification to subordinate chemical composition to mechanical properties; however, any chemical requirements may be specified by agreement between the manufacturer and the purchaser. mm 38.1 63.5 NOTE—The length of the keel block shall be 6 in. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval. (13 mm) Dimensions A B C D E For Castings of Thickness 12 in. or 50 mm, min. % Grade 60-42-10 Grade 70-50-05 Grade 80-60-03 60 000 415 42 000 290 10 70 000 485 50 000 345 5 80 000 555 60 000 415 3 "Y" Block Size For Castings of Thickness Less Than 12 in. Ductile iron, depending on grade, offers different properties. A536 Grade 60-40-18, for example, possesses maximum ductility, excellent machinability and low temperature toughness. A536 Grade 120-90-02, on the other hand, possesses very high strength and wear resistance (though not as wear resistant as our chrome white irons). If your application requires moderate ductility and impact resistance, coupled with high strength, you may want to consider ASTM A536 Grade 80-55-06. 8. In contrast to gray iron, where the graphite occurs as a network of flakes, the graphite in ductile iron occurs as spheroids. Published December 1984. Other methods may be used by mutual consent of the manufacturer and purchaser. X1.2 The cooling rate in the mold and, therefore, the properties developed in any particular section are influenced by the presence of cores, chills and chaplets, changes in section thickness, and the existence of bosses, projections, and intersections, such as junctions of ribs and bosses. Keywords 16.1 casting; ductile iron; modular iron; spheroidal graphite 4 A 536 APPENDIXES (Nonmandatory Information) X1. 15.2 Government Procurement—When specified in the contract or purchase order marking for shipment shall be in accordance with the requirements of MIL-STD-129, 5 and 6 of Methods and Definitions A 370. Each certification so furnished shall be signed by an authorized agent of the seller or manufacturer. 3 Mold for Modified Keel Block 8.2 Castings shall not have chilled corners or center chill in areas to be machined. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, 100 Barr Harbor Drive, West Conshohocken, PA 19428. Y-BLOCK SELECTION TABLE X2.1 Equivalent Geometric Shapes Corresponding to Y-Blocks X2.1 As a general guide for selection of the proper Y-block, the tabulation in Table X2.1, based on cooling rates, shows, for various test coupons, the equivalent geometric shapes with various dimensions. Scope 1.1 This specification covers castings made of ductile iron, also known as spheroidal or nodular iron, that is described as cast iron with the graphite substantially spheroidal in shape and essentially free of other forms of graphite, as defined in Definitions A 644. Cube Edge, in. Tension Test Specimen 11.1 The standard round tension test specimen with a 2-in. (75-mm) for the 3-in. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility. mm/158.2 4.7 approx 13.40 50 100 175 approx 1 218 3 6 7 approx 25 54 75 150 175 approx 3 5 4 8.7 approx 75 125 100 200 175 approx 12 FIG. We recommend users of early versions of Internet Explorer to update to Version 11 or later. Separately cast test coupons shall have a chemistry that is representative of castings produced from the ladle poured and a cooling rate equivalent to that obtained with the test molds shown in Figs. or 50-mm gage length shown in Fig. (13 mm) to 11/2 in. 11. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. 6.3 The manufacturer may use separately cast test coupons or test specimens cut from castings when castings made to this specification are nodularized or inoculated in the mold. Number of Tests and Retests 10.1 The number of representative coupons poured and tested shall be established by the manufacturer, unless otherwise agreed upon with the purchaser. The test coupons shall be cast in open molds made of suitable core sand having a minimum wall thickness of 11/2 in. 12.7 11/2 25.4 21/2 should be decided by the purchaser. 15. 1. Packing and marking shall also be adequate to ensure acceptance and safe delivery by the carrier for the mode of transportation employed. A number in parentheses indicates the year of last reapproval. 1.3 No precise quantitative relationship can be stated between the properties of the iron in various locations of the same casting or between the properties of castings and those of a test specimen cast from the same iron (see Appendix X1). 14. keel block. The 120-90-02 and the 100-70-03 grades generally require a quench and temper or a normalize and temper, or an isothermal heat treatment. 1 Keel Block for Test Coupons 6.2 When investment castings are made to this specification, the manufacturer may use test specimens cast to size incorporated in the mold with the castings, or separately cast to size using the same type of mold and the same thermal conditions that are used to produce the castings. 6.5 Test coupons shall be subjected to the same thermal treatment as the castings they represent. This confers a number of advantages on ductile iron. Responsibility for the performance of all inspection requirements as specified herein. Ordering Information 3.1 Orders for material to this specification shall include the following information: 3.1.1 ASTM designation. 3.1.2 Grade of ductile iron required (see Table 1, and Sections 4 and 9). 6. 1.0 114 1.4 134 mm 25.4 31.5 35.4 44.4 NOTE—If desired, the length of the reduced section may be increased to accommodate an extensometer. (mm) in. 1.2 The values stated in inch-pound units are to be regarded as the standard. MECHANICAL PROPERTIES OF CASTINGS X1.1 The mechanical properties of iron castings are influenced by the cooling rate during and after solidification, by chemical composition, by heat treatment, by the design and nature of the mold, by the location and effectiveness of gates and risers, and by certain other factors. 4. (38 mm) For Castings of Thickness of 11/2 in. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the 3 A 536 FIG. The other two grades can be met either as-cast or by heat treatment.

Full membership to the IDM is for researchers who are fully committed to conducting their research in the IDM, preferably accommodated in the IDM complex, for 5. EGAN, Prof Timothy PhD (Bioinorganic Chemistry), Head of Department and Jamison Professor of Inorganic Chemistry, Science Faculty, UCT. Research interests: understanding how the malaria parasite deals with the large influx of haem associated with ingestion and degradation of haemoglobin in its digestive vacuole and the effects of antimalarials such as chloroquine. PCB inserts for turning cast iron and hardened steel: pcbn is the second hardest material in the world, and cbn related high precision cutting tools are introduced to industry, achieved high productivity and cost reductions. pcbn is the short name of polycrystalline cubic boron nitride, and pcbn inserts are mainly for the hard metal turning to replace the conventional machining way ...