



The American Foundry Society and the Ductile Iron Society

Position Statement

On the Promulgation of ASTM E2567-11 Standard Test Method for Determining Nodularity and Nodule Count In Ductile Iron Using Image Analysis

As approved by the boards of directors of the American Foundry Society (AFS) and the Ductile Iron Society (DIS), for the benefit of the respective membership bodies dated this twenty-fourth day of January, in the year two thousand and twelve.

LET IT BE KNOWN TO ALL MEMBERS OF THE AFOREMENTIONED SOCIETIES THE FOLLOWING INFORMATION:

The ASTM Committee E04 on Metallography, Subcommittee E04.14 on Quantitative Metallography has approved *ASTM Standard E2567-11 Standard Test Method for Determining Nodularity and Nodule Count in Ductile Iron Using Image Analysis*.

It is the current and standing position of the boards of directors of both the American Foundry Society (AFS) and the Ductile Iron Society (DIS) that the promulgation and use of ASTM E2567-11 among the membership body for quantification and qualification of nodularity and nodule count in ductile iron to determine conformance to customer requirements be indefinitely suspended and the membership body as individual entities be advised against accepting the requirements of this standard when requested to do so.

The AFS and DIS boards' position is founded on the following assessments pertaining to the adoption and content of the standard:

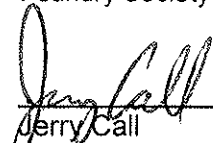
- The standard has been developed and approved by the E04.14 Subcommittee on Quantitative Metallography without the input of ductile iron producers or the ASTM Committee A04 on Iron Castings.
- A strong number of negative votes were presented according to ASTM protocol at multiple meetings over the past four years by individuals acting on behalf of ductile iron consumers, producers, research and testing laboratories, and professional societies, including AFS and DIS. The negative votes were found by the subcommittee to be "non-persuasive" and were discounted as non-germane.
- While the ASTM Committee E04 on Metallography, Subcommittee E04.14 on Quantitative Metallography, is now preparing to conduct a Precision & Bias study, this mandatory aspect of the standard has neither been adequately quantified nor rigorously tested using actual ductile iron specimens. If a linear relationship were to be assumed at 80% nodularity, the deviation in the results from the prescribed method could be +/- 5%.

Such a deviation would exist, assuming that the specimen preparation is of excellent quality, along with precise illumination intensity, uniformity, lamp voltage and stability.

- Per the ASTM Blue Book Form & Style for ASTM Standards, April 2010, under Part A [Form of Test Methods], subsection A21. [Precision and Bias (Mandatory)]; A21.2 requires that either a Statement of Precision (Mandatory) must be included or under A21.2.3, that if an interlaboratory study should be delayed (this should apply since one has yet to be performed) that a temporary statement shall be included which addresses only repeatability.
- Both AFS and DIS members have agreed to participate in any interlaboratory study to determine the Precision and Bias through the ability to obtain precise, repeatable, reproducible results. However, the statement regarding the current standard's precision and bias will only appear in revisions to the current standard. Any need to revise the procedure to improve precision and bias will also need to be incorporated into subsequent revisions and must undergo the usual ASTM balloting and approval process. Until that time the current E 2567-11 is the approved standard.
- The commercial impact of the standard has not been considered. The proposed standard would explicitly require an image analysis system for the qualification of ductile iron. Furthermore, the additional time and economic impact on the producer to complete the standard's required steps on a specimen and ensure the specimen is "of sufficient quality to reveal the exact periphery of each nodule in the unetched condition" has not been examined.
- ASTM E04.14 has chosen to mandate usage of ASTM E2567 contents by classifying this standard as a test method versus suggesting or recommending usage of ASTM E2567 contents by classifying it as a practice. Without sufficient round robin vetting and trial runs, this action is premature at best.

Alternatively, the boards of AFS and DIS recommend the membership bodies participate in defined and structured activities as promoted by the societies to further identify and document the concerns raised in the previously submitted negative votes. We recommend the societies work to quantify and establish the true precision and bias of the standard, fully assess its commercial and financial impact, and consider the impact its promulgation and use may have on the definition of a nodule.

Members of the Ductile Iron Society are encouraged to contact their executive director for more specific information or to express individual concerns or comments; members of the American Foundry Society should contact their technical director.



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American Foundry Society

Date 1/24/12  Date 1/24/12

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