



Designation: B 796 – 002

Standard Test Method for Nonmetallic Inclusion-Level Content of Powders Intended for Powder Forged Forging (P/F) Steel Parts Applications¹

This standard is issued under the fixed designation B 796; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers a ~~recognized~~ metallographic method for determining the nonmetallic inclusion level of ~~powder forged steel parts.~~

~~1.2 This test method also may be used to determine the nonmetallic inclusion content of powders intended for powder forging applications after they have been consolidated (P/F) applications.~~

1.2 The test method covers repress powder forged test specimens in a ~~prescribed manner so that the~~ which there has been minimal lateral material flow (< 1%). The core region ~~where of the assessment is to be carried out contains~~ powder forged test specimen shall contain no porosity detectable at 100×.

1.3 This test method is not suitable for determining the nonmetallic inclusion level of powder forged ~~parts test specimens~~ that have been forged such that the core region contains ~~porosity or of those parts that contain additions of manganese sulphide.~~ porosity. At the magnification used for this test method residual porosity is hard to distinguish from oxide inclusions. Too much residual porosity makes a meaningful assessment of the inclusion population impossible.

1.4 The test method may be applied to materials that contain manganese sulfide (admixed or prealloyed) provided the near neighbor separation distance is changed from 30 μm to 15 μm.

NOTE 1—The test method may be applied to powder forged parts where there has been a greater amount of material flow provided:
The near neighbor separation distance is changed, or
The inclusion sizes agreed between the parties are adjusted for the amount of material flow.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

¹ This test method is under the jurisdiction of ASTM Committee ~~B-9~~ B09 on Metal Powders and Metal Powder Products and is the direct responsibility of Subcommittee B09.11 on Near Full Density Powder Metallurgy Parts.

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