



Engineering,
GM DAEWOO Auto & Technology
Standards

METHOD OF SULPHUR PRINT TEST FOR STEEL

EDS-T-7106

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1. SCOPE

This standard specifies the method of the sulphur print test for steel. However, steels which contain over 0.10% sulphur are excluded. This standard is suitable for steel castings.

2. DEFINITION

2.1. Sulphur print test

A method for investigating the distribution of sulphide in a steel by means of the sulphur print obtained by putting a photographic paper previously soaked in the sulphuric acid solution, closely on a section of the steel.

3. TEST PIECE

The flat test piece shall be cut from the forged or rolled steel generally in perpendicular direction to the working axis.

However, hot shearing will affect to alignment of inclusion and texture segregation, etc. and gas cutting will cause hardening or crack, it is appropriate to take the test piece apart from these portions.

After cutting and grinding, the test surface of the test piece shall generally be free from grease prior to the test.

4. TEST METHOD

4.1. Use the photographic paper for the sulphur print test.

4.2. Immerse the photographic paper which has been cut to dimensions appropriate to the test surface in 1 - 5% sulphuric acid solution, and soak it with the solution sufficiently (approximately for 5 minutes). Then, remove the excess solution by putting it between papers or using the absorbent cotton or the like after taking it out from the solution.

4.3. Immediately, adhere the photographic paper which has been removed the solution sufficiently over the entire test surface, and then, remove the air bubbles by pressing with the absorbent cotton to prevent the photographic paper from slipping off.

After enough time to enable the coloring of the photographic paper to a suitable density by reacting with the sulphide contained in the steel, take off the photographic paper from the test surface. In this case, the adhering time of the photographic paper shall be about 1 - 3 minutes.

4.4. Wash the photographic paper which has been taken off from the test surface and immerse it in 15 - 40% aqueous solution of at room temperature for 5 - 10 minutes.

After fixing with the solution, wash it with running water for 30 minutes or more.

4.5. After fixing and washing, examine the state of distribution of the sulphide with respect to the dry photographic paper.