



CORPORATE STANDARD

AA 085 01 34

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EVALUATION AND ACCEPTANCE STANDARD FOR MAGNETIC PARTICLE EXAMINATION OF CASTINGS

1.0 SCOPE:

- 1.1 This standard is applicable for Magnetic Particle Examination of Castings.
- 1.2 The procedure adopted for this examination is as per Corporate Standard AA 085 01 33

2.0 DEFINITION OF INDICATIONS:

- 2.1 Circular indications are those more or less elliptical with major axis not more than three times the minor axis.
- 2.2 Linear indications are those having length in excess of three times average width.
- 2.3 In-line indications are those in group of three or more indications aligned side by side in line with intervening gaps of less than 2mm measured edge to edge.

3.0 EVALUATION OF INDICATIONS:

- 3.1 Discontinuities and defects will be indicated by the retention of magnetic particles. All such indications are not necessarily defects, since exclusive surface roughness, magnetic permeability variations and machining marks may also produce similar indications.
- 3.2 Any indication suspected to be non-relevant is to be considered relevant till it is proved otherwise.
- 3.3 Broad areas of particle accumulation which could mask indications or discontinuities are unacceptable and those areas shall be cleaned and re-examined.
- 3.4 Relevant indications are those which results from unacceptable mechanical discontinuities.

4.0 ACCEPTANCE STANDARD:

- 5.1 Castings are classified into four levels as detailed below according to the size and number of flaws permissible.

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Level	No. & size of acceptable indications per 100 sq. cm. area and length not exceeding 25 cm.	Unacceptable indications.
1	2 Nos. of 3mm long indication.	Cracks & hot tears.
2	3 Nos. of 3mm long indication. One of 5mm long indication.	-do-
3	3 Nos. of 3mm long indication. 2 Nos. of 4mm long indication. One of 6mm long indication. One in line indication of - (10mm Max. lgth.)	-do-
4	4 Nos. of 3mm long indication. 3 Nos. of 4mm long indication. 2 Nos. of 8mm long indication. One in line indication of - (15mm Max. lgth.)	-do-

Note: The minimum permissible distance between any two or more acceptable individual flaws shall not be less than the major dimension of the larger flaw.

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