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BUREAU OF INDIAN STANDARDS

Draft AMENDMENT No. 2

TO

**IS 649 : 1997 METHODS OF TESTING STEEL SHEETS FOR MAGNETIC CIRCUITS OF
POWER ELECTRICAL APPARATUS
(SECOND REVISION)**

ICS 77.140.50; 77.140.40; 29.040.10

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(Page 2, Section 1) - Magnetic Testing as given this section is for Conventional Grain Oriented Steel (CGO), High Permeability Grain Oriented (HPGO) and Non Oriented Electrical Steel. In case of some HPGO grades like Domain refined not amenable for heat treatment use the test method as given in IEC 60404-3:1992 + A 1:2002 Magnetic materials Part 3: Methods of measurement of the magnetic properties of magnetic sheet and strip by means of a single sheet tester.

(Page 22, clause 55) - The clause specifies method for determination of the ductility of grain oriented electrical steel as covered under IS 3024:2006. The alternate method is given in Annex A. One of the either of the method can be used as per availability of apparatus.

Annex A

A.0 Alternate Method 2 for determination of the ductility of grain oriented electrical steel

A.1 SUMMARY OF METHOD

A test strip is placed in the special test apparatus designed to clamp one end of the specimen securely while the other end is free to move, but held in tension by spring. The specimen is repeatedly bent through 90° reversals until a crack appears at the bend or until sudden failure occurs by complete rupture. The number of reversals until failure is taken as a measure of the brittleness.

A.2 APPARATUS

Same as given in Clause 51

A.3 SAMPLING AND TEST SPECIMEN

A.3.1 The test specimen may be cut from samples used for core loss or other tests.

A.3.2 The test specimens shall be about 30 mm in width and not less than 152 mm in length.

A.3.3 The number of test specimens representing each test lot shall not be less than five.

A.3.4 The long axis of test specimens shall be in the direction of rolling.

A.3.5 Edges of the test specimens shall be practically free from burrs; filing or machining to remove burrs is permissible.



A.4 PROCEDURE

A.4.1 Clamp the specimen tightly in the stationary jaws in the bend test machine, Fig. 9, place in tension by stretching in the spring during clamping.

A.4.2 Bend the specimen through 90° use of the movable arm and jaws, Fig.10. alternatively to each side of its initial position. The test shall be stopped on appearance in bare metal of the first crack visible to the naked eye and last bend shall not be counted.

A.4.3 A bend of 90° from initial position with return to initial position counts one bend.



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