

JIS

JAPANESE INDUSTRIAL STANDARD

**Method of Plane Bending
Fatigue Testing of Metal Plates**

JIS Z 2275 —1978

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Method of Plane Bending Fatigue Testing of
Metal Plates

Z 2275-1978

1. Scope

This Japanese Industrial Standard specifies the method of plane bending fatigue testing of metal plates by the use of standard test pieces to be carried out in the atmospheric air at room temperature, covering fatigue life at the number of stress cycles not less than 10^4 times. The plane bending herein signifies a loading method in such a manner that the repeated bending moment is applied to a plate-shaped test piece in the plane intersecting the plate surface perpendicularly and including the axis of the test piece.

2. Definitions

The definitions of the main terms used in this standard shall be in accordance with 2. of JIS Z 2273.

3. Test Pieces

3.1 The test pieces to be employed shall be those plate-shaped.

Applicable Standards:

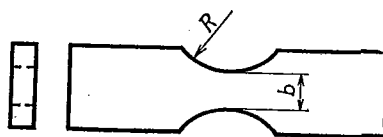
JIS Z 2273-General Rules for Fatigue Testing of Metals

JIS Z 8401-Rules for Rounding Off of Numerical Values

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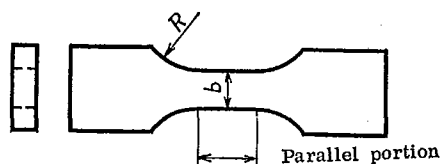
3.2 The shape and dimensions of the standard test piece to be employed in the case of applying the uniform bending shall be as shown in Fig. 1 or Fig. 2.

Fig. 1. No. 1 Test Piece



Symbol	b (mm)	R
1-15	15	b and over
1-20	20	
1-25	25	
1-30	30	
1-40	40	

Fig. 2. No. 2 Test Piece



Symbol	b (mm)	R
2-15	15	b and over
2-20	20	
2-25	25	
2-30	30	
2-40	40	

3.3 Where the load is applied to a test piece as a cantilever, the shape and dimensions of the test piece shall be determined, depending upon the fatigue testing machine to be used and the thickness of the base material of the test piece.

3.4 Both surfaces of the test piece shall, as a rule, be finished. However, the base material surface may be remained as it is without working, if necessary. Where the surfaces of a test piece are not finished, it is desirable that the surface conditions thereof be recorded.

3.5 In preparing test pieces by machining through cutting or grinding, care should be taken to ensure that the process does not cause on the test piece tearings and appreciable work strains, and also that the test pieces are not heated.

3.6 Sufficient care shall be taken at the time of machining test pieces concerning the status of the test piece grips, flatness of the whole surface, parallelism, clearance at the fixing bolt holes, etc., in order to avoid application of unexpected load such as twist, irregular steps, and bend in the plane, to the test piece, when the test piece is mounted on the testing machine.

3.7 The edges of both sides of the test piece shall be rounded with approximately 0.1 mm radius.