මෙය රාජ්‍ය භාෂාවෙන් [illegible] [illegible] කර ඇත.

ශ්‍රී ලංකා ප්‍රමිති 391 : 1976
SRI LANKA STANDARD 391 : 1976

විශ්ව දශම වර්ග කිරීම UDC 620.178.7 : 669.14

වානේ සඳහා V-අවනි ලූ දඬු ගැටුම් පරීක්ෂා කිරීමේ ක්‍රමය
METHOD FOR V-NOTCHED BEAM IMPACT TEST FOR STEEL

ලංකා ප්‍රමිති කාර්යාංශය
BUREAU OF CEYLON STANDARDS

METHOD FOR V-NOTCHED BEAM IMPACT TEST FOR STEEL

S. L. S. 391 : 1976

Gr. 3

BUREAU OF CEYLON STANDARDS
53, Dharmapala Mawatha,
COLOMBO 3.

BUREAU OF CEYLON STANDARDS
53, DHARMAPALA MAWATHA,
COLOMBO 3.

Telephone : 26055
26054
26051

Telegrams : " PRAMIKA "

SRI LANKA STANDARD METHOD FOR V-NOTCHED BEAM IMPACT TEST FOR STEEL

FOREWORD

This Sri Lanka Standard Specification was adopted from the ISO Standard — Beam Impact Test V-Notch for Steel on the recommendation made by the Drafting Committee of the Bureau on Steel. It was approved by the Civil Engineering Divisional Committee of the Bureau of Ceylon Standards and was authorised for adoption and publication by the Council of the Bureau on 1976-08-04.

This standard was adopted from ISO — R 148 — Beam Impact test V–Notch for Steel.

All values given in this standard are in Metric Units.

1. SCOPE AND PRINCIPLE OF TEST

This Standard Method for V-Notched Beam Impact Test for Steel is confined to the method of test only, and evaluation criteria are matters for material specifications. The test consists in breaking by one blow from a swinging hammer under conditions defined hereafter, a test piece V-Notched in the middle and supported at each end. The energy absorbed is determined.

2. SYMBOLS AND DESIGNATIONS

Number	Symbol	Designation	Size dimension
1	—	Length of test piece	55 mm
2	a	Thickness of test piece	10 mm
3	b	Width of test piece	10 mm
4	—	Thickness of test piece minus depth of notch (depth below notch)	8 mm
5	—	Angle of notch	45°
6	—	Depth of notch	2 mm
7	—	Radius of curvature of base of notch	0·25 mm

(Cont. Next Page)

(Contd.)

Number	Symbol	Designation	Size dimension
8	L	Distance between supports	40 mm
9	—	Radius of curvature of supports	r = 1 to 1·5 mm
10	—	Taper of supports	slope 1 : 5
11	—	Angle at tip of hammer	30°
12	—	Radius of curvature of hammer	2 to 2·5 mm
—	kV	Energy absorbed in kilogramme-force-metres or foot-pound-force	

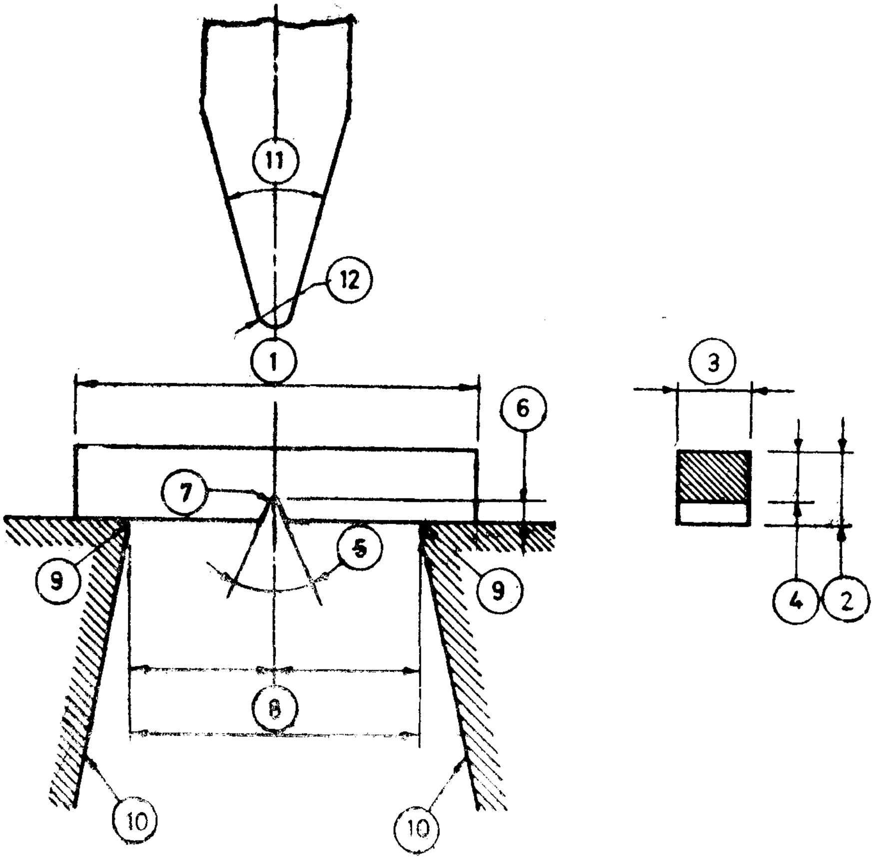

Figure — Beam Impact test (V-notch)

3. TEST PIECES

3.1 The test piece is machined all over, is 55 mm long and of square section with 10 mm sides. In the centre of the length there is a V-notch of 45° included angle, 2 mm deep, with 0·25 mm root radius.

3.2 The plane of symmetry of the notch is perpendicular to the longitudinal axis of the test piece.

3.3 The following tolerances on the above dimensions are permitted :

Table 1 — Tolerances on Specified Dimensions

Designation	Nominal dimension	Machining tolerance	
		Values	ISA symbol
Length	55 mm	± 0·60 mm	j 15
Thickness	10 mm	± 0·11 mm	j 13
Width	10 mm	± 0·11 mm	j 13
Angle of notch	45°	± 2°	—
Depth below notch	8 mm	± 0·11 mm	j 13
Root radius	0·25 mm	± 0·025 mm	—
Distance of plane of symmetry of notch from end of test piece	27·5 mm	± 0·42 mm	j 15
Angle between plane of symmetry of notch and the longitudinal axis of the test piece	90°	± 2°	—

3.4 The notch may be made by any machining method. The notch should be carefully prepared so that no grooves appear at the base of the notch.

4. TESTING MACHINE

4.1 The testing machine is constructed and installed steady and rigid.

4.1.1 The following conditions should be satisfied:

Table 2 — Characteristics of Testing Machine

Designation	Metric units
Distance between supports	$40 \begin{array}{l} +0{\cdot}5\text{ mm} \\ -0\text{ mm} \end{array}$
Radius of curvature of supports	1 to 1·5 mm
Taper of supports	1 : 5
Angle at tip of hammer	30° ± 1°
Radius of curvature of hammer	2 to 2·5 mm
Speed of hammer at the instant of striking	4·5 to 7 m/s*

* It is recommended that in future machines the speed of hammer at the instant of striking should be 5 to 5·5 m/s.

4.1.2 The plane of swing of the hammer is vertical. The machine is constructed so that the loss of energy (such as from translation, rotation or vibration) in the machine framework during a test is negligible.

4.1.3 The centre of percussion should be at the point of impact of the hammer.

4.1.4 The accuracy of the graduation of the scale of the machine is ± 0·5 per cent of the maximum striking energy of the machine.

4.2 For a standard test the striking energy of the testing machine is 30 ± 1 kgf m. The energy absorbed under these conditions is denoted by kV.

4.8 Testing machines with different striking energies are permitted, in which case the symbol kV is supplemented by an index.

5. TEST REQUIREMENTS

5.1 The test piece should lie squarely against the supports with the plane of symmetry of the notch within 0·5 mm of the plane midway between them. It should be struck by the hammer in the plane of symmetry of the notch and on the side opposite the notch.

5.2 The temperature of the test piece at the moment of breaking should not differ from the specified temperature by more than ± 2°C, unless some other tolerance is agreed. If the temperature of testing is not specified, it is taken as 20°C in temperate climates and 27°C in tropical climates, subject in each case to the above tolerance. In all cases the temperature of test is to be recorded.

5.3 If, during the test, the test piece is deformed, but not completely broken, the impact value obtained is indefinite. The test report should state that the test piece was unbroken by X kgf m or lbf. ft.

Note : There is no general process for converting the results obtained by one method of test into those which would be obtained by another method of test.

BUREAU OF CEYLON STANDARDS

The Bureau of Ceylon Standards (BCS) is the national standards organisation of Sri Lanka and was established by the Hon. Minister of Industries & Fisheries, as provided for by the Bureau of Ceylon Standards Act No. 38 of 1964.

The principal objects of the Bureau as set in the Act are to promote standards in industry and commerce, prepare national Standard Specifications and Codes of Practice and operate a Standardisation Marks Scheme and provide testing facilities, as the need arises.

The Bureau is financed by Government grants and the sale of its publications. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The detailed preparation of Standard Specifications is done by Drafting Committees composed of experts in each particular field assisted by permanent officers of the Bureau. These Committees are appointed by Divisional Committees, which are appointed by the Council. All members of the Drafting and Divisional Committees render their services in an honorary capacity. In preparing the Standard Specifications, the Bureau endeavours to ensure adequate representation of all view points.

In the international field the Bureau represents Sri Lanka in the International Organisation for Standardisation (ISO) and will participate in such fields of Standardisation as are of special interest to Sri Lanka.

Printed at Caxton Printing Works Ltd., 280, Dam Street, Colombo 12 for the Bureau of Ceylon Standards, 53, Dharmapala Mawatha, Colombo 3.