Australian Standard®

Methods of test for fibre ropes

Method 4: Impact strength index

PREFACE

This Standard was prepared by the Standards Australia Committee on Ropes and Cordage. The Standard is based on the method used by the International Union of Alpinist Associations (UIAA) for testing ropes for mountaineering.

METHOD

1 SCOPE This Standard sets out a method for measuring the impact strength index of fibre rope.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
4142 Fibre ropes
4142.1 Part 1: Care and safe usage
4142.2 Part 2: Three-strand hawser-laid and eight-strand plaited
4142.3 Part 3: Man-made fibre ropes for static life rescue lines

3 DEFINITIONS For the purpose of this Standard, the definitions given in AS 4142.1, AS 4142.2 and AS 4142.3 apply.

4 PRINCIPLE The impact strength index of the rope is obtained by recording the number of times the test specimen can be used to arrest the fall of a dropped mass until either the core or the sheath breaks, and then until the entire rope breaks.

5 APPARATUS The following apparatus, arranged as shown in Figure 1, is required:

(a) A block of mass 80 kg with a smooth 15 mm diameter pin fixed to its upper portion. The roughness of the pin shall average 0.8 µm and shall be no greater than 6.3 µm.

(b) An orifice plate (see Figure 2) made of 10 mm thick hardened steel and having an orifice 40 ±1 mm in diameter. The surface of the orifice shall be rounded to a 5 mm radius and smooth, with an average roughness of 0.4 µm and no greater than 4.0 µm. The orifice plate is mounted with the plate vertical.

(c) A fixed pin having a diameter of 30 mm. This pin is secured horizontally to a wall or other strong point. The roughness of the pin shall average 0.8 µm and shall be no greater than 6.3 µm.