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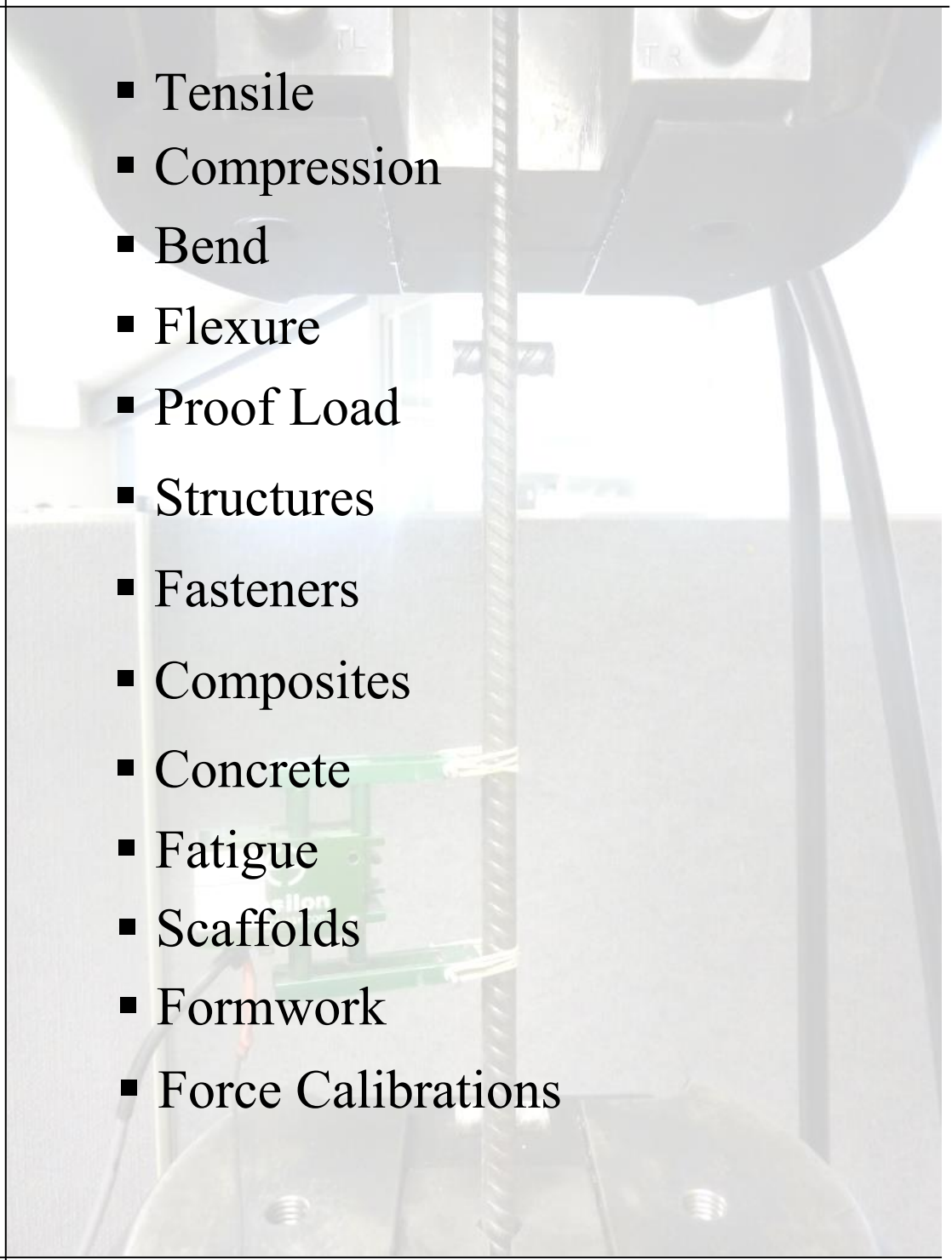
Mechanical Testing



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IN CONFIDENCE TO THE CLIENT

REPORT NO: MT-18/323

TENSILE TESTING OF JAYBRO 6MM CABLE HAULING ROPE

CLIENT: **JAYBRO CIVIL AND SAFETY PRODUCTS**
ATTENTION: CHRIS BROOKER
29 PENELOPE CRESCENT
ARNDELL PARK NSW 2148

DATE OF TEST: MARCH 22ND – MARCH 23RD 2018

DATE OF REPORT: MARCH 26TH 2018

TEST SYNOPSIS:

A roll of 6.0mm general purpose cable hauling rope, also known as *Parramatta Rope*, was delivered to the MTS Laboratory for load testing (see Fig.1). Prior to testing and in conjunction with the client, the rope was inspected and the following material characteristics were recorded:

Product Code:	*41-6PR*
Batch Number:	*ASDR1*
Nominal Diameter:	*6.0mm*
Rope Construction:	*3 Strands Twisted*
Colour:	*Blue and Yellow*
Material:	*Polypropylene mixed with Polyethylene*
Mix Ratio:	*3:1*
Minimum Breaking Strength:	*595kg (≈ 5837N)* *(Specified by the Manufacturer)*

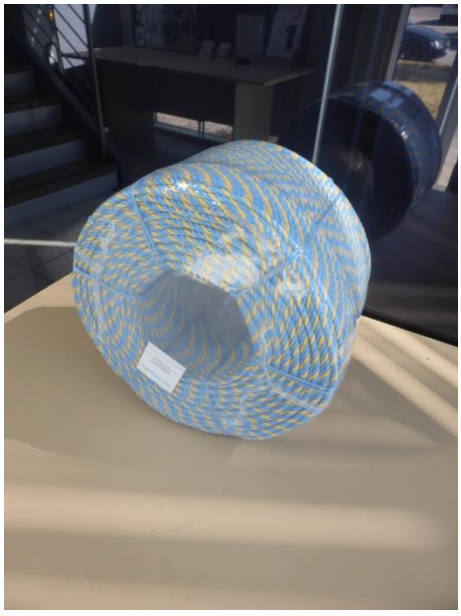

FIG.1
CABLE HAULING ROLL AS DELIVERED

TEST PROCEDURE:

At the request of the client, the rope was to be tested in accordance with AS 4143.1 – 1993 METHODS OF TEST FOR FIBRE ROPES, METHOD 1: DIMENSIONS, LINEAR DENSITY, BREAKING FORCE AND ELONGATION. Two test samples were procured from the roll and each was inserted into an automatic calibrated universal testing machine clamped to two specifically designed loading bollards (see Fig.2). Prior to testing, measurements were taken to determine the average diameter of the rope and the average length of a rope lay. Gauge marks were then applied to the rope in between the bollards prior to commencing the test. The rope was then subjected to a tensile test with gauge readings taken at 75% of the specified breaking force and at fracture. The peak test force was also recorded.

TEST OBSERVATIONS:

Both tested samples suffered fracture of the blue strands in the area of one of the bollards and outside of the applied gauge marks. Respective peak forces of **6661N** and **6381N** were recorded for the rope samples immediately prior to fracture.

FIG.2
TEST SET-UP

TEST RESULTS:

Test results for the two tests can be seen in Table 1A and Table 1B.

TEST COMMENTS:

The items tested and reported herein ruptured outside the gauge marks and the mean peak force was determined to be greater than the manufacturer's specified minimum breaking strength of 595kg (≈5837N).

As per AS 4143.1 Clause 7(k), the test results reported in Tables 1A and 1B are deemed to be valid, as the force registered at the time of break was not less than 90% of the specified minimum breaking force.

Test No.	Nominal Diameter (mm)	Diameter (mm)	Average Diameter (mm)	Length of Lay (mm)	Average Length of Lay (mm)	Linear Density (g/m)	Original Elongation (mm)
1	6.0	6.00	5.99	7.00	7.07	17.7	630
2	6.0	5.99		7.13			630

TABLE 1A.
ROPE TEST RESULTS

Test No.	Elongation at 75% of 5.7kN (mm)	Elongation at Break (mm)	Peak Load (N)	Elongation at Break (%)	Average Elongation at Break (%)	Elongation at 75% of 5.7kN (%)	Average Elongation at 75% of 5.7kN (%)
1	702	743	6661	17.94	17.38	11.43	11.75
2	706	736	6381	16.83		12.06	

TABLE 1B.
ROPE TEST RESULTS

Notes:

1. Melbourne Testing Services (MTS) Pty Ltd shall not be liable for loss, cost, damages or expenses incurred by the client or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall MTS be liable for consequential damages including, but not limited to, lost profit, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested.
2. It remains the responsibility of the client to ensure that the samples tested are representative of the entire product batch.
3. MTS shall take no responsibility for the procurement and authenticity of the test product as described herein.
4. This report is specific to the test items in their state at the time of testing. It should not be taken as a statement that all products in all states of repair, would also perform in the same manner.
5. MTS shall take no responsibility for the installation procedures used for the test items as described herein.
6. MTS shall take no responsibility for the interpretation or misinterpretation of the procedures or calculation methods as provided herein or for the appropriateness or validity of the test procedures for the test items described and reported herein.
7. The tests as reported herein are considered Experimental Type Tests and therefore do not validate or certify the products with any Australian or International standards that may apply.
8. Due to the restriction in height of the MTS testing machine, a minimum gauge length of 630mm was used for testing and not 1000mm as specified in AS 4143.1. MTS does not consider that a lower gauge length would affect the peak force achieved in the test results.

MARK WILKIE
Senior Laboratory Officer