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RECOMMENDATIONS FOR

THE SELECTION, USE AND CARE OF MAN-MADE FIBRE ROPES IN MARINE APPLICATIONS

BS 4128 : 1967

Price 8/- net

BRITISH STANDARDS INSTITUTION

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THESE BRITISH STANDARD RECOMMENDATIONS, having been approved by the Chairman of the Textile Divisional Council, were published under the authority of the General Council on 10th February, 1967.

The Institution desires to call attention to the fact that these recommendations do not purport to include all the necessary provisions of a contract.

A complete list of British Standards, numbering over 4000, fully indexed and with a note of the contents of each, will be found in the British Standards Yearbook, price 15s. The BS Yearbook may be consulted in many public libraries and similar institutions.

These recommendations make reference to the following British Standards:

BS 2052. Ropes made from coir, hemp, manila and sisal.
BS 3758. Polyester filament ropes (hawser laid).
BS 3977. Polyamide (nylon) filament ropes (hawser laid).

British Standards are revised, when necessary, by the issue either of amendment slips or of revised editions. It is important that users of British Standards should ascertain that they are in possession of the latest amendments or editions.

The following BSI references relate to the work on these recommendations:
Committee references: T/3 and T/3/-/1
Draft for comment: 66/20541

CO-OPERATING ORGANIZATIONS

The Textile Divisional Council, under whose supervision these British Standard Recommendations were prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

*British Railways Board
Consumer Council
Cotton Industry Standards Committee
Jute Industry Standards Committee
Linen Industry Standards Committee
London Transport Board
Man-made Fibres Industry Standards Committee
Ministry of Defence
Silk Industry Standards Committee
Society of Dyers and Colourists
Textile Institute
Textile Machinery Industry Standards Committee
Trades Union Congress
Wool Industry Standards Committee

The industrial organization marked with an asterisk in the above list, together with the following, were directly represented on the committees entrusted with the preparation of these recommendations:

Board of Trade
British Tugowners Association
Chamber of Shipping of the United Kingdom
Cotton Twine Manufacturers' Association
Council of British Manufacturers of Petroleum Equipment
Crown Agents for Oversea Governments and Administrations
Dock and Harbour Authorities' Association
Federation of Soft Fibre Associations
Hard Fibre Cordage Institute
Home Office (Civil Defence Training Branch)
Lloyd's Register of Shipping
London Master Stevedores' Associations
Ministry of Aviation
Ministry of Defence, Army Department
Ministry of Defence, Navy Department
Ministry of Labour (H.M. Factory Inspectorate)
Synthetic Cordage Manufacturers' Association

BRITISH STANDARD RECOMMENDATIONS FOR

THE SELECTION, USE AND CARE OF MAN-MADE FIBRE ROPES IN MARINE APPLICATIONS

FOREWORD

These British Standard Recommendations have been based on the accumulated knowledge of representatives from ship owners, tug owners, rope manufacturers and Lloyd's Register of Shipping, comprising a technical panel convened by the British Standards Institution in response to a request from the Chamber of Shipping of the United Kingdom.

NOTE. Where metric equivalents are stated the figures in British units are to be regarded as the standard. The metric conversions are approximate. More accurate conversions should be based on the tables in BS 350, ' Conversion factors and tables '.

RECOMMENDATIONS

1. SCOPE

This British Standard describes materials and physical properties of cordage, and makes recommendations for size and types of cordage for deep sea towing, harbour towing, mooring and general purpose ropes. Clauses on care, inspection and maintenance and safety precautions are also included.

2. MATERIALS

Cordage is available for marine use in a number of man-made materials and Table 1 details the basic properites of such materials.

3. PHYSICAL PROPERTIES OF CORDAGE

Tables 2 and 3 give details of the weight and breaking strength of the types of cordage in use, and Fig. 1 shows the extensibility under load. It will be appreciated that other properties such as elasticity, energy absorption and resistance to heat are all important to the proper functioning of the rope.

Unlike polyamide (nylon) and polyester ropes, the effective strength of polypropylene ropes is reduced by increase in temperature, but is regained on cooling. For instance a rise from 68°F (20°C) to 100°F (38°C) will result in a strength drop of approximately 8% and at 150°F (66°C) between 15% and 33% according