ISO 16625:2025-02 (E)

Cranes and hoists - Selection of wire ropes, drums and sheaves

Contents

Page

Foreword iv

1 Scope 1

2 Normative references 1

3 Terms,definitionsandsymbols 2
3.1 Terms and definitions 2
3.2 Symbols 2

4 Runningropesandstationaryropes 5
4.1 General 5
4.2 Discard criteria 5
4.3 Rope and rope terminations 6

5 Proof of competence of running ropes 6
5.1 Proof of static strength 6
5.1.1 General 6
5.1.2 Vertical hoisting of loads 6
5.1.3 General rope drives 12
5.1.4 Limit design rope force 15
5.2 Proof of fatigue strength 16
5.2.1 General 16
5.2.2 Design rope force 19
5.2.3 Limit design rope force 22
5.3 Proof of competence for multilayer spooling 27
5.3.1 General 27
5.3.2 Vertical hoisting of loads 28
5.3.3 General rope drive 28
5.3.4 Limit design rope force 29

6 Proofofcompetenceofstationaryropes 30
6.1 Proof of static strength 30
6.1.1 General 30
6.1.2 Limit design rope force 30
6.2 Proof of fatigue strength 31
6.2.1 General 31
6.2.2 Limit design rope force 31

Annex A (normative)Numberofrelevantbendingcycles 33

Annex B (informative) Determination of the maximum tensile force in the ropes of multi-rope grabs(holdingandclosing) 45

Annex C (informative) Comparison of minimum design factor according to ISO 16625:2013 and safetylevelaccordingcurrentversion 46

Annex D (informative)Selectionofaropebyminimumdesignfactor Zp 50

Annex E (informative)Assumednumberofhoistropes Ir during the design life of a crane 52

Annex F (informative) Other rope-related design and rope selection aspects 54

Bibliography 66