DIN EN ISO 20312:2012-01 (E)

Petroleum and natural gas industries - Design and operating limits of drill strings with aluminium alloy components (ISO 20312:2011); English version EN ISO 20312:2011

Inhalt

Seite

Foreword 3

Introduction 4

1 Scope 5

2 Normative references 5

3 Terms, definitions, symbols and abbreviated terms 5
3.1 Terms and definitions 5
3.2 Symbols 7
3.3 Abbreviated terms 11

4 Properties of ADP and tool joints 12
4.1 General 12
4.2 New pipes and tool joints data 12
4.3 Buoyant weight 12
4.4 Mechanical properties 12
4.5 ADP with integral tool joint and heavy wall ADP 15

5 Considerations and limitations of drill string design using ADP 19
5.1 Application aspects of aluminium alloy drill pipe 19
5.2 General principles of aluminium drill string assembly design 20
5.3 Influence of temperature on choice of material for drill pipe 21
5.4 Resistance to hydroabrasive and corrosive damage 27
5.5 Buckling 28

6 Basic requirements for calculation of drill strings containing ADP 30

7 Drill pipe operation 31
7.1 Operations management 31
7.2 General drill pipe operating recommendations 31
7.3 Fatigue strength limitations 35
7.4 Combined load capacity limitation 36

8 Wear-based inspection, identification and classification of aluminium drill pipe 40
8.1 Inspection 40
8.2 Wear-based marking and identification of pipe and tool joints 42
8.3 Wear-based pipe classification 43
8.4 Wear-based tool joints classification 44
8.5 Pipe repairing and discarding 44

9 Transportation and storage of pipe 45
9.1 Transportation of pipe 45
9.2 Storage of pipe 45

Annex A (informative) **Drill pipe design, range and technical properties of integral tool joint ADP and heavy wall ADP** 46

Annex B (normative) **Calculations** 51

Annex C (informative) **Conversion of SI units to USC units** 62

Bibliography 63