ISO/TR 14179-2:2001-08 (E)

Gears - Thermal capacity - Part 2: Thermal load-carrying capacity

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Symbols, units and indices 1

3 Principle 6
3.1 General 6
3.2 Purpose and applicability 6

4 Equivalent transmitted power 7

5 Power loss 8
5.1 General 8
5.2 Gear losses 8
5.3 Bearing losses 15
5.4 Shaft seals 19

6 Heat dissipation 19
6.1 General 19
6.2 Heat dissipation through the housing 19
6.3 Heat dissipation via the foundation 22
6.4 Heat dissipation via shafts and couplings 24
6.5 Heat dissipation via an external cooler 26

7 Results of calculation 27
7.1 Splash lubrication 27
7.2 Injection lubrication 27

8 Sample calculation 27
8.1 General 27
8.2 Geometry and surrounding conditions 27
8.3 Power loss 30
8.4 Heat dissipation 32
8.5 Comparison 33

Bibliography 34