ISO/TR 22131:2023-02 (E)

Railway applications - Railway braking - Country specific applications for ISO 20138-1

Contents

Page

Foreword iv

1 Scope 1

2 Normative references 1

3 Terms and definitions 1

4 Slowing or stopping distance calculation using a method implemented in France 1
4.1 General 1
4.2 Symbols and abbreviations 1
4.3 Slowing or stopping distance calculation 2
4.3.1 French model for "G" position 2
4.3.2 Calculation using ISO 20138-1:2018, 5.7.5.1 step model 4
4.4 Example of calculation 4
4.4.1 Test results 4
4.4.2 Comparison of calculation models with test results 5

5 Calculation of braking performance implemented in Japan 5
5.1 General 5
5.2 Brake ratio for a single vehicle 5
5.3 Example for brake ratio calculation 6
5.4 Equivalent response time 7
5.4.1 General 7
5.4.2 Case 1: Determination based on train speed 8
5.4.3 Case 2: Determination based on BC pressure response 8

6 Stopping or slowing distance calculation methods for some particular rolling stock in China 9
6.1 General 9
6.2 Symbols and abbreviations 9
6.3 Train resistance retarding forces 10
6.3.1 Basic running resistance 10
6.3.2 Curve resistance 12
6.4 Train braking force 13
6.4.1 Total braking force of train 13
6.4.2 Real friction coefficient 14
6.4.3 Conversion friction coefficient 14
6.4.4 Real brake block force 15
6.4.5 Nominal values of rigging efficiency 16
6.4.6 Emergency brake cylinder pressure 16
6.4.7 Conversion brake block force 17
6.4.8 Conversion braking ratio 18
6.4.9 Train unit brake ratio 20
6.4.10 Dynamic brake force 20
6.4.11 Coefficient of adhesion 21
6.5 Brake calculation 21
6.5.1 Braking time 21
6.5.2 Free running time 22
6.5.3 Stopping/slowing distance 22

Bibliography 24