DIN EN 16839:2022-10 (E)

Railway applications - Rolling stock - Head stock layout

Contents

Page

European foreword 4

1 Scope 5

2 Normative references 5

3 Terms and definitions 6

4 Free spaces 7
4.1 General 7
4.2 Berne rectangle 9
4.3 Free spaces for coupling of coaches 9
4.4 Climb protection 10

5 Buffers 10
5.1 General 10
5.2 Position of buffers on the headstock 10
5.2.1 Distance between buffers 10
5.2.2 Height of buffers above top of the rail 10
5.3 Buffer fixing 11
5.3.1 Vehicles without crashworthy buffer systems 11
5.3.2 Vehicles with crashworthy buffer systems 12
5.4 Interaction coupling/buffer 13
5.4.1 General 13
5.4.2 Mounting of buffers 13
5.5 Requirements to avoid buffer locking 14
5.5.1 Boundary dimensions 14
5.5.2 Calculation of width of buffer heads 16
5.5.3 Verification 17

6 Screw coupling 17
6.1 General 17
6.2 Position of draw gear on the headstock 18
6.2.1 Height of the draw gear above top of the rail 18
6.2.2 Position of the device to hang the screw coupler when not in use 18
6.3 Clearances around the draw hook 18
6.4 Draw gear fixing 20

7 Brake pipe connections 21

8 Pneumatic half couplings 22

9 Electrical connections 23
9.1 General 23
9.2 Electrical power supply connection 24
9.3 Electro pneumatic brake connection (EP-brake) 25

Annex A (normative) Calculation of the width of buffer heads 28

A.1 General 28
A.1.1 Introduction 28
A.1.2 Comments on the preparation of the formulae in this annex 28

A.1.3 Track ... 28
A.1.4 Vehicle ... 29
A.2 Data used in the calculation ... 29
A.3 Calculation ... 29
A.4 Return Value ... 30

Annex B (normative) Validation of the calculated width of buffer heads by drawing methodology ... 31

B.1 General ... 31
B.2 Methods ... 31
B.2.1 General ... 31
B.2.2 Drawing method ... 34
B.2.3 Simulation method ... 34

Annex C (informative) Example of location of rest for uncoupled half couplings ... 35

Annex D (normative) Special national conditions ... 38

Annex E (informative) Examples for permissible arrangement of brake pipe connections ... 39

Annex F (normative) Calculation of space for shunter (Berne Rectangle) in curves when using screw couplings ... 49

Annex ZA (informative) Relationship between this European Standard and the Essential requirements of EU Directive 2016/797/EC aimed to be covered ... 51

Bibliography ... 53