

DIN EN 13848-2:2006-08 (E)

Railway applications - Track - Track geometry quality - Part 2: Measuring systems - Track recording vehicles

Contents		Page
Foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	6
4	Symbols and abbreviations	7
5	Track recording vehicle	8
5.1	General description	8
5.2	Environmental conditions	9
5.2.1	Introduction	9
5.2.2	Climatic conditions	9
5.2.3	Operating conditions	10
5.3	Track features input	10
5.4	Data localisation	10
5.5	Measuring system/device	11
5.5.1	General	11
5.5.2	Sensors	11
5.5.3	Signal transmission	11
5.5.4	Signal processing	12
5.6	Data processing	12
5.6.1	General requirements	12
5.6.2	Parameter generation	12
5.6.3	Parameter analysis	13
5.6.4	Preparation for output interfaces	13
5.7	Data output	13
5.7.1	Visualisation	13
5.7.2	Output of analysis results	14
5.7.3	Data transmission	14
5.8	Data storage	14
6	Testing of track geometry recording system	14
6.1	Introduction	14
6.2	Compliance with EN 13848-1	17
6.3	Calibration	17
6.4	Validation by field tests	17
6.4.1	Overview	17
6.4.2	Test conditions	17
6.4.3	Comparison between different runs	18
6.4.4	Cross check	19
6.4.5	Field tests	19
Annex A (informative)	Transfer and coherence functions	20
A.1	General description	20
A.1.1	Transfer function	20

A.1.2	Coherence function	21
A.2	Practical calculation	21
A.3	Applications within this standard	22
A.3.1	Comparison between two runs	22
A.3.2	Cross check	23
Annex B (informative) Principles of measurement		25
B.1	General description	25
B.2	Longitudinal level and alignment	25
B.2.1	Chord measuring system	25
B.2.2	Inertial measuring system	25
B.3	Gauge	26
B.4	Cant	26
B.5	Twist	26
Annex C (normative) Description of field tests: values to be respected		27
C.1	General	27
C.2	Repeatability	27
C.2.1	Statistical analysis of parameter data	27
C.2.2	Statistical analysis of standard deviations	28
C.2.3	Frequency analysis	29
C.3	Reproducibility	31
C.3.1	Statistical analysis of parameter data	31
C.3.2	Statistical analysis of standard deviations	32
C.3.3	Frequency analysis	32
C.4	Cross check	34
C.4.1	General	34
C.4.2	Transfer function	34
C.4.3	Coherence function	34
Bibliography		35