

# DIN EN 15654-1:2018-03 (E)

## Railway applications - Measurement of vertical forces on wheels and wheelsets - Part 1: On-track measurement sites for vehicles in service

---

<b>Contents</b>		<b>Page</b>
European foreword .....		4
Introduction .....		5
1	Scope .....	6
2	Normative references .....	7
3	Terms, definitions, symbols and abbreviations .....	7
3.1	Terms and definitions .....	7
3.2	Abbreviations .....	10
3.3	Symbols .....	10
4	Measured and derived quantities .....	11
4.1	Measured quantities .....	11
4.2	Mandatory derived quantities .....	11
4.3	Optional derived quantities .....	11
5	Metrological characteristics .....	14
5.1	General .....	14
5.2	Accuracy classes .....	14
5.3	Measurement and calibration range .....	16
5.4	Influence quantities .....	17
5.5	Condition of use .....	17
6	Technical requirements .....	17
6.1	Train and vehicle related capability .....	17
6.2	Environmental .....	18
6.3	Inputs and Outputs .....	18
6.4	Descriptive markings .....	21
6.5	Measuring device specific .....	22
6.6	Measuring site specific .....	23
Annex A (informative) Device assessment frame work .....		24
A.1	Introduction .....	24
A.2	Type approval test .....	24
A.3	Initial verification .....	24
A.4	In-service verification .....	24
A.5	Adjustment and verification methods .....	24
Annex B (informative) Measurement site selection criteria .....		25
B.1	Introduction .....	25
B.2	Measurement site .....	25
B.3	Criteria for site selection .....	26
Annex C (informative) Data exchange format .....		30
C.1	Introduction .....	30
C.2	Example 1 .....	30

<b>C.3</b>	<b>Example 2: mandatory values .....</b>	<b>34</b>
	<b>Annex D (informative) Usage of data and accuracy classes .....</b>	<b>36</b>
<b>D.1</b>	<b>Introduction .....</b>	<b>36</b>
<b>D.2</b>	<b>Typical applications .....</b>	<b>36</b>
	<b>Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC aimed to be covered .....</b>	<b>39</b>
	<b>Bibliography .....</b>	<b>41</b>