

# DIN EN 13481-2:2012-08 (E)

## Railway applications - Track - Performance requirements for fastening systems - Part 2: Fastening systems for concrete sleepers

---

<b>Contents</b>		<b>Page</b>
Foreword .....		3
Introduction .....		5
1	Scope .....	6
2	Normative references .....	6
3	Terms and definitions .....	7
4	Symbols .....	7
5	Requirements .....	9
5.1	Longitudinal rail restraint .....	9
5.2	Torsional resistance .....	9
5.3	Attenuation of impact loads .....	9
5.4	Pad and assembly stiffness .....	9
5.5	Effect of repeated loading .....	10
5.6	Electrical resistance of fastening system and sleeper .....	11
5.7	Effect of exposure to severe environmental conditions .....	11
5.8	Dimensions .....	11
5.9	Effect of fastening system tolerances on track gauge .....	12
5.10	Clamping force .....	13
5.11	Cast-in and glued-in fastening components .....	13
5.12	In-service testing .....	13
5.13	Attenuation of noise and vibration .....	13
6	Test specimens .....	13
7	Fitness for purpose .....	13
8	Marking, labelling and packaging .....	13
Annex A (normative) Vertical load test for cast-in and glued-in fastening components .....		14
A.1	Test procedure .....	14
A.2	Test report .....	15
Annex B (informative) Vibration and noise .....		16
B.1	General .....	16
B.2	Symbols .....	16
B.3	Parameters for environmental vibration calculations .....	16
B.4	Calculating the vibration attenuation .....	17
B.5	Environmental noise .....	17
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC .....		18
Bibliography .....		21