

DIN EN 13146-1:2019-04 (E)

Railway applications - Track - Test methods for fastening systems - Part 1: Determination of longitudinal rail restraint

| Contents | | Page |
|-------------------------|--|-------------|
| European foreword | | 3 |
| Introduction | | 5 |
| 1 | Scope | 6 |
| 2 | Normative references | 6 |
| 3 | Terms, definitions and symbols | 6 |
| 3.1 | Terms and definitions | 6 |
| 3.2 | Symbols | 7 |
| 4 | Principle | 7 |
| 5 | Apparatus | 7 |
| 5.1 | Rail | 7 |
| 5.2 | Actuator | 7 |
| 5.3 | Displacement measuring instruments | 7 |
| 5.3.1 | Contacting displacement measuring instruments | 7 |
| 5.3.2 | Non-contacting displacement measuring instruments | 7 |
| 5.4 | Force measuring instruments | 8 |
| 5.5 | Verification of calibration | 8 |
| 6 | Test specimens | 8 |
| 6.1 | Rail support | 8 |
| 6.2 | Fastening | 8 |
| 7 | Procedure | 8 |
| 7.1 | Test temperature | 8 |
| 7.2 | Preparation for test | 8 |
| 7.3 | Loading | 9 |
| 7.3.1 | Longitudinal rail restraint | 9 |
| 7.3.2 | Longitudinal stiffness | 10 |
| 7.3.3 | Parameters for Track-Bridge Interaction calculations | 10 |
| 7.4 | Calculation | 11 |
| 7.4.1 | Longitudinal rail restraint | 11 |
| 7.4.2 | Longitudinal stiffness | 11 |
| 7.4.3 | Parameters for Track-Bridge Interaction calculations | 11 |
| 7.5 | Visual inspection | 11 |
| 8 | Test report | 12 |