

ISO 18379-1:2026-05 (E)

Railway infrastructure - Ballastless track - Part 1: General requirements

Contents

Page

| | |
|--|----------|
| Foreword..... | v |
| Introduction..... | vi |
| 1 Scope..... | 1 |
| 2 Normative references..... | 1 |
| 3 Terms and definitions..... | 1 |
| 4 Configuration of ballastless track..... | 2 |
| 4.1 General..... | 2 |
| 4.2 Ballastless track system, subsystems and components..... | 2 |
| 5 External actions..... | 3 |
| 5.1 Types of actions..... | 3 |
| 5.2 Railway traffic loading..... | 3 |
| 5.2.1 General..... | 3 |
| 5.2.2 Vertical loads..... | 3 |
| 5.2.3 Lateral loads..... | 4 |
| 5.2.4 Longitudinal loads..... | 4 |
| 5.3 Indirect actions and conditions imposed by the substructure..... | 5 |
| 5.3.1 General..... | 5 |
| 5.3.2 Indirect actions..... | 5 |
| 5.3.3 Earthworks..... | 6 |
| 5.3.4 Bridges..... | 6 |
| 5.3.5 Tunnels..... | 7 |
| 5.4 Environmental actions..... | 7 |
| 5.4.1 General..... | 7 |
| 5.4.2 Temperature..... | 7 |
| 5.4.3 Earthquake..... | 7 |
| 6 System requirements..... | 8 |
| 6.1 Track design geometry..... | 8 |
| 6.2 Track stability..... | 8 |
| 6.3 Structure gauge..... | 8 |
| 6.4 Design life..... | 8 |
| 6.5 Maintainability..... | 8 |
| 6.6 Environmental sustainability..... | 8 |
| 6.7 Noise and vibration..... | 8 |
| 6.8 Derailment..... | 9 |
| 6.9 Electrical interfaces..... | 9 |
| 6.9.1 General..... | 9 |
| 6.9.2 Rail-to-rail electrical resistance..... | 9 |
| 6.9.3 Electrical interfaces with traction power supply systems..... | 9 |
| 6.9.4 Electrical interfaces with signalling systems..... | 10 |
| 6.9.5 Track circuit..... | 10 |
| 6.9.6 Electromagnetic compatibility (EMC) with signalling systems..... | 10 |
| 6.10 Fixing of equipment..... | 10 |
| 6.11 Requirements related to the substructure..... | 10 |
| 6.11.1 General..... | 10 |
| 6.11.2 Earthworks..... | 10 |
| 6.11.3 Bridges..... | 11 |

| | | |
|--|---|-----------|
| 6.11.4 | Tunnels..... | 12 |
| 6.12 | Transitions..... | 12 |
| 6.13 | Requirements related to the environment..... | 12 |
| 6.13.1 | General..... | 12 |
| 6.13.2 | Water..... | 13 |
| 6.13.3 | Drainage..... | 13 |
| 6.13.4 | Temperature..... | 13 |
| 6.13.5 | Earthquakes..... | 13 |
| 6.13.6 | Chemical exposure, UV exposure and pollution..... | 13 |
| 6.13.7 | Fire implications of trackform..... | 14 |
| Annex A (informative) System configuration of ballastless track systems..... | | 15 |
| Annex B (informative) Railway traffic loading of specific regions or nations..... | | 18 |
| Annex C (informative) Rail temperature increase by using eddy current brake..... | | 24 |
| Annex D (informative) Examples of loop-free and zones with limited metal content to ensure EMC..... | | 27 |
| Annex E (informative) Example of beacon mounting system..... | | 29 |
| Annex F (informative) Correlation between relevant regional or national standards..... | | 30 |
| Bibliography..... | | 32 |