

ISO 12856-3:2022-02 (E)

Railway applications - Polymeric composite sleepers, bearers and transoms - Part 3: General requirements

Contents		Page
	Foreword	v
	Introduction	vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Symbols	4
5	General characteristics	6
5.1	General.....	6
5.2	Geometrical design, mass and tolerances.....	6
5.3	Surface finish.....	11
5.4	Loading.....	11
5.4.1	Loads.....	11
5.4.2	Load distribution.....	11
5.5	Characteristic bending moments.....	11
5.6	Ecodesign.....	11
6	Quality control	12
6.1	General.....	12
6.2	Quality control during design approval tests.....	12
6.3	Quality control during manufacturing.....	13
7	Documentation	13
7.1	General.....	13
7.2	Data to be supplied by the purchaser.....	13
7.3	Data to be provided by the supplier.....	14
7.3.1	Before the design approval tests.....	14
7.3.2	After the design approval tests.....	14
7.3.3	Prior to start-up of production.....	14
7.4	Marking.....	15
8	Product testing	15
8.1	General.....	15
8.2	Tests on product.....	15
8.2.1	General.....	15
8.2.2	Bending resistance.....	17
8.2.3	Thermal expansion.....	22
8.2.4	Permanent deformation of screw/insert in function of temperature.....	22
8.2.5	Fastening system.....	22
8.2.6	Electrical resistance.....	22
8.2.7	Screw, spike, cast-in and glued-in fastening components.....	23
8.2.8	Fire.....	23
8.2.9	System test.....	23
8.3	Tests on material characteristics.....	23
8.3.1	Chemical compatibility.....	23
8.3.2	Environmental resistance.....	23
8.3.3	Environmental compatibility.....	24
8.3.4	Mechanical properties.....	24

8.4	Additional tests for consideration (optional).....	24
8.4.1	Damaging of the sleeper surface by ballast.....	24
8.4.2	Test in track.....	24
8.4.3	Lateral resistance.....	24
Annex A	(informative) Definition and recommendation for measurement of rail seat inclination and twist between rail seats.....	25
Annex B	(informative) Design methods and factors.....	26
Annex C	(informative) Calculation of bending moments for transom.....	39
Bibliography	42