

# DIN EN 12080:2017-11 (E)

## Railway applications - Axleboxes - Rolling bearings

---

<b>Contents</b>		<b>Page</b>
European foreword .....		4
Introduction .....		6
1	Scope .....	7
2	Normative references .....	7
3	Terms and definitions .....	8
4	Technical specification .....	10
4.1	General requirements .....	10
4.2	Technical specification content .....	10
5	Quality systems .....	11
6	Manufacture .....	11
6.1	Steel manufacturing .....	11
6.2	Heat treatment .....	11
6.3	Traceability .....	12
6.4	Coatings .....	13
6.4.1	General .....	13
6.4.2	Permanent coating .....	13
6.4.3	Non-permanent coating .....	13
7	Material properties .....	13
7.1	General .....	13
7.2	Steel for rings and rolling elements .....	13
7.2.1	Grades .....	13
7.2.2	Inclusion content .....	14
7.3	Materials of other components (cages, spacers, seals etc.) .....	14
8	Geometry and dimensions .....	14
8.1	Dimensions and tolerances .....	14
8.2	Rolling bearing internal clearance .....	14
8.2.1	Rolling bearing clearance before mounting .....	14
8.2.2	Rolling bearing clearance after mounting .....	15
9	Mechanical properties -- inner ring expanding ability .....	15
10	Physical properties .....	15
10.1	Visual aspect .....	15
10.1.1	Rings and rolling elements .....	15
10.1.2	Cages .....	15
10.2	Soundness of rings and rolling elements .....	15
10.2.1	General rules .....	15
10.2.2	Internal soundness of rings .....	16
10.2.3	Soundness of ring surfaces .....	16
10.2.4	Soundness of roller raceway surfaces .....	16
10.2.5	Grinding burns .....	16
10.3	Case depth .....	16
10.4	Surface hardness .....	17

11	Marking .....	17
11.1	General .....	17
11.2	Marking of rings for cylindrical roller bearings (CRB) .....	17
11.3	Marking of cartridge bearings for axleboxes .....	18
11.4	Marking of spherical roller bearings (SRB) .....	19
11.5	Prefix and postfix .....	19
12	Inspection .....	19
12.1	Inspection plan .....	19
12.2	Sampling .....	20
13	Quality records .....	21
14	Approval .....	21
15	Delivery and packing .....	21
15.1	Greasing of rolling bearings .....	21
15.2	Corrosion protection .....	21
15.3	Packaging .....	21
Annex A (normative) Ultrasonic inspection of rolling bearing rings .....		23
Annex B (normative) Magnetic particle inspection of ring surfaces .....		28
Annex C (normative) Eddy current inspection of the raceways of the rollers .....		30
Annex D (normative) Cages of polymeric material .....		33
Annex E (normative) Approval procedures .....		42
Annex F (normative) Criteria to determine the extent of approval procedures .....		44
Annex G (informative) Examples of axlebox assemblies .....		46
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC aimed to be covered .....		48
Bibliography .....		50