

DIN EN 12080:2011-01 (E)

Railway applications - Axleboxes - Rolling bearings (includes Amendment A1:2010)

Contents		Page
Foreword.....		4
Introduction		5
1 Scope		6
2 Normative references		6
3 Terms and definitions		6
4 Information and requirements to be agreed and documented		7
4.1 General.....		7
4.2 Information to be supplied by customer		7
4.3 Optional requirements		8
4.4 Requirements for agreement.....		8
5 Quality systems		8
6 Manufacture.....		9
6.1 Steel manufacturing		9
6.2 Heat treatment.....		9
6.3 Traceability		9
7 Material properties.....		9
7.1 General.....		9
7.2 Steel for rings and rolling elements.....		9
7.3 Materials of other components (cages, spacers, seals etc.).....		10
8 Geometry and dimensions.....		10
8.1 Dimensions and tolerances		10
8.2 Rolling bearing internal clearance before mounting		10
9 Mechanical properties — inner ring expanding ability		10
10 Physical properties.....		10
10.1 Visual aspect		10
10.2 Soundness of rings and rolling elements		11
10.3 Case depth.....		11
10.4 Surface hardness.....		12
11 Marking		12
12 Inspection		12
12.1 Inspection plan.....		12
12.2 Sampling		13
13 Quality records.....		13
14 Approval		14
15 Delivery and packing		14
15.1 Greasing of rolling bearings.....		14
15.2 Rust protection		14
15.3 Packaging		14
Annex A (normative) Ultrasonic inspection of rolling bearing rings.....		15
A.1 Purpose.....		15
A.2 Principle.....		15
A.3 Equipment		15
A.4 Operating procedure		15

Annex B (normative) Magnetic particle inspection of ring surfaces	20
B.1 Purpose	20
B.2 Principle	20
B.3 Equipment	20
B.4 Operation procedure	20
Annex C (normative) Eddy current inspection of the raceways of the rollers	22
C.1 Purpose	22
C.2 Principle	22
C.3 Equipment	22
C.4 Operating procedure	22
Annex D (informative) Cages of polymeric material.....	25
D.1 Purpose	25
D.2 References	25
D.3 Material	25
D.4 Cage requirement	26
D.5 Mechanical tests	27
D.6 Compatibility with lubricating greases	29
Annex E (normative) Approval procedures.....	30
E.1 General	30
E.2 Complete procedure, type C	30
E.3 Reduced procedure, type R.....	31
Annex F (informative) Criteria to determine the extent of approval procedures.....	32
Annex ZA (informative)  Relationship between this European Standard and the Essential Requirements of EU Directive 2008/57/EC of the European Parliament and of the Council of 17 June 2008 on the interoperability of the rail system within the Community (Recast) 	34
Bibliography.....	37