EXERCISES

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Materials and manufacturing

1. **What is the designation of the steel that is usually used for rolling bearings?**
   a) 100Cr6
   b) E360C
   c) S235JR
   d) S355J2

2. **What are the characteristics of the materials from which the rings and the rolling elements of a bearing are made?**
   a) They are particularly light
   b) Resistance to rolling fatigue
   c) Heat resistance
   d) Dimensional accuracy

3. **What are the advantages of a ceramic rolling element?**
   a) Increased energy efficiency
   b) Simpler production
   c) Electrical conductivity
   d) Temperature resistance

4. **Which statements are true?**
   a) Large bearings usually have a brass cage
   b) Small to medium-sized bearings usually have a sheet steel cage
   c) Large bearings usually have a solid cage
   d) Sheet steel cages can withstand heavy loads
   e) Cages made of plastic are not recommended, especially in case of very strong vibrations and high loads

5. **What are the characteristics that cage materials should have?**
   a) High strength
   b) High coefficient of friction
   c) Low weight
   d) Adaptability to the operating temperature

6. **What is the correct sequence for making bearing rings?**
   a) Forming, austenitisation, tempering, grinding
   b) Austenitisation, tempering, grinding, forming
   c) Tempering, forming, austenitisation, grinding
   d) Forming, grinding, tempering, austenitisation

7. **Rolling elements are subjected to the same heat treatment as the inner ring and outer ring.**
   a) Correct
   b) Incorrect

8. **What connects the two halves of a cage?**
   a) Rivets
   b) Bonding
   c) Spot welding
   d) Magnets

Solution: 1. a; 2. b, d; 3. a, d; 4. a, b, c; 5. a, c, d; 6. a; 7. a; 8. a, c