

**Kraftfahrt-  
Bundesamt**



# / Directive

**for use and welding of cold-formed materials for  
couplings and for overrun brake systems (RKV)**

Issue: July 2022

**Directive for use and welding of cold-formed materials  
for couplings and for overrun brake systems (RKV)**

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# Directive on the supply and testing of load-bearing components made of malleable cast iron for road vehicle trailer couplings (GTW)

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## 1 Semifinished products

Semifinished products manufactured by cold-forming (e. g. according to DIN EN 10210-2, DIN EN 10219-2, EN 10305-1 und EN 10305-4) may principally be welded only in normal annealed condition. The suitability for welding in terms of its material-standard is the relevant issue to mention.

## 2 Components made of sheets and bands, which are cold-formed by the manufacturer of the semifinished product

Components made of sheets and bands, which are cold-formed by the manufacturer of the semifinished product, may be used and welded unannealed only if the conditions according to section 2.1 to 2.3 are met.

### 2.1 Thickness of the sheets up to 8 mm

#### 2.1.1 Dimension relations

For parts made of rolled sections according to DIN EN 10025-2 (Oct. 2019), in combination with DIN EN 10219-2 (July 2019), the dimension relations and measures according to table 12 ought to be kept.

#### 2.1.2 Bending radius

The bending radius according to DIN EN 10025-2 (Oct. 2019) table 11, or respectively annex B of DIN EN 10149-2 (Dec. 2013) and of DIN EN 10149-3 (Dec. 2013) applies to ~~minimum value~~ for parts manufactured by edging, cold-flanshing or seaming.

#### 2.1.3 Types of material

For parts named under 2.1.1 only the materials S235JRC, S235JOC, S275JR, S275JOC and S355JOC or equivalent according to DIN EN 10025-2 (Oct. 2019) may be used.

For parts named under 2.1.2 only the materials S235JRG, S235J2G, S275JRC, S275J2G3, S355J2G according to DIN EN 10025 (Oct. 2019), S260NC, S315MC, S355MC, S420MC according to DIN EN 10149-2 (Dec. 2013) and DIN EN 10149-3 (Dec. 2013) or equivalent may be used.

### 2.2 Thickness of the sheets of more than 8 mm

For profiles with a wall thickness over 8 mm DIN EN 10025 (Feb. 2005) table 7 is valid for the manufacturing. DIN 18800 part 1 point 5.2.3 is valid for the weldability in cold-formed areas.

The material choice is limited to S235JRG, S315J2G, S275JRC, S275J2G3 and S355J2G, S260NC, S315MC, S355MC, S420MC or equivalent.

### 2.3 Profiles according to DIN EN 10219-2

For profiles according to DIN EN 10219-2 (July 2019) with a wall thickness of up to 12,5 mm the mentioned bending radius is valid.

For a wall thickness of more than 8 mm or respectively more than 12,5 mm the inner bending radius according to DIN EN 10025-2 (Oct. 2019) table 11 is valid.

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### **3 Components, which are cold-formed by the manufacturer of the coupling**

#### **3.1 Cold-formed components according to 2.**

The Technical Service has to require the approval of the manufacturer of the cold-formed parts for further cold-forming and/or welding of this parts by the manufacturer of the coupling and of overrun brakes.

#### **3.2 Warm-formed or annealed parts**

##### **3.2.1 Material thickness up to 8 mm**

For material thickness up to 8 mm the conditions named under 2.1.2 and 2.1.3 are valid.

##### **3.2.2 Material thickness of more than 8 mm**

For material thickness of more than 8 mm the conditions named under 2.2 are valid.

### **4 Remarks**

#### **4.1 Fatigue strength**

Additional to considerations of technological features of the material the design is of great importance for the fatigue strength of a device.

#### **4.2 Further types of material**

If necessary also other materials can be used, if the manufacturer of steel guarantees the cold-formability and/ or weldability after cold-forming.

## / Legal notice

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