

Cold Rolled Steel Specification for Drums

SEFA RECOMMENDATION

This recommendation has been developed by SEFA in
co-operation with its Supplier Members from
the European Iron and Steel Industry

1. SCOPE AND FIELD OF APPLICATION

- 1.1. This document specifies the characteristics of cold rolled Steel used for drum manufacturing.
- 1.2. If local circumstances should require a deviation from the specification, the special requirements should be specified in the order, after agreement is reached between buyer and supplier.

2. REFERENCES

- 2.1. ISO 3574 Cold-reduced carbon steel sheet of commercial and drawing qualities
- 2.2. ISO 16162 Dimensional and shape tolerances

3. DESIGNATION

The Steel must be supplied as Coil or Sheet (as specified in the order) ISO 3574 (1 .0330).

3.1. REQUIREMENTS

- (1) dry skin passed
- (2) non-alloy quality
- (3) continuous cast
- (4) continuous annealed or Hicon/H2 batch annealed (under special circumstances other batch annealing process could be agreed upon)
- (5) suitable for drum making (body or lid, as specified)
- (6) un-oiled
- (7) suitable for resistance seam lap welding at a welding speed of 18m/min, by using an overlap of 2 +/- 0.5 mm, with an AC welding process
- (8) suitable for spray painting or lacquering without pre-cleaning or any other pre-treatment (paint samples available on request)

3.2. SPECIFIC REQUIREMENTS

- (1) carbon content: max. 0.09 %
- (2) hardness: 40-55 HRB 1)
- (3) cleanliness: - a loss of reflectivity in tape test of maximum 20% ²⁾
(See annex 1, page 4 for Test Method)
- a surface free of oil, rust and water sensitive residues
- a total contamination of less than 25 mg/m²/side

Notes:

- 1) Steel mills to try to reduce range to maximum 10 points by raising the minimum
- 2) As for certain applications (c.q. packing automotive paints) cleaner steel is needed, the aim should be to reach a lower loss of reflectivity. If this better cleanliness is a must it will be mentioned in the purchase order including the maximum loss of reflectivity which is acceptable (e.g. 10%).

- (4) heavy metal content to be less than 100 ppm (lead (Pb), Cadmium (Cd), Mercury (Hg) and Chrome 6 (CrV1))

Note: (3) This requirement also applies to pre-coated material.

SPECIFIC REQUIREMENTS (cont.)

- (5) tolerance on ordered coil width: minus 0, plus 2 mm
- (6) the thickness drop between the edge and 40 mm from the edge should not exceed 3% of the measured thickness
- (7) flatness: Steel characteristics should be such that after decoiling and roller levelling the distance between the sheet and a horizontal plane surface does not exceed 5 mm, measured over a distance of 1800 mm in length. The buyer to assure that suitable equipment is used and the equipment is adjusted correctly.
- (8) Camber: edge camber maximum 1 mm over a length of 2000 mm
- (9) welds: no more than one weld per coil is allowable. However one additional pickling line weld will be accepted. This weld should not be marked.
- (10) winding regularity of the coils: maximum 10 mm between the two extreme spires.

4. MARKING OF WELDS

The weld within the coil (but not the pickling line weld) must be marked by one of the following methods (or combination of methods), specified in the order :

- (1) a hole punched adjacent to the weld at the mid width position
- (2) aerosol paint and also marked clearly noticeable at the outside of the coil
- (3) punching at each edge of the coil

5. PACKING

Coils should be packed in such a way to avoid any penetration of moisture and formation of rust. The supplier has to take back the packing material used if it is specified in the order, after negotiation between buyer and supplier.

6. DOCUMENTS

Certificate of compliance with the order is required per shipment: to be mailed together with the shipping documents. Test reports, if specified in the order.

ANNEX 1

Tape/reflectivity test:

This test gives a measurement of steel surface cleanliness.

Equipment

- Clean tape of the type "Scotch Magic technology" (ref = 3M Scotch TM Magic 810 Invisible tape) or Sellotape Original.
- Clean white paper, thick and smooth (at least 80 grams/m²).
- Reflection measurement system of Scheenopac or Smoke Stain Reflectometer model 43 or equivalent, with angle of 45°.

Test procedure

- Stick Scotch tape or Sellotape on the surface of the steel and press to have a good contact.
- Tear away and stick on the white paper (B).
- For reference a clean piece of Scotch tape or Sellotape is also stuck on the same white paper (A).

Measurement

- The meter indicator of the reflectometer is set on 100 when measuring the reference tape (A).
- The reflectivity of the B tape is measured.
- The result should be in accordance with minimum set in SEFA steel specification.