



TECHNICAL SPECIFICATION

HRC FOR RE-ROLLING

AUTOMOTIVE

1. HR PRODUCT

Hot Rolled Coil, not pickled, not oiled with hot mill edge for un-exposed automotive parts

2. DSP END USE

Un-exposed automotive parts / not surface critical

3. DSP PROCESSES

Start with hydrochloric pickling followed by cold reduction (up to 88% maximum) through a single stand reversing mill after which the cold full hard product (CFH) is utilized for...

- Cold rolled annealed and tempered (CFIN)
- Hot dip galvanized (HDG)

4. STEEL GRADES

Steel Grades	Final Quality (HDG)
IF I004	EN 10346 DX53, EN 10346 DX54
IFY22NT	EN 10346 DX53, EN 10346 DX54, EN10346 HX220YD
DDS DX54	EN 10346 DX53, EN 10346 DX54
SAE 1006	EN 10346 HX260LAD
EN 10149 S315MC	EN 10346 HX300LAD, EN 10346 HX340LAD
Auto SQ I0H8	EN 10346 HX300LAD, EN 10346 HX380LAD
DITH H030	EN 10346 HX300LAD
EN 10149 S355MC	EN 10346 HX340LAD, EN 10346 HX380LAD
Auto SQ H034	EN 10346 HX340LAD, EN 10346 HX380LAD

5. HR SLAB REQUIREMENTS

The supplier must exclude from the rolling process the “slabs of events”, such as heads (first slab), tails (last slab), tundish change, submerged shroud exchange slabs, casting without submerged or ladle shroud, cleaning of submerged shroud, slabs from low level of steel in the tundish, mould turbulence, casting with submerged shroud cracked, casting without argon sealing on the ladle or on the submerged shroud and casting without automatic level control in the mould, and also slabs split in the width (longitudinally cut by torch).

6. INTERNAL STRUCTURE OF THE HRC

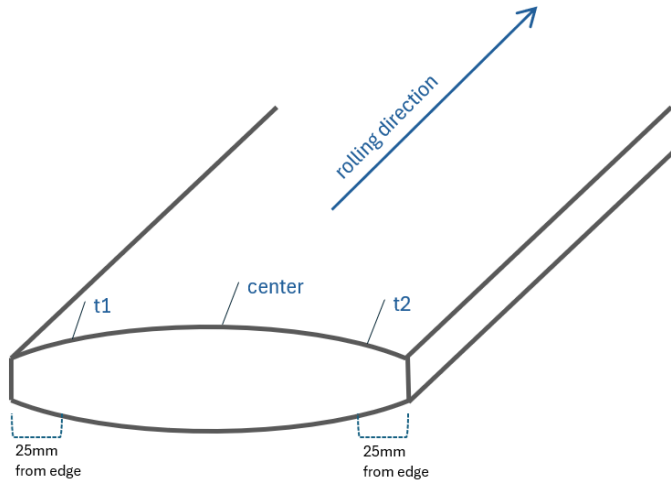
The HRC must be rolled in control of temperature, without duplex structure. The grain size must greater than 7 ASTM, with a maximum size difference of 3 ASTM from skin to mid thickness. Grain size check must be performed minimum 40mm from coil edges.

7. DIMENSIONAL AND WEIGHT TOLERANCES

- a. Thickness tolerance: 75% of the EN10051 (Table 2) or 75% of ASTM 568 (Table A1.1). The tolerance is to be spread equally below and above the nominal HRC order gauge.
- b. Width Tolerance: -0 / +25mm (coils with negative tolerance is not to be shipped).
- c. Inside Diameter (ID): 810 (+/-30mm) or 760 mm (+/-30mm). Shipment of alternative ID's subjected to DSP written consent.
- d. Coil size: Outer diameter (OD) maximum 1960 OR maximum coils mass 28 metric ton. Coils exceeding maximum 1960 OD or maximum 28 metric ton must be cut back prior shipment.
- e. Flatness: Excluding the first and last 15m of an individual coil, out of flatness cannot exceed 40mm. If specifically requested in the order, a restricted flatness tolerance – 25mm max - can be agreed. The material with higher values of out-of-flat will be evaluated on case-by-case basis to verify the impact of such defect on and final use, for such cases the subsequent processing must be guaranteed.

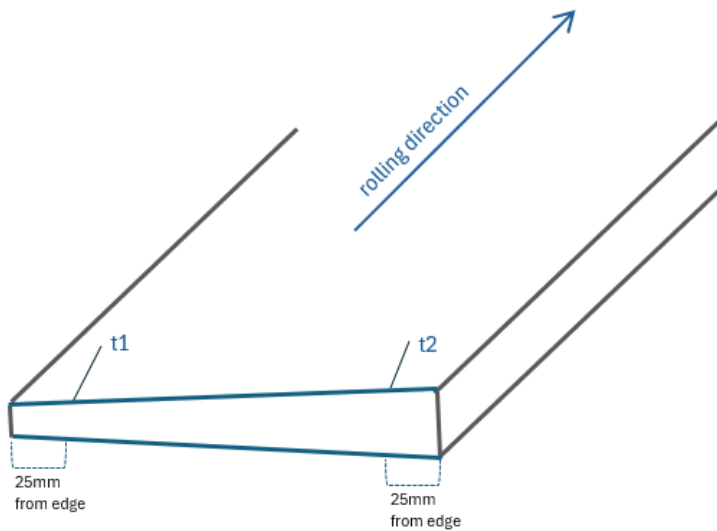
8. STRIP PROFILE

- a. Crown Tolerance: (30 to 90 μm) aim 60 μm maximum measured 25 mm from mill edge



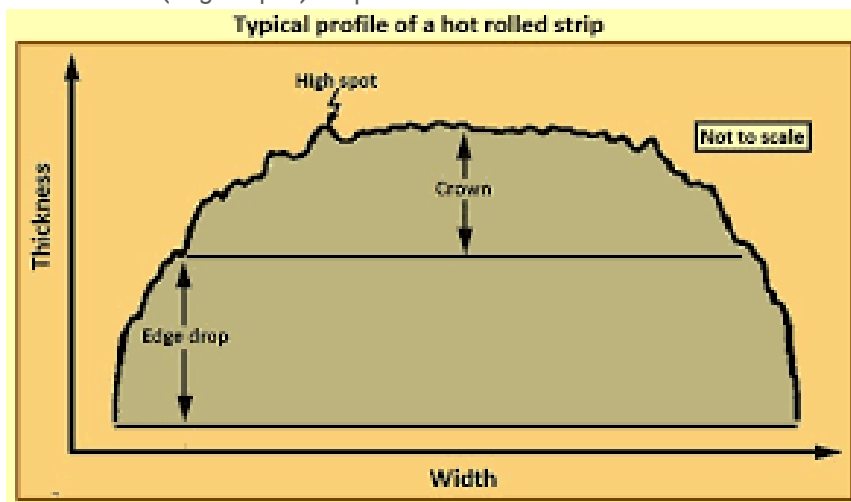
$$\text{Crown: centre} - (t1 + t2) / 2.0$$

- b. Wedge tolerance: (50 μm maximum) aim 20 μm maximum measured 25mm from mill edge

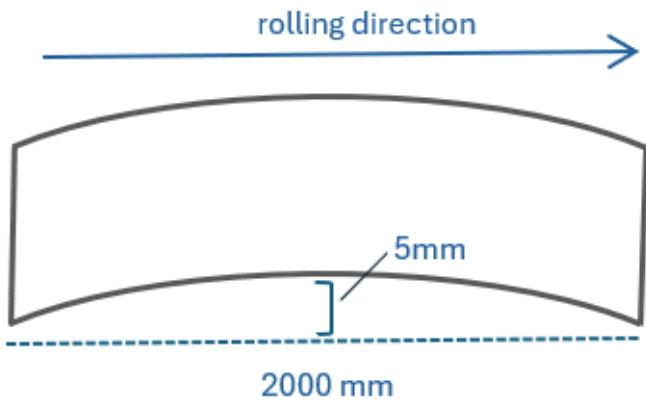


$$\text{Wedge} = t1 - t2$$

- c. Peak (High-Spot): 10 μm maximum



d. Camber: 5 mm maximum by each 2 meters length



9. SURFACE QUALITY

Oxide layers of various colours acceptable, flaky or an oxide layer that is not adhering the hot roll surface is not to be shipped. Oxide should be easily removed in the pickle process using hydrochloric acid.

After pickling the presence of imperfections like small imprints or light surface defects is tolerated, the defect should be light in appearance, should not be felt when touched and should be removed through cold reduction process. Light coil break, light roll marks, light scratches that will not prejudice the end use is permitted.

The hot roll strip shall be free from injurious defects such as abrasion, scabs, holes, roll marks and pinch marks, slivers, laminations, seams and scratches. Surface shall be free of rolled-in and other severe forms of scale: rolled in scale, pit scale (salt and pepper), scab are not accepted.

10. INTERNAL STRUCTURAL DEFECTS

Defects such as laminations or high inclusion level detrimental to cold rolling or to final use, is not to be shipped.

11. EDGE

HRC will be delivered with mill edges that is free from tears, folds and saw edge. Edge defects should not penetrate the width more than +5mm. DSP written confirmation is to be obtained for coils that is supplied with a cut edge prior shipment.

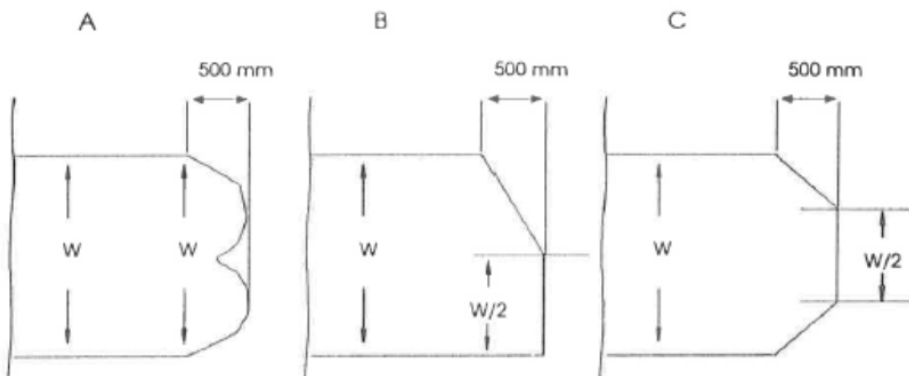
12. COILING QUALITY

Telescope between wraps - 50 mm max

Loose and protruding wraps not acceptable

13. COIL ENDS

The irregular shape of the HRC Tail cannot exceed 0.5m length. Tongue max 900mm can be tolerated if exceptional



14. ROLLING TEMPERATURES (Typical)

Finishing: $880 \pm 10^{\circ} \text{C}$

Coiling: $650 \pm 10^{\circ} \text{C}$

15. PACKING

Coils must be shipped in horizontal axis. Each coil with 6 steel bands through eye of the coil spaced evenly and 2 straps around the circumference of the coil.

16. IDENTIFICATION TAG

Position: 4 labels - one on each end of the ID and 2 on opposite side of the OD

Minimum information

- Coil identification number (as on pack list and test certificate)
- Coil weight (gross and net)
- Heat number
- Specification
- Dimensions (thickness and width)

17. QUALITY MILL CERTIFICATE

With the following information:

- Customer
- Product
- Sales order number
- Specification
- Dimensions (thickness and width)
- Edge condition (mill edge / cut edge)
- Coil number identification
- Coil weight (net)
- Heat number
- Chemical composition (all specified elements)
- Mechanical results
- Quality Mill Certificate number and date issued
- Cast and poured

Product must be certified to be free from radioactivity

17. TECHNICAL INFORMATION

Below technical information to be made available in excel electronic format prior arrival of the vessel in Saldanha.

1. Supplying mill sales contract number to DITH
2. DITH purchase contract with supplying mill
3. Thickness, width, weight (nett & gross)
4. Coil nr and position on the production program (casting, rolling)
5. Steel grade, cast analysis, cast number, heat number
6. Mechanical values if available
7. On request, diagrams of thickness, width, crown, roughing temperature, finishing rolling temperature, coiling temperature, cooling pattern, results of the surface inspection and of other tests executed on the coil

Revision: 5

Date: April 2026

18. CONTROLS BEFORE COLD PROCESSING

HRC will be subject to the following checks before the cold processing begins:

1. Visual examination
2. Dimensional and weight control
3. Coil ID check
4. Mechanical properties (only for specific cases)

The supplier of the HRC REMAINS responsible for the non-conformities discovered by the end user or by the final customer that are due to hidden defects (that cannot be found by normal controls and normal tests performed during and prior cold processing).