01

# Cold-forming and drawing steels

### Hot rolled and pickled

The first stage in the production of flat carbon steels in the form of coils is hot rolling. Albasider is able to supply its customers with hot-rolled coils in thicknesses between 1.50 and 20 mm.

Following hot rolling, the material can undergo a pickling process.

Pickling is a chemical dissolution operation that takes place mainly through the use of special acids, which allows rust, calamine and other processing residues to be removed from the surfaces.

Albasider can supply its customers with pickled plates, tapes and straps in thicknesses between 1.50 and 12 mm.

| Hot Rolled |           |       | Pickled |           |            |
|------------|-----------|-------|---------|-----------|------------|
|            | Thickness | Width |         | Thickness | Width      |
| Plates     | 1.50 - 20 | ≤2000 | Plates  | 1.50 - 12 | ≤2000      |
| Tapes      | 1.50 - 6  | ≤2000 | Tapes   | 1.50 - 6  | ≤2000      |
| Straps     | -         | -     | Ohmen   | 1.50 - 3  | 180 - 2000 |
|            |           |       | Straps  | 4 - 6     | 500 - 2000 |



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These steels are mainly characterised by a low carbon content and excellent weldability.

Their maximum ultimate tensile strength and minimum elongation parameters give them a good aptitude for bending and drawing.

The higher the grade chosen, DD11  $\rightarrow$  DD14, the greater the material's propensity for deep drawing.



# Main fields of application:

#### GENERAL INDUSTRY

AUTOMOTIVE AND TRANSPORT

CARPENTRY

### **Mechanical properties**

| Thickness (mm) | EN 10111 | DD11      | DD12      | DD13      | DD14      |
|----------------|----------|-----------|-----------|-----------|-----------|
| 1.35 - 1.49    | Re (MPa) | 170 - 360 | 170 - 340 | 170 - 330 | 170 - 310 |
|                | Rm (MPa) | ≤ 440     | ≤ 420     | ≤400      | ≤ 380     |
|                | A 80 (%) | ≥22       | ≥24       | ≥27       | ≥ 30      |
| 1.50 - 1.99    | Re (MPa) | 170 - 360 | 170 - 340 | 170 - 330 | 170 - 310 |
|                | Rm (MPa) | ≤ 440     | ≤ 420     | ≤ 400     | ≤380      |
|                | A 80 (%) | ≥23       | ≥25       | ≥28       | ≥ 31      |
| 2 - 2.99       | Re (MPa) | 170 - 340 | 170 - 320 | 170 - 310 | 170 - 290 |
|                | Rm (MPa) | ≤ 440     | ≤ 420     | ≤400      | ≤380      |
|                | A 80 (%) | ≥24       | ≥26       | ≥29       | ≥32       |
| 3 - 11         | Re (MPa) | 170 - 340 | 170 - 320 | 170 - 310 | 170 - 290 |
|                | Rm (MPa) | ≤ 440     | ≤ 420     | ≤400      | ≤ 380     |
|                | A 5 (%)  | ≥28       | ≥30       | ≥33       | ≥36       |

#### Legend

Re (MPa) = Yield strength (inelastic index); Rm (Mpa) = Tensile strength; A 80 (%) = Elongation for thickness < 3mm; A 5 (%) = Elongation for thickness ≥ 3mm Please note:

Tests carried out transversely to the rolling direction.

