

Basic metals – melt, cast, roll

# The cheapest charge that still makes grade

A least-cost furnace charge that lands every element inside the grade window, yields followed from melt to mill, and a certificate for every lot – tied to accounting and stores.

## Least-cost charge

Own simplex, checked on 27 blends

## EN 10204

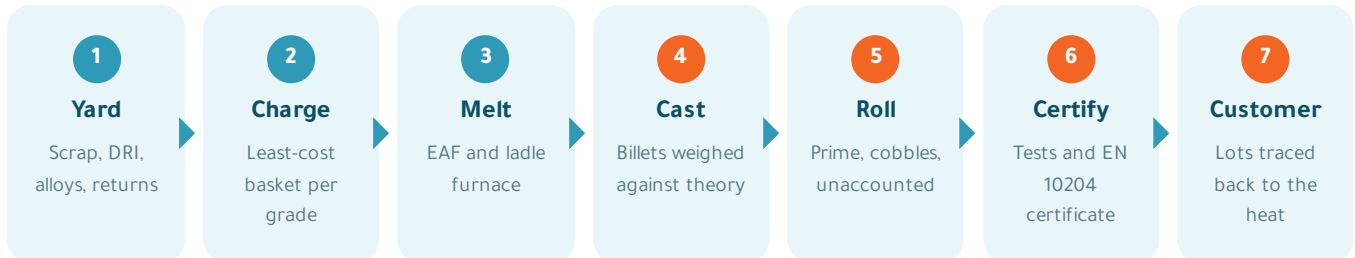
An inspection certificate per lot

## Melt → cast → mill

Three yields that multiply

# From scrap yard to bar – every tonne accounted

Scrap is about seventy per cent of the cost of liquid steel. VLUERP chooses the charge, follows the metal through furnace, caster and mill, and posts every step to the ledger.



## A charge you can defend

Every element window, residual ceiling and material share limit is respected – at the lowest cost per tonne of liquid, not per tonne bought.



## Yields that multiply

Melt, cast and mill yield are kept separately and multiplied, so you see how many tonnes of charge one tonne of bar really takes.



## Chemistry before the heat

The system checks whether a basket can make the grade before it is charged, and shows the gap between predicted and measured.



## Certificates from the data

Tensile, yield, Rm/Re and elongation are checked against the grade, and every lot carries its heat and its certificate.

**~70%**

of melt cost is the scrap

**27**

hand-solved blends checked

**3**

yields that multiply

**6:1**

reduction-ratio warning

## Buy the basket – not the cheapest scrap

A genuine linear programme: each element window is a ratio of element mass to liquid mass, so the charge cannot be worked out by adding up a spreadsheet.



### The least-cost charge

- Scrap grades, DRI, ferroalloys and home returns, each with its assay, yield and cost per tonne.
- Cost is compared per tonne of **liquid** steel, after yield – not per tonne bought.
- Element windows, material share limits and residual ceilings are solved together by a two-phase simplex.
- A metallic material priced at zero is refused and named – returns carry the power and electrodes already spent.



### Chemistry a melt shop trusts

- Copper, tin, nickel and chromium are residuals: nothing in an arc furnace removes them, so their ceilings bind.
- Carbon is blown out on purpose, so its ceiling is freed – but only up to the carbon blow you set (0.40% by default).
- The charge aims at the grade's aim point, a third up the window, not at the edge where half the heats would fail.
- Predicted against measured leaves out refined elements, so the column still catches a wrong assay.



### What staying off the edge is worth

In testing on the seismic grade B500C, aiming at the aim point instead of the limit costs **72.55 SAR a tonne (5.81%)** – the price of not trimming heats at ferroalloy prices or selling them down a grade.

#### Check the charge

"Can this basket make the grade?" is asked separately from "is this bath the grade?"

#### Heat record

Charged, tapped and cast tonnes, melt yield, kWh/t, carbon equivalent and cost per tonne.

#### Furnaces

Tap size, power, tap-to-tap time, heats and tonnes a day for each furnace.

## Melt to mill – and back to the heat

Billets checked against their theoretical weight, rolling orders that account for every tonne, and lots certified from test data and traced both ways.



### Caster and mill

- Billet weight is checked against section x length x density, so a caster running off-section shows up.
- Rolling orders record charged and prime tonnes, cobbles and the unaccounted remainder.
- A reduction ratio below **6:1** raises a warning.



### Lots and certificates

- Rm/Re, Agt and the actual-over-nominal yield ceiling are enforced – an over-strong rebar moves the failure into the column.
- Every lot carries its heat, tonnes, bundles, tests and an EN 10204 certificate.
- Genealogy both ways: where a heat went, and what went into a lot.

## Seeded reference mill – in testing

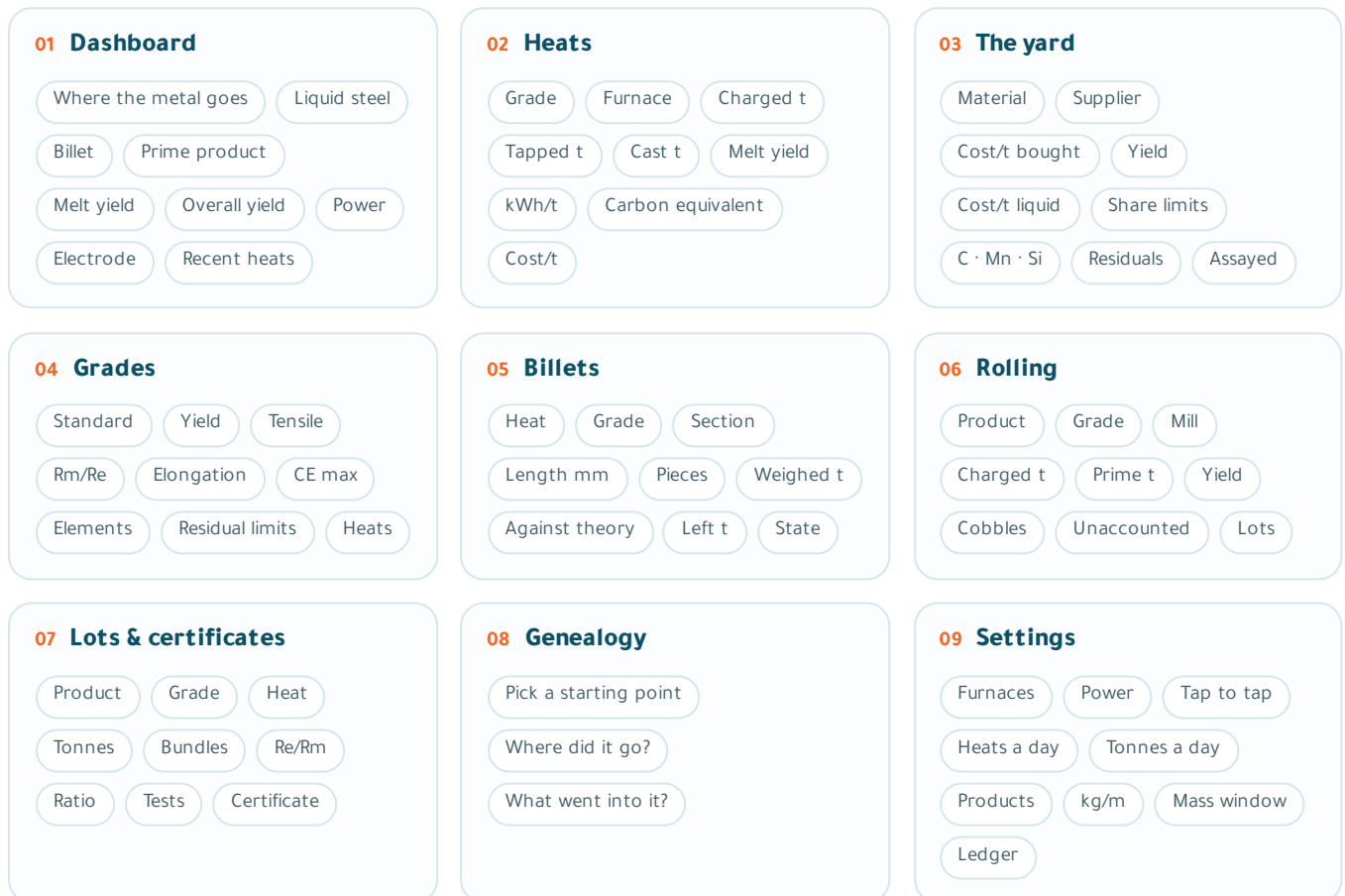
| Measure               | What it covers                    | Value               |
|-----------------------|-----------------------------------|---------------------|
| Melt yield            | Charge to liquid steel            | <b>90.15%</b>       |
| Power                 | Electricity per tonne of liquid   | <b>516 kWh/t</b>    |
| Electrodes            | Electrode consumption per tonne   | <b>1.76 kg/t</b>    |
| Residuals             | Copper, tin, nickel, chromium     | <b>0.564%</b>       |
| Charge per tonne sold | Melt x cast x mill yield combined | <b>1.517 t</b>      |
| Melting labour        | Standard hours per tonne x crew   | <b>1.10 h/t x 4</b> |

Seeded with three grades – B500B, seismic B500C and SAE1008 wire rod – 14 charge materials, an EAF and a ladle furnace, 15 heats and 12 certified lots.

# Every screen in the module – and what is on it

Read off the running application – the panels, columns and figures that are actually there.

**9** **75**  
screens functions



## Not a separate program – a complete business system

The trade module sits on top of a complete ERP: everything it does lands directly in the accounts, the stores and the reports – no double entry.



### Accounting

Editable chart of accounts, automatic entries from every transaction, VAT and financial statements.



### Financial dimensions

Cost centres, departments, business lines and sites – with statements per factory.



### Inventory

Warehouses and bins, batches and serials, moving average, FIFO or standard cost.



### Purchasing & sales

RFQs, purchase orders and receipts, quotations, invoices and ageing.



### Maintenance & assets

Equipment register, preventive maintenance, work orders and depreciation.



### Access & language

Roles and rights per module, audit trail, full Arabic and English interface.

## Standards and grades referenced

### EN 10204

Inspection documents (certificates)

### B500B · B500C

Rebar grades seeded, incl. seismic

### SAE 1008

Wire-rod grade seeded

Grades are records you edit: elements, residual limits, tensile and CE limits for each grade, with its standard. Each lot's certificate is issued from its test results.

# Bring your grades **and scrap**

Book a session and we'll set up the demo with your own grades, charge materials and prices – then run the optimiser on them live.

## Request a demo

Website

[www.vluerp.com](http://www.vluerp.com)

Demo request

[www.vluerp.com/#demo](http://www.vluerp.com/#demo)

Email

[hello@vluerp.com](mailto:hello@vluerp.com)

**1 Charge optimiser:** the cheapest basket for a grade, and what aiming at the aim point costs.

**2 A heat:** charged, tapped and cast tonnes, melt yield, power and predicted against measured chemistry.

**3 Billets and rolling:** weights against theory, prime tonnes, cobbles and the unaccounted remainder.

**4 Genealogy:** from a certified lot back to its heat and charge, and forward to where it went.

Switched on from Add-ons with a free seven-day trial, and it runs on the same general ledger.