

Quality Management at HASLE

Raw materials

Check incoming raw materials

Check processed raw materials

Products

Quality control on unshaped castables

Quality control on precasted, prefired elements

Installation

Technical guidance and supervision

Test of installed material

After installation

Customer feedback

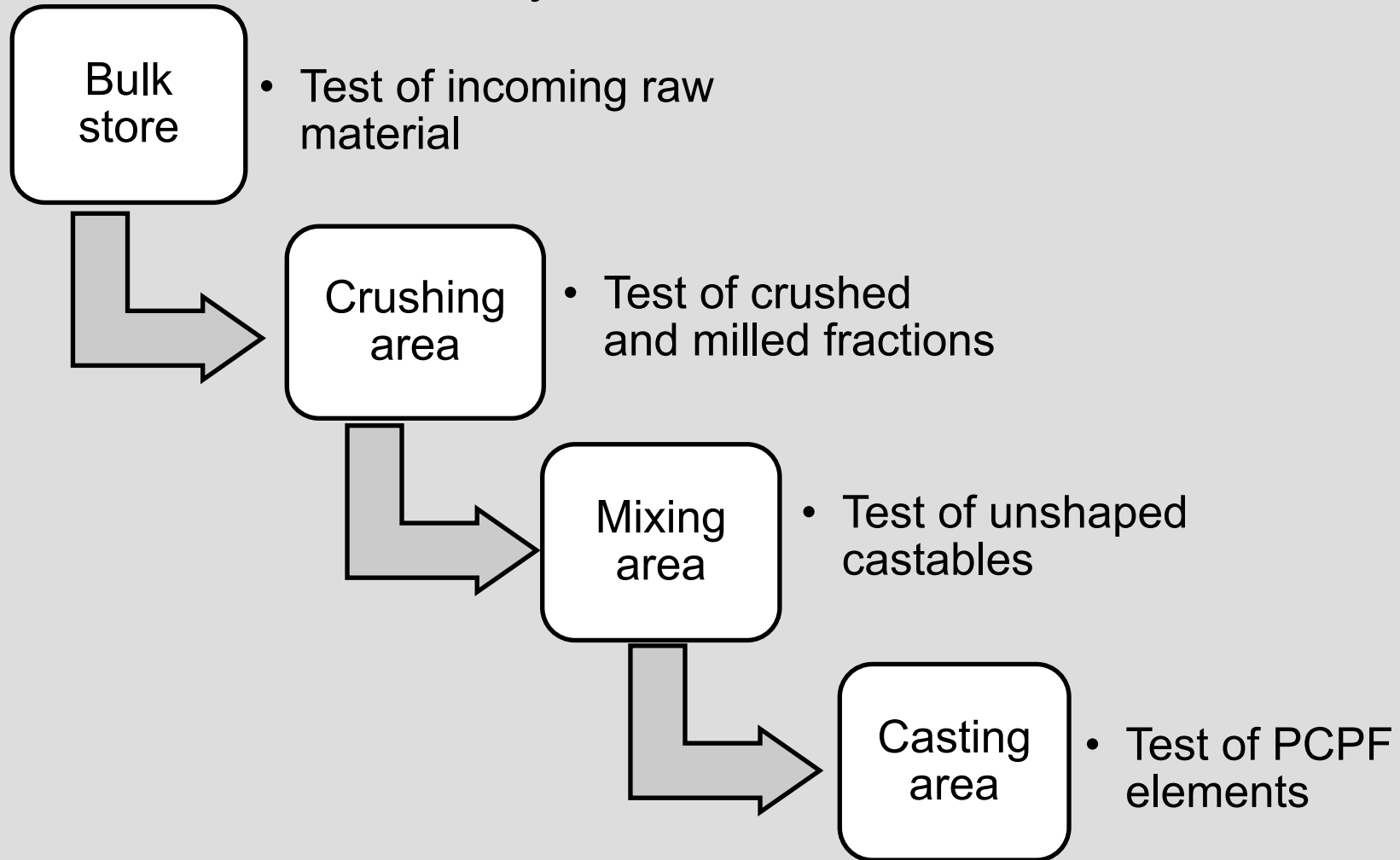
Post mortem analysis

R&D

Test of materials in line with operation conditions

Adjustment of products and raw materials

Quality Assurance at HASLE



Test of raw materials

Incoming raw materials

Grain size distribution

Moisture content

Bulk density

Open porosity

Dry litre weight

Chemical analysis

Crushed and milled fractions

Grain size distribution

Moisture content

Dry litre weight

Test of unshaped castables in bags

General properties

Particle size distribution

Water demand

Workability (consistency)

Setting time

Physical properties after drying at 110°C

Density

Cold Modulus of Rupture

Cold Crushing Strength

Physical properties after firing at 500-1000-1500°C

Density

Permanent linear change

Cold Modulus of Rupture

Cold Crushing Strength

Test of pre-casted and pre-fired elements

Every batch
after drying at 110°C

Water addition

Density

Modulus of Rupture

Cold Crushing Strength

Inspection of casted
elements

After pre-firing at
500-1350°C

Density

Modulus of Rupture

Cold Crushing Strength

Inspection of pre-fired
elements

Complementary test on refractory properties

General properties

Refractoriness

Thermal conductivity

Open porosity after firing

Microstructure

Thermo-mechanical properties

Thermal shock resistance

Hot modulus of rupture

Abrasion resistance

Thermal expansion

Corrosion behaviour

Resistance to alkalis (cup test)

Resistance to melt or slag (cup test)

Resistance to melt (dynamic test)

CO resistance