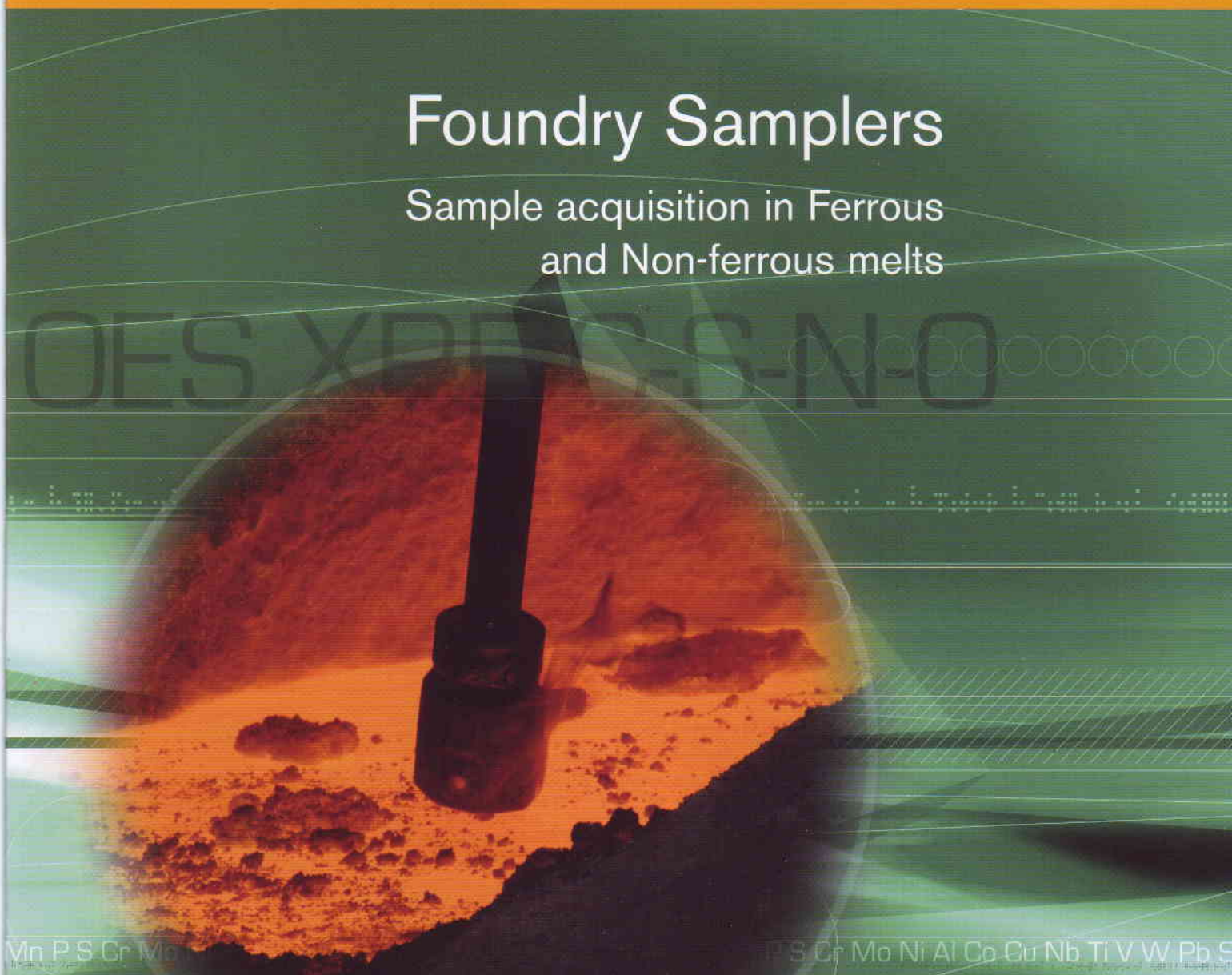
Heraeus

Foundry Samplers

Sample acquisition in Ferrous and Non-ferrous melts



The masters when it comes to control techniques

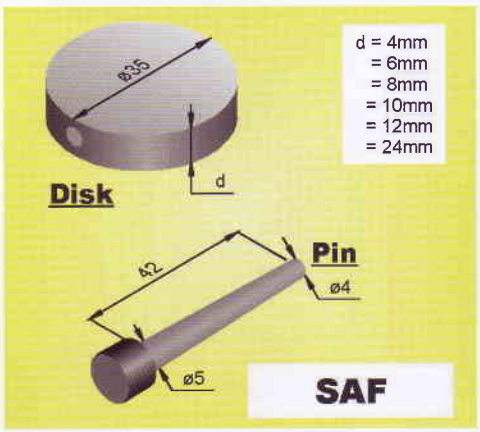
Electro-Nite

DETAILED INFORMATION

SAF : SAMPLER FOR FOUNDRY

- Yields 1x white chilled disk sample and 1x grey chilled conical pin sample.
- Acquisition : shallow or deep immersions. No adhesion of cooling plates or sand particles. No burrs. Quick stripping of inlet. Inlet caps are optional to prevent slag intrusion.
- Preparation. Disk: by grinding/milling away the skin. Pin: by cutting off a small piece.
- Evaluation : Disk for OES, Pin for combustion.
- Applications : at furnaces and ladles with base iron or Mg-treated iron.
- 6 types in function of the disk thickness :

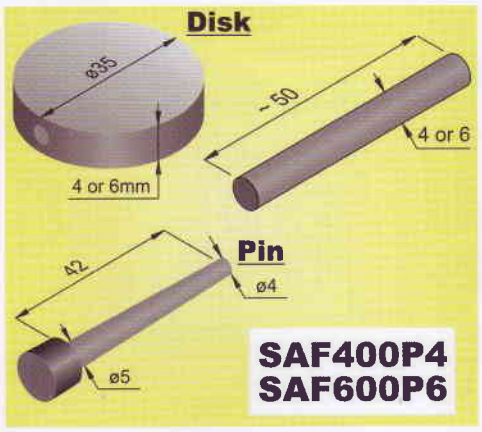
SAF400	4mm thick
SAF600	6mm thick
SAF800	8mm thick
SAF100	10mm thick
SAF120	12mm thick
SAF240	24mm thick (for brass)



SAF-P : SAF WITH QUARTZ PIN

- As SAF and extra yield of 1x clean grey pin sample (cylindrical).
- Acquisition : shallow or deep immersions. No adhesion of cooling plates or sand particles. No burrs.
- Applications : in very low Carbon melts.
- Mainly 2 types, disk and pin thickness :

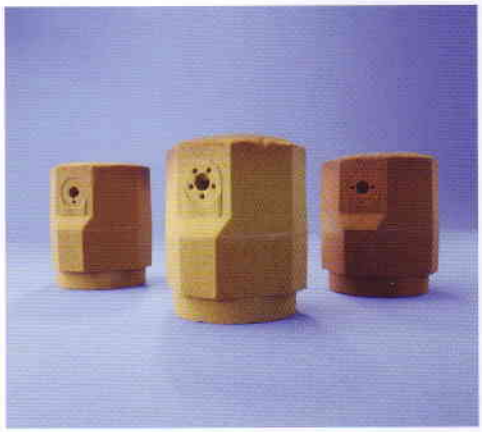
SAF400P4	4mm disk, 4mm pin
SAF600P6	6mm disk, 6mm pin



SAF-DO : SAMPLER FOR FOUNDRY - DISK ONLY

- Yields 1x white chilled disk sample only.
- Acquisition : shallow immersion only. No adhesion of cooling plates or sand particles. No burrs. Quick stripping of inlet. Extremely good filling.
- Preparation. Disk : by grinding/milling away only the skin.
- Evaluation : Disk for OES.
- Applications : in melting furnaces at high superheats and at pouring ladles or autopours with low superheat. Can be used in stream and mould sprue.
- 3 types in function of the disk thickness :

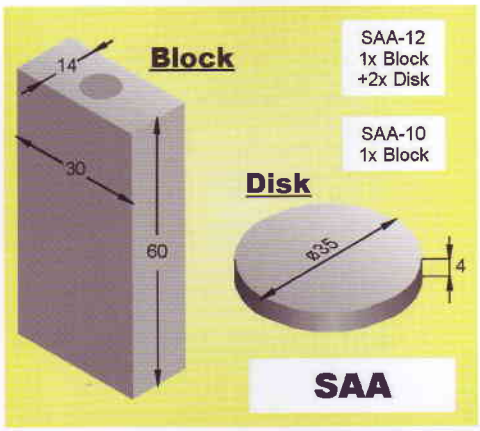
  SAF-DO400 4mm thick
  SAF-DO600 6mm thick
  SAF-DO120 12mm thick

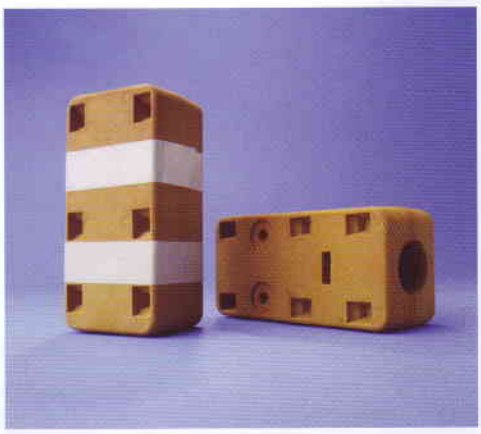


SAA : ACOUSTIC STRUCTURE SAMPLER

- Yields 1x grey block sample and optionally 2x white chilled disk samples.
- Acquisition : both shallow and deep immersion. Filling by gravity. No pores due to riser concept.
- Preparation. Deburring and polishing of the block sample.
- Evaluation : by (ultra-)sonic equipment.
- Applications : Ductile Iron micro-structures or (ultra-)sonic checks.
- 2 types, with or without the disk samples.

  SAA-12 1x Block, 2x Disks
  SAA-10 1x Block, no Disks





DESCRIPTION

The control of casting melts requires representative metal samples from all stages of the melting process.
These samples must be suitably prepared so that they can be analyzed by :

- Optical Emission Spectrometry (OES) or X-Ray Fluorescence (XRF) for determination of the chemical components
- Combustion analysis for the determination of specific chemical elements like C, S, H and N.
- Optical Microscope for microstructure evaluation of the sample
- Ultra-sonic and acoustic instruments for the measurement of the damping characteristics of the material

DEEP OR SHALLOW SAMPLING

Depending on the location in the melt where a sample is wanted, there are 2 dipping systems available :
shallow and deep.
For shallow dips a lance with a quick-connect system is used, so no extra cardboard tube is needed.
In case of deep dips one needs a sampler with a cardboard tube. Where safety is an issue, non-splash tubes are the best solution.

WHITE OR GREY SAMPLES

Cast Iron can solidify white or grey.
White samples are quickly chilled and obtained by built-in cooling plates.
Grey samples are exposed to a slow cooling rate.

BENEFITS

Heraeus Electro-Nite Foundry Samplers are designed to

- **allow safe and easy acquisition**
  Via immersion, not by spoon
  Perfect filling
  Easy stripping
- **allow quick and easy preparation**
  No burrs
  Easy inlet removal
  Easy machining
- **allow accurate and simple evaluation**
  Homogeneous samples
  Clean samples
  Stable sample dimensions

Compared to classical sampling moulds the filling conditions for HEN immersion samplers are always the same.
This reflects in an optimal sample quality. No spoon is needed, leading to a higher safety.

DETAILED INFORMATION (Sampling Tools for shallow dips)

TOOLS FOR SHALLOW DIPS : LANCES AND LANCE TIPS

LANCES

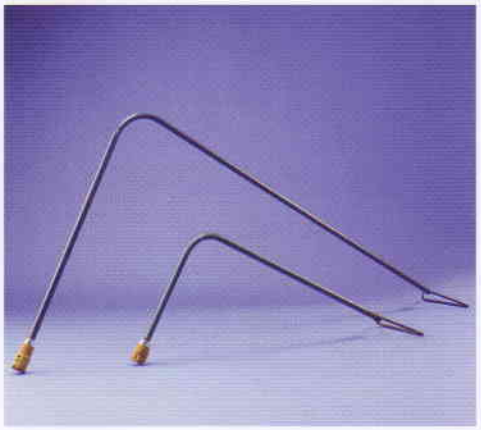
The lances are universal with a 3/4" connection, so that every lance tip fits. They are designed for optimum safety.

Specifications :

- Short Foundry sampling lance universal tip, 50cm up, 90deg bent, 100cm aside, rigid handle
- Long Foundry sampling lance universal tip, 100cm up, 90deg bent, 200cm aside, rigid handle
- 2 Lances with different length

  LC39001100 Short foundry SA lance

  LC39001200 Long foundry SA lance



LANCE TIPS

On the tip of each lance an appropriate product holder can be screwed, in function of the sampler that has to be dipped.

Specifications :

- Lance holder SAF and SAA (ø 32mm)
- Lance holder SAF-DO (ø 41mm)
- 2 Lance tips for different samplers

  LC39002010 for SaF and SAA

  LC39002020 for SAF-DO

TOOLS FOR DEEP DIPS : TUBES IN CARDBOARD AND NON-SPLASH

NON-SPLASH TUBES

In case of a deep immersion, the best protection against splashes is given by a cardboard tube that is covered with a harmless refractory material.

Specifications :

- **Non-splash tube for SAF&SAF-DO**
  nominal length 600mm
  waterglass based NS-sleeve of 500mm length and 40mm outer diameter
- **Non-splash tube for SAA**
  nominal length 600mm
  waterglass based NS-sleeve of 200mm length and 40mm outer diameter

DRIED CARDBOARD TUBES

The less water in a cardboard tube, the less splashes it will generate. That is why dried cardboard tubes are preferred.

Specifications :

- **Short cardboard tube SAF&SAA**
  nominal length 300mm, OD=29.5mm
- **Standard cardboard tube SAF&SAA**
  nominal length 600mm, OD=29.5mm
- **Cardboard tube SAF-DO**
  Nominal length 900mm, OD=40.0mm

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