



FILTRATION SOFTWARE TOOL STUDY

Product: FILTERCALC for STEEL

Objective:

Increase accuracy of filter and direct pour unit size selection to maximise effectiveness at lowest cost.

Program Capabilities:

- produces fast, accurate filter selections based on flow dynamics versus simple, empirical tables of flow-rate and filter capacity
- enhanced accuracy in solutions based on alloy type, metal cleanliness, moulding conditions and pouring practices
- current methods are severely limited and generally result in oversizing and higher filtration costs.
- allows rapid what-if calculations to determine best practice solutions

Inputs:

- filtration method and configuration
- pouring data (weight, time, temperature)
- head height and sprue dimensions
- alloy
- ladle type
- deoxidation practice

Outputs:

- recommended filter size
- maximum filter capacity
- constraint on filter size
- predicted flow rate
- predicted pour time
- choke size/area

Basis:

- known physics based models
- extensive water modelling
- pressure drop effect of ceramic foam on metal stream

Flexibility:

- models both in-line and direct pour applications
- different filter prints and direct pour designs can be investigated
- different filter porosities can be selected
- allowances can be made for specific local practices

Validation:

- results compare well with those obtained from published data sheet information
- results comparable with actual field trials

FOSECO products used:

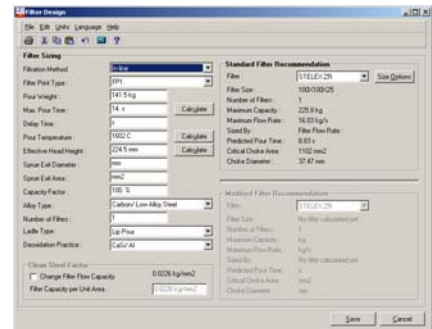
STELEX* Pro Filters
STELEX* ZR Filters
KALPUR* for steel Direct Pour Units

Key Benefits

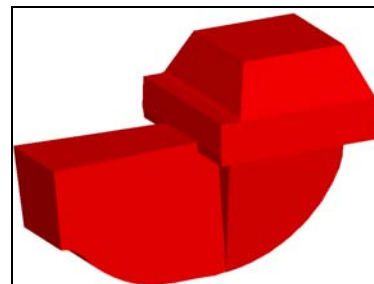
- optimum product selection
- accurate predictions
- alternative filter print and KALPUR* designs can be quickly selected
- adaptable to local foundry conditions



FILTERCALC for Steel CD-ROM



FILTERCALC for Steel inputs and recommendation for oil tool casting



Typical filter print (FP1)

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