STELEX* STEEL FILTERS

FILTERED STEEL CASTINGS – LOW TURBULENCE MOULD FILLING

STELEX STEEL FILTERS ARE APPLIED AS FOLLOWS

STELEX PrO

STELEX PrO	
Process	Filtration capacity [kg/cm²]
High content of deoxidation products	max. 1.95
Low content of deoxidation products	max. 2.9
Ductile iron	max. 4.0

STELEX PrO

STELEX ZR	
Process	Filtration capacity [kg/cm²]
C-steel	max. 1.5
Stainless steel	max. 2.2
Ductile iron	max. 3.6

Note: The capacity of STELEX ceramic filters is influenced by a variety of process factors so the values given above are for guidance only.

- The filter size is dependant upon the grade of steel to be filtered
- The complete filter entry face must be used to filter the metal
- The filter area should be at least three times larger than the smallest cross-section in the gating system
- The friction loss factor is dependent upon the gating system and mould type and is normally in the range 0.2 to 0.6
- The effective pouring height is determined by the relationship between cope height and ingate level
- STELEX PrO filters can be located close to the ingates

GATING SYSTEM CALCULATION

For gating systems using STELEX filters the downsprue area is usually the smallest cross-section. The calculation to determine this area is defined below.

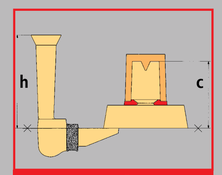
$$D_A = \frac{22.6 \times W}{\xi \times \rho \times t \sqrt{H}}$$

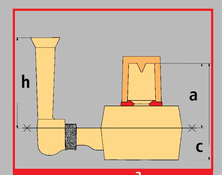
D_A : Downsprue area [cm²]
22.6 : Constant
W : Weight to be poured, including feeders [kg]
ξ : Friction factor
ρ : Steel density [g/cm³]
t : Pouring time [sec]
H : Effective pouring height [cm]

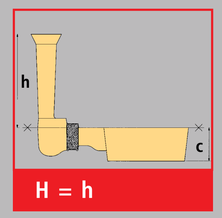
Foseco recommends the following ratios for gating system cross-sectional areas
Downsprue 1.0 : Runner 1.1 : Ingate 1.2

It is important to ensure the filter area is large enough to eliminate blockage by melt impurities. Foseco recommend a filter area four times larger than that of the downsprue to avoid this problem.

The filter support area should be at least 30% of the total filter area.







ADVANTAGES

The advantages of using STELEX filters:

- Reduction in inclusion levels
- Reduced welding and fettling costs
- Increased yield
- Lower energy and refractory costs

PROPERTIES

STELEX PrO:

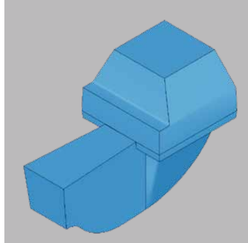
- Reduction in inclusion levels
- Consistent "Priming" even at low pouring temperatures
- Carbon pick-up possible in low carbon steel alloy applications
- No increase in pouring temperature required when filters are applied
- Increased filter capacity
- Greater flexibility of filter positioning
- No filter floatation problem when using KALPUR direct pour units

STELEX ZR:

- Reduction in inclusion levels
- Good filtration capacity
- Ideal for the filtration of high alloyed steel
- High efficiency
- Filters can be preheated for investment casting application

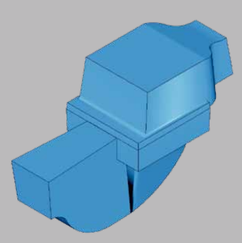
FOR CORRECT APPLICATION OF STELEX FILTERS, IT IS RECOMMENDED THAT ONLY WELL-PROVEN AND TESTED FOSECO FILTER PRINTS[1] BE USED.

STELEX FP 1



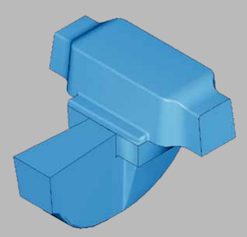
55 x 55 x 25
75 x 75 x 25
100 x 100 x 25
125 x 125 x 30
150 x 150 x 30

STELEX FP 3



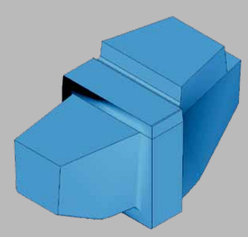
65 x 65 x 20
125 x 125 x 30
150 x 150 x 30

STELEX FP 4



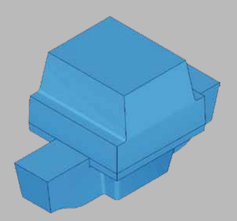
55 x 55 x 25
75 x 75 x 25
100 x 100 x 25
125 x 125 x 30
150 x 150 x 30

STELEX FP 6[2]



55 x 55 x 25
75 x 75 x 25
100 x 100 x 25
125 x 125 x 30
150 x 150 x 30

STELEX FP 7



55 x 55 x 25
65 x 65 x 20
75 x 75 x 25
100 x 100 x 25
125 x 125 x 30
150 x 150 x 30

[1] Filter print samples can be made available upon request

[2] This filter print is not recommended for the application of STELEX ZR in carbon steel

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