STELEX* STEEL FILTERS
FILTERED STEEL CASTINGS – LOW TURBULENCE MOULD FILLING

STELEX STEEL FILTERS ARE APPLIED AS FOLLOWS

### STELEX PrO

<table>
<thead>
<tr>
<th>Process</th>
<th>STELEX PrO</th>
<th>Filtration capacity [kg/cm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>High content of deoxidation products</td>
<td>max. 1.35</td>
<td></td>
</tr>
<tr>
<td>Low content of deoxidation products</td>
<td>max. 0.9</td>
<td></td>
</tr>
<tr>
<td>Ductile iron</td>
<td>max. 4.0</td>
<td></td>
</tr>
</tbody>
</table>

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 dependent 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.

### STELEX ZR

<table>
<thead>
<tr>
<th>Process</th>
<th>STELEX ZR</th>
<th>Filtration capacity [kg/cm²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>C-steel</td>
<td>max. 1.5</td>
<td></td>
</tr>
<tr>
<td>Ductile iron</td>
<td>max. 2.2</td>
<td></td>
</tr>
<tr>
<td>Double iron</td>
<td>max. 1.6</td>
<td></td>
</tr>
</tbody>
</table>

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

\[
D_a = \frac{22.6 \times W}{\xi \times \rho \times \sqrt{H}}
\]

\[
H = h - \frac{a^2}{2c}
\]

- The downsprue area is calculated for the process.
- The effective pouring height is determined for the process using a relationship between cope height and ingate level.
- STELEX PrO filters can be located close to the ingates.

GATING SYSTEM CALCULATION

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 flotation 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† 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‡

- 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

†Filter print samples can be made available upon request
‡This filter print is not recommended for the application of STELEX ZR in carbon steel

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