TEMET BLAST DOOR SO-1

Applications
The SO-1 blast doors are designed to stop the advance of blast waves through the passageways into the protected area of blast hardened Civil Defense and military shelters. The SO-1 blast doors are possible to open and close manually from both sides. The latching device tightens the door plate against the frame so that the maximum clearance between the load bearing surfaces of the door plate and the frame is 2.0 mm.

Specification
Manufacturer of SO-1 Blast Door is Temet, Finland, the brand of Väistö Group.
The SO-1 blast doors are fabricated from structural steel with a door plate of solid homogenous steel plate. Minimum thickness of a door plate is 20 mm. The door frame is of flush design for easy installation in the reinforced concrete wall, and the door plate / frame assembly has an optimized pattern for transfer of the blast forces into the surrounding wall.

Design Criteria
The SO-1 blast door is made in accordance with specific provisions issued by the Finnish Ministry of Interior. The SO-1 blast doors are approved for use on the basis of structural calculations approved by Eurofins Expert Services, an Independent Testing Authority mandated to perform type inspection for shelter equipment and systems by the Finnish Ministry of Interior.

SO-1 Door Protection Capability
The SO-1 doors are designed to withstand multiple long duration blast loads having peak reflected overpressure of 2.0 bar (200 kPa) in the elastic range of the materials used. The door frame design enables uniform distribution of the positive blast load into the surrounding wall. Rebound load is received by latching system and hinges. SO-1 Blast door is also available with a 3.0 bar peak reflected overpressure version. This is mentioned in the product name e.g. SO-1 900x2000 3 bar.
The SO-1 doors also resist a mechanical shock transmitting through the installation wall with a rapid change in velocity of 1.5 m/s corresponding to acceleration force of 30 g.
The doors are designed to function within the operating temperature range of -30 … +80 °C.
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Standard SO-1 Blast Resistant Door

Door hinges
Hinges are provided with maintenance free slide bearings.

SO-1 Blast Door gas tightness
Temet SO-1 blast doors are provided with a gasket for tightness against entry of gases in such a way that the allowable leakage through the door is not more than 0.2 dm³/s (0.72 m³/h) for each square meter of the opening when the external overpressure is 150 Pa.

Surface treatment
Temet SO-1 doors are painted with durable shop primer resisting corrosion during transportation and storage. Top coating is added by customer after concrete casting.

Installation
Standard wall thickness is 300 mm. For wall thicknesses of 350, 400, 450, 500 mm the door will be delivered with a factory assembled extension frame that has to be bolted to the door on site. For wall thickness over 500 mm an L-profile extension frame that must be welded on the door on site is used. See IOM for installation instructions for both types.

Door opens outwards from the protected side (see drawing on the left). Door handedness can be changed before (recommended) or after concrete casting.

Other documents related to SO-1 blast door:
- Installation, Operation & Maintenance Instructions

Standard SO-1 Door sizes available

Single wing door sizes with main dimensions:

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>Min. S</th>
<th>Weight (kg), S=300</th>
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<td>2000</td>
<td>1170</td>
<td>2180</td>
<td>1020</td>
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Contact the manufacturer for the availability of special door sizes.

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