Customer: BASF SE  
Class: Fire Door Frames  
Location: Frankenthal, Germany  
Website: www.basf.com

Listing No. F411-2  
Project No. F411-2 Edition 7

Effective Date: October 12, 2012  
Last Revised Date: May 28, 2018

Standards:  
- CAN/ULC S104  
- UL 10B  
- UL 10C  
- NFPA 252

Product: 45 min Rated Positive Pressure Fire Door Frames

Markings: See FD001 - Fire Door Labeling requirements

Models: 45-MINUTE FIRE DOOR FRAMES:

### Maximum Frame Sizes

<table>
<thead>
<tr>
<th>Swing Type:</th>
<th>Rectangular</th>
<th>Arched Top</th>
<th>Mulled Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width:</td>
<td>3'6&quot; (1067 mm)</td>
<td>3'6&quot; (1067 mm)</td>
<td>7'0&quot; (2134 mm)</td>
</tr>
<tr>
<td>Height:</td>
<td>7'9&quot; (2362 mm)</td>
<td>7'9&quot; (2362 mm)</td>
<td>7'9&quot; (2362 mm)</td>
</tr>
</tbody>
</table>

Pairs: Not Permitted

Double Egress: Not Permitted

Two Layers of SW 20-1 Cores or Single Layer of SW 45-1 Core:

<table>
<thead>
<tr>
<th>Swing Type:</th>
<th>Maximum Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width:</td>
<td>Height:</td>
</tr>
<tr>
<td>Single Swing</td>
<td>3'6&quot; (1067 mm)</td>
</tr>
<tr>
<td>Communicating</td>
<td>3'6&quot; (1067 mm)</td>
</tr>
<tr>
<td>Pairs</td>
<td>7'0&quot; (2134 mm)</td>
</tr>
<tr>
<td>Double Egress</td>
<td>Not Permitted</td>
</tr>
</tbody>
</table>
Three Layers of SW 20-1 Cores or Single Layer of SW 60-1 Core:

<table>
<thead>
<tr>
<th>Swing Type:</th>
<th>Maximum Dimensions Width:</th>
<th>Height:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Swing</td>
<td>3'6&quot; (1067 mm)</td>
<td>9'0&quot; (2743 mm)</td>
</tr>
<tr>
<td>Communicating</td>
<td>3'6&quot; (1067 mm)</td>
<td>9'0&quot; (2743 mm)</td>
</tr>
<tr>
<td>Pairs</td>
<td>7'0&quot; (2134 mm)</td>
<td>9'0&quot; (2743 mm)</td>
</tr>
<tr>
<td>Double Egress</td>
<td>Not Permitted</td>
<td></td>
</tr>
</tbody>
</table>

LIMITATIONS:
- Minimum Frame Leg Width: 4-3/4"
- Maximum Frame Leg Width: Equivalent to wall thickness
- Minimum Frame Leg Thickness: 5/8" (-1/16") [BASF Palusol Frame]
  3/4" (-1/16") [MDF Frame]
- Minimum Rabbet for Door: 1-3/4" (-1/16")
- Minimum Stop Height: 1/2"
- Minimum Stop Width: 1-1/4" (-1/16")
  1-3/4" (-1/16") [Communicating Door Frames]

Hardwood Facings: Maximum ¼" x 1" Hardwood Facing inlaid into the face of the frame leg

Electric Raceway: Max. ¼" diameter hole through the frame leg at 40" from the floor and below.

Mortised Door Closer: Concealed closer allowed in the frame header. Maximum 2-1/6" x 3-5/8" x 12" pocket dimensions lined with Interdens Type 15 on 4 sides as outlined in drawings. Minimum 3/8" frame header thickness above the concealed closer pocket. Header is constructed with layers of Palusol SW cores.

Installation: Fastened through the frame legs with finishing nails. Fasten through the frame at 2 fastener locations on the hinges with fastener long enough to penetrate at least ¾" into wall framing.

Notes: Refer to QAI evaluation report F411-2 and the applicable test reports for test assembly configurations used for fire endurance testing.

Refer to the QAI FD002 - Fire Door Guidelines for general guidelines of fire door assemblies

Final acceptance of the product in the intended application is to be determined by the authority having jurisdiction (AHJ).

Product is to be installed in accordance with the manufacturer's published installation instructions by qualified installing personnel.

The materials, products or systems listed herein have been qualified to bear the QAI Listing Mark under the conditions stated with each Listing. Only those products bearing the QAI Listing Mark are considered to be listed by QAI. No warrantee is expressed or implied, and no guarantee is provided that any jurisdictional authority will accept the Listing found herein. The appropriate authorities should be contacted regarding the acceptability of any given Listing. Visit the QAI Online Listing Directory located at www.qai.org for the most up to date version of this Listing and to validate that this QAI Listing is active. Questions regarding this listing may be directed to info@qai.org. Please include the listing number in the request.

***