QAI Design B1093-1a – Chicago Flameproof & Wood Specialties Corporation FlameTech™
Fire Retardant Treated Lumber and Plywood
CAN/ULC-S101/ASTM E119 – 1-Hour Load Bearing Fire-Resistance Rated Wall Assemblies

Note 1: See details below for assembly construction requirements required for orientation of fire-resistance rating required.

Load Bearing is Determined Based on National Design Specification for Wood Construction, Allowable Stress Design (ASD) Method with Reduction Factors Below to be Followed:

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>DF</th>
<th>SPF</th>
<th>SYP</th>
<th>OTHER SPECIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compression parallel to grain, $F_{c11}$</td>
<td>0.96</td>
<td>0.95</td>
<td>0.96</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Jurisdictions adopting Limit States Design or Load Resistance Factor Design are to have the equivalent load calculated accordingly.

Visit the QAI Online Listing Directory located at [www.qai.org](http://www.qai.org) for the most up to date version of this Listing and to validate that this QAI Listing is active.
<table>
<thead>
<tr>
<th>NUMBER</th>
<th>PART</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| 1²     | Interior Gypsum | Type: USG Firecode C Type X complying with ASTM C1396 listed by an approved agency.  
Thickness: Single layer, minimum 5/8-inches (16 mm).  
Fasteners: Board is to be fastened to lumber framing with #6 1-5/8 inches (41 mm) length coarse thread drywall screws, spaced at 6 inches (152 mm) around perimeter and in field. Fastener heads to be covered with joint compound.  
Joints: Joints to be tapped and mudded with joint compound.  
Installation: Gypsum to be oriented vertically. |
| 2²     | a. Fire Retardant Treated Lumber | Type: FlameTech™ fire retardant treated lumber softwood.  
Minimum Size: 2 inch by 4 inch nominal (38 mm x 89 mm).  
Maximum Spacing: 16 inches (406 mm) on center maximum.  
Installation: FlameTech™ fire retardant treated lumber is to be installed into a double top (cap) plate, and single bottom (sill) plate per applicable code. Blocking is to be applied at FlameTech™ plywood joints. |
|        | b. FlameTech™ Fire Retardant Treated Plywood | Type: FlameTech™ fire retardant treated plywood.  
Minimum Size: 15/32 inches (12 mm) thickness.  
Fasteners: Minimum 2-3/8 inches (60 mm) length 8D nails, spaced 8 inches (204 mm) on center around perimeter and in the field.  
Installation: FlameTech™ fire retardant treated plywood is installed vertically. |
| 3²     | Insulation | Type: Fiberglass or Mineral Wool.  
Thickness: 2 x 4 Lumber: 3-1/2 (89 mm), sized to fit stud cavity (min. R-13). For greater stud depths, insulation to be sized to fit cavity.  
Installation: Friction fit to stud cavity, with insulation compressed to ensure no gaps at insulation joints. |
|        | OPTIONAL Exterior Cladding (Not Shown) | Type: Masonry brick veneer, concrete or manufactured stone.  
Fiber-cement.  
Stucco or Exterior Insulating Finish Systems (EIFS)  
Wood based.  
Metal siding.  
Vinyl Siding.  
All Claddings noted above are to be installed with a code approved weather barrier and fastening in accordance with the applicable codes and approved by the authority having jurisdiction. |
# FLAMETECH™ 1-HOUR LOAD BEARING, INTERIOR OR EXTERIOR EXPOSED TO FIRE

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>PART</th>
<th>DESCRIPTION</th>
</tr>
</thead>
</table>
| 1²     | Interior Gypsum | Type: USG Firecode C Type X complying with ASTM C1396 listed by an approved agency.  
Thickness: Single layer, minimum 5/8-inches (16 mm).  
Fasteners: Board is to be fastened to lumber framing with #6 1-5/8 inches (41 mm) length coarse thread drywall screws, spaced at 6 inches (152 mm) around perimeter and in field. Fastener heads to be covered with joint compound.  
Joints: Joints to be tapped and mudded with joint compound.  
Installation: Gypsum to be oriented vertically. |
| 2²     | a. Fire Retardant Treated Lumber  
b. FlameTech™ Fire Retardant Treated Plywood | Type: FlameTech™ fire retardant treated lumber softwood.  
Minimum Size: 2 inch x 4 inch nominal (38 mm x 89 mm).  
Maximum Spacing: 16 inches (406 mm) on center maximum.  
Installation: FlameTech™ fire retardant treated lumber is to be installed into a double top (cap) plate, and single bottom (sill) plate per applicable code. Blocking is to be applied at FlameTech™ plywood joints.  
Type: FlameTech™ fire retardant treated plywood.  
Minimum Size: 15/32 inches (12 mm) thickness.  
Fasteners: Minimum 2-3/8 inches (60 mm) length 8D nails, spaced 8 inches (204 mm) on center around perimeter and in the field.  
Installation: FlameTech™ fire retardant treated plywood is installed vertically. |
| 3²     | Insulation | Type: Fiberglass or Mineral Wool.  
Thickness: 2 x 4 Lumber: 3-1/2 (89 mm), sized to fit stud cavity (min. R-13). For greater stud depths, insulation to be sized to fit cavity.  
Installation: Friction fit to stud cavity, with insulation compressed to ensure no gaps at insulation joints. |
| 4³     | Exterior Gypsum  
Plaster  
Brick | Type: 5/8 inch (16 mm) Type X complying with ASTM C1396 listed by an approved agency. Installation can be done either side of Number 2b) component. Installation of gypsum to follow ASTM C840 or CSA A82.31, as appropriate.  
Type: 3/8 inch thickness cement plaster, composed of 1:4 for scratch coat, 1:5 for brown coat by volume cement to sand. Plaster is applied to metal lath, anchored with 6D common nails at 7 inches (177 mm) on center spacing, with 1 inch (25 mm) penetration depth.  
Type: 2.7 inch (69 mm) thickness solid brick or 2.3 inch (58 mm) hollow brick, anchored to structure to resist anticipated service loads in accordance with the applicable codes as approved by the Authority Having Jurisdiction. |
| 5      | OPTIONAL Exterior Cladding (Not Shown) | Type: Masonry brick veneer, concrete or manufactured stone.  
Fiber-cement.  
Stucco or Exterior Insulating Finish Systems (EIFS)  
Wood based.  
Metal siding.  
Vinyl Siding.  
All Claddings noted above are to be installed with a code approved weather barrier and fastening in accordance with the applicable codes and approved by the authority having jurisdiction. |