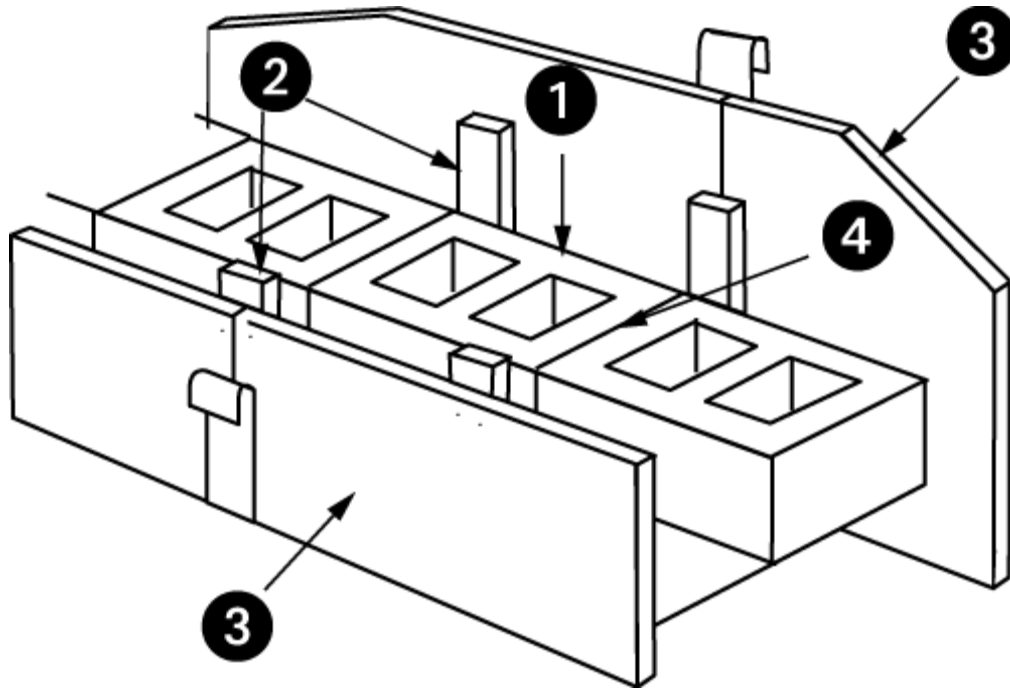


## 4-Hour Fire Rating

12" C.M.U.

Fire Rating: 4 Hour

No. 12-4-910110D2



### Assembly Information

1. Preferred product 910110 c.m.u. 12" x 8" x 16" nominal
2. Wood or steel furring members - 16" o.c. maximum.
3. Gypsum wallboard, 3/8" thick, both sides, long dimension parallel to furring members - all joints finished.
3. ASTM C-270 Masonry Mortar, Type M or S. Face shell or full mortar bedding as required.
4. Masonry grout, reinforcing steel, joint reinforcement, anchors, ties and accessories (Not depicted above - optional). Use where specified.

***Preferred Materials Inc. accepts no responsibility for proper application of the rated wall assembly above, or responsibility for the construction of such assemblies.***

**Fire Rating: 4 Hour      No. 12-4-910110D2**

## **Concrete Masonry Unit**

**Section 3.1 of ACI 216.1**

| <b>Unit Description</b> | <b>Size<br/>WxHxL Nominal</b> | <b>Equivalent<br/>Thickness Inches</b> | <b>Fire Rating Minutes</b> |
|-------------------------|-------------------------------|--|----------------------------|
| <b>910110</b>           | <b>12x8x16</b>                | <b>5.14</b>                            | <b>180*</b>                |

*\* Linear interpolation from Table 3.1 of ACI 216.1 for Exposed Finish Block Mix – 55% limestone & 45% siliceous aggregates.*

**Sections 3.2.2 and 3.2.3**

**Solid Grouted construction and/or cells filled with loose-fill materials**

| <b>Included</b> | <b>Equivalent<br/>Thickness Inches</b> | <b>Fire Rating<br/>Minutes</b> |
|-----------------|--|--------------------------------|
| <b>No</b>       | <b>5.14</b>                            | <b>180*</b>                    |
| <b>Yes</b>      | <b>N/A</b>                             | <b>N/A</b>                     |

*\* Linear interpolation from Table 3.1 of ACI 216.1 for Exposed Finish Block Mix – 55% limestone & 45% siliceous aggregates.*

**Fire Rating: 4 Hour**

**No. 12-4-910110D2**

**Nonfire-exposed side**

**Side 1**

**Section 5.2.2 of ACI 216.1**

| <b>Finish</b>                                     |         |
|---|---------|
| 3/8 inch thick Gypsum Wallboard                   | .375    |
| Multiplying factor Table 5.1                      | 3       |
| Adjusted Thickness                                | 1.12    |
| <b>Concrete Masonry Unit</b>                      |         |
| Unit Description                                  | 910110  |
| Size WxHxL Nominal                                | 12x8x16 |
| Equivalent Thickness                              | 5.14    |
| Fire Rating Minutes                               | 180     |
| Total Thickness, CMU + Finish                     | 6.26    |
| Fire Resistance Rating of CMU & Finish, Table 5.1 | 240*    |

*\* Linear interpolation from Table 3.1 of ACI 216.1 for Exposed Finish Block Mix – 55% limestone & 45% siliceous aggregates.*

|  |     |
|--|-----|
| Max. allowable assembly Fire Resistance Block + finishes | 270 |
| Fire-Resistance Rating of Block and Finish               | 240 |

**Side 2**

**Section 5.2.2 of ACI 216.1**

| <b>Finish</b>                          |         |
|--|---------|
| 3/8 inch thick Gypsum Wallboard        | .375    |
| Multiplying factor Table 5.1           | 3       |
| Adjusted Thickness (inches)            | 1.12    |
| <b>Concrete Masonry Unit</b>           |         |
| Unit Description                       | 910110  |
| Size WxHxL Nominal                     | 12x8x16 |
| Equivalent Thickness (inches)          | 5.14    |
| Fire Rating Minutes                    | 180     |
| Total Thickness, CMU + Finish (inches) | 6.26    |

|  |             |
|--|-------------|
| <b>Fire Resistance Rating of CMU &amp; Finish, Table 5.1</b> | <b>240*</b> |
|--|-------------|

*\* Linear interpolation from Table 3.1 of ACI 216.1 for Exposed Finish Block Mix – 55% limestone & 45% siliceous aggregates.*

|   |                     |
|---|---------------------|
| <b>Max. allowable assembly Fire Resistance Block + finishes</b> | <b>270<br/>6.04</b> |
|   |                     |
| <b>Fire-Resistance Rating of Block and Finish</b>               | <b>240<br/>6.04</b> |

**Fire Rating: 4 Hour**

**No. 12-4-910110D2**

**Fire-exposed side**

**Side 1**

**Section 5.2.3 of ACI 216.1**

| <b>Finish</b>   |            |
|---|------------|
| <b>3/8 inch Gypsum Wallboard</b>  |            |
| <b>Time assigned to finish materials Table 5.2</b>                      | <b>10</b>  |
| <b>Fire Resistance of CMU and Nonfire-exposed side Finish Table 3.1</b> | <b>240</b> |
| <b>Assembly Fire-Resistance Rating</b>                                  | <b>250</b> |
| <b>Max. allowable assembly Fire Resistance Block + finishes</b>         | <b>270</b> |
| <b>Total Assembly Fire-Resistance Rating</b>                            | <b>240</b> |

**Side 2**

**Section 5.2.3 of ACI 216.1**

| <b>Finish</b>   |            |
|---|------------|
| <b>3/8 inch thick Gypsum Wallboard</b>                                  |            |
| <b>Time assigned to finish materials Table 5.2</b>                      | <b>10</b>  |
| <b>Fire Resistance of CMU and Nonfire-exposed side Finish Table 3.1</b> | <b>240</b> |
| <b>Assembly Fire-Resistance Rating</b>                                  | <b>250</b> |
| <b>Max. allowable assembly Fire Resistance Block + finishes</b>         | <b>270</b> |
| <b>Total Assembly Fire-Resistance Rating</b>                            | <b>240</b> |

|  |                    |
|--|--------------------|
| <b>Assembly Fire-Resistance Rating</b> | <b>240 Minutes</b> |
|--|--------------------|

**Fire Resistance Rating, minutes per inches of equivalent thickness**  
**Linear Interpolation from Table 3.1 of ACI 216.1**  
**Exposed Finish Mix - 55% limestone + 45% siliceous aggregates**

| et   | min  | et   | min  | et   | min   | et   | min   | et   | min   | et   | min   | et   | min   | et   | min   | et   | min   |
|------|------|------|------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| 2.75 | 60.0 | 3.16 | 76.6 | 3.57 | 94.0  | 3.98 | 114.5 | 4.39 | 137.1 | 4.80 | 160.5 | 5.21 | 184.7 | 5.62 | 212.0 | 6.03 | 239.4 |
| 2.76 | 60.4 | 3.17 | 77.0 | 3.58 | 94.5  | 3.99 | 115.0 | 4.40 | 137.7 | 4.81 | 161.1 | 5.22 | 185.3 | 5.63 | 212.7 | 6.04 | 240.0 |
| 2.77 | 60.8 | 3.18 | 77.4 | 3.59 | 95.0  | 4.00 | 115.5 | 4.41 | 138.3 | 4.82 | 161.7 | 5.23 | 186.0 | 5.64 | 213.3 |      |       |
| 2.78 | 61.2 | 3.19 | 77.8 | 3.60 | 95.5  | 4.01 | 116.0 | 4.42 | 138.8 | 4.83 | 162.3 | 5.24 | 186.7 | 5.65 | 214.0 |      |       |
| 2.79 | 61.6 | 3.20 | 78.2 | 3.61 | 96.0  | 4.02 | 116.5 | 4.43 | 139.4 | 4.84 | 162.8 | 5.25 | 187.3 | 5.66 | 214.7 |      |       |
| 2.80 | 62.0 | 3.21 | 78.6 | 3.62 | 96.5  | 4.03 | 117.0 | 4.44 | 140.0 | 4.85 | 163.4 | 5.26 | 188.0 | 5.67 | 215.4 |      |       |
| 2.81 | 62.4 | 3.22 | 79.0 | 3.63 | 97.0  | 4.04 | 117.5 | 4.45 | 140.6 | 4.86 | 164.0 | 5.27 | 188.7 | 5.68 | 216.0 |      |       |
| 2.82 | 62.8 | 3.23 | 79.4 | 3.64 | 97.5  | 4.05 | 118.0 | 4.46 | 141.1 | 4.87 | 164.5 | 5.28 | 189.3 | 5.69 | 216.7 |      |       |
| 2.83 | 63.2 | 3.24 | 79.8 | 3.65 | 98.0  | 4.06 | 118.5 | 4.47 | 141.7 | 4.88 | 165.1 | 5.29 | 190.0 | 5.70 | 217.4 |      |       |
| 2.84 | 63.6 | 3.25 | 80.2 | 3.66 | 98.5  | 4.07 | 119.0 | 4.48 | 142.3 | 4.89 | 165.7 | 5.30 | 190.7 | 5.71 | 218.0 |      |       |
| 2.85 | 64.0 | 3.26 | 80.7 | 3.67 | 99.0  | 4.08 | 119.5 | 4.49 | 142.8 | 4.90 | 166.3 | 5.31 | 191.3 | 5.72 | 218.7 |      |       |
| 2.86 | 64.5 | 3.27 | 81.1 | 3.68 | 99.5  | 4.09 | 120.0 | 4.50 | 143.4 | 4.91 | 166.8 | 5.32 | 192.0 | 5.73 | 219.4 |      |       |
| 2.87 | 64.9 | 3.28 | 81.5 | 3.69 | 100.0 | 4.10 | 120.6 | 4.51 | 144.0 | 4.92 | 167.4 | 5.33 | 192.7 | 5.74 | 220.0 |      |       |
| 2.88 | 65.3 | 3.29 | 81.9 | 3.70 | 100.5 | 4.11 | 121.1 | 4.52 | 144.6 | 4.93 | 168.0 | 5.34 | 193.3 | 5.75 | 220.7 |      |       |
| 2.89 | 65.7 | 3.30 | 82.3 | 3.71 | 101.0 | 4.12 | 121.7 | 4.53 | 145.1 | 4.94 | 168.5 | 5.35 | 194.0 | 5.76 | 221.4 |      |       |
| 2.90 | 66.1 | 3.31 | 82.7 | 3.72 | 101.5 | 4.13 | 122.3 | 4.54 | 145.7 | 4.95 | 169.1 | 5.36 | 194.7 | 5.77 | 222.0 |      |       |
| 2.91 | 66.5 | 3.32 | 83.1 | 3.73 | 102.0 | 4.14 | 122.9 | 4.55 | 146.3 | 4.96 | 169.7 | 5.37 | 195.3 | 5.78 | 222.7 |      |       |
| 2.92 | 66.9 | 3.33 | 83.5 | 3.74 | 102.5 | 4.15 | 123.4 | 4.56 | 146.8 | 4.97 | 170.2 | 5.38 | 196.0 | 5.79 | 223.4 |      |       |
| 2.93 | 67.3 | 3.34 | 83.9 | 3.75 | 103.0 | 4.16 | 124.0 | 4.57 | 147.4 | 4.98 | 170.8 | 5.39 | 196.7 | 5.80 | 224.0 |      |       |
| 2.94 | 67.7 | 3.35 | 84.3 | 3.76 | 103.5 | 4.17 | 124.6 | 4.58 | 148.0 | 4.99 | 171.4 | 5.40 | 197.3 | 5.81 | 224.7 |      |       |
| 2.95 | 68.1 | 3.36 | 84.7 | 3.77 | 104.0 | 4.18 | 125.1 | 4.59 | 148.5 | 5.00 | 172.0 | 5.41 | 198.0 | 5.82 | 225.4 |      |       |
| 2.96 | 68.5 | 3.37 | 85.1 | 3.78 | 104.5 | 4.19 | 125.7 | 4.60 | 149.1 | 5.01 | 172.5 | 5.42 | 198.7 | 5.83 | 226.0 |      |       |
| 2.97 | 68.9 | 3.38 | 85.5 | 3.79 | 105.0 | 4.20 | 126.3 | 4.61 | 149.7 | 5.02 | 173.1 | 5.43 | 199.3 | 5.84 | 226.7 |      |       |
| 2.98 | 69.3 | 3.39 | 85.9 | 3.80 | 105.5 | 4.21 | 126.9 | 4.62 | 150.3 | 5.03 | 173.7 | 5.44 | 200.0 | 5.85 | 227.4 |      |       |
| 2.99 | 69.7 | 3.40 | 86.3 | 3.81 | 106.0 | 4.22 | 127.4 | 4.63 | 150.8 | 5.04 | 174.2 | 5.45 | 200.7 | 5.86 | 228.0 |      |       |
| 3.00 | 70.1 | 3.41 | 86.7 | 3.82 | 106.5 | 4.23 | 128.0 | 4.64 | 151.4 | 5.05 | 174.8 | 5.46 | 201.3 | 5.87 | 228.7 |      |       |
| 3.01 | 70.5 | 3.42 | 87.1 | 3.83 | 107.0 | 4.24 | 128.6 | 4.65 | 152.0 | 5.06 | 175.4 | 5.47 | 202.0 | 5.88 | 229.4 |      |       |
| 3.02 | 70.9 | 3.43 | 87.5 | 3.84 | 107.5 | 4.25 | 129.1 | 4.66 | 152.5 | 5.07 | 176.0 | 5.48 | 202.7 | 5.89 | 230.0 |      |       |
| 3.03 | 71.3 | 3.44 | 87.9 | 3.85 | 108.0 | 4.26 | 129.7 | 4.67 | 153.1 | 5.08 | 176.5 | 5.49 | 203.3 | 5.90 | 230.7 |      |       |
| 3.04 | 71.7 | 3.45 | 88.3 | 3.86 | 108.5 | 4.27 | 130.3 | 4.68 | 153.7 | 5.09 | 177.1 | 5.50 | 204.0 | 5.91 | 231.4 |      |       |
| 3.05 | 72.1 | 3.46 | 88.8 | 3.87 | 109.0 | 4.28 | 130.8 | 4.69 | 154.3 | 5.10 | 177.7 | 5.51 | 204.7 | 5.92 | 232.0 |      |       |
| 3.06 | 72.6 | 3.47 | 89.2 | 3.88 | 109.5 | 4.29 | 131.4 | 4.70 | 154.8 | 5.11 | 178.2 | 5.52 | 205.3 | 5.93 | 232.7 |      |       |
| 3.07 | 73.0 | 3.48 | 89.6 | 3.89 | 110.0 | 4.30 | 132.0 | 4.71 | 155.4 | 5.12 | 178.8 | 5.53 | 206.0 | 5.94 | 233.4 |      |       |
| 3.08 | 73.4 | 3.49 | 90.0 | 3.90 | 110.5 | 4.31 | 132.6 | 4.72 | 156.0 | 5.13 | 179.4 | 5.54 | 206.7 | 5.95 | 234.0 |      |       |
| 3.09 | 73.8 | 3.50 | 90.5 | 3.91 | 111.0 | 4.32 | 133.1 | 4.73 | 156.5 | 5.14 | 180.0 | 5.55 | 207.3 | 5.96 | 234.7 |      |       |
| 3.10 | 74.2 | 3.51 | 91.0 | 3.92 | 111.5 | 4.33 | 133.7 | 4.74 | 157.1 | 5.15 | 180.7 | 5.56 | 208.0 | 5.97 | 235.4 |      |       |
| 3.11 | 74.6 | 3.52 | 91.5 | 3.93 | 112.0 | 4.34 | 134.3 | 4.75 | 157.7 | 5.16 | 181.3 | 5.57 | 208.7 | 5.98 | 236.0 |      |       |
| 3.12 | 75.0 | 3.53 | 92.0 | 3.94 | 112.5 | 4.35 | 134.8 | 4.76 | 158.3 | 5.17 | 182.0 | 5.58 | 209.3 | 5.99 | 236.7 |      |       |
| 3.13 | 75.4 | 3.54 | 92.5 | 3.95 | 113.0 | 4.36 | 135.4 | 4.77 | 158.8 | 5.18 | 182.7 | 5.59 | 210.0 | 6.00 | 237.4 |      |       |
| 3.14 | 75.8 | 3.55 | 93.0 | 3.96 | 113.5 | 4.37 | 136.0 | 4.78 | 159.4 | 5.19 | 183.3 | 5.60 | 210.7 | 6.01 | 238.0 |      |       |
| 3.15 | 76.2 | 3.56 | 93.5 | 3.97 | 114.0 | 4.38 | 136.6 | 4.79 | 160.0 | 5.20 | 184.0 | 5.61 | 211.3 | 6.02 | 238.7 |      |       |