结构防火设计计算书

1,设计依据

《建筑钢结构防火技术规范》 GB51249-2017

《钢结构设计标准》 GB50017-2017

2、设计参数

结构重要性系数 :1.00

火灾前室内温度Tg0 :20.00℃

火灾前构件温度Ts0 :20.00℃

钢材类型 :结构钢

火灾升温曲线类型 :以纤维类物质为主

时间计算步长 :5.00s

3、火灾下的温度工况内力表

单位：kN、kN.m

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **单元号** | **工况号** | **位置** | **N** | **Q2** | **Q3** | **T** | **M2** | **M3** |
| 67 | -2 | i | 0.01 | -0.13 | 0.00 | 0.00 | -0.02 | -0.66 |
| 67 | -2 | j | 0.01 | -0.13 | 0.00 | 0.00 | -0.01 | 0.00 |
| 66 | -2 | i | -0.19 | -0.75 | -0.13 | 0.00 | 0.20 | -1.39 |
| 66 | -2 | j | -0.19 | -0.75 | -0.13 | 0.00 | -0.19 | 0.86 |
| 65 | -2 | i | -0.50 | 0.03 | 0.02 | -0.00 | -0.02 | 0.00 |
| 65 | -2 | j | -0.50 | 0.03 | 0.02 | -0.00 | 0.06 | -0.13 |
| 64 | -2 | i | -0.44 | -0.01 | -0.01 | -0.00 | 0.03 | -0.07 |
| 64 | -2 | j | -0.44 | -0.01 | -0.01 | -0.00 | -0.04 | 0.00 |
| 63 | -2 | i | 0.00 | 0.00 | -0.12 | 0.00 | 0.18 | -0.06 |
| 63 | -2 | j | 0.00 | 0.00 | -0.12 | 0.00 | -0.18 | -0.07 |
| 62 | -2 | i | -0.20 | 0.01 | -0.00 | 0.00 | 0.01 | -0.00 |
| 62 | -2 | j | -0.20 | 0.01 | -0.00 | 0.00 | -0.00 | -0.06 |
| 61 | -2 | i | 0.01 | -0.03 | -0.01 | 0.00 | 0.03 | -0.13 |
| 61 | -2 | j | 0.01 | -0.03 | -0.01 | 0.00 | -0.02 | 0.00 |
| 60 | -2 | i | 0.07 | 0.00 | 0.00 | -0.00 | -0.01 | -0.13 |
| 60 | -2 | j | 0.07 | 0.00 | 0.00 | -0.00 | 0.01 | -0.13 |
| 59 | -2 | i | -0.17 | 0.01 | 0.00 | 0.00 | -0.01 | -0.06 |
| 59 | -2 | j | -0.17 | 0.01 | 0.00 | 0.00 | 0.01 | -0.13 |
| 58 | -2 | i | -0.16 | 0.01 | -0.01 | 0.00 | 0.02 | 0.00 |
| 58 | -2 | j | -0.16 | 0.01 | -0.01 | 0.00 | -0.02 | -0.06 |
| 57 | -2 | i | -0.16 | 0.01 | 0.01 | -0.00 | -0.05 | 0.06 |
| 57 | -2 | j | -0.16 | 0.01 | 0.01 | -0.00 | 0.02 | 0.00 |
| 56 | -2 | i | -0.11 | -0.08 | -0.20 | -0.00 | 0.36 | -0.17 |
| 56 | -2 | j | -0.11 | -0.08 | -0.20 | -0.00 | -0.20 | 0.06 |
| 55 | -2 | i | -0.31 | 0.40 | 2.57 | -0.00 | -0.33 | -0.08 |
| 55 | -2 | j | -0.31 | 0.40 | 2.57 | -0.00 | 0.21 | -0.17 |
| 54 | -2 | i | 0.12 | 0.02 | -0.06 | -0.00 | 0.15 | -0.00 |
| 54 | -2 | j | 0.12 | 0.02 | -0.06 | -0.00 | -0.16 | -0.08 |
| 53 | -2 | i | -0.03 | -0.04 | -0.00 | -0.00 | 0.01 | -0.19 |
| 53 | -2 | j | -0.03 | -0.04 | -0.00 | -0.00 | -0.01 | -0.00 |
| 52 | -2 | i | -0.04 | 0.09 | 0.01 | -0.00 | -0.02 | 0.37 |
| 52 | -2 | j | -0.04 | 0.09 | 0.01 | -0.00 | 0.02 | -0.19 |
| 51 | -2 | i | 0.51 | 0.11 | 0.01 | 0.00 | -0.02 | 1.01 |
| 51 | -2 | j | 0.51 | 0.11 | 0.01 | 0.00 | 0.02 | 0.37 |
| 50 | -2 | i | 1.01 | -0.20 | -0.02 | 0.00 | 0.08 | -0.00 |
| 50 | -2 | j | 1.01 | -0.20 | -0.02 | 0.00 | -0.04 | 1.02 |
| 49 | -2 | i | -0.03 | 0.04 | 0.00 | 0.00 | -0.01 | 0.19 |
| 49 | -2 | j | -0.03 | 0.04 | 0.00 | 0.00 | 0.01 | -0.00 |
| 48 | -2 | i | -0.02 | -0.02 | -0.03 | 0.00 | 0.05 | 0.13 |
| 48 | -2 | j | -0.02 | -0.02 | -0.03 | 0.00 | -0.05 | 0.19 |
| 47 | -2 | i | 0.01 | -0.03 | 0.01 | 0.00 | -0.02 | -0.00 |
| 47 | -2 | j | 0.01 | -0.03 | 0.01 | 0.00 | 0.03 | 0.13 |
| 40 | -2 | i | -0.47 | 0.31 | 0.01 | -0.00 | -0.05 | 1.56 |
| 40 | -2 | j | -0.47 | 0.31 | 0.01 | -0.00 | 0.02 | 0.00 |
| 38 | -2 | i | -0.23 | -0.09 | -0.14 | -0.00 | 0.23 | 0.39 |
| 38 | -2 | j | -0.23 | -0.09 | -0.14 | -0.00 | -0.18 | 0.65 |
| 37 | -2 | i | 0.01 | -0.00 | 0.01 | -0.00 | -0.01 | -0.00 |
| 37 | -2 | j | 0.01 | -0.00 | 0.01 | -0.00 | 0.04 | 0.01 |
| 36 | -2 | i | -0.84 | 0.01 | 0.01 | -0.00 | -0.02 | 0.04 |
| 36 | -2 | j | -0.84 | 0.01 | 0.01 | -0.00 | 0.03 | 0.00 |
| 35 | -2 | i | -0.01 | 0.64 | 0.04 | -0.00 | -0.09 | 0.17 |
| 35 | -2 | j | -0.01 | 0.64 | 0.04 | -0.00 | 0.12 | -3.67 |
| 34 | -2 | i | 0.11 | 0.63 | 0.03 | 0.00 | -0.10 | 3.96 |
| 34 | -2 | j | 0.11 | 0.63 | 0.03 | 0.00 | 0.09 | 0.17 |
| 33 | -2 | i | 0.22 | -0.09 | 0.05 | 0.00 | -0.15 | 0.00 |
| 33 | -2 | j | 0.22 | -0.09 | 0.05 | 0.00 | 0.09 | 0.46 |
| 32 | -2 | i | 1.85 | 0.38 | -0.04 | 0.00 | 0.03 | 1.92 |
| 32 | -2 | j | 1.85 | 0.38 | -0.04 | 0.00 | -0.17 | -0.00 |
| 31 | -2 | i | 0.87 | -0.77 | 0.04 | 0.00 | -0.11 | 0.71 |
| 31 | -2 | j | 0.87 | -0.77 | 0.04 | 0.00 | 0.15 | 5.30 |
| 30 | -2 | i | 1.29 | -0.78 | 0.04 | -0.00 | -0.13 | -3.99 |
| 30 | -2 | j | 1.29 | -0.78 | 0.04 | -0.00 | 0.10 | 0.71 |
| 29 | -2 | i | 0.04 | -0.06 | 0.02 | -0.00 | -0.04 | 0.00 |
| 29 | -2 | j | 0.04 | -0.06 | 0.02 | -0.00 | 0.04 | 0.29 |
| 28 | -2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | -2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | -2 | i | 0.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | -2 | j | 0.91 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | -2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | -2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | -2 | i | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | -2 | j | 0.16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | -2 | i | 0.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | -2 | j | 0.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | -2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | -2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | -2 | i | 0.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | -2 | j | 0.69 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | -2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | -2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | -2 | i | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | -2 | j | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | -2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | -2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | -2 | i | 0.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | -2 | j | 0.59 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | -2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | -2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | -2 | i | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | -2 | j | 0.40 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | -2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | -2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | -2 | i | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | -2 | j | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | -2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | -2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | -2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | -2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | -2 | i | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | -2 | j | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | -2 | i | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | -2 | j | 0.21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | -2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | -2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | -2 | i | 0.11 | -0.39 | -1.11 | 0.00 | 4.28 | -1.52 |
| 4 | -2 | j | 0.11 | -0.39 | -1.11 | 0.00 | -4.58 | 1.57 |
| 3 | -2 | i | 1.41 | -0.34 | -0.97 | 0.00 | 3.71 | -1.26 |
| 3 | -2 | j | 1.41 | -0.34 | -0.97 | 0.00 | -4.08 | 1.44 |
| 2 | -2 | i | -1.55 | 0.21 | -0.94 | 0.00 | 3.38 | 0.91 |
| 2 | -2 | j | -1.55 | 0.21 | -0.94 | 0.00 | -4.13 | -0.75 |
| 1 | -2 | i | -0.64 | 0.11 | -0.93 | 0.00 | 3.50 | 0.39 |
| 1 | -2 | j | -0.64 | 0.11 | -0.93 | 0.00 | -3.98 | -0.49 |

4、组合内力表

4.1荷载组合

|  |  |
| --- | --- |
| **序号** | **荷载组合名称** |
| 1 | 承载能力组合1(1):工况0+工况1+工况-2 |
| 2 | 承载能力组合2(1):工况0+工况1+工况2+工况-2 |
| 3 | 承载能力组合3(1):工况0+工况1+工况3+工况-2 |

4.2组合内力

单位：kN、kN.m

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **单元号** | **组合号** | **位置** | **N** | **Q2** | **Q3** | **T** | **M2** | **M3** |
| 67 | 1 | i | -1.28 | 28.61 | 0.04 | 0.01 | -0.10 | 129.21 |
| 67 | 1 | j | -1.28 | 23.07 | 0.04 | 0.01 | 0.09 | 0.00 |
| 67 | 2 | i | -1.86 | 36.47 | 0.05 | 0.01 | -0.12 | 169.10 |
| 67 | 2 | j | -1.86 | 31.18 | 0.05 | 0.01 | 0.12 | 0.00 |
| 67 | 3 | i | -0.18 | 12.23 | 0.01 | 0.01 | -0.04 | 47.93 |
| 67 | 3 | j | -0.18 | 6.94 | 0.01 | 0.01 | 0.02 | 0.00 |
| 66 | 1 | i | 8.03 | 5.51 | 0.11 | 0.00 | -0.19 | 94.25 |
| 66 | 1 | j | 8.03 | 2.18 | 0.11 | 0.00 | 0.14 | 82.72 |
| 66 | 2 | i | 10.51 | 7.11 | 0.19 | 0.01 | -0.31 | 124.15 |
| 66 | 2 | j | 10.51 | 3.94 | 0.19 | 0.01 | 0.25 | 107.58 |
| 66 | 3 | i | 2.88 | 2.33 | -0.04 | 0.00 | 0.05 | 34.00 |
| 66 | 3 | j | 2.88 | -0.84 | -0.04 | 0.00 | -0.06 | 31.76 |
| 65 | 1 | i | 0.02 | -24.22 | -0.02 | 0.00 | 0.03 | -0.00 |
| 65 | 1 | j | 0.02 | -29.76 | -0.02 | 0.00 | -0.08 | 134.97 |
| 65 | 2 | i | 0.03 | -32.78 | -0.04 | 0.00 | 0.05 | -0.00 |
| 65 | 2 | j | 0.03 | -38.07 | -0.04 | 0.00 | -0.13 | 177.12 |
| 65 | 3 | i | -0.05 | -7.31 | 0.00 | -0.00 | -0.00 | 0.00 |
| 65 | 3 | j | -0.05 | -12.60 | 0.00 | -0.00 | 0.01 | 49.76 |
| 64 | 1 | i | -1.30 | 12.16 | 0.05 | -0.00 | -0.13 | 53.27 |
| 64 | 1 | j | -1.30 | 9.15 | 0.05 | -0.00 | 0.11 | 0.00 |
| 64 | 2 | i | -1.87 | 15.70 | 0.07 | -0.00 | -0.18 | 70.97 |
| 64 | 2 | j | -1.87 | 12.69 | 0.07 | -0.00 | 0.17 | 0.00 |
| 64 | 3 | i | -0.22 | 5.09 | 0.01 | -0.00 | -0.02 | 17.94 |
| 64 | 3 | j | -0.22 | 2.08 | 0.01 | -0.00 | 0.02 | 0.00 |
| 63 | 1 | i | -0.02 | 0.71 | 0.13 | 0.00 | -0.20 | 52.68 |
| 63 | 1 | j | -0.02 | -1.10 | 0.13 | 0.00 | 0.18 | 53.27 |
| 63 | 2 | i | -0.02 | 0.67 | 0.21 | 0.00 | -0.33 | 70.29 |
| 63 | 2 | j | -0.02 | -1.13 | 0.21 | 0.00 | 0.30 | 70.97 |
| 63 | 3 | i | -0.02 | 0.79 | -0.03 | 0.00 | 0.04 | 17.60 |
| 63 | 3 | j | -0.02 | -1.01 | -0.03 | 0.00 | -0.04 | 17.94 |
| 62 | 1 | i | -0.21 | -9.04 | 0.00 | 0.00 | -0.01 | -0.00 |
| 62 | 1 | j | -0.21 | -12.04 | 0.00 | 0.00 | -0.00 | 52.70 |
| 62 | 2 | i | -0.34 | -12.56 | 0.00 | 0.00 | -0.02 | -0.00 |
| 62 | 2 | j | -0.34 | -15.56 | 0.00 | 0.00 | -0.00 | 70.30 |
| 62 | 3 | i | -0.07 | -2.02 | -0.00 | 0.00 | 0.00 | 0.00 |
| 62 | 3 | j | -0.07 | -5.02 | -0.00 | 0.00 | -0.00 | 17.60 |
| 61 | 1 | i | -0.59 | 11.67 | 0.02 | -0.00 | -0.05 | 24.52 |
| 61 | 1 | j | -0.59 | -1.86 | 0.02 | -0.00 | 0.03 | 0.00 |
| 61 | 2 | i | -0.90 | 15.63 | 0.02 | -0.00 | -0.07 | 31.40 |
| 61 | 2 | j | -0.90 | -3.07 | 0.02 | -0.00 | 0.05 | 0.00 |
| 61 | 3 | i | 0.00 | 3.75 | -0.00 | 0.00 | 0.00 | 10.33 |
| 61 | 3 | j | 0.00 | 0.38 | -0.00 | 0.00 | -0.00 | -0.00 |
| 60 | 1 | i | -0.62 | 3.90 | -0.00 | -0.00 | 0.01 | -0.79 |
| 60 | 1 | j | -0.62 | -12.34 | -0.00 | -0.00 | -0.01 | 24.52 |
| 60 | 2 | i | -0.94 | 5.49 | -0.00 | -0.00 | 0.01 | -2.92 |
| 60 | 2 | j | -0.94 | -16.94 | -0.00 | -0.00 | -0.02 | 31.41 |
| 60 | 3 | i | -0.05 | 0.71 | 0.00 | 0.00 | -0.00 | 2.46 |
| 60 | 3 | j | -0.05 | -3.34 | 0.00 | 0.00 | -0.00 | 10.33 |
| 59 | 1 | i | -0.37 | 11.33 | -0.00 | 0.00 | 0.00 | 18.49 |
| 59 | 1 | j | -0.37 | -4.91 | -0.00 | 0.00 | -0.00 | -0.79 |
| 59 | 2 | i | -0.53 | 15.59 | -0.00 | 0.00 | 0.01 | 23.34 |
| 59 | 2 | j | -0.53 | -6.84 | -0.00 | 0.00 | -0.01 | -2.92 |
| 59 | 3 | i | -0.14 | 2.97 | 0.00 | 0.00 | -0.00 | 8.14 |
| 59 | 3 | j | -0.14 | -1.08 | 0.00 | 0.00 | 0.00 | 2.46 |
| 58 | 1 | i | -0.14 | 3.07 | -0.00 | 0.00 | 0.00 | 0.01 |
| 58 | 1 | j | -0.14 | -10.46 | -0.00 | 0.00 | -0.00 | 18.48 |
| 58 | 2 | i | -0.16 | 4.68 | 0.00 | 0.01 | -0.00 | 0.01 |
| 58 | 2 | j | -0.16 | -14.01 | 0.00 | 0.01 | 0.00 | 23.33 |
| 58 | 3 | i | -0.13 | 0.06 | -0.00 | 0.00 | 0.01 | 0.00 |
| 58 | 3 | j | -0.13 | -3.32 | -0.00 | 0.00 | -0.01 | 8.14 |
| 57 | 1 | i | -0.14 | 9.21 | 0.00 | -0.01 | -0.00 | 30.96 |
| 57 | 1 | j | -0.14 | 3.18 | 0.00 | -0.01 | 0.00 | 0.00 |
| 57 | 2 | i | -0.17 | 10.57 | -0.00 | -0.01 | 0.01 | 38.39 |
| 57 | 2 | j | -0.17 | 4.79 | -0.00 | -0.01 | -0.00 | 0.01 |
| 57 | 3 | i | -0.13 | 5.94 | 0.01 | -0.00 | -0.03 | 15.27 |
| 57 | 3 | j | -0.13 | 0.16 | 0.01 | -0.00 | 0.01 | 0.00 |
| 56 | 1 | i | -0.96 | -0.10 | 0.01 | -0.01 | 0.07 | 25.24 |
| 56 | 1 | j | -0.96 | -4.01 | 0.01 | -0.01 | 0.09 | 30.98 |
| 56 | 2 | i | -1.42 | -0.85 | 0.07 | -0.02 | -0.02 | 30.80 |
| 56 | 2 | j | -1.42 | -4.62 | 0.07 | -0.02 | 0.18 | 38.42 |
| 56 | 3 | i | -0.13 | 1.12 | -0.12 | -0.00 | 0.24 | 13.14 |
| 56 | 3 | j | -0.13 | -2.65 | -0.12 | -0.00 | -0.09 | 15.27 |
| 55 | 1 | i | 3.32 | 10.04 | -0.08 | -0.01 | -0.37 | 27.29 |
| 55 | 1 | j | 3.32 | 9.56 | -0.08 | -0.01 | -0.39 | 25.24 |
| 55 | 2 | i | 4.42 | 13.10 | -0.96 | -0.02 | -0.40 | 33.49 |
| 55 | 2 | j | 4.42 | 12.50 | -0.96 | -0.02 | -0.60 | 30.80 |
| 55 | 3 | i | 1.36 | 4.24 | 1.62 | -0.00 | -0.34 | 14.00 |
| 55 | 3 | j | 1.36 | 4.02 | 1.62 | -0.00 | 0.00 | 13.14 |
| 54 | 1 | i | 1.55 | -1.96 | -0.02 | 0.00 | 0.08 | 0.00 |
| 54 | 1 | j | 1.55 | -8.96 | -0.02 | 0.00 | -0.02 | 27.31 |
| 54 | 2 | i | 2.03 | -3.32 | -0.00 | 0.00 | 0.05 | 0.01 |
| 54 | 2 | j | 2.03 | -10.08 | -0.00 | 0.00 | 0.03 | 33.51 |
| 54 | 3 | i | 0.77 | 0.58 | -0.05 | 0.00 | 0.13 | 0.00 |
| 54 | 3 | j | 0.77 | -6.18 | -0.05 | 0.00 | -0.11 | 14.01 |
| 53 | 1 | i | -0.39 | 11.68 | -0.01 | -0.00 | 0.01 | 24.56 |
| 53 | 1 | j | -0.39 | -1.85 | -0.01 | -0.00 | -0.02 | -0.00 |
| 53 | 2 | i | -0.53 | 15.64 | -0.01 | -0.00 | 0.02 | 31.47 |
| 53 | 2 | j | -0.53 | -3.05 | -0.01 | -0.00 | -0.02 | -0.00 |
| 53 | 3 | i | -0.13 | 3.75 | -0.00 | -0.00 | 0.01 | 10.31 |
| 53 | 3 | j | -0.13 | 0.38 | -0.00 | -0.00 | -0.01 | -0.00 |
| 52 | 1 | i | -1.95 | 5.06 | -0.02 | -0.00 | 0.06 | 6.21 |
| 52 | 1 | j | -1.95 | -11.18 | -0.02 | -0.00 | -0.07 | 24.55 |
| 52 | 2 | i | -2.78 | 7.11 | -0.03 | -0.00 | 0.09 | 6.85 |
| 52 | 2 | j | -2.78 | -15.32 | -0.03 | -0.00 | -0.11 | 31.46 |
| 52 | 3 | i | -0.37 | 1.08 | -0.00 | -0.00 | 0.01 | 4.62 |
| 52 | 3 | j | -0.37 | -2.97 | -0.00 | -0.00 | -0.01 | 10.31 |
| 51 | 1 | i | -3.56 | 12.38 | -0.02 | 0.00 | 0.05 | 31.77 |
| 51 | 1 | j | -3.56 | -3.86 | -0.02 | 0.00 | -0.05 | 6.21 |
| 51 | 2 | i | -5.10 | 17.08 | -0.03 | 0.00 | 0.08 | 42.03 |
| 51 | 2 | j | -5.10 | -5.35 | -0.03 | 0.00 | -0.07 | 6.85 |
| 51 | 3 | i | -0.63 | 3.27 | -0.00 | 0.00 | 0.00 | 12.10 |
| 51 | 3 | j | -0.63 | -0.78 | -0.00 | 0.00 | -0.01 | 4.62 |
| 50 | 1 | i | -5.30 | 0.90 | -0.10 | -0.00 | 0.29 | 0.00 |
| 50 | 1 | j | -5.30 | -13.61 | -0.10 | -0.00 | -0.20 | 31.78 |
| 50 | 2 | i | -7.45 | 1.42 | -0.12 | -0.01 | 0.35 | 0.00 |
| 50 | 2 | j | -7.45 | -18.24 | -0.12 | -0.01 | -0.25 | 42.04 |
| 50 | 3 | i | -1.21 | -0.25 | -0.05 | -0.00 | 0.17 | 0.00 |
| 50 | 3 | j | -1.21 | -4.59 | -0.05 | -0.00 | -0.10 | 12.10 |
| 49 | 1 | i | -0.39 | 7.99 | 0.01 | 0.00 | -0.02 | 24.87 |
| 49 | 1 | j | -0.39 | 1.96 | 0.01 | 0.00 | 0.02 | -0.00 |
| 49 | 2 | i | -0.53 | 8.94 | 0.01 | 0.00 | -0.02 | 30.23 |
| 49 | 2 | j | -0.53 | 3.15 | 0.01 | 0.00 | 0.02 | -0.00 |
| 49 | 3 | i | -0.13 | 5.51 | 0.00 | 0.00 | -0.01 | 13.09 |
| 49 | 3 | j | -0.13 | -0.27 | 0.00 | 0.00 | 0.01 | -0.00 |
| 48 | 1 | i | -0.60 | 1.83 | 0.02 | 0.00 | -0.03 | 24.91 |
| 48 | 1 | j | -0.60 | -1.79 | 0.02 | 0.00 | 0.02 | 24.86 |
| 48 | 2 | i | -0.91 | 1.76 | 0.03 | 0.00 | -0.06 | 30.30 |
| 48 | 2 | j | -0.91 | -1.71 | 0.03 | 0.00 | 0.04 | 30.22 |
| 48 | 3 | i | -0.13 | 1.73 | -0.01 | 0.00 | 0.02 | 13.07 |
| 48 | 3 | j | -0.13 | -1.74 | -0.01 | 0.00 | -0.02 | 13.08 |
| 47 | 1 | i | -0.59 | -1.97 | -0.02 | 0.00 | 0.03 | 0.00 |
| 47 | 1 | j | -0.59 | -8.00 | -0.02 | 0.00 | -0.04 | 24.91 |
| 47 | 2 | i | -0.90 | -3.17 | -0.02 | 0.00 | 0.05 | 0.00 |
| 47 | 2 | j | -0.90 | -8.95 | -0.02 | 0.00 | -0.07 | 30.30 |
| 47 | 3 | i | 0.00 | 0.28 | 0.00 | -0.00 | -0.00 | -0.00 |
| 47 | 3 | j | 0.00 | -5.51 | 0.00 | -0.00 | 0.00 | 13.08 |
| 40 | 1 | i | -1.72 | 31.75 | 0.10 | -0.01 | -0.24 | 144.87 |
| 40 | 1 | j | -1.72 | 26.21 | 0.10 | -0.01 | 0.25 | -0.01 |
| 40 | 2 | i | -2.32 | 40.83 | 0.13 | -0.01 | -0.31 | 190.89 |
| 40 | 2 | j | -2.32 | 35.54 | 0.13 | -0.01 | 0.33 | -0.01 |
| 40 | 3 | i | -0.58 | 13.37 | 0.04 | -0.01 | -0.12 | 53.63 |
| 40 | 3 | j | -0.58 | 8.08 | 0.04 | -0.01 | 0.10 | -0.00 |
| 38 | 1 | i | 7.66 | -3.38 | 0.17 | -0.01 | -0.28 | 82.45 |
| 38 | 1 | j | 7.66 | -6.70 | 0.17 | -0.01 | 0.23 | 97.56 |
| 38 | 2 | i | 10.02 | -5.42 | 0.27 | -0.01 | -0.45 | 107.67 |
| 38 | 2 | j | 10.02 | -8.59 | 0.27 | -0.01 | 0.37 | 128.69 |
| 38 | 3 | i | 2.91 | -0.09 | -0.02 | -0.00 | 0.04 | 30.92 |
| 38 | 3 | j | 2.91 | -3.27 | -0.02 | -0.00 | -0.03 | 35.97 |
| 37 | 1 | i | -0.19 | -22.01 | -0.01 | -0.01 | -0.00 | -0.00 |
| 37 | 1 | j | -0.19 | -27.55 | -0.01 | -0.01 | -0.05 | 123.89 |
| 37 | 2 | i | -0.33 | -29.82 | -0.02 | -0.02 | -0.00 | -0.00 |
| 37 | 2 | j | -0.33 | -35.11 | -0.02 | -0.02 | -0.08 | 162.31 |
| 37 | 3 | i | 0.01 | -6.51 | 0.00 | -0.00 | -0.01 | -0.00 |
| 37 | 3 | j | 0.01 | -11.79 | 0.00 | -0.00 | 0.01 | 45.75 |
| 36 | 1 | i | 0.03 | 26.05 | 0.01 | 0.00 | -0.03 | 90.17 |
| 36 | 1 | j | 0.03 | 10.01 | 0.01 | 0.00 | 0.01 | 0.00 |
| 36 | 2 | i | 0.06 | 35.60 | 0.01 | 0.00 | -0.03 | 116.25 |
| 36 | 2 | j | 0.06 | 10.90 | 0.01 | 0.00 | 0.01 | -0.00 |
| 36 | 3 | i | -0.21 | 7.61 | 0.01 | 0.00 | -0.02 | 37.60 |
| 36 | 3 | j | -0.21 | 7.43 | 0.01 | 0.00 | 0.02 | 0.00 |
| 35 | 1 | i | 2.85 | -5.82 | -0.04 | -0.01 | 0.10 | -14.45 |
| 35 | 1 | j | 2.85 | -25.06 | -0.04 | -0.01 | -0.14 | 78.18 |
| 35 | 2 | i | 2.94 | -7.56 | -0.06 | -0.01 | 0.17 | -28.47 |
| 35 | 2 | j | 2.94 | -37.19 | -0.06 | -0.01 | -0.22 | 105.76 |
| 35 | 3 | i | 2.34 | -2.34 | 0.01 | -0.00 | -0.02 | 9.56 |
| 35 | 3 | j | 2.34 | -2.57 | 0.01 | -0.00 | 0.02 | 24.29 |
| 34 | 1 | i | 2.75 | 26.41 | -0.03 | 0.01 | 0.11 | 86.26 |
| 34 | 1 | j | 2.75 | 7.16 | -0.03 | 0.01 | -0.09 | -14.45 |
| 34 | 2 | i | 2.76 | 38.54 | -0.06 | 0.01 | 0.18 | 113.89 |
| 34 | 2 | j | 2.76 | 8.91 | -0.06 | 0.01 | -0.16 | -28.47 |
| 34 | 3 | i | 2.37 | 3.92 | 0.01 | 0.00 | -0.02 | 32.42 |
| 34 | 3 | j | 2.37 | 3.70 | 0.01 | 0.00 | 0.02 | 9.56 |
| 33 | 1 | i | -1.30 | -13.41 | -0.04 | 0.02 | 0.09 | 0.01 |
| 33 | 1 | j | -1.30 | -29.36 | -0.04 | 0.02 | -0.12 | 106.92 |
| 33 | 2 | i | -2.05 | -15.37 | -0.07 | 0.03 | 0.17 | 0.01 |
| 33 | 2 | j | -2.05 | -39.91 | -0.07 | 0.03 | -0.19 | 138.20 |
| 33 | 3 | i | 0.11 | -8.78 | 0.02 | 0.01 | -0.06 | 0.00 |
| 33 | 3 | j | 0.11 | -9.00 | 0.02 | 0.01 | 0.02 | 44.46 |
| 32 | 1 | i | -1.70 | 35.13 | -0.13 | 0.01 | 0.31 | 135.79 |
| 32 | 1 | j | -1.70 | 19.19 | -0.13 | 0.01 | -0.36 | -0.02 |
| 32 | 2 | i | -3.18 | 47.90 | -0.17 | 0.02 | 0.40 | 178.15 |
| 32 | 2 | j | -3.18 | 23.37 | -0.17 | 0.02 | -0.43 | -0.02 |
| 32 | 3 | i | 1.10 | 10.83 | -0.07 | 0.00 | 0.12 | 53.59 |
| 32 | 3 | j | 1.10 | 10.61 | -0.07 | 0.00 | -0.23 | -0.00 |
| 31 | 1 | i | 3.84 | -9.31 | -0.05 | 0.00 | 0.14 | -7.09 |
| 31 | 1 | j | 3.84 | -28.56 | -0.05 | 0.00 | -0.16 | 106.51 |
| 31 | 2 | i | 3.94 | -11.82 | -0.08 | 0.00 | 0.22 | -18.05 |
| 31 | 2 | j | 3.94 | -41.45 | -0.08 | 0.00 | -0.27 | 141.75 |
| 31 | 3 | i | 3.41 | -4.47 | 0.01 | 0.00 | -0.02 | 11.61 |
| 31 | 3 | j | 3.41 | -4.69 | 0.01 | 0.00 | 0.03 | 39.09 |
| 30 | 1 | i | 2.40 | 23.42 | -0.06 | -0.00 | 0.21 | 75.67 |
| 30 | 1 | j | 2.40 | 4.17 | -0.06 | -0.00 | -0.17 | -7.09 |
| 30 | 2 | i | 1.89 | 34.87 | -0.10 | -0.00 | 0.32 | 102.28 |
| 30 | 2 | j | 1.89 | 5.24 | -0.10 | -0.00 | -0.26 | -18.05 |
| 30 | 3 | i | 3.16 | 2.09 | 0.00 | -0.00 | -0.00 | 23.47 |
| 30 | 3 | j | 3.16 | 1.86 | 0.00 | -0.00 | 0.00 | 11.61 |
| 29 | 1 | i | -0.34 | -9.97 | -0.01 | -0.01 | 0.04 | 0.00 |
| 29 | 1 | j | -0.34 | -26.01 | -0.01 | -0.01 | -0.03 | 89.95 |
| 29 | 2 | i | -0.62 | -10.83 | -0.02 | -0.01 | 0.07 | -0.00 |
| 29 | 2 | j | -0.62 | -35.53 | -0.02 | -0.01 | -0.05 | 115.89 |
| 29 | 3 | i | 0.02 | -7.44 | 0.00 | -0.01 | -0.01 | 0.00 |
| 29 | 3 | j | 0.02 | -7.62 | 0.00 | -0.01 | 0.01 | 37.65 |
| 28 | 1 | i | 1.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 1 | j | 1.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 2 | i | 2.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 2 | j | 2.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 3 | i | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 3 | j | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 1 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 1 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 3 | i | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 3 | j | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 1 | i | 2.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 1 | j | 2.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 2 | i | 3.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 2 | j | 3.15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 3 | i | 0.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 3 | j | 0.75 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 1 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 1 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 3 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 3 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 1 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 1 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 3 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 3 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 1 | i | 2.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 1 | j | 2.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 2 | i | 2.93 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 2 | j | 2.93 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 3 | i | 0.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 3 | j | 0.34 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 1 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 1 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 3 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 3 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 1 | i | 1.97 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 1 | j | 1.97 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 2 | i | 2.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 2 | j | 2.86 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 3 | i | 0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 3 | j | 0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 1 | i | 0.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 1 | j | 0.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 2 | i | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 2 | j | 0.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 3 | i | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 3 | j | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 1 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 1 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 3 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 3 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 1 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 1 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 3 | i | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 3 | j | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 1 | i | 0.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 1 | j | 0.38 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 2 | i | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 2 | j | 0.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 3 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 3 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 1 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 1 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 3 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 3 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 1 | i | 0.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 1 | j | 0.82 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 2 | i | 1.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 2 | j | 1.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 3 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 3 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 1 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 1 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 3 | i | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 3 | j | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 1 | i | 0.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 1 | j | 0.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 2 | i | 0.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 2 | j | 0.52 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 3 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 3 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 1 | i | 0.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 1 | j | 0.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 2 | i | 0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 2 | j | 0.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 3 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 3 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 1 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 1 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 3 | i | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 3 | j | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 1 | i | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 1 | j | 0.20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 2 | i | 0.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 2 | j | 0.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 3 | i | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 3 | j | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 1 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 1 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 2 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 2 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 3 | i | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 | 3 | j | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 1 | i | -76.16 | 8.98 | -2.43 | -0.00 | 14.29 | 46.50 |
| 4 | 1 | j | -84.76 | 8.98 | -2.43 | -0.00 | -5.15 | -25.31 |
| 4 | 2 | i | -103.23 | 11.92 | -2.12 | -0.00 | 13.62 | 61.54 |
| 4 | 2 | j | -111.83 | 11.92 | -2.12 | -0.00 | -3.36 | -33.79 |
| 4 | 3 | i | -23.09 | 3.06 | -2.76 | 0.00 | 14.19 | 16.17 |
| 4 | 3 | j | -31.68 | 3.06 | -2.76 | 0.00 | -7.90 | -8.31 |
| 3 | 1 | i | -86.69 | -7.38 | -2.03 | -0.00 | 11.99 | -40.73 |
| 3 | 1 | j | -95.29 | -7.38 | -2.03 | -0.00 | -4.26 | 18.27 |
| 3 | 2 | i | -118.27 | -9.55 | -1.59 | -0.00 | 10.48 | -52.99 |
| 3 | 2 | j | -126.87 | -9.55 | -1.59 | -0.00 | -2.22 | 23.42 |
| 3 | 3 | i | -25.41 | -2.93 | -2.59 | 0.00 | 13.32 | -15.77 |
| 3 | 3 | j | -34.01 | -2.93 | -2.59 | 0.00 | -7.43 | 7.65 |
| 2 | 1 | i | -102.44 | 8.94 | 5.74 | -0.00 | -29.28 | 47.32 |
| 2 | 1 | j | -111.04 | 8.94 | 5.74 | -0.00 | 16.62 | -24.16 |
| 2 | 2 | i | -139.07 | 11.74 | 7.25 | -0.00 | -36.40 | 62.22 |
| 2 | 2 | j | -147.67 | 11.74 | 7.25 | -0.00 | 21.63 | -31.66 |
| 2 | 3 | i | -32.46 | 3.36 | 2.62 | 0.00 | -14.50 | 17.67 |
| 2 | 3 | j | -41.06 | 3.36 | 2.62 | 0.00 | 6.43 | -9.22 |
| 1 | 1 | i | -80.24 | -7.70 | 4.09 | -0.00 | -20.66 | -41.43 |
| 1 | 1 | j | -88.84 | -7.70 | 4.09 | -0.00 | 12.04 | 20.18 |
| 1 | 2 | i | -108.44 | -10.17 | 4.94 | -0.00 | -24.32 | -54.62 |
| 1 | 2 | j | -117.04 | -10.17 | 4.94 | -0.00 | 15.16 | 26.71 |
| 1 | 3 | i | -24.93 | -2.73 | 2.16 | 0.00 | -12.04 | -14.83 |
| 1 | 3 | j | -33.52 | -2.73 | 2.16 | 0.00 | 5.24 | 7.02 |

5、设计结果表

1）非膨胀型

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **单元号** | **火灾持续时间（h）** | **防火材料厚度（mm）** | **构件温度Ts（℃）** | **临界温度Td（临界温度法）** | **应力比（承载力法）** | | |
| **强度** | **2轴稳定** | **3轴稳定** |
| 67 | 0.01 | 0.00 | 20.00 | 619.74 | - | - | - |
| 66 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 65 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 64 | 0.01 | 0.00 | 20.00 | 647.38 | - | - | - |
| 63 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 62 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 61 | 0.01 | 0.00 | 20.00 | 644.13 | - | - | - |
| 60 | 0.01 | 0.00 | 20.00 | 642.46 | - | - | - |
| 59 | 0.01 | 0.00 | 20.00 | 644.13 | - | - | - |
| 58 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 57 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 56 | 0.01 | 0.00 | 20.00 | 654.08 | - | - | - |
| 55 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 54 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 53 | 0.01 | 0.00 | 20.00 | 644.13 | - | - | - |
| 52 | 0.01 | 0.00 | 20.00 | 640.28 | - | - | - |
| 51 | 0.01 | 0.00 | 20.00 | 600.98 | - | - | - |
| 50 | 0.01 | 0.00 | 20.00 | 646.07 | - | - | - |
| 49 | 0.01 | 0.00 | 20.00 | 647.01 | - | - | - |
| 48 | 0.01 | 0.00 | 20.00 | 647.91 | - | - | - |
| 47 | 0.01 | 0.00 | 20.00 | 647.01 | - | - | - |
| 40 | 0.01 | 0.00 | 20.00 | 625.06 | - | - | - |
| 38 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 37 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 36 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 35 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 34 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 33 | 0.01 | 0.00 | 20.00 | 646.35 | - | - | - |
| 32 | 0.01 | 0.00 | 20.00 | 634.01 | - | - | - |
| 31 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 30 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 29 | 0.01 | 0.00 | 20.00 | 649.77 | - | - | - |
| 28 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 27 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 26 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 25 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 24 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 23 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 22 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 21 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 20 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 19 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 18 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 17 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 16 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 15 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 14 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 13 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 12 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 11 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 10 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 9 | 0.01 | 0.00 | 20.00 | 663.00 | - | - | - |
| 4 | 2.50 | 27.00 | 638.00 | 648.83 | - | - | - |
| 3 | 2.50 | 27.00 | 638.00 | 648.83 | - | - | - |
| 2 | 2.50 | 27.00 | 638.00 | 648.83 | - | - | - |
| 1 | 2.50 | 27.00 | 638.00 | 648.83 | - | - | - |