

C++ code 4.1.8: Building of the Mehrstellen right hand side vector. → [GitLab](#)

```
2 template <typename FUNCTOR>
3 Eigen::VectorXd compMehrstellenf(FUNCTOR &&f, unsigned int M) {
4     Eigen::VectorXd phi = Eigen::VectorXd::Zero(M * M);
5     const double h = 1. / (M + 1);
6     // Iterate over all interior nodes of the mesh
7     for (int i = 0; i < M; ++i) {
8         for (int j = 0; j < M; ++j) {
9             // Translate i and j to x- and y-coordinates
10            const double x = (i + 1) * h;
11            const double y = (j + 1) * h;
12            // Compute the index of the node at (i,j)
13            const int k = i * M + j;
14            // Compute the k-th element of the load vector
15            phi[k] += f(x, y - h);
16            phi[k] += f(x - h, y);
17            phi[k] += 8 * f(x, y);
18            phi[k] += f(x + h, y);
19            phi[k] += f(x, y + h);
20        }
21    }
22    phi *= h * h / 12;
23    return phi;
24 }
```