

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **300 °C** design temperature on steel pursuant to UNE EN 13381-4.

OPEN SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 11 | 16 | 25 | 35 | 54 | - |
| 70 | 10 | 12 | 16 | 26 | 36 | 55 | - |
| 80 | 10 | 13 | 18 | 28 | 38 | 57 | - |
| 90 | 10 | 14 | 19 | 29 | 39 | 59 | - |
| 100 | 10 | 15 | 20 | 30 | 40 | 60 | - |
| 110 | 11 | 16 | 21 | 31 | 41 | 61 | - |
| 120 | 12 | 17 | 22 | 32 | 42 | 62 | - |
| 130 | 12 | 17 | 22 | 32 | 42 | 62 | - |
| 140 | 13 | 18 | 23 | 33 | 43 | 63 | - |
| 150 | 13 | 18 | 23 | 33 | 43 | 63 | - |
| 160 | 14 | 19 | 24 | 34 | 44 | 64 | - |
| 170 | 14 | 19 | 24 | 34 | 44 | 64 | - |
| 180 | 14 | 19 | 24 | 34 | 45 | 65 | - |
| 190 | 15 | 20 | 25 | 35 | 45 | 65 | - |
| 200 | 15 | 20 | 25 | 35 | 45 | 65 | - |
| 210 | 15 | 20 | 25 | 35 | 45 | 66 | - |
| 220 | 15 | 20 | 25 | 35 | 46 | 66 | - |
| 230 | 15 | 20 | 26 | 36 | 46 | 66 | - |
| 240 | 16 | 21 | 26 | 36 | 46 | 66 | - |
| 250 | 16 | 21 | 26 | 36 | 46 | 67 | - |
| 260 | 16 | 21 | 26 | 36 | 46 | 67 | - |
| 270 | 16 | 21 | 26 | 36 | 47 | 67 | - |
| 280 | 16 | 21 | 26 | 36 | 47 | 67 | - |
| 290 | 16 | 21 | 26 | 37 | 47 | 67 | - |
| 300 | 16 | 21 | 27 | 37 | 47 | 67 | - |
| 310 | 16 | 22 | 27 | 37 | 47 | 67 | - |
| 320 | 16 | 22 | 27 | 37 | 47 | 68 | - |
| 330 | 17 | 22 | 27 | 37 | 47 | 68 | - |
| 340 | 17 | 22 | 27 | 37 | 47 | 68 | - |
| 350 | 17 | 22 | 27 | 37 | 47 | 68 | - |
| 360 | 17 | 22 | 27 | 37 | 48 | 68 | - |
| 370 | 17 | 22 | 27 | 37 | 48 | 68 | - |
| 380 | 17 | 22 | 27 | 37 | 48 | 68 | - |
| 390 | 17 | 22 | 27 | 37 | 48 | 68 | - |
| 400 | 17 | 22 | 27 | 38 | 48 | 68 | - |
| 410 | 17 | 22 | 27 | 38 | 48 | 68 | - |
| 420 | 17 | 22 | 27 | 38 | 48 | 68 | - |
| 430 | 17 | 22 | 27 | 38 | 48 | 68 | - |
| 440 | 17 | 22 | 28 | 38 | 48 | 69 | - |
| 495 | 18 | 23 | 28 | 38 | 48 | 69 | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **300 °C** design temperature on steel pursuant to UNE EN 13381-4.

CLOSED SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 12 | 17 | 27 | 37 | 58 | - |
| 70 | 10 | 12 | 18 | 28 | 38 | 59 | - |
| 80 | 10 | 14 | 19 | 30 | 41 | 62 | - |
| 90 | 10 | 16 | 21 | 32 | 42 | 64 | - |
| 100 | 11 | 17 | 22 | 33 | 44 | 66 | - |
| 110 | 12 | 18 | 23 | 34 | 45 | 67 | - |
| 120 | 13 | 19 | 24 | 36 | 47 | 69 | - |
| 130 | 14 | 20 | 25 | 37 | 48 | - | - |
| 140 | 15 | 20 | 26 | 38 | 49 | - | - |
| 150 | 15 | 21 | 27 | 38 | 50 | - | - |
| 160 | 16 | 22 | 28 | 39 | 51 | - | - |
| 170 | 16 | 22 | 28 | 40 | 52 | - | - |
| 180 | 17 | 23 | 29 | 41 | 53 | - | - |
| 190 | 17 | 23 | 29 | 41 | 53 | - | - |
| 200 | 18 | 24 | 30 | 42 | 54 | - | - |
| 210 | 18 | 24 | 30 | 43 | 55 | - | - |
| 220 | 19 | 25 | 31 | 43 | 56 | - | - |
| 230 | 19 | 25 | 31 | 44 | 56 | - | - |
| 240 | 19 | 26 | 32 | 44 | 57 | - | - |
| 250 | 20 | 26 | 32 | 45 | 58 | - | - |
| 260 | 20 | 26 | 33 | 45 | 58 | - | - |
| 270 | 20 | 26 | 33 | 45 | 58 | - | - |
| 280 | 20 | 26 | 33 | 46 | 58 | - | - |
| 290 | 20 | 27 | 33 | 46 | 58 | - | - |
| 300 | 20 | 27 | 33 | 46 | 59 | - | - |
| 310 | 20 | 27 | 33 | 46 | 59 | - | - |
| 320 | 21 | 27 | 33 | 46 | 59 | - | - |
| 330 | 21 | 27 | 33 | 46 | 59 | - | - |
| 340 | 21 | 27 | 34 | 46 | 59 | - | - |
| 350 | 21 | 27 | 34 | 46 | 59 | - | - |
| 360 | 21 | 27 | 34 | 47 | 59 | - | - |
| 370 | 21 | 27 | 34 | 47 | 59 | - | - |
| 380 | 21 | 28 | 34 | 47 | 60 | - | - |
| 390 | 21 | 28 | 34 | 47 | 60 | - | - |
| 400 | 21 | 28 | 34 | 47 | 60 | - | - |
| 410 | 21 | 28 | 34 | 47 | 60 | - | - |
| 420 | 21 | 28 | 34 | 47 | 60 | - | - |
| 430 | 22 | 28 | 34 | 47 | 60 | - | - |
| 440 | 22 | 28 | 34 | 47 | 60 | - | - |
| 495 | 22 | 28 | 35 | 48 | 60 | - | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **350 °C** design temperature on steel pursuant to UNE EN 13381-4.

OPEN SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 13 | 21 | 30 | 47 | 65 |
| 70 | 10 | 10 | 13 | 22 | 31 | 48 | 66 |
| 80 | 10 | 11 | 15 | 24 | 33 | 50 | 68 |
| 90 | 10 | 12 | 16 | 25 | 34 | 52 | - |
| 100 | 10 | 13 | 17 | 26 | 36 | 54 | - |
| 110 | 10 | 14 | 18 | 27 | 37 | 55 | - |
| 120 | 10 | 14 | 19 | 28 | 37 | 56 | - |
| 130 | 10 | 15 | 20 | 29 | 38 | 57 | - |
| 140 | 11 | 16 | 20 | 30 | 39 | 58 | - |
| 150 | 11 | 16 | 21 | 30 | 40 | 58 | - |
| 160 | 12 | 16 | 21 | 31 | 40 | 59 | - |
| 170 | 12 | 17 | 22 | 31 | 41 | 59 | - |
| 180 | 12 | 17 | 22 | 31 | 41 | 60 | - |
| 190 | 13 | 17 | 22 | 32 | 41 | 60 | - |
| 200 | 13 | 18 | 23 | 32 | 42 | 61 | - |
| 210 | 13 | 18 | 23 | 32 | 42 | 61 | - |
| 220 | 13 | 18 | 23 | 33 | 42 | 61 | - |
| 230 | 14 | 18 | 23 | 33 | 42 | 62 | - |
| 240 | 14 | 19 | 23 | 33 | 43 | 62 | - |
| 250 | 14 | 19 | 24 | 33 | 43 | 62 | - |
| 260 | 14 | 19 | 24 | 33 | 43 | 62 | - |
| 270 | 14 | 19 | 24 | 34 | 43 | 63 | - |
| 280 | 14 | 19 | 24 | 34 | 44 | 63 | - |
| 290 | 15 | 19 | 24 | 34 | 44 | 63 | - |
| 300 | 15 | 20 | 24 | 34 | 44 | 63 | - |
| 310 | 15 | 20 | 25 | 34 | 44 | 63 | - |
| 320 | 15 | 20 | 25 | 34 | 44 | 64 | - |
| 330 | 15 | 20 | 25 | 34 | 44 | 64 | - |
| 340 | 15 | 20 | 25 | 35 | 44 | 64 | - |
| 350 | 15 | 20 | 25 | 35 | 44 | 64 | - |
| 360 | 15 | 20 | 25 | 35 | 45 | 64 | - |
| 370 | 15 | 20 | 25 | 35 | 45 | 64 | - |
| 380 | 15 | 20 | 25 | 35 | 45 | 64 | - |
| 390 | 15 | 20 | 25 | 35 | 45 | 64 | - |
| 400 | 16 | 20 | 25 | 35 | 45 | 65 | - |
| 410 | 16 | 20 | 25 | 35 | 45 | 65 | - |
| 420 | 16 | 21 | 25 | 35 | 45 | 65 | - |
| 430 | 16 | 21 | 26 | 35 | 45 | 65 | - |
| 440 | 16 | 21 | 26 | 35 | 45 | 65 | - |
| 495 | 16 | 21 | 26 | 36 | 46 | 65 | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **350 °C** design temperature on steel pursuant to UNE EN 13381-4.

CLOSED SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 13 | 23 | 32 | 50 | 69 |
| 70 | 10 | 10 | 14 | 24 | 33 | 52 | - |
| 80 | 10 | 11 | 16 | 26 | 35 | 54 | - |
| 90 | 10 | 13 | 18 | 28 | 37 | 57 | - |
| 100 | 10 | 14 | 19 | 29 | 39 | 59 | - |
| 110 | 11 | 15 | 20 | 30 | 41 | 61 | - |
| 120 | 11 | 16 | 21 | 32 | 42 | 63 | - |
| 130 | 12 | 17 | 22 | 33 | 43 | 64 | - |
| 140 | 12 | 18 | 23 | 34 | 44 | 66 | - |
| 150 | 13 | 18 | 24 | 35 | 45 | 67 | - |
| 160 | 14 | 19 | 25 | 36 | 46 | 68 | - |
| 170 | 14 | 20 | 25 | 36 | 47 | - | - |
| 180 | 15 | 20 | 26 | 37 | 48 | - | - |
| 190 | 15 | 21 | 26 | 38 | 49 | - | - |
| 200 | 16 | 21 | 27 | 39 | 50 | - | - |
| 210 | 16 | 22 | 28 | 39 | 51 | - | - |
| 220 | 16 | 22 | 28 | 40 | 52 | - | - |
| 230 | 17 | 23 | 29 | 40 | 52 | - | - |
| 240 | 17 | 23 | 29 | 41 | 53 | - | - |
| 250 | 17 | 24 | 30 | 42 | 54 | - | - |
| 260 | 18 | 24 | 30 | 42 | 54 | - | - |
| 270 | 18 | 24 | 30 | 42 | 54 | - | - |
| 280 | 18 | 24 | 30 | 42 | 54 | - | - |
| 290 | 18 | 24 | 30 | 42 | 55 | - | - |
| 300 | 18 | 24 | 30 | 43 | 55 | - | - |
| 310 | 18 | 25 | 31 | 43 | 55 | - | - |
| 320 | 19 | 25 | 31 | 43 | 55 | - | - |
| 330 | 19 | 25 | 31 | 43 | 55 | - | - |
| 340 | 19 | 25 | 31 | 43 | 55 | - | - |
| 350 | 19 | 25 | 31 | 43 | 56 | - | - |
| 360 | 19 | 25 | 31 | 43 | 56 | - | - |
| 370 | 19 | 25 | 31 | 44 | 56 | - | - |
| 380 | 19 | 25 | 31 | 44 | 56 | - | - |
| 390 | 19 | 25 | 32 | 44 | 56 | - | - |
| 400 | 19 | 26 | 32 | 44 | 56 | - | - |
| 410 | 19 | 26 | 32 | 44 | 56 | - | - |
| 420 | 20 | 26 | 32 | 44 | 56 | - | - |
| 430 | 20 | 26 | 32 | 44 | 56 | - | - |
| 440 | 20 | 26 | 32 | 44 | 57 | - | - |
| 495 | 20 | 26 | 32 | 45 | 57 | - | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **400 °C** design temperature on steel pursuant to UNE EN 13381-4.

OPEN SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 18 | 26 | 41 | 57 |
| 70 | 10 | 10 | 11 | 19 | 27 | 42 | 58 |
| 80 | 10 | 10 | 12 | 21 | 29 | 45 | 61 |
| 90 | 10 | 10 | 14 | 22 | 30 | 47 | 63 |
| 100 | 10 | 11 | 15 | 23 | 32 | 48 | 65 |
| 110 | 10 | 12 | 16 | 24 | 33 | 50 | 67 |
| 120 | 10 | 12 | 17 | 25 | 34 | 51 | 68 |
| 130 | 10 | 13 | 17 | 26 | 35 | 52 | - |
| 140 | 10 | 14 | 18 | 27 | 35 | 53 | - |
| 150 | 10 | 14 | 18 | 27 | 36 | 54 | - |
| 160 | 10 | 15 | 19 | 28 | 37 | 54 | - |
| 170 | 10 | 15 | 19 | 28 | 37 | 55 | - |
| 180 | 11 | 15 | 20 | 29 | 38 | 56 | - |
| 190 | 11 | 16 | 20 | 29 | 38 | 56 | - |
| 200 | 11 | 16 | 20 | 29 | 39 | 57 | - |
| 210 | 12 | 16 | 21 | 30 | 39 | 57 | - |
| 220 | 12 | 16 | 21 | 30 | 39 | 57 | - |
| 230 | 12 | 17 | 21 | 30 | 39 | 58 | - |
| 240 | 12 | 17 | 21 | 31 | 40 | 58 | - |
| 250 | 12 | 17 | 22 | 31 | 40 | 58 | - |
| 260 | 13 | 17 | 22 | 31 | 40 | 59 | - |
| 270 | 13 | 17 | 22 | 31 | 40 | 59 | - |
| 280 | 13 | 18 | 22 | 31 | 41 | 59 | - |
| 290 | 13 | 18 | 22 | 32 | 41 | 59 | - |
| 300 | 13 | 18 | 22 | 32 | 41 | 60 | - |
| 310 | 13 | 18 | 23 | 32 | 41 | 60 | - |
| 320 | 13 | 18 | 23 | 32 | 41 | 60 | - |
| 330 | 14 | 18 | 23 | 32 | 41 | 60 | - |
| 340 | 14 | 18 | 23 | 32 | 42 | 60 | - |
| 350 | 14 | 18 | 23 | 32 | 42 | 60 | - |
| 360 | 14 | 18 | 23 | 33 | 42 | 61 | - |
| 370 | 14 | 19 | 23 | 33 | 42 | 61 | - |
| 380 | 14 | 19 | 23 | 33 | 42 | 61 | - |
| 390 | 14 | 19 | 23 | 33 | 42 | 61 | - |
| 400 | 14 | 19 | 24 | 33 | 42 | 61 | - |
| 410 | 14 | 19 | 24 | 33 | 42 | 61 | - |
| 420 | 14 | 19 | 24 | 33 | 43 | 61 | - |
| 430 | 14 | 19 | 24 | 33 | 43 | 61 | - |
| 440 | 14 | 19 | 24 | 33 | 43 | 62 | - |
| 495 | 15 | 19 | 24 | 34 | 43 | 62 | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **400 °C** design temperature on steel pursuant to UNE EN 13381-4.

CLOSED SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 11 | 19 | 27 | 44 | 61 |
| 70 | 10 | 10 | 11 | 20 | 28 | 45 | 62 |
| 80 | 10 | 10 | 13 | 22 | 31 | 48 | 66 |
| 90 | 10 | 11 | 15 | 24 | 33 | 51 | 69 |
| 100 | 10 | 12 | 16 | 26 | 35 | 53 | - |
| 110 | 11 | 13 | 18 | 27 | 36 | 55 | - |
| 120 | 11 | 14 | 19 | 28 | 38 | 57 | - |
| 130 | 11 | 15 | 20 | 29 | 39 | 59 | - |
| 140 | 11 | 15 | 20 | 30 | 40 | 60 | - |
| 150 | 11 | 16 | 21 | 31 | 42 | 62 | - |
| 160 | 12 | 17 | 22 | 32 | 43 | 63 | - |
| 170 | 12 | 17 | 23 | 33 | 44 | 64 | - |
| 180 | 13 | 18 | 23 | 34 | 44 | 66 | - |
| 190 | 13 | 19 | 24 | 35 | 45 | 67 | - |
| 200 | 14 | 19 | 25 | 35 | 46 | 68 | - |
| 210 | 14 | 20 | 25 | 36 | 47 | 69 | - |
| 220 | 14 | 20 | 26 | 37 | 48 | - | - |
| 230 | 15 | 20 | 26 | 37 | 49 | - | - |
| 240 | 15 | 21 | 27 | 38 | 49 | - | - |
| 250 | 16 | 21 | 27 | 39 | 50 | - | - |
| 260 | 16 | 22 | 27 | 39 | 50 | - | - |
| 270 | 16 | 22 | 28 | 39 | 51 | - | - |
| 280 | 16 | 22 | 28 | 39 | 51 | - | - |
| 290 | 16 | 22 | 28 | 39 | 51 | - | - |
| 300 | 16 | 22 | 28 | 40 | 51 | - | - |
| 310 | 17 | 22 | 28 | 40 | 51 | - | - |
| 320 | 17 | 23 | 28 | 40 | 52 | - | - |
| 330 | 17 | 23 | 29 | 40 | 52 | - | - |
| 340 | 17 | 23 | 29 | 40 | 52 | - | - |
| 350 | 17 | 23 | 29 | 41 | 52 | - | - |
| 360 | 17 | 23 | 29 | 41 | 52 | - | - |
| 370 | 17 | 23 | 29 | 41 | 53 | - | - |
| 380 | 17 | 23 | 29 | 41 | 53 | - | - |
| 390 | 18 | 23 | 29 | 41 | 53 | - | - |
| 400 | 18 | 24 | 29 | 41 | 53 | - | - |
| 410 | 18 | 24 | 30 | 41 | 53 | - | - |
| 420 | 18 | 24 | 30 | 41 | 53 | - | - |
| 430 | 18 | 24 | 30 | 41 | 53 | - | - |
| 440 | 18 | 24 | 30 | 42 | 53 | - | - |
| 495 | 18 | 24 | 30 | 42 | 54 | - | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **450 °C** design temperature on steel pursuant to UNE EN 13381-4.

OPEN SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 15 | 22 | 37 | 51 |
| 70 | 10 | 10 | 10 | 16 | 23 | 38 | 52 |
| 80 | 10 | 10 | 10 | 18 | 25 | 40 | 55 |
| 90 | 10 | 10 | 12 | 19 | 27 | 42 | 58 |
| 100 | 10 | 10 | 13 | 21 | 28 | 44 | 60 |
| 110 | 10 | 10 | 14 | 22 | 30 | 46 | 61 |
| 120 | 10 | 11 | 15 | 23 | 31 | 47 | 63 |
| 130 | 10 | 11 | 15 | 23 | 32 | 48 | 64 |
| 140 | 10 | 12 | 16 | 24 | 32 | 49 | 65 |
| 150 | 10 | 12 | 16 | 25 | 33 | 50 | 66 |
| 160 | 10 | 13 | 17 | 25 | 34 | 51 | 67 |
| 170 | 10 | 13 | 17 | 26 | 34 | 51 | 68 |
| 180 | 10 | 14 | 18 | 26 | 35 | 52 | 69 |
| 190 | 10 | 14 | 18 | 27 | 35 | 52 | - |
| 200 | 10 | 14 | 19 | 27 | 36 | 53 | - |
| 210 | 10 | 15 | 19 | 27 | 36 | 53 | - |
| 220 | 10 | 15 | 19 | 28 | 36 | 54 | - |
| 230 | 11 | 15 | 19 | 28 | 37 | 54 | - |
| 240 | 11 | 15 | 20 | 28 | 37 | 55 | - |
| 250 | 11 | 15 | 20 | 29 | 37 | 55 | - |
| 260 | 11 | 16 | 20 | 29 | 38 | 55 | - |
| 270 | 11 | 16 | 20 | 29 | 38 | 55 | - |
| 280 | 12 | 16 | 20 | 29 | 38 | 56 | - |
| 290 | 12 | 16 | 21 | 29 | 38 | 56 | - |
| 300 | 12 | 16 | 21 | 30 | 38 | 56 | - |
| 310 | 12 | 16 | 21 | 30 | 39 | 56 | - |
| 320 | 12 | 17 | 21 | 30 | 39 | 57 | - |
| 330 | 12 | 17 | 21 | 30 | 39 | 57 | - |
| 340 | 12 | 17 | 21 | 30 | 39 | 57 | - |
| 350 | 12 | 17 | 21 | 30 | 39 | 57 | - |
| 360 | 12 | 17 | 21 | 30 | 39 | 57 | - |
| 370 | 13 | 17 | 22 | 31 | 40 | 58 | - |
| 380 | 13 | 17 | 22 | 31 | 40 | 58 | - |
| 390 | 13 | 17 | 22 | 31 | 40 | 58 | - |
| 400 | 13 | 17 | 22 | 31 | 40 | 58 | - |
| 410 | 13 | 17 | 22 | 31 | 40 | 58 | - |
| 420 | 13 | 17 | 22 | 31 | 40 | 58 | - |
| 430 | 13 | 18 | 22 | 31 | 40 | 58 | - |
| 440 | 13 | 18 | 22 | 31 | 40 | 58 | - |
| 495 | 13 | 18 | 23 | 32 | 41 | 59 | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **450 °C** design temperature on steel pursuant to UNE EN 13381-4.

CLOSED SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 16 | 24 | 39 | 54 |
| 70 | 10 | 10 | 10 | 17 | 25 | 40 | 56 |
| 80 | 10 | 10 | 11 | 19 | 27 | 43 | 60 |
| 90 | 10 | 10 | 13 | 21 | 29 | 46 | 63 |
| 100 | 10 | 10 | 14 | 23 | 31 | 48 | 66 |
| 110 | 11 | 11 | 15 | 24 | 33 | 51 | 68 |
| 120 | 11 | 12 | 16 | 25 | 34 | 52 | - |
| 130 | 11 | 13 | 17 | 26 | 36 | 54 | - |
| 140 | 11 | 13 | 18 | 28 | 37 | 56 | - |
| 150 | 11 | 14 | 19 | 29 | 38 | 57 | - |
| 160 | 11 | 15 | 20 | 29 | 39 | 59 | - |
| 170 | 11 | 15 | 20 | 30 | 40 | 60 | - |
| 180 | 11 | 16 | 21 | 31 | 41 | 61 | - |
| 190 | 11 | 17 | 22 | 32 | 42 | 62 | - |
| 200 | 12 | 17 | 22 | 33 | 43 | 63 | - |
| 210 | 12 | 18 | 23 | 33 | 44 | 65 | - |
| 220 | 13 | 18 | 23 | 34 | 44 | 66 | - |
| 230 | 13 | 18 | 24 | 35 | 45 | 67 | - |
| 240 | 13 | 19 | 24 | 35 | 46 | 68 | - |
| 250 | 14 | 19 | 25 | 36 | 47 | 69 | - |
| 260 | 14 | 20 | 25 | 36 | 47 | 69 | - |
| 270 | 14 | 20 | 25 | 36 | 47 | 69 | - |
| 280 | 14 | 20 | 25 | 37 | 48 | - | - |
| 290 | 15 | 20 | 26 | 37 | 48 | - | - |
| 300 | 15 | 20 | 26 | 37 | 48 | - | - |
| 310 | 15 | 21 | 26 | 37 | 48 | - | - |
| 320 | 15 | 21 | 26 | 37 | 49 | - | - |
| 330 | 15 | 21 | 26 | 38 | 49 | - | - |
| 340 | 15 | 21 | 27 | 38 | 49 | - | - |
| 350 | 15 | 21 | 27 | 38 | 49 | - | - |
| 360 | 16 | 21 | 27 | 38 | 49 | - | - |
| 370 | 16 | 21 | 27 | 38 | 49 | - | - |
| 380 | 16 | 21 | 27 | 38 | 50 | - | - |
| 390 | 16 | 22 | 27 | 38 | 50 | - | - |
| 400 | 16 | 22 | 27 | 39 | 50 | - | - |
| 410 | 16 | 22 | 27 | 39 | 50 | - | - |
| 420 | 16 | 22 | 28 | 39 | 50 | - | - |
| 430 | 16 | 22 | 28 | 39 | 50 | - | - |
| 440 | 16 | 22 | 28 | 39 | 50 | - | - |
| 495 | 17 | 22 | 28 | 40 | 51 | - | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **500 °C** design temperature on steel pursuant to UNE EN 13381-4.

OPEN SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 13 | 19 | 33 | 46 |
| 70 | 10 | 10 | 10 | 13 | 20 | 34 | 47 |
| 80 | 10 | 10 | 10 | 15 | 22 | 36 | 50 |
| 90 | 10 | 10 | 10 | 17 | 24 | 38 | 53 |
| 100 | 10 | 10 | 11 | 18 | 26 | 40 | 55 |
| 110 | 10 | 10 | 12 | 19 | 27 | 42 | 57 |
| 120 | 10 | 10 | 13 | 20 | 28 | 43 | 58 |
| 130 | 10 | 10 | 13 | 21 | 29 | 44 | 60 |
| 140 | 10 | 10 | 14 | 22 | 30 | 45 | 61 |
| 150 | 10 | 11 | 15 | 23 | 30 | 46 | 62 |
| 160 | 10 | 11 | 15 | 23 | 31 | 47 | 63 |
| 170 | 10 | 12 | 16 | 24 | 32 | 48 | 64 |
| 180 | 10 | 12 | 16 | 24 | 32 | 48 | 64 |
| 190 | 10 | 12 | 16 | 25 | 33 | 49 | 65 |
| 200 | 10 | 13 | 17 | 25 | 33 | 49 | 66 |
| 210 | 10 | 13 | 17 | 25 | 34 | 50 | 66 |
| 220 | 10 | 13 | 17 | 26 | 34 | 50 | 67 |
| 230 | 10 | 14 | 18 | 26 | 34 | 51 | 67 |
| 240 | 10 | 14 | 18 | 26 | 35 | 51 | 68 |
| 250 | 10 | 14 | 18 | 27 | 35 | 52 | 68 |
| 260 | 10 | 14 | 18 | 27 | 35 | 52 | 69 |
| 270 | 10 | 14 | 19 | 27 | 35 | 52 | 69 |
| 280 | 10 | 15 | 19 | 27 | 36 | 53 | - |
| 290 | 10 | 15 | 19 | 27 | 36 | 53 | - |
| 300 | 11 | 15 | 19 | 28 | 36 | 53 | - |
| 310 | 11 | 15 | 19 | 28 | 36 | 53 | - |
| 320 | 11 | 15 | 19 | 28 | 36 | 54 | - |
| 330 | 11 | 15 | 20 | 28 | 37 | 54 | - |
| 340 | 11 | 15 | 20 | 28 | 37 | 54 | - |
| 350 | 11 | 15 | 20 | 28 | 37 | 54 | - |
| 360 | 11 | 16 | 20 | 29 | 37 | 54 | - |
| 370 | 11 | 16 | 20 | 29 | 37 | 55 | - |
| 380 | 11 | 16 | 20 | 29 | 37 | 55 | - |
| 390 | 12 | 16 | 20 | 29 | 38 | 55 | - |
| 400 | 12 | 16 | 20 | 29 | 38 | 55 | - |
| 410 | 12 | 16 | 20 | 29 | 38 | 55 | - |
| 420 | 12 | 16 | 20 | 29 | 38 | 55 | - |
| 430 | 12 | 16 | 21 | 29 | 38 | 55 | - |
| 440 | 12 | 16 | 21 | 29 | 38 | 56 | - |
| 495 | 12 | 17 | 21 | 30 | 39 | 56 | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **500 °C** design temperature on steel pursuant to UNE EN 13381-4.

CLOSED SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 14 | 21 | 35 | 49 |
| 70 | 10 | 10 | 10 | 14 | 22 | 36 | 50 |
| 80 | 10 | 10 | 10 | 17 | 24 | 39 | 54 |
| 90 | 10 | 10 | 11 | 18 | 26 | 42 | 57 |
| 100 | 10 | 10 | 12 | 20 | 28 | 44 | 60 |
| 110 | 11 | 11 | 13 | 21 | 30 | 46 | 63 |
| 120 | 11 | 11 | 14 | 23 | 31 | 48 | 65 |
| 130 | 11 | 11 | 15 | 24 | 33 | 50 | 67 |
| 140 | 11 | 12 | 16 | 25 | 34 | 52 | 69 |
| 150 | 11 | 12 | 17 | 26 | 35 | 53 | - |
| 160 | 11 | 13 | 18 | 27 | 36 | 54 | - |
| 170 | 11 | 14 | 18 | 28 | 37 | 56 | - |
| 180 | 11 | 14 | 19 | 29 | 38 | 57 | - |
| 190 | 11 | 15 | 20 | 29 | 39 | 58 | - |
| 200 | 11 | 15 | 20 | 30 | 40 | 59 | - |
| 210 | 11 | 16 | 21 | 31 | 41 | 60 | - |
| 220 | 12 | 16 | 21 | 31 | 41 | 62 | - |
| 230 | 12 | 17 | 22 | 32 | 42 | 63 | - |
| 240 | 12 | 17 | 22 | 33 | 43 | 64 | - |
| 250 | 12 | 17 | 23 | 33 | 44 | 65 | - |
| 260 | 12 | 18 | 23 | 33 | 44 | 65 | - |
| 270 | 13 | 18 | 23 | 34 | 44 | 65 | - |
| 280 | 13 | 18 | 23 | 34 | 45 | 66 | - |
| 290 | 13 | 18 | 24 | 34 | 45 | 66 | - |
| 300 | 13 | 19 | 24 | 35 | 45 | 66 | - |
| 310 | 13 | 19 | 24 | 35 | 45 | 67 | - |
| 320 | 14 | 19 | 24 | 35 | 46 | 67 | - |
| 330 | 14 | 19 | 24 | 35 | 46 | 67 | - |
| 340 | 14 | 19 | 25 | 35 | 46 | 68 | - |
| 350 | 14 | 19 | 25 | 35 | 46 | 68 | - |
| 360 | 14 | 19 | 25 | 36 | 46 | 68 | - |
| 370 | 14 | 20 | 25 | 36 | 47 | 68 | - |
| 380 | 14 | 20 | 25 | 36 | 47 | 68 | - |
| 390 | 14 | 20 | 25 | 36 | 47 | 69 | - |
| 400 | 15 | 20 | 25 | 36 | 47 | 69 | - |
| 410 | 15 | 20 | 26 | 36 | 47 | 69 | - |
| 420 | 15 | 20 | 26 | 36 | 47 | 69 | - |
| 430 | 15 | 20 | 26 | 37 | 48 | 69 | - |
| 440 | 15 | 20 | 26 | 37 | 48 | 69 | - |
| 495 | 15 | 21 | 26 | 37 | 48 | - | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **550 °C** design temperature on steel pursuant to UNE EN 13381-4.

OPEN SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 11 | 17 | 29 | 41 |
| 70 | 10 | 10 | 10 | 11 | 18 | 30 | 43 |
| 80 | 10 | 10 | 10 | 13 | 20 | 33 | 46 |
| 90 | 10 | 10 | 10 | 15 | 22 | 35 | 48 |
| 100 | 10 | 10 | 10 | 16 | 23 | 37 | 50 |
| 110 | 10 | 10 | 10 | 17 | 24 | 38 | 52 |
| 120 | 10 | 10 | 11 | 18 | 25 | 40 | 54 |
| 130 | 10 | 10 | 12 | 19 | 26 | 41 | 55 |
| 140 | 10 | 10 | 13 | 20 | 27 | 42 | 57 |
| 150 | 10 | 10 | 13 | 21 | 28 | 43 | 58 |
| 160 | 10 | 10 | 14 | 21 | 29 | 44 | 59 |
| 170 | 10 | 10 | 14 | 22 | 29 | 45 | 60 |
| 180 | 10 | 11 | 15 | 22 | 30 | 45 | 61 |
| 190 | 10 | 11 | 15 | 23 | 30 | 46 | 61 |
| 200 | 10 | 11 | 15 | 23 | 31 | 46 | 62 |
| 210 | 10 | 12 | 16 | 23 | 31 | 47 | 63 |
| 220 | 10 | 12 | 16 | 24 | 32 | 47 | 63 |
| 230 | 10 | 12 | 16 | 24 | 32 | 48 | 64 |
| 240 | 10 | 12 | 16 | 24 | 32 | 48 | 64 |
| 250 | 10 | 13 | 17 | 25 | 33 | 49 | 65 |
| 260 | 10 | 13 | 17 | 25 | 33 | 49 | 65 |
| 270 | 10 | 13 | 17 | 25 | 33 | 49 | 66 |
| 280 | 10 | 13 | 17 | 25 | 33 | 50 | 66 |
| 290 | 10 | 13 | 17 | 26 | 34 | 50 | 66 |
| 300 | 10 | 14 | 18 | 26 | 34 | 50 | 67 |
| 310 | 10 | 14 | 18 | 26 | 34 | 51 | 67 |
| 320 | 10 | 14 | 18 | 26 | 34 | 51 | 67 |
| 330 | 10 | 14 | 18 | 26 | 35 | 51 | 68 |
| 340 | 10 | 14 | 18 | 26 | 35 | 51 | 68 |
| 350 | 10 | 14 | 18 | 27 | 35 | 51 | 68 |
| 360 | 10 | 14 | 18 | 27 | 35 | 52 | 68 |
| 370 | 10 | 14 | 19 | 27 | 35 | 52 | 68 |
| 380 | 10 | 15 | 19 | 27 | 35 | 52 | 69 |
| 390 | 10 | 15 | 19 | 27 | 35 | 52 | 69 |
| 400 | 11 | 15 | 19 | 27 | 36 | 52 | 69 |
| 410 | 11 | 15 | 19 | 27 | 36 | 53 | 69 |
| 420 | 11 | 15 | 19 | 27 | 36 | 53 | - |
| 430 | 11 | 15 | 19 | 28 | 36 | 53 | - |
| 440 | 11 | 15 | 19 | 28 | 36 | 53 | - |
| 495 | 11 | 15 | 20 | 28 | 37 | 54 | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **550 °C** design temperature on steel pursuant to UNE EN 13381-4.

CLOSED SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 11 | 18 | 31 | 44 |
| 70 | 10 | 10 | 10 | 12 | 19 | 32 | 46 |
| 80 | 10 | 10 | 10 | 14 | 21 | 35 | 49 |
| 90 | 10 | 10 | 10 | 16 | 23 | 38 | 53 |
| 100 | 10 | 10 | 10 | 18 | 25 | 40 | 56 |
| 110 | 11 | 11 | 11 | 19 | 27 | 43 | 58 |
| 120 | 11 | 11 | 12 | 20 | 28 | 44 | 60 |
| 130 | 11 | 11 | 13 | 22 | 30 | 46 | 63 |
| 140 | 11 | 11 | 14 | 23 | 31 | 48 | 65 |
| 150 | 11 | 11 | 15 | 24 | 32 | 49 | 67 |
| 160 | 11 | 11 | 16 | 25 | 33 | 51 | 68 |
| 170 | 11 | 12 | 16 | 25 | 34 | 52 | - |
| 180 | 11 | 13 | 17 | 26 | 35 | 53 | - |
| 190 | 11 | 13 | 18 | 27 | 36 | 55 | - |
| 200 | 11 | 14 | 18 | 28 | 37 | 56 | - |
| 210 | 11 | 14 | 19 | 28 | 38 | 57 | - |
| 220 | 12 | 15 | 19 | 29 | 39 | 58 | - |
| 230 | 12 | 15 | 20 | 30 | 39 | 59 | - |
| 240 | 12 | 15 | 20 | 30 | 40 | 60 | - |
| 250 | 12 | 16 | 21 | 31 | 41 | 61 | - |
| 260 | 12 | 16 | 21 | 31 | 41 | 61 | - |
| 270 | 12 | 16 | 21 | 31 | 42 | 62 | - |
| 280 | 12 | 17 | 22 | 32 | 42 | 62 | - |
| 290 | 12 | 17 | 22 | 32 | 42 | 63 | - |
| 300 | 12 | 17 | 22 | 32 | 42 | 63 | - |
| 310 | 12 | 17 | 22 | 32 | 43 | 63 | - |
| 320 | 12 | 17 | 22 | 33 | 43 | 63 | - |
| 330 | 12 | 17 | 23 | 33 | 43 | 64 | - |
| 340 | 12 | 18 | 23 | 33 | 43 | 64 | - |
| 350 | 13 | 18 | 23 | 33 | 44 | 64 | - |
| 360 | 13 | 18 | 23 | 33 | 44 | 65 | - |
| 370 | 13 | 18 | 23 | 34 | 44 | 65 | - |
| 380 | 13 | 18 | 23 | 34 | 44 | 65 | - |
| 390 | 13 | 18 | 23 | 34 | 44 | 65 | - |
| 400 | 13 | 18 | 24 | 34 | 45 | 65 | - |
| 410 | 13 | 18 | 24 | 34 | 45 | 66 | - |
| 420 | 13 | 19 | 24 | 34 | 45 | 66 | - |
| 430 | 13 | 19 | 24 | 34 | 45 | 66 | - |
| 440 | 14 | 19 | 24 | 35 | 45 | 66 | - |
| 495 | 14 | 19 | 25 | 35 | 46 | 67 | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **600 °C** design temperature on steel pursuant to UNE EN 13381-4.

OPEN SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 10 | 15 | 26 | 38 |
| 70 | 10 | 10 | 10 | 10 | 16 | 27 | 39 |
| 80 | 10 | 10 | 10 | 12 | 18 | 30 | 42 |
| 90 | 10 | 10 | 10 | 13 | 19 | 32 | 44 |
| 100 | 10 | 10 | 10 | 14 | 21 | 34 | 47 |
| 110 | 10 | 10 | 10 | 15 | 22 | 35 | 49 |
| 120 | 10 | 10 | 10 | 16 | 23 | 37 | 50 |
| 130 | 10 | 10 | 10 | 17 | 24 | 38 | 52 |
| 140 | 10 | 10 | 11 | 18 | 25 | 39 | 53 |
| 150 | 10 | 10 | 12 | 19 | 26 | 40 | 54 |
| 160 | 10 | 10 | 12 | 19 | 27 | 41 | 55 |
| 170 | 10 | 10 | 13 | 20 | 27 | 42 | 56 |
| 180 | 10 | 10 | 13 | 20 | 28 | 42 | 57 |
| 190 | 10 | 10 | 13 | 21 | 28 | 43 | 58 |
| 200 | 10 | 10 | 14 | 21 | 29 | 44 | 59 |
| 210 | 10 | 10 | 14 | 22 | 29 | 44 | 59 |
| 220 | 10 | 11 | 14 | 22 | 30 | 45 | 60 |
| 230 | 10 | 11 | 15 | 22 | 30 | 45 | 60 |
| 240 | 10 | 11 | 15 | 23 | 30 | 46 | 61 |
| 250 | 10 | 11 | 15 | 23 | 31 | 46 | 61 |
| 260 | 10 | 12 | 15 | 23 | 31 | 46 | 62 |
| 270 | 10 | 12 | 16 | 23 | 31 | 47 | 62 |
| 280 | 10 | 12 | 16 | 24 | 31 | 47 | 63 |
| 290 | 10 | 12 | 16 | 24 | 32 | 47 | 63 |
| 300 | 10 | 12 | 16 | 24 | 32 | 48 | 63 |
| 310 | 10 | 12 | 16 | 24 | 32 | 48 | 64 |
| 320 | 10 | 13 | 17 | 24 | 32 | 48 | 64 |
| 330 | 10 | 13 | 17 | 25 | 33 | 48 | 64 |
| 340 | 10 | 13 | 17 | 25 | 33 | 49 | 65 |
| 350 | 10 | 13 | 17 | 25 | 33 | 49 | 65 |
| 360 | 10 | 13 | 17 | 25 | 33 | 49 | 65 |
| 370 | 10 | 13 | 17 | 25 | 33 | 49 | 65 |
| 380 | 10 | 13 | 17 | 25 | 33 | 49 | 66 |
| 390 | 10 | 13 | 17 | 26 | 34 | 50 | 66 |
| 400 | 10 | 14 | 18 | 26 | 34 | 50 | 66 |
| 410 | 10 | 14 | 18 | 26 | 34 | 50 | 66 |
| 420 | 10 | 14 | 18 | 26 | 34 | 50 | 66 |
| 430 | 10 | 14 | 18 | 26 | 34 | 50 | 67 |
| 440 | 10 | 14 | 18 | 26 | 34 | 50 | 67 |
| 495 | 10 | 14 | 18 | 27 | 35 | 51 | 68 |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **600 °C** design temperature on steel pursuant to UNE EN 13381-4.

CLOSED SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 10 | 16 | 28 | 40 |
| 70 | 10 | 10 | 10 | 10 | 17 | 29 | 41 |
| 80 | 10 | 10 | 10 | 12 | 19 | 32 | 45 |
| 90 | 10 | 10 | 10 | 14 | 21 | 35 | 48 |
| 100 | 10 | 10 | 10 | 16 | 23 | 37 | 51 |
| 110 | 11 | 11 | 11 | 17 | 25 | 39 | 54 |
| 120 | 11 | 11 | 11 | 18 | 26 | 41 | 56 |
| 130 | 11 | 11 | 12 | 20 | 27 | 43 | 58 |
| 140 | 11 | 11 | 13 | 21 | 29 | 45 | 60 |
| 150 | 11 | 11 | 13 | 22 | 30 | 46 | 62 |
| 160 | 11 | 11 | 14 | 22 | 31 | 47 | 64 |
| 170 | 11 | 11 | 15 | 23 | 32 | 49 | 66 |
| 180 | 11 | 11 | 15 | 24 | 33 | 50 | 67 |
| 190 | 11 | 12 | 16 | 25 | 34 | 51 | 69 |
| 200 | 11 | 12 | 17 | 26 | 34 | 52 | - |
| 210 | 11 | 13 | 17 | 26 | 35 | 53 | - |
| 220 | 12 | 13 | 18 | 27 | 36 | 55 | - |
| 230 | 12 | 13 | 18 | 27 | 37 | 56 | - |
| 240 | 12 | 14 | 19 | 28 | 38 | 57 | - |
| 250 | 12 | 14 | 19 | 29 | 38 | 58 | - |
| 260 | 12 | 15 | 19 | 29 | 39 | 58 | - |
| 270 | 12 | 15 | 20 | 29 | 39 | 58 | - |
| 280 | 12 | 15 | 20 | 30 | 39 | 59 | - |
| 290 | 12 | 15 | 20 | 30 | 40 | 59 | - |
| 300 | 12 | 15 | 20 | 30 | 40 | 60 | - |
| 310 | 12 | 16 | 21 | 30 | 40 | 60 | - |
| 320 | 12 | 16 | 21 | 31 | 40 | 60 | - |
| 330 | 12 | 16 | 21 | 31 | 41 | 61 | - |
| 340 | 12 | 16 | 21 | 31 | 41 | 61 | - |
| 350 | 12 | 16 | 21 | 31 | 41 | 61 | - |
| 360 | 12 | 16 | 21 | 31 | 41 | 61 | - |
| 370 | 12 | 17 | 22 | 32 | 42 | 62 | - |
| 380 | 12 | 17 | 22 | 32 | 42 | 62 | - |
| 390 | 12 | 17 | 22 | 32 | 42 | 62 | - |
| 400 | 12 | 17 | 22 | 32 | 42 | 62 | - |
| 410 | 12 | 17 | 22 | 32 | 42 | 63 | - |
| 420 | 12 | 17 | 22 | 32 | 42 | 63 | - |
| 430 | 12 | 17 | 22 | 32 | 43 | 63 | - |
| 440 | 12 | 17 | 22 | 33 | 43 | 63 | - |
| 495 | 13 | 18 | 23 | 33 | 43 | 64 | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **650 °C** design temperature on steel pursuant to UNE EN 13381-4.

OPEN SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 10 | 13 | 24 | 34 |
| 70 | 10 | 10 | 10 | 10 | 14 | 24 | 35 |
| 80 | 10 | 10 | 10 | 10 | 16 | 27 | 38 |
| 90 | 10 | 10 | 10 | 11 | 17 | 29 | 41 |
| 100 | 10 | 10 | 10 | 13 | 19 | 31 | 43 |
| 110 | 10 | 10 | 10 | 14 | 20 | 33 | 45 |
| 120 | 10 | 10 | 10 | 15 | 21 | 34 | 47 |
| 130 | 10 | 10 | 10 | 16 | 22 | 35 | 48 |
| 140 | 10 | 10 | 10 | 16 | 23 | 36 | 50 |
| 150 | 10 | 10 | 10 | 17 | 24 | 37 | 51 |
| 160 | 10 | 10 | 11 | 18 | 25 | 38 | 52 |
| 170 | 10 | 10 | 11 | 18 | 25 | 39 | 53 |
| 180 | 10 | 10 | 12 | 19 | 26 | 40 | 54 |
| 190 | 10 | 10 | 12 | 19 | 26 | 40 | 55 |
| 200 | 10 | 10 | 13 | 20 | 27 | 41 | 55 |
| 210 | 10 | 10 | 13 | 20 | 27 | 42 | 56 |
| 220 | 10 | 10 | 13 | 20 | 28 | 42 | 57 |
| 230 | 10 | 10 | 13 | 21 | 28 | 43 | 57 |
| 240 | 10 | 10 | 14 | 21 | 28 | 43 | 58 |
| 250 | 10 | 10 | 14 | 21 | 29 | 44 | 58 |
| 260 | 10 | 10 | 14 | 22 | 29 | 44 | 59 |
| 270 | 10 | 11 | 14 | 22 | 29 | 44 | 59 |
| 280 | 10 | 11 | 15 | 22 | 30 | 45 | 60 |
| 290 | 10 | 11 | 15 | 22 | 30 | 45 | 60 |
| 300 | 10 | 11 | 15 | 23 | 30 | 45 | 60 |
| 310 | 10 | 11 | 15 | 23 | 30 | 46 | 61 |
| 320 | 10 | 11 | 15 | 23 | 31 | 46 | 61 |
| 330 | 10 | 12 | 15 | 23 | 31 | 46 | 61 |
| 340 | 10 | 12 | 16 | 23 | 31 | 46 | 62 |
| 350 | 10 | 12 | 16 | 23 | 31 | 47 | 62 |
| 360 | 10 | 12 | 16 | 24 | 31 | 47 | 62 |
| 370 | 10 | 12 | 16 | 24 | 31 | 47 | 62 |
| 380 | 10 | 12 | 16 | 24 | 32 | 47 | 63 |
| 390 | 10 | 12 | 16 | 24 | 32 | 47 | 63 |
| 400 | 10 | 12 | 16 | 24 | 32 | 47 | 63 |
| 410 | 10 | 13 | 16 | 24 | 32 | 48 | 63 |
| 420 | 10 | 13 | 17 | 24 | 32 | 48 | 63 |
| 430 | 10 | 13 | 17 | 24 | 32 | 48 | 64 |
| 440 | 10 | 13 | 17 | 25 | 32 | 48 | 64 |
| 495 | 10 | 13 | 17 | 25 | 33 | 49 | 65 |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **650 °C** design temperature on steel pursuant to UNE EN 13381-4.

CLOSED SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 10 | 14 | 25 | 36 |
| 70 | 10 | 10 | 10 | 10 | 15 | 26 | 38 |
| 80 | 10 | 10 | 10 | 11 | 17 | 29 | 42 |
| 90 | 10 | 10 | 10 | 12 | 19 | 32 | 45 |
| 100 | 10 | 10 | 10 | 14 | 21 | 34 | 48 |
| 110 | 11 | 11 | 11 | 15 | 22 | 36 | 50 |
| 120 | 11 | 11 | 11 | 17 | 24 | 38 | 53 |
| 130 | 11 | 11 | 11 | 18 | 25 | 40 | 55 |
| 140 | 11 | 11 | 11 | 19 | 26 | 41 | 57 |
| 150 | 11 | 11 | 12 | 20 | 27 | 43 | 59 |
| 160 | 11 | 11 | 13 | 21 | 29 | 44 | 60 |
| 170 | 11 | 11 | 13 | 21 | 29 | 46 | 62 |
| 180 | 11 | 11 | 14 | 22 | 30 | 47 | 64 |
| 190 | 11 | 11 | 14 | 23 | 31 | 48 | 65 |
| 200 | 11 | 11 | 15 | 24 | 32 | 49 | 66 |
| 210 | 11 | 11 | 16 | 24 | 33 | 50 | 68 |
| 220 | 12 | 12 | 16 | 25 | 34 | 51 | 69 |
| 230 | 12 | 12 | 17 | 26 | 35 | 52 | - |
| 240 | 12 | 12 | 17 | 26 | 35 | 53 | - |
| 250 | 12 | 13 | 17 | 27 | 36 | 54 | - |
| 260 | 12 | 13 | 18 | 27 | 36 | 55 | - |
| 270 | 12 | 13 | 18 | 27 | 37 | 55 | - |
| 280 | 12 | 14 | 18 | 28 | 37 | 56 | - |
| 290 | 12 | 14 | 19 | 28 | 37 | 56 | - |
| 300 | 12 | 14 | 19 | 28 | 38 | 57 | - |
| 310 | 12 | 14 | 19 | 28 | 38 | 57 | - |
| 320 | 12 | 14 | 19 | 29 | 38 | 57 | - |
| 330 | 12 | 15 | 19 | 29 | 38 | 58 | - |
| 340 | 12 | 15 | 19 | 29 | 39 | 58 | - |
| 350 | 12 | 15 | 20 | 29 | 39 | 58 | - |
| 360 | 12 | 15 | 20 | 29 | 39 | 58 | - |
| 370 | 12 | 15 | 20 | 30 | 39 | 59 | - |
| 380 | 12 | 15 | 20 | 30 | 40 | 59 | - |
| 390 | 12 | 15 | 20 | 30 | 40 | 59 | - |
| 400 | 12 | 16 | 20 | 30 | 40 | 59 | - |
| 410 | 12 | 16 | 21 | 30 | 40 | 60 | - |
| 420 | 12 | 16 | 21 | 30 | 40 | 60 | - |
| 430 | 12 | 16 | 21 | 31 | 40 | 60 | - |
| 440 | 12 | 16 | 21 | 31 | 41 | 60 | - |
| 495 | 12 | 16 | 21 | 31 | 41 | 61 | - |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **700 °C** design temperature on steel pursuant to UNE EN 13381-4.

OPEN SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 10 | 11 | 21 | 31 |
| 70 | 10 | 10 | 10 | 10 | 12 | 22 | 32 |
| 80 | 10 | 10 | 10 | 10 | 14 | 25 | 35 |
| 90 | 10 | 10 | 10 | 10 | 16 | 27 | 38 |
| 100 | 10 | 10 | 10 | 11 | 17 | 29 | 40 |
| 110 | 10 | 10 | 10 | 12 | 18 | 30 | 42 |
| 120 | 10 | 10 | 10 | 13 | 19 | 32 | 44 |
| 130 | 10 | 10 | 10 | 14 | 20 | 33 | 45 |
| 140 | 10 | 10 | 10 | 15 | 21 | 34 | 47 |
| 150 | 10 | 10 | 10 | 16 | 22 | 35 | 48 |
| 160 | 10 | 10 | 10 | 16 | 23 | 36 | 49 |
| 170 | 10 | 10 | 10 | 17 | 23 | 37 | 50 |
| 180 | 10 | 10 | 11 | 17 | 24 | 37 | 51 |
| 190 | 10 | 10 | 11 | 18 | 25 | 38 | 52 |
| 200 | 10 | 10 | 11 | 18 | 25 | 39 | 52 |
| 210 | 10 | 10 | 12 | 19 | 25 | 39 | 53 |
| 220 | 10 | 10 | 12 | 19 | 26 | 40 | 54 |
| 230 | 10 | 10 | 12 | 19 | 26 | 40 | 54 |
| 240 | 10 | 10 | 13 | 20 | 27 | 41 | 55 |
| 250 | 10 | 10 | 13 | 20 | 27 | 41 | 55 |
| 260 | 10 | 10 | 13 | 20 | 27 | 42 | 56 |
| 270 | 10 | 10 | 13 | 20 | 28 | 42 | 56 |
| 280 | 10 | 10 | 13 | 21 | 28 | 42 | 57 |
| 290 | 10 | 10 | 14 | 21 | 28 | 43 | 57 |
| 300 | 10 | 10 | 14 | 21 | 28 | 43 | 58 |
| 310 | 10 | 10 | 14 | 21 | 29 | 43 | 58 |
| 320 | 10 | 10 | 14 | 21 | 29 | 44 | 58 |
| 330 | 10 | 11 | 14 | 22 | 29 | 44 | 59 |
| 340 | 10 | 11 | 14 | 22 | 29 | 44 | 59 |
| 350 | 10 | 11 | 15 | 22 | 29 | 44 | 59 |
| 360 | 10 | 11 | 15 | 22 | 30 | 45 | 59 |
| 370 | 10 | 11 | 15 | 22 | 30 | 45 | 60 |
| 380 | 10 | 11 | 15 | 22 | 30 | 45 | 60 |
| 390 | 10 | 11 | 15 | 23 | 30 | 45 | 60 |
| 400 | 10 | 11 | 15 | 23 | 30 | 45 | 60 |
| 410 | 10 | 11 | 15 | 23 | 30 | 45 | 61 |
| 420 | 10 | 12 | 15 | 23 | 31 | 46 | 61 |
| 430 | 10 | 12 | 15 | 23 | 31 | 46 | 61 |
| 440 | 10 | 12 | 16 | 23 | 31 | 46 | 61 |
| 495 | 10 | 12 | 16 | 24 | 31 | 47 | 62 |

The information in this chart appears in the characteristics report under file 08/32302469.

MORTAR THICKNESS SPECIFICATION CHART ACCORDING TO THE REQUIRED FIRE RESISTANCE AND THE PROFILE'S SECTION FACTOR

Valid chart for **700 °C** design temperature on steel pursuant to UNE EN 13381-4.

CLOSED SECTION BEAMS AND PILARS

TEST RESULTS UNDER THE EN 13381-4 STANDARD AND CLASSIFICACION UNDER THE EN 13501-2 STANDARD

| Mass (m ⁻¹) | R30 min | R45 min | R60 min | R90 min | R120 min | R180 min | R240 min |
|-------------------------|---------|---------|---------|---------|----------|----------|----------|
| 67 | 10 | 10 | 10 | 10 | 12 | 23 | 33 |
| 70 | 10 | 10 | 10 | 10 | 13 | 24 | 35 |
| 80 | 10 | 10 | 10 | 10 | 15 | 27 | 38 |
| 90 | 10 | 10 | 10 | 11 | 17 | 29 | 41 |
| 100 | 11 | 10 | 10 | 12 | 19 | 32 | 44 |
| 110 | 12 | 11 | 11 | 14 | 20 | 34 | 47 |
| 120 | 13 | 11 | 11 | 15 | 22 | 35 | 49 |
| 130 | 14 | 11 | 11 | 16 | 23 | 37 | 51 |
| 140 | 15 | 11 | 11 | 17 | 24 | 39 | 53 |
| 150 | 15 | 11 | 11 | 18 | 25 | 40 | 55 |
| 160 | 16 | 11 | 11 | 19 | 26 | 42 | 57 |
| 170 | 16 | 11 | 12 | 20 | 27 | 43 | 58 |
| 180 | 17 | 11 | 12 | 20 | 28 | 44 | 60 |
| 190 | 17 | 11 | 13 | 21 | 29 | 45 | 62 |
| 200 | 18 | 11 | 14 | 22 | 30 | 46 | 63 |
| 210 | 18 | 11 | 14 | 22 | 31 | 48 | 64 |
| 220 | 19 | 12 | 15 | 23 | 32 | 49 | 66 |
| 230 | 19 | 12 | 15 | 24 | 32 | 50 | 67 |
| 240 | 19 | 12 | 16 | 24 | 33 | 51 | 68 |
| 250 | 20 | 12 | 16 | 25 | 34 | 52 | 69 |
| 260 | 20 | 12 | 16 | 25 | 34 | 52 | - |
| 270 | 20 | 12 | 17 | 26 | 35 | 52 | - |
| 280 | 20 | 12 | 17 | 26 | 35 | 53 | - |
| 290 | 20 | 12 | 17 | 26 | 35 | 53 | - |
| 300 | 20 | 13 | 17 | 26 | 35 | 54 | - |
| 310 | 20 | 13 | 17 | 27 | 36 | 54 | - |
| 320 | 21 | 13 | 18 | 27 | 36 | 54 | - |
| 330 | 21 | 13 | 18 | 27 | 36 | 55 | - |
| 340 | 21 | 13 | 18 | 27 | 37 | 55 | - |
| 350 | 21 | 14 | 18 | 27 | 37 | 55 | - |
| 360 | 21 | 14 | 18 | 28 | 37 | 56 | - |
| 370 | 21 | 14 | 19 | 28 | 37 | 56 | - |
| 380 | 21 | 14 | 19 | 28 | 37 | 56 | - |
| 390 | 21 | 14 | 19 | 28 | 38 | 56 | - |
| 400 | 21 | 14 | 19 | 28 | 38 | 57 | - |
| 410 | 21 | 14 | 19 | 29 | 38 | 57 | - |
| 420 | 21 | 14 | 19 | 29 | 38 | 57 | - |
| 430 | 22 | 15 | 19 | 29 | 38 | 57 | - |
| 440 | 22 | 15 | 19 | 29 | 38 | 57 | - |
| 495 | 22 | 15 | 20 | 30 | 39 | 58 | - |

The information in this chart appears in the characteristics report under file 08/32302469.