

TMS 602-13 CONCRETE MASONRY COMPRESSIVE STRENGTHS

There have been several significant changes in the 2013 masonry code and specifications. Table 2 values for f'_m in previous editions of the masonry specifications were based on prism tests that did not use consistent bedding practices. Recent prism testing of concrete masonry units has demonstrated higher prism strengths for both type N and for type S and M mortars. Based on those tests, the compressive strength, f'_m tables for clay and concrete masonry assemblies have been revised as follows:

2013 Table 2 – Concrete masonry compressive strength based on unit compressive strength

| Net area compressive strength of concrete masonry, f'_m | Net area compressive strength of concrete masonry units | |
|---|---|-----------------------|
| | Type S or M mortar | Type N mortar |
| 1,700 psi (11.72 MPa) | ----- | 1,900 psi (13.10 MPa) |
| 1,900 psi (13.10 MPa) | 1,900 psi (13.10 MPa) | 2,350 psi (16.21 MPa) |
| 2,000 psi (13.79 MPa) | 2,000 psi (13.79 MPa) | 2,650 psi (18.27 MPa) |
| 2,250 psi (15.51 MPa) | 2,600 psi (17.93 MPa) | 3,400 psi (23.44 MPa) |
| 2,500 psi (17.24 MPa) | 3,250 psi (22.41 MPa) | 4,350 psi (30.00 MPa) |
| 2,750 psi (18.96 MPa) | 3,900 psi (26.89 MPa) | ----- |
| 3,000 psi (20.69 MPa) | 4,500 psi (31.03 MPa) | ----- |

These values may be safely used for structural design of masonry, even if the 2013 code has not been adopted, because they have been based on a comprehensive testing program conducted by National Concrete Masonry Association. Note that the table in TMS602-13 contained two errors in conversion to SI units. Those errors have been corrected in the table above. The corrected values are shown in italics.

2011 Table 2 – Concrete masonry compressive strength based on unit compressive strength

| Net area compressive strength of concrete masonry | Net area compressive strength of concrete masonry units | |
|---|---|-----------------------|
| | Type S or M mortar | Type N mortar |
| 1,700 psi (11.72 MPa) | ----- | 1,900 psi (13.10 MPa) |
| 1,900 psi (13.10 MPa) | 1,900 psi (13.10 MPa) | 2,150 psi (14.82 MPa) |
| 2,000 psi (13.79 MPa) | 2,800 psi (13.79 MPa) | 3,050 psi (21.03 MPa) |
| 2,500 psi (17.24 MPa) | 3,750 psi (22.41 MPa) | 4,050 psi (27.92 MPa) |
| 3,000 psi (20.69 MPa) | 4,800 psi (31.03 MPa) | 5,250 psi (36.20 MPa) |

Clay masonry compressive strengths in Table 1 remain unchanged from previous editions of TMS602:

2013 Table 1 – Clay masonry compressive strength based on unit compressive strength

| Net area compressive strength of clay masonry | Net area compressive strength of clay masonry units | |
|---|---|------------------------|
| | Type S or M mortar | Type N mortar |
| 1,000 psi (6.90 MPa) | 1,700 psi (11.72 MPa) | 2,100 psi (14.48 MPa) |
| 1,500 psi (10.34 MPa) | 3,350 psi (23.10 MPa) | 4,150 psi (28.61 MPa) |
| 2,000 psi (13.79 MPa) | 4,950 psi (34.13 MPa) | 6,200 psi (42.75 MPa) |
| 2,500 psi (17.24 MPa) | 6,600 psi (45.51 MPa) | 8,250 psi (56.88 MPa) |
| 3,000 psi (20.69 MPa) | 8,250 psi (56.88 MPa) | 10,300 psi (71.02 MPa) |
| 3,500 psi (24.13 MPa) | 9,900 psi (68.26 MPa) | ----- |
| 4,000 psi (27.58 MPa) | 11,500 psi (79.29 MPa) | ----- |