

Axial Strength and Mating Screw Recommended Tightening Torque for PEM® Brand Self-clinching Nuts

| PEM® Brand S™ Nuts - Metric | | | | | | | | | |
|-----------------------------|--|--|--|--------------|-----------------|--------------|--------------|---------------|---------------|
| PEM® Part Number | Min. Axial Strength w/PC12.9 Screw, kN | Screw Strength Required to Develop Min. Axial, MPa | Mating Screw Recommended Tightening Torque, (N·m) (Assuming K=0.20 - actual K value may vary) | | | | | | |
| | | | Steel PC 4.6 | Steel PC 5.6 | Stainless A2-70 | Steel PC 8.8 | Steel PC 9.8 | Steel PC 10.9 | Steel PC 12.9 |
| S-M2-0ZI | 2.53 | 1220 | 0.15 | 0.19 | 0.28 | 0.40 | 0.45 | 0.59 | 0.61 |
| S-M2-1ZI | 2.53 | 1220 | 0.15 | 0.19 | 0.28 | 0.40 | 0.45 | 0.59 | 0.68 |
| S-M2-2ZI | 2.53 | 1220 | 0.15 | 0.19 | 0.28 | 0.40 | 0.45 | 0.59 | 0.68 |
| S-M2.5-0ZI | 3.81 | 1220 | 0.28 | 0.35 | 0.53 | 0.75 | 0.84 | 1.10 | 1.18 |
| S-M2.5-1ZI | 4.14 | 1220 | 0.31 | 0.38 | 0.57 | 0.81 | 0.92 | 1.20 | 1.32 |
| S-M2.5-2ZI | 4.14 | 1220 | 0.31 | 0.38 | 0.57 | 0.81 | 0.92 | 1.20 | 1.40 |
| S-M3-0ZI | 5.09 | 1220 | 0.45 | 0.56 | 0.85 | 1.20 | 1.35 | 1.77 | 1.88 |
| S-M3-1ZI | 5.65 | 1220 | 0.50 | 0.62 | 0.94 | 1.33 | 1.50 | 1.96 | 2.09 |
| S-M3-2ZI | 6.14 | 1220 | 0.54 | 0.68 | 1.02 | 1.45 | 1.63 | 2.13 | 2.49 |
| S-M3.5-0ZI | 5.63 | 1220 | 0.58 | 0.73 | 1.09 | 1.55 | 1.74 | 2.28 | 2.42 |
| S-M3.5-1ZI | 6.29 | 1220 | 0.65 | 0.81 | 1.22 | 1.73 | 1.95 | 2.54 | 2.71 |
| S-M3.5-2ZI | 7.61 | 1220 | 0.79 | 0.98 | 1.47 | 2.10 | 2.36 | 3.08 | 3.29 |
| S-M4-0ZI | 7.81 | 1220 | 0.92 | 1.15 | 1.73 | 2.46 | 2.76 | 3.61 | 3.88 |
| S-M4-1ZI | 8.58 | 1220 | 1.01 | 1.27 | 1.90 | 2.70 | 3.04 | 3.97 | 4.27 |
| S-M4-2ZI | 10.1 | 1220 | 1.20 | 1.49 | 2.24 | 3.19 | 3.59 | 4.68 | 5.05 |
| SS-M5-0ZI | 11.2 | 1220 | 1.65 | 2.06 | 3.09 | 4.40 | 4.95 | 6.46 | 6.95 |
| SS-M5-1ZI | 12.2 | 1220 | 1.80 | 2.25 | 3.37 | 4.79 | 5.39 | 7.04 | 7.57 |
| SS-M5-2ZI | 14.2 | 1220 | 2.09 | 2.62 | 3.92 | 5.58 | 6.28 | 8.20 | 8.82 |
| S-M6-00ZI | 23.7 | 1220 | 4.20 | 5.25 | 7.88 | 11.2 | 12.6 | 16.5 | 17.8 |
| S-M6-0ZI | 24.6 | 1220 | 4.35 | 5.43 | 8.15 | 11.6 | 13.0 | 17.0 | 18.9 |
| S-M6-1ZI | 24.6 | 1220 | 4.35 | 5.43 | 8.15 | 11.6 | 13.0 | 17.0 | 19.9 |
| S-M6-2ZI | 24.6 | 1220 | 4.35 | 5.43 | 8.15 | 11.6 | 13.0 | 17.0 | 19.9 |
| S-M8-1ZI | 44.7 | 1220 | 10.5 | 13.2 | 19.8 | 28.1 | 31.6 | 41.3 | 47.0 |
| S-M8-2ZI | 44.7 | 1220 | 10.5 | 13.2 | 19.8 | 28.1 | 31.6 | 41.3 | 48.3 |
| S-M10-1ZI | 70.7 | 1220 | 20.9 | 26.1 | 39.1 | 55.7 | 62.6 | 81.8 | 95.7 |
| S-M10-2ZI | 70.7 | 1220 | 20.9 | 26.1 | 39.1 | 55.7 | 62.6 | 81.8 | 95.7 |
| S-M12-1ZI | 102.8 | 1220 | 36.4 | 45.5 | 68.3 | 97.1 | 109 | 143 | 167 |

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Axial Strength and Mating Screw Recommended Tightening Torque for PEM® Brand Self-clinching Nuts

| PEM® Brand CLS™ Nuts - Metric | | | | | | | | | |
|-------------------------------|--|--|--|--------------|-----------------|--------------|--------------|---------------|---------------|
| PEM® Part Number | Min. Axial Strength w/PC12.9 Screw, kN | Screw Strength Required to Develop Min. Axial, MPa | Mating Screw Recommended Tightening Torque, (N·m) (Assuming K=0.20 - actual K value may vary) | | | | | | |
| | | | Steel PC 4.6 | Steel PC 5.6 | Stainless A2-70 | Steel PC 8.8 | Steel PC 9.8 | Steel PC 10.9 | Steel PC 12.9 |
| CLS-M2-0 | 1.76 | 847 | 0.15 | 0.19 | 0.28 | 0.37 | 0.37 | 0.37 | 0.37 |
| CLS-M2-1 | 2.00 | 966 | 0.15 | 0.19 | 0.28 | 0.40 | 0.42 | 0.42 | 0.42 |
| CLS-M2-2 | 2.50 | 1204 | 0.15 | 0.19 | 0.28 | 0.40 | 0.45 | 0.52 | 0.52 |
| CLS-M2.5-0 | 2.71 | 868 | 0.28 | 0.35 | 0.53 | 0.71 | 0.71 | 0.71 | 0.71 |
| CLS-M2.5-1 | 3.03 | 895 | 0.31 | 0.38 | 0.57 | 0.80 | 0.80 | 0.80 | 0.80 |
| CLS-M2.5-2 | 3.69 | 1087 | 0.31 | 0.38 | 0.57 | 0.81 | 0.92 | 0.97 | 0.97 |
| CLS-M3-0 | 3.60 | 863 | 0.45 | 0.56 | 0.85 | 1.13 | 1.13 | 1.13 | 1.13 |
| CLS-M3-1 | 4.00 | 864 | 0.50 | 0.63 | 0.94 | 1.26 | 1.26 | 1.26 | 1.26 |
| CLS-M3-2 | 4.80 | 953 | 0.54 | 0.68 | 1.02 | 1.45 | 1.51 | 1.51 | 1.51 |
| CLS-M3.5-0 | 3.98 | 862 | 0.58 | 0.73 | 1.09 | 1.46 | 1.46 | 1.46 | 1.46 |
| CLS-M3.5-1 | 4.45 | 863 | 0.65 | 0.81 | 1.22 | 1.64 | 1.64 | 1.64 | 1.64 |
| CLS-M3.5-2 | 5.40 | 866 | 0.79 | 0.98 | 1.47 | 1.98 | 1.98 | 1.98 | 1.98 |
| CLS-M4-0 | 5.58 | 871 | 0.92 | 1.15 | 1.73 | 2.34 | 2.34 | 2.34 | 2.34 |
| CLS-M4-1 | 6.13 | 872 | 1.01 | 1.27 | 1.90 | 2.58 | 2.58 | 2.58 | 2.58 |
| CLS-M4-2 | 7.25 | 874 | 1.20 | 1.49 | 2.24 | 3.04 | 3.04 | 3.04 | 3.04 |
| CLSS-M5-0 | 7.98 | 870 | 1.65 | 2.06 | 3.09 | 4.19 | 4.19 | 4.19 | 4.19 |
| CLSS-M5-1 | 8.69 | 871 | 1.80 | 2.25 | 3.37 | 4.56 | 4.56 | 4.56 | 4.56 |
| CLSS-M5-2 | 10.13 | 871 | 2.09 | 2.62 | 3.92 | 5.32 | 5.32 | 5.32 | 5.32 |
| CLS-M6-00 | 17.0 | 876 | 4.20 | 5.25 | 7.88 | 10.7 | 10.7 | 10.7 | 10.7 |
| CLS-M6-0 | 18.1 | 901 | 4.35 | 5.43 | 8.15 | 11.4 | 11.4 | 11.4 | 11.4 |
| CLS-M6-1 | 19.1 | 950 | 4.35 | 5.43 | 8.15 | 11.6 | 12.0 | 12.0 | 12.0 |
| CLS-M6-2 | 22.7 | 1130 | 4.35 | 5.43 | 8.15 | 11.6 | 13.0 | 13.0 | 14.3 |
| CLS-M8-1 | 33.7 | 921 | 10.5 | 13.2 | 19.8 | 28.1 | 28.3 | 28.3 | 28.3 |
| CLS-M8-2 | 38.7 | 1057 | 10.5 | 13.2 | 19.8 | 28.1 | 31.6 | 32.5 | 32.5 |
| CLS-M10-1 | 66.5 | 1147 | 20.9 | 26.1 | 39.1 | 55.7 | 62.6 | 69.8 | 69.8 |
| CLS-M10-2 | 70.7 | 1220 | 20.9 | 26.1 | 39.1 | 55.7 | 62.6 | 76.8 | 76.8 |
| CLS-M12-1 | 87.1 | 1033 | 36.4 | 45.5 | 68.3 | 97.1 | 109 | 110 | 110 |

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Axial Strength and Mating Screw Recommended Tightening Torque for PEM® Brand Self-clinching Nuts

| PEM® Brand SP™ Nuts - Metric | | | | | | | | | |
|------------------------------|--|--|--|--------------|-----------------|--------------|--------------|---------------|---------------|
| PEM® Part Number | Min. Axial Strength w/PC12.9 Screw, kN | Screw Strength Required to Develop Min. Axial, MPa | Mating Screw Recommended Tightening Torque, (N·m) (Assuming K=0.20 - actual K value may vary) | | | | | | |
| | | | Steel PC 4.6 | Steel PC 5.6 | Stainless A2-70 | Steel PC 8.8 | Steel PC 9.8 | Steel PC 10.9 | Steel PC 12.9 |
| SP-M2-1 | 2.53 | 1220 | 0.15 | 0.19 | 0.28 | 0.40 | 0.45 | 0.59 | 0.68 |
| SP-M2-2 | 2.53 | 1220 | 0.15 | 0.19 | 0.28 | 0.40 | 0.45 | 0.59 | 0.68 |
| SP-M2.5-0 | 3.81 | 1220 | 0.28 | 0.35 | 0.53 | 0.75 | 0.84 | 1.10 | 1.29 |
| SP-M2.5-1 | 4.14 | 1220 | 0.31 | 0.38 | 0.57 | 0.82 | 0.92 | 1.20 | 1.40 |
| SP-M2.5-2 | 4.14 | 1220 | 0.31 | 0.38 | 0.57 | 0.82 | 0.92 | 1.20 | 1.40 |
| SP-M3-0 | 5.09 | 1220 | 0.45 | 0.56 | 0.85 | 1.20 | 1.35 | 1.77 | 2.07 |
| SP-M3-1 | 5.65 | 1220 | 0.50 | 0.63 | 0.94 | 1.33 | 1.50 | 1.96 | 2.29 |
| SP-M3-2 | 6.14 | 1220 | 0.54 | 0.68 | 1.02 | 1.45 | 1.63 | 2.13 | 2.49 |
| SP-M3.5-0 | 5.63 | 1220 | 0.58 | 0.73 | 1.09 | 1.55 | 1.74 | 2.28 | 2.66 |
| SP-M3.5-1 | 6.29 | 1220 | 0.65 | 0.81 | 1.22 | 1.73 | 1.95 | 2.54 | 2.98 |
| SP-M3.5-2 | 7.61 | 1220 | 0.79 | 0.98 | 1.47 | 2.10 | 2.36 | 3.08 | 3.60 |
| SP-M4-0 | 7.81 | 1220 | 0.92 | 1.15 | 1.73 | 2.46 | 2.76 | 3.61 | 4.22 |
| SP-M4-1 | 8.58 | 1220 | 1.01 | 1.27 | 1.90 | 2.70 | 3.04 | 3.97 | 4.64 |
| SP-M4-2 | 10.1 | 1220 | 1.20 | 1.49 | 2.24 | 3.19 | 3.59 | 4.68 | 5.48 |
| SP-M5-0 | 11.2 | 1220 | 1.65 | 2.06 | 3.09 | 4.40 | 4.95 | 6.46 | 7.56 |
| SP-M5-1 | 12.2 | 1220 | 1.80 | 2.25 | 3.37 | 4.79 | 5.39 | 7.04 | 8.24 |
| SP-M5-2 | 14.2 | 1220 | 2.09 | 2.62 | 3.92 | 5.58 | 6.28 | 8.20 | 9.59 |
| SP-M6-1 | 24.6 | 1220 | 4.35 | 5.43 | 8.15 | 11.6 | 13.0 | 17.0 | 19.9 |
| SP-M6-2 | 24.6 | 1220 | 4.35 | 5.43 | 8.15 | 11.6 | 13.0 | 17.0 | 19.9 |
| SP-M8-1 | 44.7 | 1220 | 10.5 | 13.2 | 19.8 | 28.1 | 31.6 | 41.3 | 48.3 |
| SP-M8-2 | 44.7 | 1220 | 10.5 | 13.2 | 19.8 | 28.1 | 31.6 | 41.3 | 48.3 |
| SP-M10-1 | 70.7 | 1220 | 20.9 | 26.1 | 39.1 | 55.7 | 62.6 | 81.8 | 95.7 |

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Axial Strength and Mating Screw Recommended Tightening Torque for PEM® Brand Self-clinching Nuts

| PEM® Brand CLA™ Nuts - Metric | | | | | | | | |
|-------------------------------|--|--|--|--------------|-----------------|--------------|---------------|---------------|
| PEM® Part Number | Min. Axial Strength w/PC12.9 Screw, kN | Screw Strength Required to Develop Min. Axial, MPa | Mating Screw Recommended Tightening Torque, (N·m) (Assuming K=0.20 - actual K value may vary) | | | | | |
| | | | Aluminum 2024-T4 | Steel PC 5.6 | Stainless A2-70 | Steel PC 8.8 | Steel PC 10.9 | Steel PC 12.9 |
| CLA-M2-1 | 0.969 | 639 | 0.141 | 0.136 | 0.205 | 0.211 | 0.211 | 0.211 |
| CLA-M2-2 | 1.309 | 632 | 0.193 | 0.187 | 0.280 | 0.285 | 0.285 | 0.285 |
| CLA-M3-1 | 2.428 | 651 | 0.521 | 0.503 | 0.755 | 0.793 | 0.793 | 0.793 |
| CLA-M3-2 | 2.977 | 642 | 0.647 | 0.626 | 0.939 | 0.972 | 0.972 | 0.972 |
| CLA-M3.5-1 | 2.831 | 669 | 0.690 | 0.667 | 1.00 | 1.08 | 1.08 | 1.08 |
| CLA-M3.5-2 | 3.485 | 656 | 0.866 | 0.837 | 1.26 | 1.33 | 1.33 | 1.33 |
| CLA-M4-1 | 4.195 | 660 | 1.47 | 1.42 | 2.13 | 2.26 | 2.26 | 2.26 |
| CLA-M4-2 | 5.965 | 679 | 1.63 | 1.58 | 2.37 | 2.60 | 2.60 | 2.60 |
| CLA-M5-1 | 8.502 | 654 | 3.02 | 2.92 | 4.39 | 4.63 | 4.63 | 4.63 |
| CLA-M5-2 | 9.492 | 669 | 3.30 | 3.19 | 4.79 | 5.17 | 5.17 | 5.17 |
| CLA-M6-1 | 10.55 | 674 | 4.37 | 4.23 | 6.34 | 6.89 | 6.89 | 6.89 |
| CLA-M6-2 | 13.05 | 659 | 5.52 | 5.34 | 8.01 | 8.52 | 8.52 | 8.52 |

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Axial Strength and Mating Screw Recommended Tightening Torque for PEM® Brand Self-clinching Nuts

| PEM® Brand SH™, HNL™ and H™ Nuts - Metric | | | | | | | | | |
|---|--|--|--|--------------|-----------------|--------------|--------------|---------------|---------------|
| PEM® Part Number | Min. Axial Strength w/PC12.9 Screw, kN | Screw Strength Required to Develop Min. Axial, MPa | Mating Screw Recommended Tightening Torque, (N·m) (Assuming K=0.20 - actual K value may vary) | | | | | | |
| | | | Steel PC 4.6 | Steel PC 5.6 | Stainless A2-70 | Steel PC 8.8 | Steel PC 9.8 | Steel PC 10.9 | Steel PC 12.9 |
| SH-M6-1X | 24.6 | 1220 | 4.35 | 5.43 | 8.15 | 11.6 | 13.0 | 17.0 | 19.9 |
| SH-M6-2X | 24.6 | 1220 | 4.35 | 5.43 | 8.15 | 11.6 | 13.0 | 17.0 | 19.9 |
| SH-M8-1X | 44.7 | 1220 | 10.5 | 13.2 | 19.8 | 28.1 | 31.6 | 41.3 | 48.3 |
| SH-M8-2X | 44.7 | 1220 | 10.5 | 13.2 | 19.8 | 28.1 | 31.6 | 41.3 | 48.3 |
| SH-M10-1X | 70.7 | 1220 | 20.9 | 26.1 | 39.1 | 55.7 | 62.6 | 81.8 | 95.7 |
| HNL-M6-LZ | 16.7 | 877 | 4.1 | 5.1 | 7.7 | 10.5 | 10.5 | 10.5 | 10.5 |
| HNL-M8-LZ | 31.1 | 862 | 10 | 13 | 19 | 26 | 26 | 26 | 26 |
| HNL-M10-LZ | 51.3 | 884 | 21 | 26 | 39 | 54 | 54 | 54 | 54 |
| H-M10-ZI | 70.7 | 1220 | 21 | 26 | 39 | 56 | 63 | 82 | 89 |

| PEM RT® Nuts - Metric | | | | | | | | | |
|-----------------------|--|--|--|--------------|-----------------|--------------|--------------|---------------|---------------|
| PEM® Part Number | Min. Axial Strength w/PC12.9 Screw, kN | Screw Strength Required to Develop Min. Axial, MPa | Mating Screw Recommended Tightening Torque, (N·m) (Assuming k=0.25 - actual k value may vary) * | | | | | | |
| | | | Steel PC 4.6 | Steel PC 5.6 | Stainless A2-70 | Steel PC 8.8 | Steel PC 9.8 | Steel PC 10.9 | Steel PC 12.9 |
| S-RTM3-0ZI | 3.17 | 1220 | 0.3 | 0.38 | 0.57 | 0.81 | 0.91 | 1.19 | 1.39 |
| S-RTM3-1ZI | 3.52 | 1220 | 0.34 | 0.43 | 0.64 | 0.91 | 1.03 | 1.34 | 1.49 |
| S-RTM3-2ZI | 6.14 | 1220 | 0.42 | 0.52 | 0.78 | 1.12 | 1.26 | 1.64 | 1.92 |
| S-RTM4-0ZI | 5.31 | 1220 | 0.65 | 0.81 | 1.22 | 1.73 | 1.95 | 2.54 | 2.98 |
| S-RTM4-1ZI | 5.83 | 1220 | 0.73 | 0.91 | 1.36 | 1.94 | 2.18 | 2.85 | 3.33 |
| S-RTM4-2ZI | 6.9 | 1220 | 0.88 | 1.1 | 1.65 | 2.35 | 2.65 | 3.45 | 4.04 |
| S-RTM5-0ZI | 5.9 | 1220 | 1.08 | 1.35 | 2.03 | 2.89 | 3.25 | 4.24 | 4.96 |
| S-RTM5-1ZI | 6.4 | 1220 | 1.18 | 1.48 | 2.21 | 3.15 | 3.54 | 4.62 | 5.41 |
| S-RTM5-2ZI | 7.4 | 1220 | 1.37 | 1.72 | 2.58 | 3.66 | 4.12 | 5.38 | 6.3 |
| S-RTM6-00ZI | 20 | 1220 | 4.42 | 5.52 | 8.28 | 11.8 | 13.3 | 17.3 | 19.5 |
| S-RTM6-0ZI | 24.6 | 1220 | 4.7 | 5.88 | 8.81 | 12.5 | 14.1 | 18.4 | 20.8 |
| S-RTM6-1ZI | 24.6 | 1220 | 4.96 | 6.2 | 9.29 | 13 | 14.9 | 19.4 | 21.9 |
| S-RTM6-2ZI | 24.6 | 1220 | 5.89 | 7.37 | 11.1 | 15.7 | 17.7 | 23.1 | 26.1 |
| S-RTM8-1ZI | 44.7 | 1220 | 11.5 | 14.4 | 21.6 | 30.8 | 34.6 | 45.2 | 47.9 |
| S-RTM8-2ZI | 44.7 | 1220 | 13.3 | 16.6 | 24 | 35.5 | 39.9 | 52.1 | 60.7 |

* The additional tightening torque for the PEM RT® nut is 25% more than a standard thread (RT Factor: 1.25)

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Axial Strength and Mating Screw Recommended Tightening Torque for PEM® Brand Self-clinching Nuts

| PEM® Brand SMP™ Nuts - Metric | | | | | | | | | |
|-------------------------------|--|--|--|--------------|-----------------|--------------|--------------|---------------|---------------|
| PEM® Part Number | Min. Axial Strength w/PC12.9 Screw, kN | Screw Strength Required to Develop Min. Axial, MPa | Mating Screw Recommended Tightening Torque, (N·m) (Assuming K=0.20 - actual K value may vary) | | | | | | |
| | | | Steel PC 4.6 | Steel PC 5.6 | Stainless A2-70 | Steel PC 8.8 | Steel PC 9.8 | Steel PC 10.9 | Steel PC 12.9 |
| SMPS-M2.5 | 2.24 | 865 | 0.23 | 0.29 | 0.44 | 0.59 | 0.59 | 0.59 | 0.59 |
| SMPP-M2.5 | 3.10 | 1220 | 0.23 | 0.29 | 0.43 | 0.61 | 0.69 | 0.90 | 1.05 |
| SMPS-M3 | 2.63 | 858 | 0.33 | 0.41 | 0.62 | 0.83 | 0.83 | 0.83 | 0.83 |
| SMPP-M3 | 3.68 | 1220 | 0.33 | 0.41 | 0.61 | 0.87 | 0.98 | 1.27 | 1.49 |
| SMPS-M3.5 | 2.97 | 858 | 0.44 | 0.55 | 0.82 | 1.09 | 1.09 | 1.09 | 1.09 |
| SMPP-M3.5 | 4.15 | 1220 | 0.43 | 0.54 | 0.80 | 1.14 | 1.28 | 1.68 | 1.96 |

Axial Strength and Mating Screw Recommended Tightening Torque for PEM® Brand Weld Nuts

| PEM® Brand WN™ and WNS™ Weld Nuts - Metric | | | | | | | | | |
|--|--|--|--|--------------|-----------------|--------------|--------------|---------------|---------------|
| PEM® Part Number | Min. Axial Strength w/PC12.9 Screw, kN | Screw Strength Required to Develop Min. Axial, MPa | Mating Screw Recommended Tightening Torque, (N·m) (Assuming K=0.20 - actual K value may vary) | | | | | | |
| | | | Steel PC 4.6 | Steel PC 5.6 | Stainless A2-70 | Steel PC 8.8 | Steel PC 9.8 | Steel PC 10.9 | Steel PC 12.9 |
| WN-M3-0CU | 1.73 | 597 | 0.31 | 0.39 | 0.51 | 0.51 | 0.51 | 0.51 | 0.51 |
| WN-M4-0CU | 4.73 | 564 | 1.21 | 1.51 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |
| WN-M5-0CU | 8.86 | 624 | 2.82 | 3.52 | 4.32 | 4.32 | 4.32 | 4.32 | 4.32 |
| WN-M6-0CU | 12.9 | 639 | 4.76 | 5.95 | 7.53 | 7.53 | 7.53 | 7.53 | 7.53 |
| WNS-M3-0 | 2.6 | 896 | 0.31 | 0.39 | 0.59 | 0.82 | 0.82 | 0.82 | 0.82 |
| WNS-M4-0 | 7.1 | 846 | 1.21 | 1.51 | 2.27 | 2.98 | 2.98 | 2.98 | 2.98 |
| WNS-M5-0 | 13.3 | 937 | 2.55 | 3.19 | 4.79 | 6.81 | 6.97 | 6.97 | 6.97 |
| WNS-M6-0 | 19.3 | 959 | 4.35 | 5.43 | 8.15 | 11.6 | 12.2 | 12.2 | 12.2 |

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Table I
Material Properties for Selected Strength Levels of Mating Screws

| | Industry Standard | Designation | Unified Units Material Strength, ksi | | Yield/Tensile Ratio | Metric Units Material Strength, MPa | |
|---------|-------------------|---------------------|---|-------|------------------------|--|-------|
| | | | Ultimate | Yield | | Ultimate | Yield |
| | | | | | | | |
| UNIFIED | SAE J429 | Grade 2 | 74 | 57 | 0.770 | 510.2 | 393.0 |
| | ASTM 593 | Grade C | 100 | 65 | 0.650 | 689.5 | 448.2 |
| | SAE J429 | Grade 5 | 120 | 92 | 0.767 | 827.4 | 634.3 |
| | SAE J429 | Grade 8 | 150 | 130 | 0.867 | 1034 | 896.3 |
| | ASTM A574 | (see note 3) | 180 | 162 | 0.900 | 1241 | 1117 |
| METRIC | ISO 898-1 | Property Class 4.6 | 58.0 | 34.8 | 0.600 | 400 | 240 |
| | ISO 898-1 | Property Class 5.6 | 72.5 | 43.5 | 0.600 | 500 | 300 |
| | ISO 3506 | A2 - 70 | 101.5 | 65.3 | 0.643 | 700 | 450 |
| | ISO 898-1 | Property Class 8.8 | 116.0 | 92.8 | 0.800 | 800 | 640 |
| | ISO 898-1 | Property Class 9.8 | 130.5 | 104.4 | 0.800 | 900 | 720 |
| | ISO 898-1 | Property Class 10.9 | 150.8 | 136.3 | 0.904 | 1040 | 940 |
| | ISO 898-1 | Property Class 12.9 | 176.9 | 159.5 | 0.902 | 1220 | 1100 |

Table II
Material Properties for PEM® Brand Nuts

| PEM® Brand Nuts | Fastener Material | Unified Units Material Strength, ksi | | Yield/Tensile Ratio | Metric Units Material Strength, MPa | |
|----------------------|-----------------------------------|---|-------|------------------------|--|-------|
| | | Ultimate | Yield | | Ultimate | Yield |
| WN | Carbon Steel | 60 | 39 | 0.650 | 413.7 | 268.9 |
| HNL | Carbon Steel | 90 | 63 | 0.700 | 620.5 | 434.4 |
| S, SS, H | Hardened Carbon Steel | 130.5 | 104.4 | 0.800 | 899.8 | 719.8 |
| SH | Hardened Alloy Steel | 195 | 175.5 | 0.900 | 1344 | 1210 |
| CLS, CLSS, SMPS, WNS | 300 Series Stainless Steel | 90 | 63 | 0.700 | 620.5 | 434.4 |
| SP, SMPP | Age Hardened A286 Stainless Steel | 145 | 116 | 0.800 | 1000 | 800 |
| CLA | Aluminum | 62 | 45 | 0.726 | 427.5 | 310.3 |

Notes:

- 1) Other industry standards exist which define the same or similar strength levels.
- 2) Values in blue are conversions using 1 MPa=145.04 psi.
- 3) Minimum yield adjusted up to 162 ksi (90% of 180 ksi) from the 153 ksi required by ASTM A574.