

GRK Screw Selection Guide: Your Project Just Got Easier

CLIMATEK® coated screws have been independently tested and approved for use in treated wood products. Our fasteners come with a limited **Lifetime Warranty**.

For details see www.grkfasteners.com. For best performance use *PHEinox®* stainless steel screws by GRK.

Always build your project according to current ICC (International Code Council) specifications. GRK's Climatek® coating conforms with ICC-NES Report # NER-643, ICC-ES # NER-628 and NER-669 which allows for use of triple zinc polymer coated fasteners in contact with ACQ treated woods.

Pressure Treated Lumber Decking: Use #9 or #10 gauge R4® on deck boards. For Southern Yellow Pine use #10. For best performance use *PHEinox®* stainless steel screws by GRK.

Cedar & Redwood Decking: Use #9 or #10 gauge GRK R4® to lock wood in place. Countersink screws by 1/8" and seal wood immediately with a quality sealer to lessen the likelihood of tannic acid stains. For best performance use *PHEinox®* stainless steel screws by GRK.

Tropical Wood Decking: (e.g. Mahogany, Ipe, etc.) Use *PHEinox®* stainless steel screws by GRK. Due to movements of these woods many importers recommend pre-drilling.

Composite & Plastic Decking: For best performance use *PHEinox®* RT Composite® stainless steel screws by GRK.

Ledger Boards & Structural Parts: Use RSS® Structural Screws by GRK as a lag screw alternative to get exceptional strength.

Concrete & Masonry: Use Caliburn® Screws by GRK.

**NO PRE-DRILLING FOR R4®, RSS® CABINET AND TRIM® HEAD SCREWS, EXCEPT WHERE WOOD LIMITATIONS REQUIRE.
ALWAYS PLACE DECK BOARDS WITH OUTER EDGE OF GROWTH RINGS FACING UP (BARK SIDE UP).
DO NOT USE DECK CLEANERS WHICH CONTAIN BLEACH WITH COATED METALS.
CONSULT WOOD SUPPLIER'S / MANUFACTURER'S RECOMMENDATIONS.
DECKING SCREWS SHOULD BE COUNTERSUNK 1/8".**

April/05

GRK Fasteners[®] utilizes strict quality control procedures. Every batch of screws produced is independently random sampled and quality controlled to the highest standards.

Accreditations for independent test laboratories include:
ISO, ICC, CNLA, TÜV, DAR, Ü

TECHNICAL DATA

<p><u>Pull Out Test Results for RSS[®] Structural Screws</u></p> <table border="1"> <thead> <tr> <th></th> <th>Sidegrain:</th> <th>Endgrain:</th> </tr> </thead> <tbody> <tr><td>5/16 x 2 1/2"</td><td>791 kg/1740 lb</td><td>556 kg/1223 lb</td></tr> <tr><td>5/16 x 3 1/8"</td><td>934 kg/2054 lb</td><td>1055 kg/2321 lb</td></tr> <tr><td>5/16 x 4"</td><td>1202 kg/2565 lb</td><td>1166 kg/2565 lb</td></tr> <tr><td>5/16 x 5 1/8"</td><td>1248 kg/2829 lb</td><td>1286 kg/2829 lb</td></tr> <tr><td>5/16 x 6"</td><td>1645 kg/3619 lb</td><td>1601 kg/3522 lb</td></tr> <tr><td>3/8 x 7 1/4"</td><td>1801 kg/3962 lb</td><td>1782 kg/3920 lb</td></tr> <tr><td>3/8 x 8"</td><td>1984 kg/4364 lb</td><td>2119 kg/4661 lb</td></tr> <tr><td>3/8 x 10"</td><td>2200 kg/4840 lb</td><td>2320 kg/5104 lb</td></tr> <tr><td>3/8 x 12"</td><td>2390 kg/5258 lb</td><td>2293 kg/5044 lb</td></tr> <tr><td>3/8 x 14 1/8"</td><td>2412 kg/5306 lb</td><td>2351 kg/5172 lb</td></tr> <tr><td>3/8 x 16"</td><td>2723 kg/5990 lb</td><td>2615 kg/5753 lb</td></tr> </tbody> </table> <p>**test stopped after wood failure or 1/8" screw displacement</p>		Sidegrain:	Endgrain:	5/16 x 2 1/2"	791 kg/1740 lb	556 kg/1223 lb	5/16 x 3 1/8"	934 kg/2054 lb	1055 kg/2321 lb	5/16 x 4"	1202 kg/2565 lb	1166 kg/2565 lb	5/16 x 5 1/8"	1248 kg/2829 lb	1286 kg/2829 lb	5/16 x 6"	1645 kg/3619 lb	1601 kg/3522 lb	3/8 x 7 1/4"	1801 kg/3962 lb	1782 kg/3920 lb	3/8 x 8"	1984 kg/4364 lb	2119 kg/4661 lb	3/8 x 10"	2200 kg/4840 lb	2320 kg/5104 lb	3/8 x 12"	2390 kg/5258 lb	2293 kg/5044 lb	3/8 x 14 1/8"	2412 kg/5306 lb	2351 kg/5172 lb	3/8 x 16"	2723 kg/5990 lb	2615 kg/5753 lb	<p><u>Shear Strength Test Results for RSS[®] Structural Screws</u></p> <table border="1"> <tbody> <tr><td>5/16 x 2 1/2"</td><td>377 kg/829 lb</td></tr> <tr><td>5/16 x 3 1/8"</td><td>385 kg/847 lb</td></tr> <tr><td>5/16 x 4"</td><td>604 kg/1328 lb</td></tr> <tr><td>5/16 x 5 1/8"</td><td>605 kg/1331 lb</td></tr> <tr><td>5/16 x 6"</td><td>607 kg/1335 lb</td></tr> <tr><td>3/8 x 7 1/4"</td><td>583 kg/1282 lb</td></tr> <tr><td>3/8 x 8"</td><td>630 kg/1386 lb</td></tr> <tr><td>3/8 x 10"</td><td>684 kg/1504 lb</td></tr> <tr><td>3/8 x 12"</td><td>864 kg/1900 lb</td></tr> <tr><td>3/8 x 14 1/8"</td><td>890 kg/1958 lb</td></tr> <tr><td>3/8 x 16"</td><td>939 kg/2065 lb</td></tr> </tbody> </table> <p>**test stopped after wood failure or 1/8" screw displacement</p>	5/16 x 2 1/2"	377 kg/829 lb	5/16 x 3 1/8"	385 kg/847 lb	5/16 x 4"	604 kg/1328 lb	5/16 x 5 1/8"	605 kg/1331 lb	5/16 x 6"	607 kg/1335 lb	3/8 x 7 1/4"	583 kg/1282 lb	3/8 x 8"	630 kg/1386 lb	3/8 x 10"	684 kg/1504 lb	3/8 x 12"	864 kg/1900 lb	3/8 x 14 1/8"	890 kg/1958 lb	3/8 x 16"	939 kg/2065 lb
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<p><u>Head Pull Through Test Results for RSS[®] Structural Screws</u></p> <p>5/16" screws: avg. 825 lbs. Shaft diameter: 0.198" Head diameter: 0.616"</p> <p>3/8" screws: avg. 889 lbs. Shaft diameter: 0.220" Head diameter: 0.711"</p> <p>**test stopped after wood failure or 1/8" screw displacement</p>	<p><u>Shear Test Result for R4[®] Multipurpose Screws</u></p> <table border="1"> <tbody> <tr><td>#4</td><td>139 lb</td></tr> <tr><td>#6</td><td>301 lb</td></tr> <tr><td>#8</td><td>361 lb</td></tr> <tr><td>#9</td><td>452 lb</td></tr> <tr><td>#10</td><td>687 lb</td></tr> <tr><td>#12</td><td>720 lb</td></tr> </tbody> </table> <p>**test stopped after wood failure or 1/8" screw displacement</p>	#4	139 lb	#6	301 lb	#8	361 lb	#9	452 lb	#10	687 lb	#12	720 lb																																														
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<p><u>Minimum Tensile Strength</u></p> <p>GRK Spec: 139,000 PSI Code Spec: 45,000 PSI</p>	<p><u>Minimum Bending Angle</u></p> <p>GRK Spec: 35 degrees Industry Spec: 15 degrees</p>																																																										
<p><u>Bending Yield Moment Test for RSS[®] Structural Screws</u></p> <p>5/16" : 159,073 PSI 3/8" : 177,241 PSI</p>	<p><u>GRK Certification include</u></p> <p>ISO 9001 ICC Ü - German Institute for Building Technology</p>																																																										
<p>All tests were conducted at independent laboratories in the United States, Germany and Taiwan. Tests were conducted in accordance with ASTM and/or DIN norms. Testing is ongoing and is conducted on every production series. All posted results are Average Ultimate Load Values. For construction design purposes, a safety margin of 50% should be applied unless otherwise stated by an architect or engineer. Laboratory accreditations include ICC, CNLA, TÜV, Ü, ISO, DAR.</p>																																																											

RSS

Caliburn[®]

Caliburn XL[®]



TECHNICAL DATA					
SCREW SIZE	EMBED. DEPTH (in.)	2000 psi CONCRETE		BIT SIZE	DRILL SIZE
		Tension/Pullout lbs	Shear lbs		
1/4 X 1 3/4	1 1/2	1655	1505	T25	3/16
1/4 X 2 1/4	2	2120	2055	T25	3/16
19/64 X 2 3/4	2 1/2	2209	3135	T40	1/4
19/64 X 3 1/2	3 1/4	2523	3200	T40	1/4
19/64 X 5	4 3/4	5724	3300	T40	1/4

Note:

- All values are based on close tolerance holes drilled a minimum of 1/4" deeper than embedment depth, using GRK drill bits.
- All listed values shown are average pullout and shear values for GRK's CALIBURN[®] and CALIBURN XL[®] screws. Values will vary depending on a number of factors, including the quality of the concrete and size of the drill hole.
- These figures are only offered as a guide, are not guaranteed by GRK and not reduced by any safety factor.
- For safety factor requirements in your area, contact your local building official, architect or engineer. Testing was performed according to ASTM standard E-488-96. For most current information and technical specifications (shear & tension) visit our website... www.grkfasteners.com.