



# GRADE RIGHT (NZ) LTD

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## Grade Verified Information Sheet

### What is SG timber eg., SG8?

**Introduction:** Structural or framing grades that need to be verified or confirmed for stiffness and strength were introduced in late 2004 because of concerns over the density of younger crop Radiata pine trees being harvested at the relatively young age of 25 – 30 years and the variable quality and stiffness of visually graded No. 1 Framing.

**How These Grades Are Produced:** Grade Verified timber can be produced by two methods but both methods require randomly selected timber to be tested as a joist on edge, typically in the kiln dried state, to verify or confirm the bending stiffness and bending strength. Timber sorted for stiffness through Machine Stress Graders (MSG) also has a visual grade over-ride applied to downgrade pieces with oversize knots, excessive planer skip and wane and excessive distortion or warp defects. The alternative method mainly used by smaller sawmillers to produce Grade Verified timber is to Visually Stress Grade (VSG) the timber to the No. 1 Framing grade rules as per NZS3631 “NZ timber grading rules” after which randomly selected samples are verification tested as joists on edge, again typically in the kiln dried state, for stiffness and strength as per the MSG timber. The testing requirements for MSG and VSG timber are identical for any particular size and grade. For example, what is now called SG8 (Stress Graded 8 with an average stiffness of 8.0GPa) 90x45mm which may be produced through a MSG or VSG, is tested as a joist on edge by bending the piece to measure stiffness and then a bending strength load of about 345kg applied to measure bending strength. This testing gives consumers confidence that Grade Verified timber will perform in service.

#### *What are the new Verified Grades and their uses?*

Grade	Colour Marks (MSG)	Bending Strength (MPa)	Bending Stiffness (GPa)	Typical End Uses
SG10 (dry) (old VSG10)		20.0	10.0	Engineering grades where design requires higher strength and/or stiffness
SG8(dry) (old VSG8 )		14.0	8.0	Lintels, floor joists, roof beams, general framing and trusses
SG8(wet) (old G8 grade)		11.7	6.5	Decking joists, Verandah posts, Pergola and other outdoor timbers
SG6(wet) (new grade)		7.5	4.8	Wet treated house framing equal to SG6(dry) when dry
SG12(dry) (old MSG12)	Purple	28.0	12.0	Engineering grades where design requires higher strength and/or stiffness
SG10(dry) (old MSG10)	Green	20.0	10.0	Engineering grades where design requires higher strength and/or stiffness
SG8(dry) (old MSG8)	Black	14.0	8.0	Lintels, floor joists, roof beams, general framing and trusses
SG6(dry) (old MSG6)	Blue	10.0	6.0	Lesser load bearing walls, truss webbing

In 2011, the VSG and MSG grades were amalgamated to avoid confusion, so that both MSG8 and VSG8 as an example are now simply called SG8. Similarly, MSG10 and VSG10 are now called SG10. Customers can still tell the difference between (M)SG8 and (V)SG8 through the branded information on the timber: MSG timber will have AS/NZS1748 branded down the face or edge while VSG8 will have NZS3631 branded down the face or edge. Grade Verified timber produced through a MSG may have slightly bigger knots than VSG timber simply because every piece of MSG timber passes through a machine which measures the stiffness and knots do not have as big an effect on stiffness and strength as most people think. Another important point is that the number of knots down a board is irrelevant and has never been limited.

Note: the traditional No 2 Framing grade can still be used for non-load bearing wall framing.

**SG8(wet):** This is a grade designed solely for outdoor use where the timber will get wet from time to time eg., decking joists and pergola timbers. This grade is therefore tested in the wet or green condition and has lower stiffness and strength values. This grade will be preservative treated normally to H3.2 for above-ground uses or H4 or possibly H5 treated for uses in contact with the ground where the decay risk is higher.

Be aware that SG6, SG8 and SG10 can also be H3.2, H4 or H5 preservative treated timber for outdoor use.

**SG6(wet):** This new grade (2011) is tested wet and is the traditional wet boron treated H1.2 house framing. It is equivalent to SG6(dry) when the house framing has dried naturally.

**Douglas fir:** This timber is often slightly denser, stiffer and stronger than Radiata pine and may be (a) tested in the kiln dried condition and sold as SG product, or (b) may also be tested in the green condition and if it meets the dry requirements of say SG8, then it can be sold as SG8 but with clear information that the timber is not dry. If sold wet, it should be planer gauged to the wet gauged sizes such as 94x47mm rather than the dry size 90x45mm.

**Branding:** SG timber will be ink or indent branded on the face or edge with the following information branded at least every 1500mm along each piece: the producers name (eg., ABC Timber Ltd), the grade (eg., SG8), the grading standard (AS/NZS1748 for MSG timber, or NZS3631 for VSG timber), and normally the auditing agencies name or logo (eg. Grade Verified). There may be other information branded on the timber as well such as the size (eg., 90x45), the date and time of production and preservative treatment information (eg., H1.2). SG8(wet) may instead have the required information on end-tags stapled on the end of each piece rather than branded on the face or edge.

**Producers of SG timber are Monitored:** All producers of SG timber are monitored and audited by an auditing agency. Grade Right monitors and audits about half of the producers of verified structural timber in New Zealand. This is done to ensure the producers are complying with the testing and branding requirements to ensure the timber is fit for purpose. Grade Right also audits timber for overseas markets as well.

If you have any questions, please ask your retailer or contact us at [info@graderight.co.nz](mailto:info@graderight.co.nz), ring us at 07-3491608, or fax us at 07-3494703. Website: [www.graderight.co.nz](http://www.graderight.co.nz)  
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