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Are you pining for timber?

In the good old days, structural timber was identified and categorised by its stress grade. Known as its "F" grade, the assigned number instantly gave you an indication of the timber's strength and structural properties. Stress grades ranged from F4 to F34, and in simple terms, a higher number meant a stronger timber.

Most softwood timbers (pine, oregon, etc) ranged between F5 and F11, whereas hardwood timbers started at F11 or F14 and went upwards from there. The stress grades were assigned following a visual inspection – the assessor would assign a grade based on the species and quality of the timber and the number of defects (veins, knots, etc) visible.

Most specifiers would be familiar with the stress grades F7 or F8. These were used for the majority of structural applications such as bearers, joists, and rafters, and nearly every specifier at some point in time has called up "F7 Treated Pine" somewhere on their drawings.

In the late 1990's, the timber industry, observing simultaneously the decreasing availability of oregon and the increasing availability of renewable, plantation pine, developed a new method for assessing the strength of structural pine timber. Rather than a visual inspection, the pine was assessed and graded using a machine. The resulting pine members were graded not according to an "F' grade, but rather to an MGP grade. MGP stands for Machine Graded Pine, and just to confuse things, the three grades were named MGP10, MGP12, and MGP15. In very crude terms, MGP10 is roughly the equivalent of F7, at least in terms of strength. The other notable feature about MGP timber is that it is only available seasoned, and so typical sizes for use in housing include 90x45, 140x45, 190x45, and 240x45.

MGP10 is extremely common and readily available – much the same as seasoned F7 pine was. However, the stronger grades of pine – MGP12 and MGP15 – tend to be snaffled up by the truss & framing manufacturers (e.g. Gangnail), and their availability is reasonably limited. F7 (i.e. visually graded) timber is still available, but it's more likely to be a piece of oregon or perhaps unseasoned pine. If it's pine you're after, then look for MGP.

All of the above was good and correct up until late 2006, when the pine industry again decided to move the goalposts. The MGP scale is now being dropped in favour of a new grading system known as "SP". SP stands for Structural Pine, and four grades are recognised: SP1, SP2, SP3, and SP4. SP1 is the strongest and highest quality pine (structurally speaking), and SP4 is the weakest.

The table and "Benefits" information below come from the Forest & Wood Products Research & Development Corporation and the Australian Plantation Products & Paper Industry Council:

TABLE 1 – GRADE CHARACTERISTICS

GRADE	TYPICAL APPLICATIONS	CHARACTERISTICS AND AVAILABILITY
SP4	Internal non-load bearing walls and external walls in low wind categories. **Not recommended for truss chords.**	Low tension value. Stiffness (E) variability, density and knot structure should limit use in higher structural applications. Moderate availability
SP3	General framing grade, suitable for wide application including roof and wall frames and roof trusses	Properties appropriate for a general application grade and production control on stiffness variability applies. Maximum availability
SP2	Truss and other engineering applications, lintels etc	Properties suited to higher level applications. Production stiffness control. Good availability..
SP1	Highly stressed truss components, engineered timber products etc	Suited to specialist applications. Generally lower variability expected on all properties. Low availability.

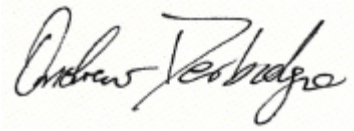
Benefits of the SP Grade System

1. A more inclusive system: one grading system will cover all structural framing output whereas MGP grading requires F-grading for grades lower than MGP10 material. In addition, SP grades will minimise other visually graded material into the market.
2. Less variable timber. SP grades will be more consistent due to the new stiffness production control on SP1, SP2 and SP3. SP4 is not recommended for deflection critical applications.
3. Better alignment of resource with market demand: more SP2 material will be available (similar properties to MGP 12) for roof trusses and other demanding applications. The SP3 grade will provide the largest volume to meet the strong demand for general framing and truss applications.
4. Consistent grade marking: The Industry Standard (IS107) requires grade marking at approximately 1200mm centres along the length of sticks.
5. All producers of SP grades are required to obtain third party product certification from a JAS-ANZ (or equivalent) accredited certification body. This provides confidence to users that SP grade production will comply with the new industry standard.

Of course, you need to bear in mind that the SP system applies to pine only. All other *natural* timbers are still classified according to their F grade. Then there's also the LVL category of timbers, e.g. as typically supplied by Hyspan and Smartframe. LVL (Laminated Veneer Lumber) is known as "engineered" timber, and this is in a category of its own. See our separate technical bulletin on this subject for more information.

Like most new innovations and movements in the Australian building industry, not everyone is quick to embrace change, and even players in the timber industry, including suppliers, have yet to adopt the new system. We at Partridge Partners see little point in designing and specifying SP-graded timber at this stage (August 2008) when so few people – particularly builders – are aware of what it is and who to turn to to source it. For the time being, we'll continue to design and specify structural pine to MGP standards, and we'll make the switch to SP once the rest of the industry has come on board.

In the meantime, at least you know what's happened and where things are going.



Andrew Derbidge
BE MIEAust CPEng NPER(Structural)
Director

Partridge Partners Pty Ltd