

Ground Applied



Phos-Chek Australia is proud to launch the ultimate “Linebacker” for ground application.

Capable of mixing any of the world leading Phos-Chek branded fire fighting additives. “Linebacker“, mounted on a 470hp Mack Quantum stretched to accommodate a 15,000lt tank features superior traction control with a Haire bag suspension system. Overall height is 4.0 metres. Inside cab controls can direct a topside monitor, rear dribble bar, hose reel and sprays that can give a 1-8 gpc coverage level. Hydrant fill point means this unit can source it’s own water. Throw in the versatility of internal paddle agitation and a 150 gallon a minute eductor mixer and “Linebacker “ can mix any Phos-Chek product in any pack size. Deliver direct to a SEAT Aircraft in less than 3 minutes. This unit can easily accommodate the demands of 2 SEAT’s.

Check with Phos-Chek on daily hire rates.

Use of Phos-Chek Retardants in Prescribed Burning

In general, Phos-Chek retardants can be used in prescribed burns to reduce the flammability of fuels, either in association with fuel removal, clearing mineral earth lines or as a substitute for fuel removal. There are several potential purposes:-

Reinforcing conventional control lines. Application of Retardant can increase the width and therefore the effectiveness of roads, mineral earth lines and other natural features, which can be used to contain a burn.

Establishing a control line. Phos-Chek Retardants can provide a line from which to burn. The burn buffer and retardant line, together, provide a control line for a prescribed burn, without the necessity of clearing a line to mineral earth.

Limiting spotting. Application outside the control line, at a lower coverage level, can minimize the possibility of spot fires.

Controlling a fire within the burn. Application at lower coverage levels inside the burn can help reduce the flame intensity and height as the burn approaches the control line. Application around the base of fire sensitive trees can help protect them from damage in understory burns. This may also reduce mop up time.

Protecting assets. Application along fences, around power and telephone poles and structures can help them from burning or scorching.

Advantages. Since Phos-Chek retardants do not depend on the contained water for their effectiveness, they retain their retardant properties until they are washed, blown or rubbed off the fuel they have been applied to. They can be applied hours, days or weeks in advance. There are no restrictions on application due to weather, smoke, inversions, visibility or the urban interface. Ground application can be more accurate and coverage can be more uniform and complete. Another tool in the Fire Managers arsenal.



Burning to a retardant line



Reinforce perimeter control lines



Protect infrastructure by pre-treating surrounding vegetation



Protecting habitat trees or speeding up mopping up operations after the burn



Bridge infrastructure



Huts and outbuildings in the path of a fire

Use of Phos-Chek Suppressants in Ground Application

Phos-Chek Australia can offer Class A fire fighting foam or water enhancing gel as a tool to assist fire fighters in gaining the upper hand. In combination with “Linebacker” we expect to be able to get the wet stuff on the red stuff a lot faster.

Foam is a direct attack tool, producing an excellent wet water with a cooling and penetrating effect aimed at the seat of the fire.

Water enhancing Gel products *AquaGel-K* and *Insul8* retain water for longer than water or foam. With enhanced coverage and superior adhesion qualities, a wall of water barrier is created against heat or flame for a prolonged period of time. Structural protection or suppression are viable tactics.

Efficiency and effectiveness

“Linebacker” has been calibrated for use. Flow rates have been established for the various outlet sprays. With consultation we can recommend a road speed to deliver the required coverage ratio. We calculate the area in square metres and derive the pumping time to deliver the amount of retardant or suppressant required.

Some theory on the relationship between fire intensity and coverage:-

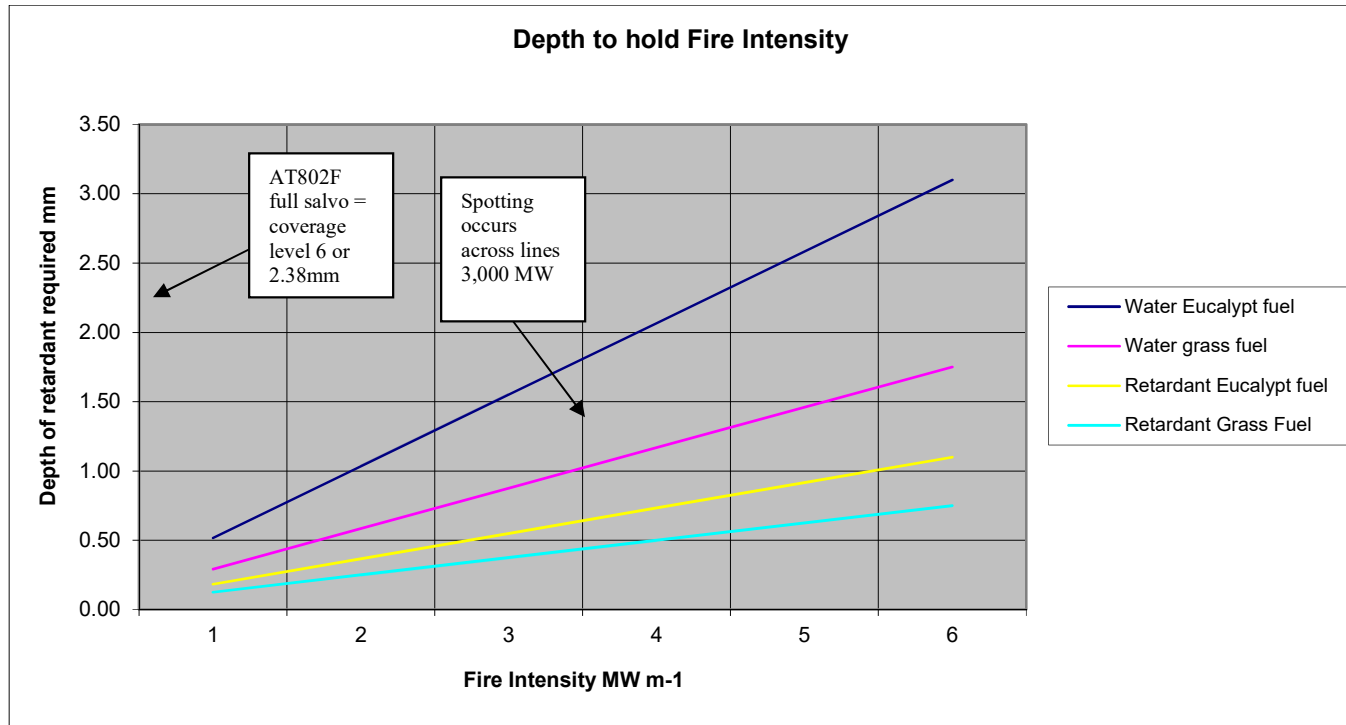




Chart Source is Loane and Gould 1986.

Coverage levels are most commonly expressed in US Gallons per 100 square feet (GPC), which can be converted to litres per square millimeter by multiplying by 0.407. For example $8 \text{ GPC} \times 0.407 = 3.26\text{mm}$. Depth of retardant in millimeters is the same as litres per square metre in the Coverage Levels chart.

More retardant is required for greater fuel loads. Consult the Coverage Levels chart to determine the retardant line **width** and the **amount** of litres per square metre recommended to do the job. Next, how **long** is the line you need?

Coverage Levels	Typical Fuel Loading		Fuel Height		Retardant Line Width		Retardant Required	
Fuel Type	Tons per Acre (1)	MT per Hectare (2)	Feet	Metres	Feet	Metres	Gallons per 100 sq. ft.	Litres per sq. m.
Short Grass	0.75	2.00	1.00	0.30	2.00	0.70	0.75	0.30
Timber Litter	5.00	13.60	0.20	0.10	2.00	0.70	1.50	0.60
Brush	3.50	9.50	2.00	0.70	4.00	1.30	1.75	0.70
Tall Grass	3.00	8.20	2.50	0.80	5.00	1.70	2.50	0.90
Timber, Grass and Understory	4.00	10.90	1.50	0.50	3.00	1.00	2.50	0.90
Light Logging Slash	7.60	20.70	1.00	0.30	2.00	0.70	2.50	0.90
Hardwood Litter	3.50	9.50	0.20	0.10	2.00	0.70	2.75	1.00
Timber Litter and Understory	12.00	32.70	1.00	0.30	2.00	0.70	4.75	1.80
Medium Logging Slash	34.50	94.00	2.30	0.80	4.50	1.50	7.25	2.70
Chaparral	16.00	43.60	6.00	2.00	12.00	4.00	9.50	3.60
Heavy Logging Slash	58.00	158.00	3.00	1.00	6.00	2.00	12.50	4.70
Note (1) Ton = short ton or 2,000lb (2) Metric Tonne = 2,205lb								
Reinforcing an existing perimeter control line			The retardant line does not have to be as wide when you are reinforcing a control line (eg. Road). Ensure that the retardant line width is equal to or exceeds the width recommended above.					

<p>Example:-</p> <p>We have a planned burn of 500 metres. Fuel height is close to 2 metres in parts and it is estimated fuel loading is around 10MT/ha. Typical eucalypt forest in a 25 inch annual rainfall environment, typical of SE Australia. Some stringy bark trees make mop-up sometimes difficult. The Park Manager would prefer not to send a dozer in to the habitat sensitive area because it could cause erosion.</p>	
<p>Solution:-</p> <p>Spray a 4 metre wide retardant line at around 1lt/m² for 500m. Retardant required is 2,000lt. Ground applied retardant (currently G75F) mixed cost is around \$0.50/lt. Materials cost \$1,000.</p>	

Access more information online

Data Sheets, Material Safety Data Sheets and an interactive calculator are available online at www.phos-chek.com.au	
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Safety & Environmental

Phos-Chek is a global brand for a range of fire fighting additives some of which have been in use for over 50 years. Phos-Chek strives to design, develop, manufacture and market our products in a manner which meets community needs while posing no undue risk to human health or the environment during all stages of the products life cycle. In addition, we continuously work with customers to ensure that these principles are followed during the product's use and ultimate disposal.

These principles are of particular importance when dealing with bushfire fire fighting additives which, during their expected use, come into contact with people, wildlife and the environment. We encourage the practice of good industrial hygiene during handling of the Phos-Chek Fire Retardant concentrates and solutions and good common-sense practices in their end use in fire prevention and control. The Material Safety Data Sheet (MSDS) should always be consulted as the primary source of health and safety information. This document provides additional guidance on the handling and use of Phos-Chek bushfire fire fighting additives.

Our products have undergone rigorous testing with the US Department of Agriculture Forest Service division and are on the Qualified Products List in the US and Australia. The Australasian Fire Authorities Council (AFAC), of which all Australian and New Zealand Fire Authorities are members, recognize that this qualification is worlds best practice.

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File: Flyer for Linebacker Ground Applied
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