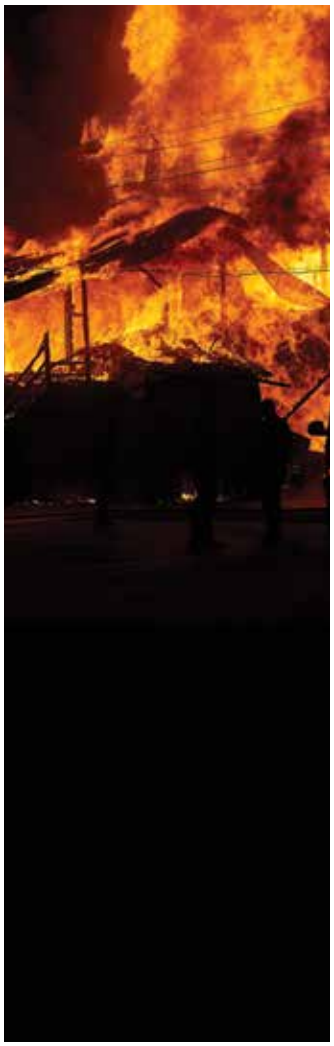
Bushfire protection benefits of turf

A history of turf as a bushfire retardant

It is common to observe that where bushfires have spread into a community, green turf appearing on natural lawns across the country will stop the spread of surface fire from bushfire-prone vegetation to fire-vulnerable assets. Live turf does not sustain surface fire spread.

Even where turf is dead and very dry, the low biomass of mown turf means that to the extent any fire spread is sustained, fire can only burn at very low intensity and is readily controlled and extinguished.



Turf as a strategic component of bushfire prevention

Living turf has long been recognised by fire agencies as a desirable component of landscaping to prevent or reduce damage from bushfire. Turf has the further benefit of providing a defendable space from which firefighters can seek to protect properties.

In the Australian Standard 3959 Construction of buildings in bushfire-prone areas, managed turf is not considered a bushfire hazard. Land areas across which the principal vegetation cover is live turf, such as sports fields, maintained lawns, golf courses and other managed grasslands are termed low threat vegetation.

The Victorian CFA's *Landscaping for Bushfire* guide also describes the benefits of turf and its maintenance requirements to reduce bushfire risk. All natural turf varieties actively grow in summer which means it is able to be maintained in a green, healthy state over the peak bushfire season in Australia.

This makes turf is an ideal groundcover for use in Asset Protection Zones.

Proving its importance through science

A Hort Innovation strategic, levy-funded project saw GHD and the CSIRO recentyly conducted a series of experiments in the CSIRO Pyrotron in Canberra attempting to ignite turf samples using simulated embers at a variety of leaf moisture contents and using three different wind speeds.

Experimental conditions were designed in order to represent typical bushfire conditions of hot days and low relative humidity. The ignition source was a lit cotton ball injected with ethanol. Ignitions which spread more than 20 cm were deemed 'sustained ignitions'.

Turf Australia, PO Box 92, Richmond NSW 2753
T: (02) 4588 5613 **E:** *admin@turfaustralia.com.au*

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Bushfire protection benefits of turf

Buffalo

A total of six out of 72 ignition attempts were sustained, four of which were at extremely dry moisture content (<5% ODW), attained through partial oven-drying.

91.7% samples were not able to be ignited

Wind speed setting	Extremely dry (<5% ODW)	Very dry (5-10% ODW)	Dry (10-20% ODW)	Dying (>20% ODW)
Calm	14.3% (1 out of 7)	0% (0 out of 8)	0% (0 out of 10)	0% (0 out of 3)
Moderate	23.1% (3 out of 13)	0% (0 out of 7)	0% (0 out of 10)	0% (0 out of 3)
Strong	0% (0 out of 4)	0% (0 out of 3)	28.6% (2 out of 7)	0% (0 out of 3)

Couch

A total of ten out of 66 ignition attempts were sustained, all of which were at extremely dry or very dry moisture content (<10% ODW), attained through partial oven-drying.

84.8% samples were not able to be ignited

Wind speed setting	Extremely dry (<5% ODW)	Very dry (5-10% ODW)	Dry (10-20% ODW)	Dying (>20% ODW)
Calm	33.3% (1 out of 3)	5.9% (1 out of 17)	0% (0 out of 1)	0% (0 out of 3)
Moderate	100% (3 out of 3)	15.4% (2 out of 13)	0% (0 out of 6)	0% (0 out of 3)
Strong	50% (2 out of 4)	11.1% (1 out of 9)	0% (0 out of 1)	0% (0 out of 3)

Leaf blade moisture contents are expressed as mass of water as a percentage of oven-dried weight (ODW) of a sample.

Kikuyu

Both short and uncut kikuyu was tested, with varying results. 13 out of the 41 uncut kikuyu ignitions sustained, compared to two sustaining ignitions out of 42 attempts in the short cut kikuyu.

82.0% samples were not able to be ignited

Kikuyu turf (dead) results for uncut (approx. 40 mm) and short cut (approx. 12 mm) samples

Length	Wind speed setting	Extremely dry (<5% ODW)	Very dry (5-10% ODW)	Dry (10-20% ODW)	Dying (>20% ODW)
Uncut	Calm	100% (1 out of 1)	100% (1 out of 1)	45.5% (5 out of 11)	0% (0 out of 2)
Uncut	Moderate	-	-	22.2% (2 out of 9)	0% (0 out of 4)
Uncut	Strong	-	100% (1 out of 1)	33.3% (3 out of 9)	0% (0 out of 3)
Short	Calm	0% (0 out of 3)	0% 0 out of 4)	0% (0 out of 7)	-
Short	Moderate	50% (1 out of 2)	0% (0 out of 5)	0% (0 out of 10)	-
Short	Strong	50% (1 out of 2)	0% (0 out of 5)	0% (0 out of 4)	-

INFORMATION FOR CONSUMERS:

How to make sure your turf remains bushfire safe:

Water turf
to keep it in a green, live state

Keep the turf cleared
of leaf litter and other flammable materials

Keep the turf short
– no longer than 100mm

Install the turf correctly
to promote a well-formed root system, this will make the turf more likely to retain moisture in dry periods

Contact Turf Australia for more information.
www.turfaustralia.com.au

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