

Bushfire Attack Level (BAL) Assessment Report

Site details

Address: Stage 8A Indi Estate

Suburb: Yanchep

State: Western Australia

Local Government Area: City of Wanneroo

Description of Building Works: Construction of Class 1a dwellings

Report details

Project number A24.012

Report version

A

Assessment date 7/07/2026

Report date

30/07/2026

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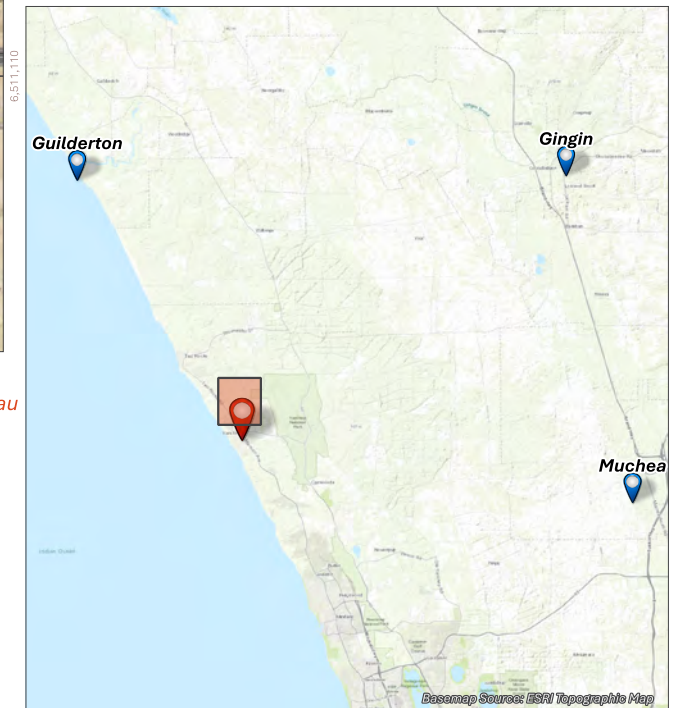
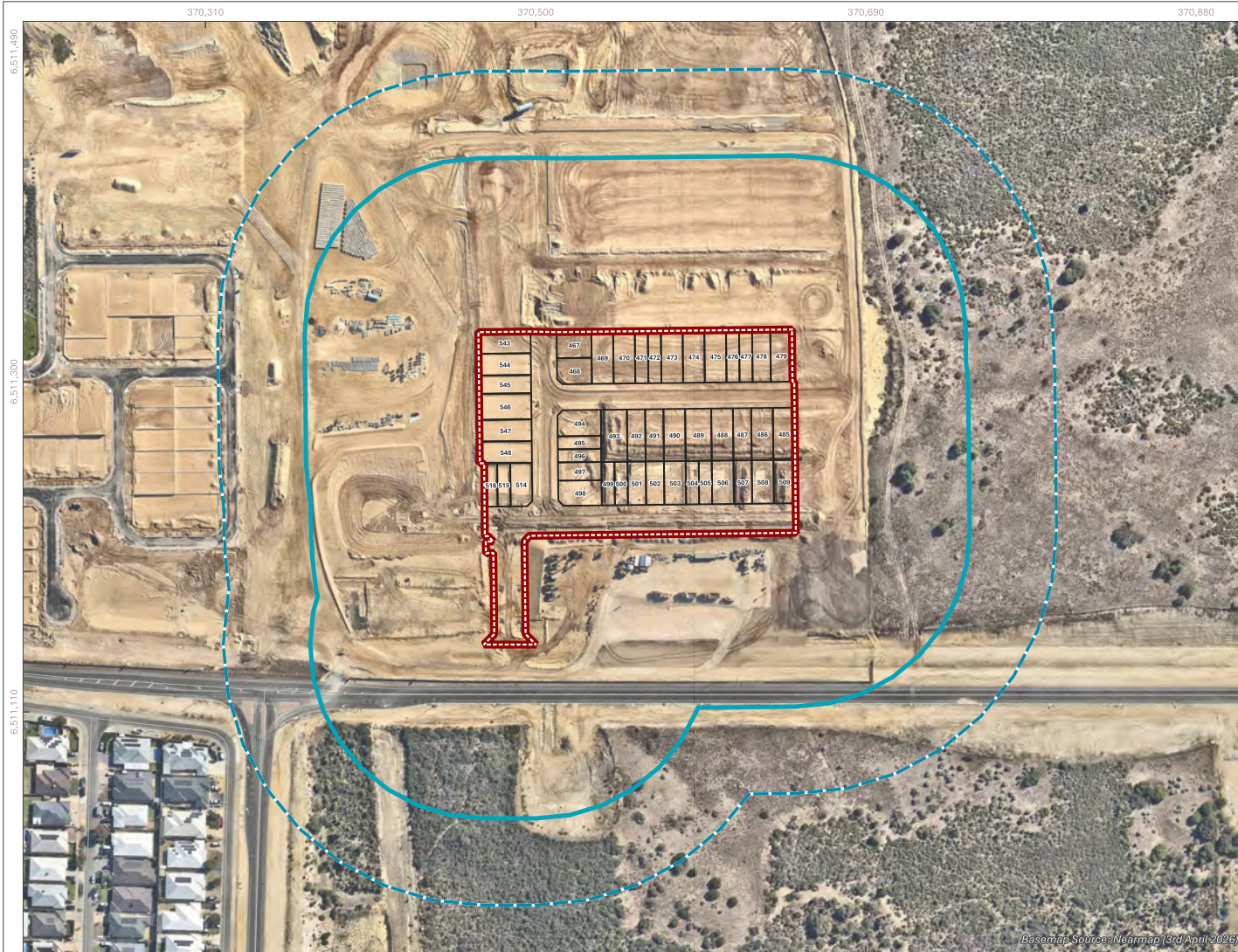


Site Assessment and Site Plan

The assessment of 48 lots (subject lots) within Stage 8A of Indi Estate (subject site) was undertaken on 7/07/2026 for the purpose of determining the Bushfire Attack Level (BAL) in accordance with *Australian Standard AS 3959: 2018 Construction of Buildings in Bushfire Prone Areas* (AS 3959: 2018; SA, 2018) Simplified Procedure (Method 1). An overview of the subject site is presented in Figure 1.1.

Vegetation Classification

All vegetation within 100 m of the 48 lots was classified in accordance with Clause 2.2.3 of AS 3959: 2018. Each distinguishable vegetation class with the potential to determine the BAL is identified in Table 1.1 and presented in Figure 1.2.



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0 30 60 90 120 m

COORDINATE REFERENCE SYSTEM:
GDA2020 / MGA Zone 50

SCALE: 1:3,800 PROJECT NUMBER: A24.012

DRAWN BY / REVIEWED BY: SC / CB 30/7/2026

Figure 1.1: Site Overview

- Subject Site
- Buffer 100m
- Buffer 150m
- Lot boundary
- Broader Indi Estate

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Table 1.1: Vegetation Classification

Plot 1 Photo 1 This plot is dominated by shrubs reaching up to 2 m in height at maturity on average. The understorey contains grasses and herbaceous plants, with shrub cover exceeding 30% throughout this plot. The height staff is set at 2 m for context. The slope under this vegetation was assessed to be downslope >0 - 5 degrees.	Class C Shrubland 7 July 2026 12:00:44 pm 31°31'39.6905"S 115°38'5.84585"E ±2.00m 183° S 
Plot 1 Photo 2 This plot is dominated by shrubs reaching up to 2 m in height at maturity on average. The understorey contains grasses and herbaceous plants, with shrub cover exceeding 30% throughout this plot. The slope under this vegetation was assessed to be downslope >0 - 5 degrees.	Class C Shrubland 7 July 2026 12:01:47 pm 31°31'39.77438"S 115°38'4.8365"E ±2.00m 164° S 
Plot 2 Photo 3 This plot is dominated by shrubs reaching up to 2 m in height at maturity on average. The understorey contains grasses and herbaceous plants, with shrubs cover exceeding 30% throughout this plot. The height staff is set at 2 m for context. The slope under this vegetation was assessed to be upslope/flat land.	Class C Shrubland 7 July 2026 11:52:11 am 31°31'41.01065"S 115°38'18.30021"E ±2.00m 194° S 

Plot 2**Class C Shrubland****Photo 4**

This plot is dominated by shrubs reaching up to 2 m in height at maturity on average. The understorey contains grasses and herbaceous plants, with shrub cover exceeding 30% throughout this plot.

The slope under this vegetation was assessed to be upslope/flat land.

**Plot 3****Class G Grassland****Photo 5**

This plot contains grasses and herbaceous plants which dominate the understorey. Sparse trees/shrubs occur in the overstorey, making up less than 10% canopy cover.

The slope under this vegetation was assessed to be downslope >0 - 5 degrees.

**Plot 4****Class G Grassland****Photo 6**

This plot contains grasses and herbaceous plants which dominate the understorey. Sparse trees/shrubs occur in the overstorey, making up less than 10% canopy cover.

The slope under this vegetation was assessed to be upslope/flat land.



Plot 4 Photo 7 This plot contains grasses and herbaceous plants which dominate the understorey. Sparse trees/shrubs occur in the overstorey, making up less than 10% canopy cover. The slope under this vegetation was assessed to be upslope/flat land.	Class G Grassland 
Plot 5 Photo 8 Areas within the subject site which have been cleared for development. Non-vegetated area been excluded in accordance with Clause 2.2.3.2 (e) of AS 3959: 2018.	Excluded - clause 2.2.3.2 (e) 
Plot 5 Photo 9 Houses, public roads and low-threat residential gardens in the areas surrounding the subject site. Non-vegetated area been excluded in accordance with Clause 2.2.3.2 (e) of AS 3959: 2018.	Excluded - clause 2.2.3.2 (e) 

Plot 5

Excluded - clause 2.2.3.2 (e)

Photo 10

Toreopango Avenue, which is devoid of vegetation.
Non-vegetated area been excluded in accordance with Clause 2.2.3.2 (e) of AS 3959: 2018.



Plot 5

Excluded - clause 2.2.3.2 (e)

Photo 11

Areas within the subject site which have been cleared for development.
Non-vegetated area been excluded in accordance with Clause 2.2.3.2 (e) of AS 3959: 2018.



Relevant Fire Danger Index

The Fire Danger Index for this site has been determined in accordance with Table 2.1 of AS 3959: 2018 and is presented in Table 1.2.

Table 1.2: Fire Danger Index (FDI)

Relevant Fire Danger Index			
FDI 40 ☐	FDI 50 ☐	FDI 80 ✓	FDI 100 ☐
Table 2.4.5	Table 2.4.4	Table 2.4.3	Table 2.4.2

Potential Bushfire Impacts

The potential bushfire impact to the subject site / proposed development from each of the identified vegetation plots are identified below in Table 1.3.

Table 1.3: Method 1 BAL Calculation (BAL Contours)

Plot	Vegetation classification	Effective slope	Separation distances required (m)				
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
1	Class C Shrubland	Downslope >0 to 5 degrees	<7	7 - <10	10 - <15	15 - <22	22 - <100
2	Class C Shrubland	All upslopes and flat land (0 degrees)	<7	7 - <9	9 - <13	13 - <19	19 - <100
3	Class G Grassland	Downslope >0 to 5 degrees	<7	7 - <9	9 - 14	14 - <20	20 - <50
4	Class G Grassland	All upslopes and flat land (0 degrees)	<6	6 - <8	8 - <12	12 - <17	17 - <50
5	Excluded - clause 2.2.3.2 (e)	-	No separation distances required - BAL-LOW				

Determined Bushfire Attack Level (BAL)

The determined Bushfire Attack Level (highest BAL) for the proposed works has been determined in accordance with Clause 2.2.6 of AS 3959: 2018. Relevant data from the subject site assessment is shown in Figure 1.3 and Table 1.4.

Table 1.4: BAL Assessment Summary

Affected Lot	BAL Rating	Construction sections to be consulted in AS 3959: 2018
467	BAL - LOW	4
468	BAL - LOW	4
469	BAL - LOW	4
470	BAL - LOW	4
471	BAL - LOW	4
472	BAL - LOW	4
473	BAL - LOW	4
474	BAL - LOW	4
475	BAL - LOW	4
476	BAL – 12.5	3 and 5
477	BAL – 12.5	3 and 5
478	BAL – 12.5	3 and 5
479	BAL – 12.5	3 and 5
485	BAL – 12.5	3 and 5
486	BAL – 12.5	3 and 5
487	BAL – 12.5	3 and 5
488	BAL - LOW	4
489	BAL - LOW	4
490	BAL - LOW	4
491	BAL - LOW	4
492	BAL - LOW	4
493	BAL - LOW	4
494	BAL - LOW	4
495	BAL - LOW	4
496	BAL - LOW	4
497	BAL - LOW	4
498	BAL - LOW	4
499	BAL - LOW	4
500	BAL - LOW	4
501	BAL - LOW	4
502	BAL - LOW	4
503	BAL - LOW	4
504	BAL - LOW	4
505	BAL - LOW	4

Affected Lot	BAL Rating	Construction sections to be consulted in AS 3959: 2018
506	BAL - LOW	4
507	BAL - LOW	4
508	BAL – 12.5	3 and 5
509	BAL – 12.5	3 and 5
514	BAL - LOW	4
515	BAL - LOW	4
516	BAL - LOW	4
543	BAL - LOW	4
544	BAL - LOW	4
545	BAL - LOW	4
546	BAL - LOW	4
547	BAL - LOW	4
548	BAL - LOW	4

Note: This BAL rating is based on the information current at the date of this document and is valid for 12 months.

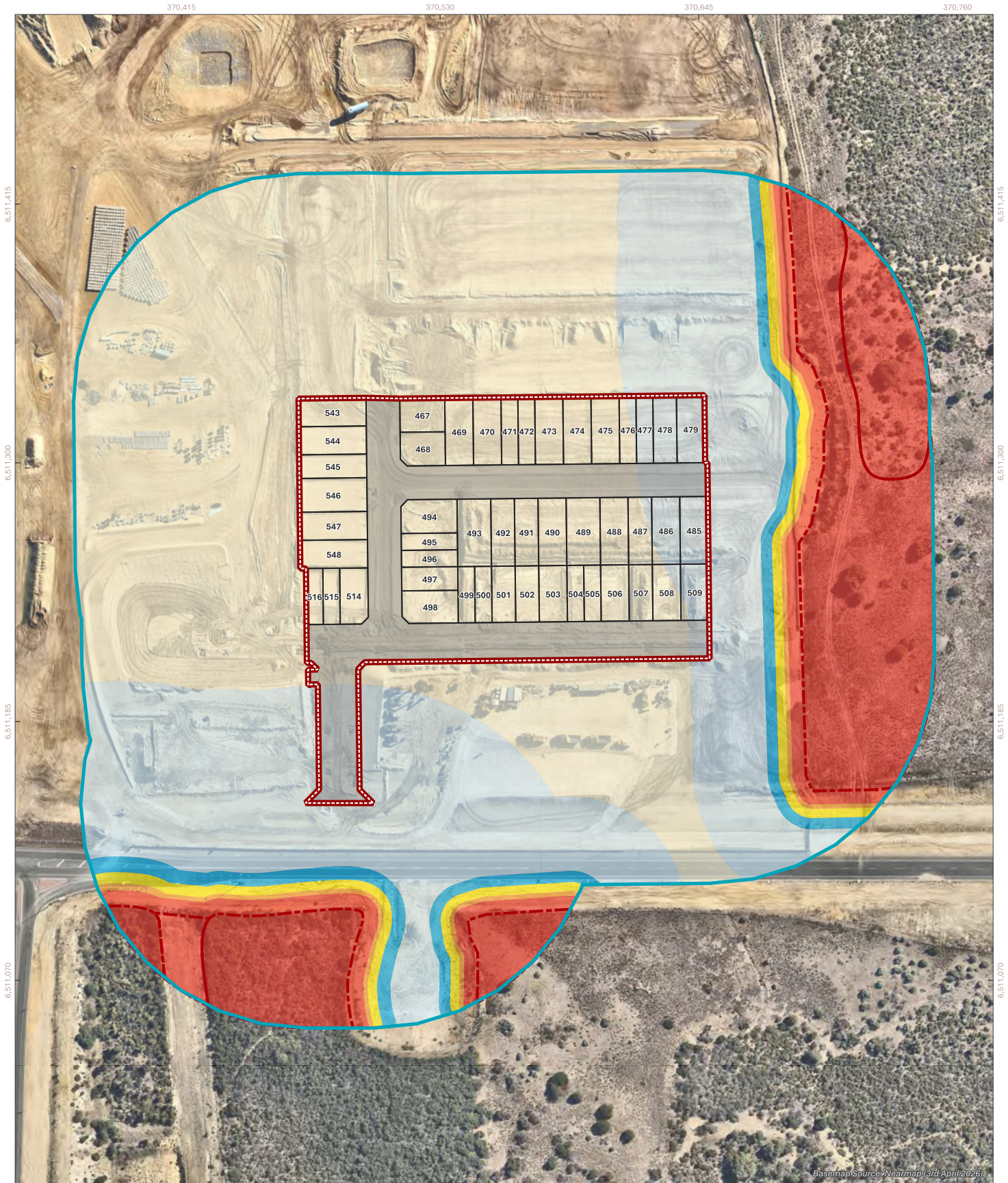


Figure 1.3: Bushfire Attack Level (BAL) Contours

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- Subject Site
- Buffer 100m
- Lot boundary
- Road
- Bushfire Hazard Interface

Bushfire Attack Level (BAL)

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW



0 10 20 30 40 m

COORDINATE REFERENCE SYSTEM:
GDA2020 / MGA Zone 50

SCALE: 1:2,300 PROJECT NUMBER: A24.012

DRAWN BY / REVIEWED BY:
SC / CB 30/7/2026



Appendix A

Additional Information / Advisory Notes

This assessment was undertaken as per AS 3959: 2018. It is important that the current version of AS 3959, is consulted for construction purposes.

This BAL rating is based on the information current at the date of this letter and is valid for 12 months from the date of this letter.

Bushfire Attack Level (BAL) as set out in the *Australian Standard 3959 Construction of Buildings in Bushfire-Prone Areas* (AS 3959), as referenced in the Building Code of Australia.

Bushfire Attack Level (BAL)	Classified vegetation within 100 m of the subject site and radiant heat flux exposure thresholds	Description of predicted bush fire attack and levels of exposure	Construction Section as per AS 3959
BAL-LOW		There is insufficient risk to warrant specific construction requirements.	4
BAL-12.5	$\leq 12.5 \text{ kW/m}^2$	Ember attack	3 and 5
BAL-19	$>12.5 \text{ kW/m}^2 \leq 19 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux.	3 and 6
BAL-29	$>19 \text{ kW/m}^2 \leq 29 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux	3 and 7
BAL-40	$>29 \text{ kW/m}^2 \leq 40 \text{ kW/m}^2$	Increasing levels of ember attack and burning debris ignited by windborne embers together with increasing radiant heat flux with the increased likelihood of exposure to flames.	3 and 8
BAL-FZ	$>40 \text{ kW/m}^2$	Direct exposure to flames from fire front in addition to radiant heat flux and ember attack	3 and 9

Source: "AS 3959: 2018 Construction of buildings in bushfire-prone areas" published by Standards Australia, Sydney.