

# Likely performance of metal gutter mesh when assessed to the non-combustibility definition of AS 3959-2009

## Assessment Report

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Commercial-in-confidence

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### Report Authorization:

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## Executive summary

This Division has examined the analysis of the data referenced by you on the likely fire performance of your metal based gutter mesh products, when assessed to the criteria of Clause 1.5.19 of AS 3959-2009.

It is the opinion of this Division that your 'Blue Mountain All Steel Gutter Mesh Super', 'Blue Mountain All Steel Gutter Mesh - Standard', 'Blue Mountain Aluminium Gutter Mesh', 'Blue Mountain Aluminium Mesh', 'Blue Mountain Mesh 2-mm' and 'Aluminium Sheets' products meet the definition of non-combustible according to AS 3959-2009, Clause 1.5.19, and may be used where non-combustible materials are required.

# Likely performance of metal gutter mesh when assessed to the non-combustibility definition of AS 3959-2009

## 1 Introduction

This Division has examined the analysis of the data referenced by you on the likely fire performance of your metal based gutter mesh products, when assessed to the criteria of Clause 1.5.19 of AS 3959-2009.

## 2 Supporting Data

Refer Appendix A

## 3 Proposal

You propose to meet the definition of non-combustible according to AS 3959-2009, for your 'Blue Mountain All Steel Gutter Mesh Super', 'Blue Mountain All Steel Gutter Mesh - Standard', 'Blue Mountain Aluminium Gutter Mesh', 'Blue Mountain Aluminium Mesh', 'Blue Mountain Mesh 2-mm' and 'Aluminium Sheets' products.

## 4 Analysis

In Australian Standard 3959-2009, Clause 1.5.19 defines non-combustible as either 'Not deemed combustible as determined by AS 1530.1 or not deemed combustible in accordance with the BCA.'

Specification C1.12 (e) of the Building Code of Australia (BCA), 2009, states that 'Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0' may be used wherever a non-combustible material is required.

The Spread-of-Flame Index as defined in the BCA is derived from testing to AS/NZS 1530.3. Your 'Blue Mountain All Steel Gutter Mesh Super', 'Blue Mountain All Steel Gutter Mesh - Standard', 'Blue Mountain Aluminium Gutter Mesh', 'Blue Mountain Aluminium Mesh', 'Blue Mountain Mesh 2-mm' and 'Aluminium Sheets' products were tested to AS/NZS 1530.3:1999.

The results were reported in Certificates of Test numbered FNE 9550 (test date 8 October 2009), FNE 9551 (test dated 8 October 2009), FNE 9513 (test dated 4 September 2009), FNE 9514 (test dated 8 September 2009), FNE 10422 (test date 8 February 2012) and FNE 9515 (test date 8 September 2009). All the products achieved a Spread-of-Flame Index of '0'.

Your gutter mesh products are manufactured from either steel or aluminium. To deem a material combustible when tested to AS 1530.1, the material is tested in a tube furnace at 750°C. Table 8.16.1 of the Fire Protection Handbook indicates that neither of these metals in solid state will ignite at this temperature. Consequently, the steel and aluminium base of these would not be deemed combustible when tested to AS 1530.1 and would meet the definition of non-combustible in the Building Code of Australia.

## 5 Conclusion

It is the opinion of this Division that your 'Blue Mountain All Steel Gutter Mesh Super', 'Blue Mountain All Steel Gutter Mesh - Standard', 'Blue Mountain Aluminium Gutter Mesh', 'Blue Mountain Aluminium Mesh', 'Blue Mountain Mesh 2-mm' and 'Aluminium Sheets' products meet the definition of non-combustible according to AS 3959-2009, Clause 1.5.19, and may be used where non-combustible materials are required.

## 6 Term of validity

This assessment report will lapse on 30 November 2020. Should you wish us to re-examine this report with a view to the possible extension of its term of validity, would you please apply to us three to four months before the date of expiry. This Division reserves the right at any time to amend or withdraw this assessment in the light of new knowledge.

## Appendix A – Supporting data

### CSIRO Sponsored Investigation report numbered FNE 9550

The sponsor described the tested specimen (Blue Mountain Aluminium Mesh) as expanded aluminium mesh sheets having 3.0 mm square apertures. The mesh was finished with a paint coating.

Nominal wire thickness:	0.6 mm	Colour:	red
Nominal mass:	470 g/m <sup>2</sup>		

The product achieved a Spread-of-Flame Index of '0'.

### CSIRO Sponsored Investigation report numbered FNE 9551

The sponsor described the tested specimen (Aluminium Sheets) as expanded aluminium mesh sheets having 1.2 mm by 3.2 mm apertures.

Nominal wire thickness:	0.6 mm	Colour:	silver
Nominal mass:	910 g/m <sup>2</sup>		

The product achieved a Spread-of-Flame Index of '0'.

### CSIRO Sponsored Investigation report numbered FNE 9513

The sponsor described the tested specimen (Blue Mountain All Steel Gutter Mesh Super) as woven steel mesh having 4 mm square apertures. The mesh was finished with a paint coating.

Nominal wire thickness:	0.6 mm	Colour:	red
Nominal mass:	1050 g/m <sup>2</sup>		

The product achieved a Spread-of-Flame Index of '0'.

### CSIRO Sponsored Investigation report numbered FNE 9514

The sponsor described the tested specimen (Blue Mountain All Steel Gutter Mesh – Standard) as welded steel mesh having 5.4 mm square apertures. The mesh was finished with a paint coating.

Nominal wire thickness:	0.7 mm	Colour:	grey
Nominal mass:	1020 g/m <sup>2</sup>		

The product achieved a Spread-of-Flame Index of '0'.

### CSIRO Sponsored Investigation report numbered FNE 9515

The sponsor described the tested specimen (Blue Mountain Aluminium Gutter Mesh) as expanded aluminium mesh having 4.0 mm square apertures. The mesh was finished with a paint coating.

Nominal wire thickness:	0.55 mm	Colour:	black
Nominal mass:	400 g/m <sup>2</sup>		

The product achieved a Spread-of-Flame Index of '0'.

## CSIRO Sponsored Investigation report numbered FNE 10422

The sponsor described the tested specimen (Blue Mountain Mesh) as woven steel mesh having 2.0 mm square apertures. The mesh was finished with a paint coating.

Nominal wire thickness:	0.5 mm	Colour:	grey
Nominal mass:	1430 g/m <sup>2</sup>		

The product achieved a Spread-of-Flame Index of '0'.



# References

The following informative documents are referred to in this Report:

AS 1530.1-1994	Methods for fire tests on building materials, components and structures - Combustibility test for materials
AS/NZS 1530.3:1999	Methods for fire tests on building materials, components and structures - Simultaneous determination of ignitability, flame propagation, heat release and smoke release
AS 3959-2009	Construction of buildings in bushfire prone areas
FNE 9550	CSIRO Sponsored Investigation report on test conducted on Blue Mountain Aluminium Mesh on 8 October 2009, in accordance with AS/NZS 1530.3:1999.
FNE 9551	CSIRO Sponsored Investigation report on test conducted on Aluminium Sheets on 8 October 2009, in accordance with AS/NZS 1530.3:1999.
FNE 9513	CSIRO Sponsored Investigation report on test conducted on Blue Mountain All Steel Gutter Mesh Super on 4 September 2009, in accordance with AS/NZS 1530.3:1999.
FNE 9514	CSIRO Sponsored Investigation report on test conducted on Blue Mountain All Steel Gutter Mesh - Standard on 8 September 2009, in accordance with AS/NZS 1530.3:1999.
FNE 9515	CSIRO Sponsored Investigation report on test conducted on Blue Mountain Aluminium Gutter Mesh on 8 September 2009, in accordance with AS/NZS 1530.3:1999.
FNE 10422	CSIRO Sponsored Investigation report on test conducted on Blue Mountain Mesh on 8 February 2012, in accordance with AS/NZS 1530.3:1999.
Fire Protection Handbook, Nineteenth Edition, Volume II	
Building Code of Australia, 2009	

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