

## Fielders Cladding: Fire Rating

**This fact file provides information regarding the flammability of Fielders product including the Finesse range of Architectural cladding products manufactured from BlueScope COLORBOND® steel ZINCALUME® steel or Galvanised steel.**

As part of the ongoing commitment to research and product development, BlueScope has commissioned CSIRO to undertake a comprehensive range of testing to determine the Flammability of various permutations of COLORBOND® steel, ZINCALUME® steel and Galvanised steel material. These tests have been conducted in accordance with AS1530.3: SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION, HEAT RELEASE AND SMOKE RELEASE. This test measures the 4 key indices of:

**Ignitability index** - a measure of the tendency for the gaseous pyrolysis products to be ignited during the test. Materials are rated from zero to 20, with materials that do not ignite having an index of zero.

**Spread of flame index** - a measure of the rate of radiant heat release once a material has ignited. Materials are rated on a scale of zero to 10. The maximum spread of flame index is 10, and the minimum zero.

**Heat evolved index** - is a measure of the quantity of radiant heat released by the test material in a specified time interval after ignition. Materials are rated on a scale of zero to 10, with increasing indices indicating increasing quantities of radiant heat evolution.

**Smoke developed index** - relates to the maximum optical density of the smoke produced during the test. The index has a range of zero to 10, with each increase of one index unit indicating a doubling in the optical density of the smoke produced.

The results of this testing are summarised in Table 1 below, refer to APPENDIX A for Test Certificates.

Product	Test Cert	Ignitability Index(0-20)	Spread of Flame Index (0-10)	Heat Evolved Index (0-10)	Smoke Developed Index (1-10)
0.70BMT COLORBOND® Astro® steel	FNE11604	0	0	0	2
0.35BMT COLORBOND® Woodland Grey® steel	FNE11605	0	0	0	2
0.55BMT COLORBOND® Metallic Citi® steel	FNE11606	0	0	0	1
0.42BMT Galvanised steel	FNE11601	0	0	0	2
0.42BMT TRUECORE® steel	FNE11601	0	0	0	1
0.42BMT ZINCALUME® steel	FNE11602	0	0	0	2

The Australian National Construction code sets out criteria for the determination of Non Combustible materials at C2D10 (5) and C2D10 (6) as show below.

## **C2D10 Non-Combustible Building Elements Clause C2D10 (5)**

The following materials, when entirely composed of itself, are non-combustible and may be used wherever a non-combustible material is required:

- (b) Steel, including metallic coated steel

and

## **Clause C2D10 (6)**


The following materials may be used wherever a non-combustible material is required:

- (e) Pre-finished metal sheeting having a combustible surface finish not exceeding 1mm thickness and where the Spread-of-Flame Index of the product is not greater than 0.

As shown in Table 1 Fielders products manufactured from BlueScope COLORBOND® steel, ZINCALUME® steel, or Galvanised steel materials that are less than 1mm thick and have a Spread of Flame index of 0 are considered Non Combustible material in accordance the National Construction Code.

The National Construction Code (NCC) is an initiative of the Council of Australian Governments (COAG) developed to incorporate all on-site construction requirements into a single code. The NCC comprises the Building Code of Australia (BCA), Volumes One and Two; and the Plumbing Code of Australia (PCA), as Volume Three.

Non Combustible Fielders Cladding Profiles

Product		Base Metal Thickness (BMT) mm	Finish
	Hi-Rib® 680	0.42, 0.48, 0.60	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvanised steel, COLORBOND® Metallic steel
	SpanForm	0.42, 0.48	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvanised steel, COLORBOND® Metallic steel
	S-Rib® Corrugated	0.35, 0.42, 0.48, 0.60	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvanised steel, COLORBOND® Metallic steel
	TL-5	0.35, 0.42, 0.48	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvanised steel, COLORBOND® Metallic steel
	KingKlip® 700	0.42, 0.48	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvanised steel, COLORBOND® Metallic steel
	HiKlip® 630	0.42, 0.48	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvanised steel, COLORBOND® Metallic steel
	FreeForm®	0.55, 0.75	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvanised steel, COLORBOND® Metallic steel
	Shadowline® 305	0.7	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, COLORBOND® Metallic steel
	Boulevard™	0.55, 0.75	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, COLORBOND® Metallic steel
	Grandeur®	0.55, 0.75	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, COLORBOND® Metallic steel
	Prominence™	0.55, 0.75	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, COLORBOND® Metallic steel
	Neo Roman®	0.55, 0.75	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, COLORBOND® Metallic steel
	Lo-Rib	0.35, 0.42	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvanised steel, COLORBOND® Metallic steel
	Mini-Flute	0.42, 0.48	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvanised steel, COLORBOND® Metallic steel
	PanelForm	0.42	ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvanised steel, COLORBOND® Metallic steel

# Certificate of Test

Quote No.: NE7500

REPORT No.: FNE11600

**AS/NZS 1530.3:1999 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION, HEAT RELEASE AND SMOKE RELEASE**

**TRADE NAME:** BlueScope Galvanised Steel

**SPONSOR:** Bluescope Steel Limited  
Innovations Lab  
Old Port Road  
PORT KEMBLA NSW 2505  
AUSTRALIA

**DESCRIPTION OF SAMPLE:** The sponsor described the tested specimen as a galvanised steel sheet with zinc coating and passivation layer on both sides.

Nominal thickness of steel sheet: 0.42 mm  
 Nominal thickness of zinc coating: 85 µm  
 Nominal thickness of passivation layer: 0.2 µm  
 Nominal total thickness: 0.5 mm  
 Nominal total mass: 3.9 kg/m<sup>2</sup>  
 Nominal total density: 7800 kg/m<sup>3</sup>  
 Colour: silver

**TEST PROCEDURE:** Six samples were tested in accordance with Australian Standard 1530, Method for fire tests on building components and structures, Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release, 1999. For the test, each sample was clamped to the specimen holder in four places.

**RESULTS:** The following means and standard errors were obtained:

Parameter	Mean	Standard Error
Ignition Time (min)	N/A	N/A
Flame Spread Time (s)	N/A	N/A
Heat Release Integral (kJ/m <sup>2</sup> )	N/A	N/A
Smoke Release (log <sub>10</sub> D)	-1.631	0.106

For regulatory purposes these figures correspond to the following indices:

Ignitability Index (0-20)	Spread of Flame Index (0-10)	Heat Evolved Index (0-10)	Smoke Developed Index (0-10)
0	0	0	2

The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

**DATE OF TEST:** 20 January 2016

Issued on the 3<sup>rd</sup> day of March 2016 without alterations or additions.



Heherson Alarde  
Testing Officer



Brett Roddy  
Team Leader, Fire Testing and Assessments

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Corporate Site No 3625  
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**CSIRO INFRASTRUCTURE TECHNOLOGIES**

14 Julius Avenue, Riverside Corporate Park, North Ryde NSW 2113 AUSTRALIA  
Telephone: 61 2 9490 5444 Facsimile: 61 2 9490 5555 www.csiro.au



Test Certificate 0.42mm bmt Galvanised steel.

# Certificate of Test

Quote No.: NE7500

REPORT No.: FNE11601

**AS/NZS 1530.3:1999 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION, HEAT RELEASE AND SMOKE RELEASE**

**TRADE NAME:** BlueScope TRUECORE Steel

**SPONSOR:** Bluescope Steel Limited  
Innovations Lab  
Old Port Road  
PORT KEMBLA NSW 2505  
AUSTRALIA

**DESCRIPTION OF SAMPLE:**

The sponsor described the tested specimen as a metal-coated steel sheet with aluminium-zinc-magnesium alloy coating, resin coating and passivation layer on both sides.

Nominal thickness of steel sheet:	0.42 mm
Nominal thickness of aluminium-zinc-magnesium coating:	45 µm
Nominal thickness of passivation layer:	0.2 µm
Nominal thickness of resin layer:	3 µm
Nominal total thickness:	0.5 mm
Nominal total mass:	3.3 kg/m <sup>2</sup>
Nominal total density:	7800 kg/m <sup>3</sup>
Colour:	blue

**TEST PROCEDURE:** Six samples were tested in accordance with Australian Standard 1530, Method for fire tests on building components and structures, Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release, 1999. For the test, each sample was clamped to the specimen holder in four places.

**RESULTS:** The following means and standard errors were obtained:

Parameter	Mean	Standard Error
Ignition Time (min)	N/A	N/A
Flame Spread Time (s)	N/A	N/A
Heat Release Integral (kJ/m <sup>2</sup> )	N/A	N/A
Smoke Release (log <sub>10</sub> D)	-2.312	0.213

For regulatory purposes these figures correspond to the following indices:

Ignitability Index (0-20)	Spread of Flame Index (0-10)	Heat Evolved Index (0-10)	Smoke Developed Index (0-10)
0	0	0	1

The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

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Test Certificate 0.42mm bmt TRUCORE® steel.

## Certificate of Test

Quote No.: NE7500

REPORT No.: FNE11602

**AS/NZS 1530.3:1999 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION,  
HEAT RELEASE AND SMOKE RELEASE**

**TRADE NAME:** BlueScope ZINCALUME Steel

**SPONSOR:** Bluescope Steel Limited  
Innovations Lab  
Old Port Road  
PORT KEMBLA NSW 2505  
AUSTRALIA

**DESCRIPTION OF**

**SAMPLE:** The sponsor described the tested specimen as a metal-coated steel sheet with aluminium-zinc-magnesium alloy coating, resin coating and passivation layer on both sides.

Nominal thickness of steel sheet:	0.42 mm
Nominal thickness of aluminium-zinc-magnesium coating:	45 µm
Nominal thickness of passivation layer:	0.2 µm
Nominal thickness of resin layer:	3 µm
Nominal total thickness:	0.5 mm
Nominal total mass:	3.3 kg/m <sup>2</sup>
Nominal total density:	7800 kg/m <sup>3</sup>
Colour:	silver

**TEST PROCEDURE:** Six samples were tested in accordance with Australian Standard 1530, Method for fire tests on building components and structures, Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release, 1999. For the test, each sample was clamped to the specimen holder in four places.

**RESULTS:** The following means and standard errors were obtained:

Parameter	Mean	Standard Error
Ignition Time (min)	N/A	N/A
Flame Spread Time (s)	N/A	N/A
Heat Release Integral (kJ/m <sup>2</sup> )	N/A	N/A
Smoke Release (log <sub>10</sub> Δ)	-1.882	0.159

For regulatory purposes these figures correspond to the following indices:

Ignitability Index (0-20)	Spread of Flame Index (0-10)	Heat Evolved Index (0-10)	Smoke Developed Index (0-10)
0	0	0	2

The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

**DATE OF TEST:** 20 January 2016

Issued on the 3<sup>rd</sup> day of March 2016 without alterations or additions.



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Test Certificate 0.42mm bmt ZINCALUME® steel.

# Certificate of Test

Quote No.: NE7500

REPORT No.: FNE11604

**AS/NZS 1530.3:1999 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION, HEAT RELEASE AND SMOKE RELEASE**

**TRADE NAME:** BlueScope COLORBOND Metallic Steel Polyester

**SPONSOR:** Bluescope Steel Limited  
Innovations Lab  
Old Port Road  
PORT KEMBLA NSW 2505  
AUSTRALIA

**DESCRIPTION OF SAMPLE:** The sponsor described the tested specimen as a polyester painted steel sheet with aluminium-zinc-magnesium alloy coating on both sides.

Nominal thickness of steel sheet:	0.70 mm
Nominal thickness of aluminium-zinc-magnesium coating:	30 µm
Nominal thickness of paint layer:	45 µm
Nominal total thickness:	0.8 mm
Nominal total mass:	5.5 kg/m <sup>2</sup>
Nominal total density:	7700 kg/m <sup>3</sup>
Colour:	metallic grey (Astro)

**TEST PROCEDURE:** Six samples were tested in accordance with Australian Standard 1530, Method for fire tests on building components and structures, Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release, 1999. For the test, each sample was clamped to the specimen holder in four places.

**RESULTS:** The following means and standard errors were obtained:

Parameter	Mean	Standard Error
Ignition Time (min)	N/A	N/A
Flame Spread Time (s)	N/A	N/A
Heat Release Integral (kJ/m <sup>2</sup> )	N/A	N/A
Smoke Release (log <sub>10</sub> D)	-1.535	0.086

For regulatory purposes these figures correspond to the following indices:

Ignitability Index (0-20)	Spread of Flame Index (0-10)	Heat Evolved Index (0-10)	Smoke Developed Index (0-10)
0	0	0	2

The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

**DATE OF TEST:** 10 February 2016

Issued on the 3<sup>rd</sup> day of March 2016 without alterations or additions.



Heheron Alarde  
Testing Officer



Brett Roddy  
Team Leader, Fire Testing and Assessments

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Test Certificate 0.70mm bmt COLORBOND® Metallic steel polyester.

# Certificate of Test

Quote No.: NE7500

REPORT No.: FNE11605

**AS/NZS 1530.3:1999 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION, HEAT RELEASE AND SMOKE RELEASE**

**TRADE NAME:** BlueScope COLORBOND Steel

**SPONSOR:** Bluescope Steel Limited  
Innovations Lab  
Old Port Road  
PORT KEMBLA NSW 2505  
AUSTRALIA

**DESCRIPTION OF SAMPLE:** The sponsor described the tested specimen as a polyester painted steel sheet with aluminium-zinc-magnesium alloy coating on both sides.

Nominal thickness of steel sheet:	0.35 mm
Nominal thickness of aluminium-zinc-magnesium coating:	30 µm
Nominal thickness of paint layer:	50 µm
Nominal total thickness:	0.45 mm
Nominal total mass:	5.5 kg/m <sup>2</sup>
Nominal total density:	7700 kg/m <sup>3</sup>
Colour:	dark grey (Woodland Grey)/brown

**TEST PROCEDURE:** Six samples were tested in accordance with Australian Standard 1530, Method for fire tests on building components and structures, Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release, 1999. For the test, each sample was clamped to the specimen holder in four places.

**RESULTS:** The following means and standard errors were obtained:

Parameter	Mean	Standard Error
Ignition Time (min)	N/A	N/A
Flame Spread Time (s)	N/A	N/A
Heat Release Integral (kJ/m <sup>2</sup> )	N/A	N/A
Smoke Release (log <sub>10</sub> D)	-1.560	0.072

For regulatory purposes these figures correspond to the following indices:

Ignitability Index (0-20)	Spread of Flame Index (0-10)	Heat Evolved Index (0-10)	Smoke Developed Index (0-10)
0	0	0	2

The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

**DATE OF TEST:** 11 February 2016

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Test Certificate 0.35mm bmt COLORBOND® steel.



# Certificate of Test

Quote No.: NE7500

REPORT No.: FNE11606

**AS/NZS 1530.3:1999 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION, HEAT RELEASE AND SMOKE RELEASE**

**TRADE NAME:** BlueScope COLORBOND Steel PVDF

**SPONSOR:** Bluescope Steel Limited  
Innovations Lab  
Old Port Road  
PORT KEMBLA NSW 2505  
AUSTRALIA

**DESCRIPTION OF SAMPLE:**

The sponsor described the tested specimen as a polyvinylidene fluoride (PVDF) painted steel sheet with aluminium-zinc-magnesium alloy coating on both sides.

Nominal thickness of steel sheet:	0.55 mm
Nominal thickness of aluminium-zinc-magnesium coating:	45 µm
Nominal thickness of paint layer:	35 µm
Nominal total thickness:	0.6 mm
Nominal total mass:	4.4 kg/m <sup>2</sup>
Nominal total density:	7700 kg/m <sup>3</sup>
Colour:	silver-grey metallic (Citi)

**TEST PROCEDURE:**

Six samples were tested in accordance with Australian Standard 1530, Method for fire tests on building components and structures, Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release, 1999. For the test, each sample was clamped to the specimen holder in four places.

**RESULTS:**

The following means and standard errors were obtained:

Parameter	Mean	Standard Error
Ignition Time (min)	N/A	N/A
Flame Spread Time (s)	N/A	N/A
Heat Release Integral (kJ/m <sup>2</sup> )	N/A	N/A
Smoke Release (log <sub>10</sub> D)	-2.053	0.099

For regulatory purposes these figures correspond to the following indices:

Ignitability Index (0-20)	Spread of Flame Index (0-10)	Heat Evolved Index (0-10)	Smoke Developed Index (0-10)
0	0	0	1

The results of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

DATE OF TEST: 11 February 2016

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Test Certificate 0.55mm bmt COLORBOND® Metallic Citi® steel.

**Please check with Fielders that you have the current Fielders Fact File for this topic**

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