

FIELDERS FACT FILE

FILE REFERENCE: CLADDING FIRE RATING /// AUG17

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 |

Table 1.

The Australian National Construction code sets out criteria for the determination of Non Combustible materials at C1.12 and 3.7.12 as show below.

C1.12 Non-combustible materials

The following materials, though *combustible* or containing *combustible* fibres, 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:

And

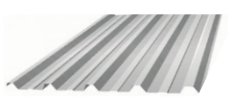

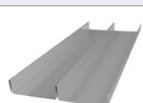


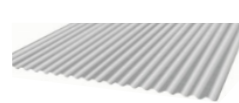
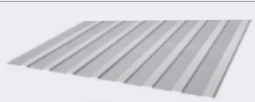
C7.1.12 General concession - non-combustible materials

The following materials, though *combustible* or containing *combustible* fibres, may be used wherever a *non-combustible* material is required in the Housing Provisions:

- (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, Galvinised steel, COLORBOND® Metallic steel |
|  | SpanForm | 0.42, 0.48 | ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvinised steel, COLORBOND® Metallic steel |
|  | S-Rib® Corrugated | 0.35, 0.42, 0.48, 0.60 | ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvinised steel, COLORBOND® Metallic steel |
|  | TL-5 | 0.35, 0.42, 0.48 | ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvinised steel, COLORBOND® Metallic steel |
|  | KingKlip® 700 | 0.42, 0.48 | ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvinised steel, COLORBOND® Metallic steel |
|  | HiKlip® 630 | 0.42, 0.48 | ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvinised steel, COLORBOND® Metallic steel |
|  | FreeForm® | 0.55, 0.75 | ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvinised 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, Galvinised steel, COLORBOND® Metallic steel |
|  | Mini-Flute | 0.42, 0.48 | ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvinised steel, COLORBOND® Metallic steel |
|  | PanelForm | 0.42 | ZINCALUME® steel, COLOBOND® steel, COLORBOND® Ultra steel, Galvinised 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/m²
Nominal total density: 7800 kg/m³
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 ²) | N/A | N/A |
| Smoke Release (log ₁₀ 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 3rd day of March 2016 without alterations or additions.



Heherson Alarde
Testing Officer



Brett Roddy
Team Leader, Fire Testing and Assessments

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Number: 165
Corporate Site No 3625
Accredited for compliance with ISO/IEC 17025

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 ² |
| Nominal total density: | 7800 kg/m ³ |
| 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 ²) | N/A | N/A |
| Smoke Release (log ₁₀ 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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Testing Officer



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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 ² |
| Nominal total density: | 7800 kg/m ³ |
| 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 ²) | N/A | N/A |
| Smoke Release (log ₁₀ D) | -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 3rd day of March 2016 without alterations or additions.



Heherson Alarde
Testing Officer



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Team Leader, Fire Testing and Assessments

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Telephone: 61 2 9490 5444 Facsimile: 61 2 9490 5555 www.csiro.au



Test Certificate 0.42mm bmt ZINCALUMNE® 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 μ m |
| Nominal thickness of paint layer: | 45 μ m |
| Nominal total thickness: | 0.8 mm |
| Nominal total mass: | 5.5 kg/m ² |
| Nominal total density: | 7700 kg/m ³ |
| 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 ²) | N/A | N/A |
| Smoke Release (log ₁₀ 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 3rd day of March 2016 without alterations or additions.



Heherson 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 ² |
| Nominal total density: | 7700 kg/m ³ |
| 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 ²) | N/A | N/A |
| Smoke Release (log ₁₀ 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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Heherson Alarde
Testing Officer



Brett Roddy
Team Leader, Fire Testing and Assessments

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Telephone: 61 2 9490 5444 Facsimile: 61 2 9490 5555 www.csiro.au



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 ² |
| Nominal total density: | 7700 kg/m ³ |
| 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 ²) | N/A | N/A |
| Smoke Release (log ₁₀ 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 |

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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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