

# FLAMMABILITY OF LYSAGHT® STEEL PRODUCTS

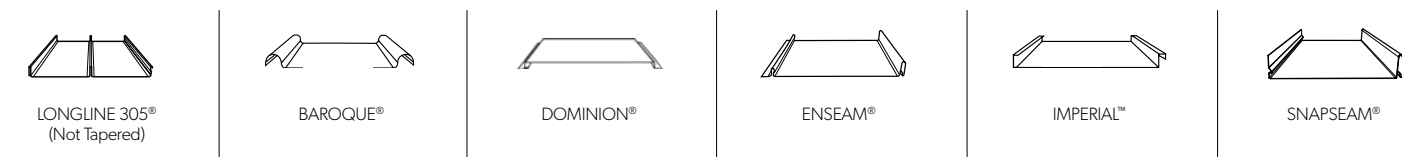
## SCOPE

Flammability of LYSAGHT® steel building products including roofing, walling, structural and rainwater goods manufactured from COLORBOND® steel, ZINCALUME® steel or galvanised steel from BlueScope.

## THE LYSAGHT® STANDARD ROOFING RANGE\*



## THE LYSAGHT ZENITH™ ROOFING RANGE\*



\*Not all products available in all regions. Please check product availability on [www.lysaght.com](http://www.lysaght.com) or with your nearest Lysaght branch.

## CONTEXT

Fire performance is a common query about the LYSAGHT® range of steel building products. The data presented in this bulletin has been compiled to provide designer's, builder's, installers, and users basic information on the fire resistance properties of LYSAGHT® steel products.

## AUSTRALIAN NATIONAL CONSTRUCTION CODE

The Australian National Construction Code (NCC) sets out criteria for the determination of Non Combustible materials at:

### C1.9.(e).(v) NON-COMBUSTIBLE MATERIALS

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:

And;

### C3.7.1.1.(e) 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:

## BLUESCOPE TESTING

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.

The results of this testing are summarised at Table 1 (next page).

**Table 1:**

Product	Test Cert	Ignitability Index <sup>(1)</sup> (0-20)	Spread of Flame Index <sup>(2)</sup> (0-10)	Heat Evolved Index <sup>(3)</sup> (0-10)	Smoke Developed Index <sup>(4)</sup> (1-10)
0.70 BMT COLORBOND® steel Astro™	FNE11604	0	0	0	2
0.35 BMT COLORBOND® steel Woodland Grey®	FNE11605	0	0	0	2
0.55 BMT COLORBOND® Metallic steel Citi	FNE11606	0	0	0	1
0.42 BMT galvanised steel	FNE11600	0	0	0	2
0.42 BMT TRUECORE® steel	FNE11601	0	0	0	1
0.42 BMT ZINCALUME® steel	FNE11602	0	0	0	2

Explanation of four indices are assigned to materials tested to AS 1530.3

1. 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.
2. 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.
3. 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.
4. 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

## CONCLUSION

As a result of this testing we are able to determine that LYSAGHT® products manufactured from BlueScope's COLORBOND® steel, ZINCALUME® steel or galvanised steel materials all have a Spread-of-Flame index of 0 (zero) and as such are considered non-combustible materials in accordance with the National Construction Code clauses C1.12 (e) and C7.12 (e).

Additional information in relation to use of COLORBOND® steel products in bush fire prone areas may be sourced from The BlueScope Fact File Steel cladding details for bushfire-prone construction at: [www.bluescopesteel.com.au/tools-and-resources/bushfire-design](http://www.bluescopesteel.com.au/tools-and-resources/bushfire-design)



## IMPORTANT NOTE:

When considering the information presented in this bulletin it is important to understand the difference between “flammability” and “fire rating”.

**Flammability** is a measure of how easily a specific material ignites or sustains a combustion reaction.

**Fire ratings** are applied to complete systems and not to individual materials or components of the system. Fire ratings, or Fire Resistance Level (FRL) refer to the fully constructed system's ability to withstand structural failure, prevent the spread/penetration of flames and ability to insulate interior elements from maximum specified temperatures. It is often expressed in minutes without failure for each of the three elements i.e. 60/60/60, -/120/120 anywhere from 30 minutes up to 240 minutes.

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.

FOR YOUR NEAREST SUPPLIER VISIT:

**WWW.LYSAGHT.COM**

FOR SALES ENQUIRIES CALL 13 30 38

FOR TECHNICAL ENQUIRIES CALL 1800 641 417

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