PAB08

LYSAGHT PRODUCT ADVISORY BULLETIN

OCTOBER 2017 | REV 01 | This version supersedes all previous issues.

FLAMMABILITY OF LYSAGHT® STEEL PRODUCTS

SCOPE

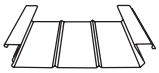
Flammability of LYSAGHT® steel building products including roofing, walling, structural and rainwater goods manufactured from COLORBOND® steel, ZINCALUME® steel or galvanised steel from BlueScope.

THE LYSAGHT® STANDARD ROOFING RANGE*

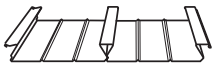
CUSTOM ORB®

CUSTOM ORB ACCENT 21®

CUSTOM ORB ACCENT 35®



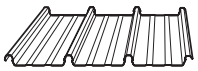
FLATDEK®



FLATDEK® II

KLIP-LOK® 406

KLIP-LOK 700 HI-STRENGTH®

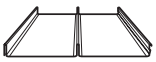


KLIP-LOK CLASSIC® 700

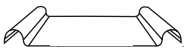
SPANDEK®

TRIMDEK®

THE LYSAGHT ZENITH™ ROOFING RANGE*



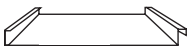
LONGLINE 305®
(Not Tapered)



BAROQUE™

DOMINION™

ENSEAM™



IMPERIAL™

*Not all products available in all regions. Please check product availability on 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:

C1.12 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:

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[1] (0-20)	Spread of Flame Index[2] (0-10)	Heat Evolved Index[3] (0-10)	Smoke Developed Index[4] (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.steelselect.com/download_centre/download.php?id=5108

FACT SHEET | Version 1 | April 2011

COLORBOND® steel clad roofing system construction

Details for bushfire-prone AS3959-2009 BAL-FZ sites

This Fact Sheet describes a range of new steel clad roofing systems that have been designed for areas determined to be "Bushfire Attack Level – Flame Zone (BAL-FZ)" in accordance with AS3959-2009. Since the Fact Sheet is intended to provide assistance to homeowners, builders and designers who are looking to build or re-build homes on BAL-FZ sites.

AS3959-2009 requires a roofing system to comply with AS1530.3 when tested from the outside. The roofing systems described in this Fact Sheet have been accepted by a leading authority as being likely to achieve bushfire attack level BAL-FZ if tested in accordance with AS1530.3 & 2007.

It is essential that the construction details and product specifications for each roofing system set out in this Fact Sheet are strictly followed. Any changes may mean that the roof constructed may not meet the performance requirements of AS3959-2009.

It is important to be aware that no single fire test can assess the performance of building materials under all fire conditions and there is no guarantee that the roofing systems detailed in this Fact Sheet will survive a bushfire.

Australian Standard AS3959-2009: Construction of buildings in bushfire-prone areas

Australian Standard AS3959-2009 specifies the requirements for the construction of buildings in bushfire-prone areas to improve their resistance to bushfire attack from burning embers, radiant heat, flame contact and combinations of the three attack forms. The objective of the Standard is to provide greater protection for the occupants who may be sheltering in a building during a bushfire and also to increase the chances of the building surviving (PAL-4) such in building in Victoria after the passing of the bushfire front.

Although AS3959-2009 is designed to improve the performance of buildings when subjected to bushfire attack in designated bushfire-prone areas, it does not guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the unpredictable nature and behaviour of fire and extreme weather conditions (Ref. Australian Standard AS3959-2009, Construction of buildings in bushfire-prone areas).

Disclaimer and warning

To the extent permitted by law, BlueScope Steel excludes all liability (including liability in negligence) for any loss or damage suffered by any person arising out of, or in connection with, any use of or reliance of the information contained in this Fact Sheet.

This Fact Sheet provides general information about the performance of specified complete roofing systems against Australian Standard AS3959-2009. The information provided is of a general nature only and is based on data available to BlueScope Steel at the time of publication. It is your responsibility to consider the suitability of products to be used in your specific project.

It is important to be aware that compliance with this Fact Sheet does not guarantee that a building or its occupants will survive a bushfire.

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Legal

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.

PRODUCT DESCRIPTIONS

All descriptions, specifications, illustrations, drawings, data, dimensions and weights contained in this catalogue, all technical literature and websites containing information from Lysaght are approximations only. They are intended by Lysaght to be a general description for information and identification purposes and do not create a sale by description. Lysaght reserves the right at any time to:

(a) supply Goods with such minor modifications from its drawings and specifications as it sees fit; and
(b) alter specifications shown in its promotional literature to reflect changes made after the date of such publication.

DISCLAIMER, WARRANTIES AND LIMITATION OF LIABILITY

This publication is intended to be an aid for all trades and professionals involved with specifying and installing Lysaght products and not to be a substitute for professional judgement.

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