SANS 53501-1

REACTION TO FIRE
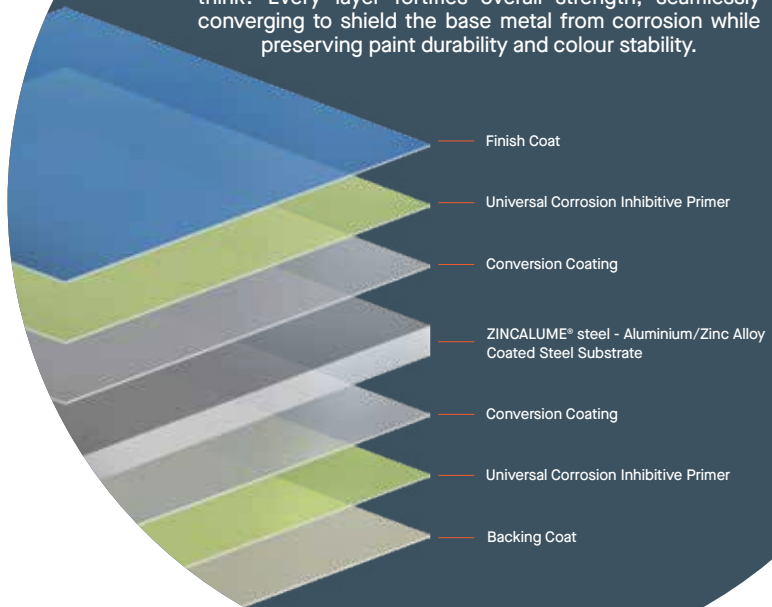
A 2 - s 1 , d0

Colorbond®

THE
FINEST MATERIALS

At the core of COLORBOND® steel is an unyielding focus on material excellence. We believe that materials are the foremost component of quality. As such, meticulous attention is expended when sourcing our materials, to ensure superiority right from the start.

The Bonding Layers

There are more layers to COLORBOND® steel than you think! Every layer fortifies overall strength, seamlessly converging to shield the base metal from corrosion while preserving paint durability and colour stability.

- Finish Coat
- Universal Corrosion Inhibitive Primer
- Conversion Coating
- ZINCALUME® steel - Aluminium/Zinc Alloy Coated Steel Substrate
- Conversion Coating
- Universal Corrosion Inhibitive Primer
- Backing Coat

High-Grade Base Steel

To create a robust coated steel, it is vital to begin with a strong foundation. The core of COLORBOND® steel is made to the highest industry standards and comprises of carefully selected steel coils – mighty and ready to be coated.

An Optimised Coating Blend

With the right coating, steel transforms to a robust core. For COLORBOND® steel, a proprietary blend of aluminium, zinc and silicon melted in exact ratios coats the base steel. The result: a core with greater corrosion resistance compared to any other coated steel.

Proprietary Paint System

Colours can make or break a design, and COLORBOND® steel understands this best. Our proprietary paint system with its optimal formula and unique pigment blends - developed from years of study - delivers both lasting colour and stunning finish options.

A2- S1, d0 - Reaction to Fire Classification

Tested and certified in accordance to SANS 53501-1, Colorbond® Steel will be your first line of defence, when the unfortunate happens and your steel cladded building exterior is exposed to fire. The proprietary coating formulations and raw materials used to manufacture Colorbond® Steel ensures that it does not contribute to the propagation of flames and fire spread and is the suitable choice to use with your Fire Rated Wall Cladding built up system.

REACTION-TO-FIRE TESTS

Reaction-to-fire tests evaluate the contribution of materials or products to the growth and spread of fire, typically within the early stages of fire development. The tests may focus on various aspects such as ignitability, flame spread, heat release rate, the heat of combustion, smoke production, or the production of toxic gases. The aggregate of these results can provide an indication of how the material is likely to behave in a fire.

Reaction-to-fire tests are also used to classify materials or products based on their fire behaviour characteristics.

SANS 53501-1 CLASSIFICATION

Classification criteria are set out by SANS 53501-1, which classifies materials based on reaction and contribution to fire. Possible classifications range from A1 - which is non-combustible, to F - which is a fire risk, and therefore, no adequate reaction to fire rating can be given.

BUILT-UP DESIGN

Materials are tested in isolation and not part of a built-up fire-resistant wall design. It is critical that all components used in the built-up system design, have a verified Reaction-To-Fire rating and therefor meet the SANS 53501-1 classification.

The desired design, construction elements and materials, supported with the relevant SANS 53501-1 Classification, should be reviewed by a qualified Fire Engineer to verify system suitability.

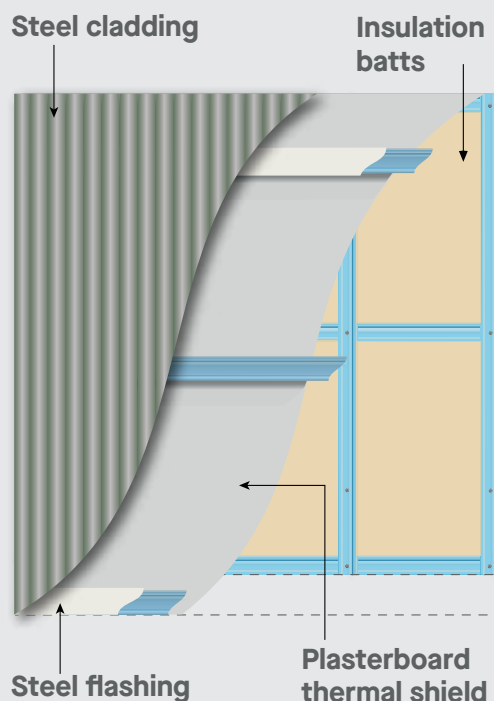An example of such a Built-up system, is shown in **Fig 1: Built-up wall system design**

Figure 1: Built-up wall system design

COLORBOND® steel

Fire Hazard Properties#		
Simultaneous determination of ignitability, flame propagation, heat release and smoke release	AS/NZS 1530.3 (Ignitability index; Spread of flame index; Heat evolved index; Smoke developed index)	Ignitability index: 0 rating in scale of 0 – 20; Spread of flame index: 0 rating in scale of 0 – 10; Heat evolved index: 0 rating in scale of 0 –10; Smoke evolved index: 2 rating in scale of 0 – 10.
Fire classification	BS 476-6 (Fire propagation); BS 476-7 (Surface spread of flame)	Fire propagation index, $I < 12$; sub-index, $i_1 < 6$; Surface spread of flame: Class 1. Classification: Class O.
	SANS 53501 – 1 (Reaction to fire)	Degree of flammability: Very limited contribution to fire; Smoke production: Low emission rate and speed; Droplets generation: No droplets; Classification: A2-s1, d0

#These test results relate only to the behaviour of the test specimen of the material under the particular conditions of the test and they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use.

![BlueScope logo]

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