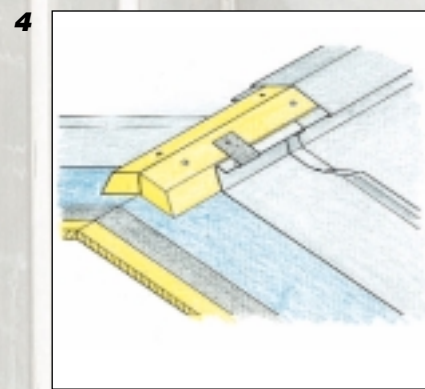
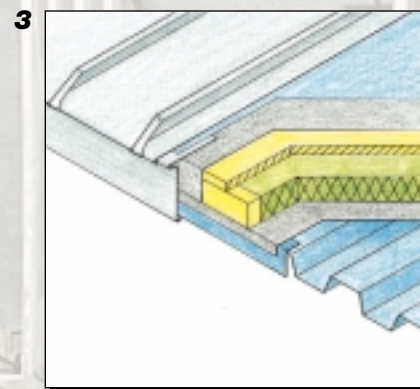
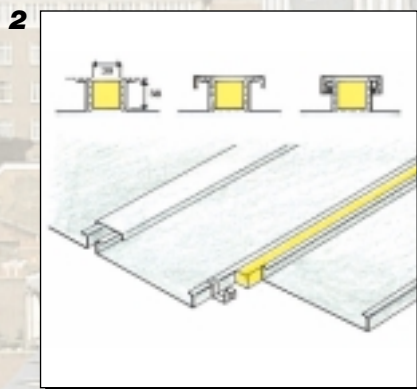
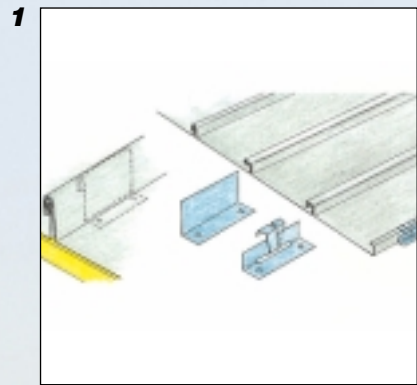


INSTALLATION

Installation of TCS is based on long metal trays formed in the factory or on site, which are fully supported by the deck to which they are attached. Attachment is made with fixed or sliding cleats which are mechanically folded into the seams joining the trays together, and fixed to the deck with stainless steel annular ring shank nails. The sliding cleats allow for thermal expansion in the length of the trays and spaces between the trays accommodate lateral movement. The deck is usually 18mm exterior plywood and is covered with a geotextile separation layer before installation of TCS.

The trays are joined with either a double lock standing seam 25mm high at 535mm centres or a batten roll joint of 38mm high at 550mm centres. The standing seam, which can be used down to pitches of 5° forms a neat crisp line and is quickly formed with a self driven seaming machine. The metal capped timber batten is more expensive to produce but forms a broad, visual joint that can be used down to 3°. Trays can be up to 15m in length and can be curved to fit barrel vault applications. Where roofs exceed this maximum length a step-joint is incorporated into the roof design.



Further standard details can be downloaded as CAD drawings from our web site www.follansbee.co.uk. NBS specifications are in section H75.

TECHNICAL DATA

Coating thickness	20 microns per side
Stainless steel	Austenitic stainless steel to BS EN 10088, 1995.
Weight	3.27kgs/m ² at 0.4mm.
Proof Stress	250-300N/mm ²
Tensile Stress	550-600N/mm ²
Elongation	50%
Thermal Expansion	17.3 x 10 per °C
Thermal Conductivity	16W/mK
Melting Point	1430°C

SIZES

TCS II is available in a standard size of 610mm wide and a thickness of 0.4mm. Other sizes are available to special order.

TCS is a registered trade mark of Follansbee Steel.

FOLLANSBEE

Lifetime roofing metals

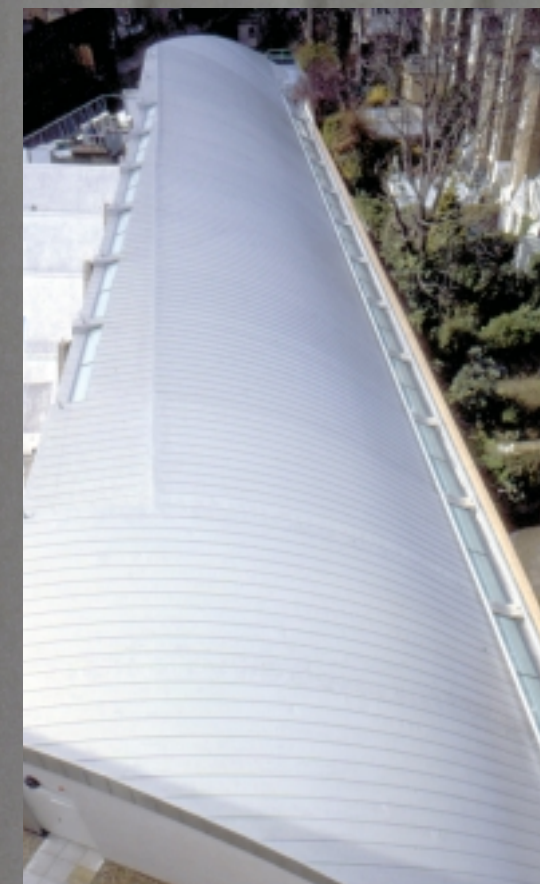
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Website: www.follansbee.co.uk Email: sales@follansbee.co.uk

TCS®

The Original Terne Coated Stainless Steel



Royal Opera House, London



Bromton road, London

- Traditional Weathered Appearance
- Environmentally Friendly, Lead-Free Alloy
- Exceptionally Durable, Thick Coating



Prospect Quay, London



Guys Hospital, London



RNLI, Bude

TCS® The Original Terne Coated Stainless Steel

INTRODUCTION

Over 100 years ago Follansbee introduced terne coated carbon steel for roofing, and many distinguished residences and public buildings were roofed with Terne because of its reputation for durability. Properly painted and maintained no other architectural metal can match its historic performance.

In 1968 Follansbee introduced TCS, the original terne coated stainless steel. This used the same protective terne coating on a stainless steel substrate to produce a maintenance free product. TCS began creating its own history of service as a roofing material, with a natural weathered appearance and a long, maintenance free life. TCS has since been specified by many of the world's leading architects and used on many prestigious projects.



Edenton, North Carolina, USA 100 years of service

Now, Follansbee is writing a new and exciting chapter in the evolution of roofing materials with the introduction of TCS II, which is designed to meet the challenging needs of the 21st century. TCS II is an improved version of the original TCS with a new patented ZT alloy coating which offers a longer life, due to its improved corrosion resistance, with an environmentally sensitive lead-free alloy composition.

Follansbee now offers a new roofing metal, TCS II, which allows the architect to design metal roofs, which achieve environmental compatibility without sacrificing performance.

THE ZT ALLOY

Environmental concerns prompted research into alternative coating compositions and after 7 years of testing Follansbee have perfected their ZT alloy. This tin/zinc alloy has been shown in both laboratory and field tests to have improved corrosion resistance, particularly in marine atmospheres.

Samples have been exposed to 2400 hours of salt spray testing, and 5 years of exposure to industrial and marine atmospheres, with no evidence of corrosion.

The durability of a coating depends on its corrosion resistance, thickness and adherence to the metal substrate. The ZT coating has been proved to have excellent corrosion resistance and TCS II has a thick 20 micron coating on both sides. Follansbee's hot dip coating technology produces a pore free coating that diffuses into the stainless steel to produce a unique inter-metallic zone, where the coating diffuses into the stainless steel, that guarantees excellent adherence.

Tests by Ove Arup on TCS II have confirmed that the ZT coating averages 20 microns per side and is uniform, continuous, with no evidence of porosity. They confirmed the presence of the inter-metallic layer, and that this and the anodic nature of the coating protects the substrate even where the coating has been damaged. Corrosion testing showed that the stainless substrate pays no part in the corrosion resistance of TCS II and confirmed that the product was suitable for use in all atmospheric conditions, even in aggressive coastal atmospheres.



Samples undergoing corrosion testing

DESCRIPTION

TCS II is an architectural stainless steel with a 20 micron coating of the tin/zinc ZT alloy on both sides, and is designed for fully supported roofing and cladding applications. The lead-free ZT alloy offers longer life, particularly in marine atmospheres, and weathers to a consistent, warm grey patina. The material is delivered in a bright condition but quickly loses its reflectivity with its grey patina developing over 12-18 months after installation.



Neighbourhood Centre, London

APPLICATION

TCS II is one of the most durable and versatile architectural metals ever developed for roofing and cladding applications, with a guaranteed performance and design life expectancy of 60 years.

In addition to the traditional standing seam roof, TCS II can be used for barrel vaults, domes and wall cladding. It is ideally suited for rural, industrial and marine environments and can be used for both cold and warm roof applications. The strength, durability and malleability make it an excellent material for all weathering applications, such as flashings, copings and gutters.

TCS II has a high fatigue strength and low coefficient of expansion so that long lengths can be used in roofs and gutters. This speeds installation, reduces the number of joints and so reduces cost.

It is one of the lightest roofing metals, being a quarter the weight of code 5 lead, and so reduces the load on the structure. This is an advantage for over-roofing or re-roofing of existing buildings, reducing the need for strengthening the roof structure.

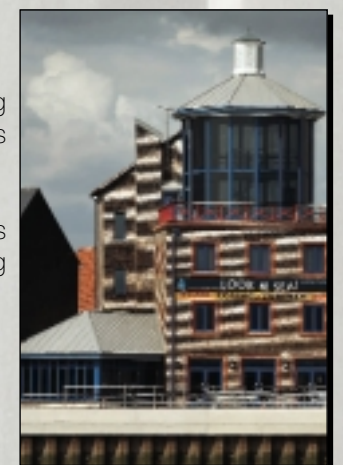


Dartmoor Prison

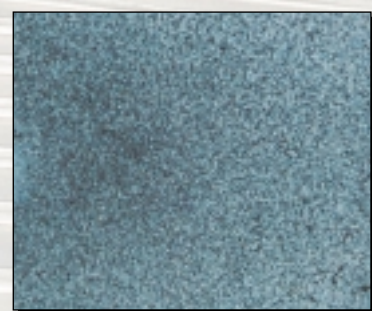
Material	coefficient of thermal expansion 10 ⁻⁶ per °C	expansion mm per metre per 60°C temperature difference									
		0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0
Aluminium	23.9	[Bar chart showing expansion values for Aluminium]									
Copper	17.5	[Bar chart showing expansion values for Copper]									
Lead	29.1	[Bar chart showing expansion values for Lead]									
TCS	17.3	[Bar chart showing expansion values for TCS]									
Zinc	31.0	[Bar chart showing expansion values for Zinc]									

In refurbishment TCS II has particular advantages where planning authorities require the appearance of lead but where the weight and costs may be prohibitive.

TCS II retains excellent ductility in cold weather and the ZT coating makes it one of the easiest metals to solder, with non-aggressive fluxes being used.



Look & Sea, Littlehampton



Over 5 years of beach front conditions