

This certificate is valid for Building Regulations & associated technical guidance in force on the date of registration and for the regulations in the countries indicated

BALCON™ system

Description of Product

This is an assessment of the BALCON™ (cast-in welded steel connection assembly) steel balcony fixing system, which is designed for each individual installation with liaison, input and authorisation of use required from the manufacturer's engineers.



Key Factors Assessed

- ☐ Mechanical Resistance & Stability
- ☐ Safety in case of Fire
- ☐ Health, Hygiene and Environmental
- ☐ Safety in Use
- ☐ Durability serviceability and identification

Validity

This certificate was first issued on 26th November 2018 and is valid until 26th November 2019

Issue Dated 26th November 2018

Scope of Registration

This registration applies to the J&P Building Systems Ltd BALCON™ steel balcony to concrete fixing system, for use on reinforced concrete floors or precast concrete/hollow-deck floors - connections are designed in consultation with J&P Building Systems technical/structural engineering department

Within the BALCON™ range there is a standard product which has been configured to design parameters derived from the JORDAHL® anchor channel system, and J&P Building Systems Ltd are authorised and regulated by JORDAHL® in the use and application of these cast-in channel systems. Design resistances for the BALCON™ system have been derived in accordance with the JORDAHL® European Technical Approval ETA-09/0338 (June 2018).

The BALCON™ system is a load bearing element and in accordance with Eurocode 2: Design of concrete structures EN1992-1-1, all load bearing elements must be backed up with performance characteristics demonstrating its ability to transfer load into the concrete. The BALCON™ system is designed to BS EN 1090-1:2009 + A1:2011. The BALCON™ product is fully supported with a Declaration of Performance and has a 'CE' mark for the standard BALCON™ product. The manufacture of the BALCON™ system is undertaken with approved fabricators who hold an FPC to control manufacture of metal products to BS-EN 1090:pt1.

This registration includes the use of Fabreeka – TIM structural thermal breaks between the BALCON™ system and a defined set of connecting structural steelwork stubs. The concrete floor and balcony steelwork stubs do not form part of this registration and must be designed separately by a qualified and competent structural engineer, in consultation with the manufacturer's own engineers.

Conditions of Certificate

The design and suitability of the BALCON™ fixing system **MUST** be made in liaison with the manufacturer's engineers for each individual project.

The manufacturing engineers will require minimum design information, including

- i) factored moment kN.m
- ii) factored shear kN values

The structural engineer/specialist steel fabricator must co-ordinate together and ensure that fixing plates are set-out to match channel positions. Fixing plates must extend the full depth of the channel assembly to maintain the design lever arm.

In terms of durability, the BALCON™ fixing system is usually enclosed within the external wall construction/insulated envelope and so would normally be hot-dip galvanized, designed in accordance with BS EN ISO 12944, environment category C3 (the equivalent is shown in Annex 3 of the product literature). Where geographical or other conditions dictate exposure ratings above C3, such as in coastal and marine environments (i.e. Class C4 or higher than normal exposure to aggressive environments), then the manufacturer should be notified and the required grade of stainless steel be specified

(includes the reinforcement bars and tee-bolts) to substitute the normally hot-dip galvanized carbon steel.

The use of Fabreeka-TIM structural thermal break in accordance with the manufacturer's design details, will comply with the minimum (X) and (y) standards required for thermal bridging when used with the tested stub section profiles and section sizes. Any departure away from the tested section sizes or the maximum u-values assumed in the calculations for the external wall and the thickness of materials used in the wall and floor constructions, will require new calculations to be performed. Alternatively, the adoption of the maximum default γ -value of 0.15 within the DER can be chosen instead. The recommendation is to contact the technical department of J&P Building Systems Ltd with specific details of the proposed balcony design for an analysis of the repeating/non-repeating thermal bridge to be undertaken.

The fire resistance requirement for the project building is also to be applied to the BALCON™ fixing system and should be discussed with J&P Building Systems Ltd Technical staff.

The use of fire-resisting, intumescent coatings is not appropriate for some of the BALCON™ solutions and should be verified with the manufacturer prior to application.

LABC consider that the BALCON™ system will meet the functional requirements of the Building Regulations (listed below) if the criteria detailed in this certificate are met;



The Building Regulations 2010 (as amended) England & Wales

Regulation 7 Materials and workmanship

Note: The system is acceptable.

AD A Structure

Note: The system is acceptable subject to limitations detailed in the Conditions section.



The Building Regulations 2010 (as amended) England

AD L1A Conservation of fuel and power

Note: The system is acceptable subject to limitations detailed in the Conditions section.



The Building Regulations 2010 (as amended) Wales

AD L1A Conservation of fuel and power

Note: The system is acceptable subject to limitations detailed in the Conditions section.



The Building (Scotland) Regulations 2004 (as amended)

If you would like to discuss a specific use of the product in Scotland it will require an additional assessment under the Scottish Building Regulations and accordingly you should contact the LABSS STAS Administrator at www.labss.org

Non-Regulatory Information



LABC Warranty

The use of the BALCON™ system has not been assessed to meet the requirements of the LABC Warranty Technical Manual. If you would like to discuss a specific use please make an enquiry to technical.services@labcwarranty.co.uk

Supporting Documentation

European Technical Assessment – ETA-09/0338 (18th June 2018)

BALCON™ manufacturer's product information including Declaration of Performance, CE data and FABREEKA-TIM structural thermal break data and thermal testing/calculations

BALCON™ structural design calculations

Tension re-bar testing document

Thermal break compression rotation design check

Re-bar design calculation for welded connection to channel

Calculation approval

Contact Information

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