

SCI / NHBC Stage 1 System Certification Frameclad SFS - External Infill Walling

25th January 2019 - Certificate number 20220125

1. Introduction

The Steel Construction Institute has assessed the structural aspects of this system for Stage 1 – System Certification and confirms that it is suitable for use in the construction of external infill wall panels in accordance with (where applicable) NHBC Standards Chapter 6.10 “Light steel framed walls and floors”. It should be noted that Stage 2 – Project Certification is only applicable to light steel framing forming the primary structural system, therefore it is not applicable to external infill walling.

This certificate is valid until 25/01/2022 unless it is withdrawn or updated before that date. To confirm validity please visit the SCI Assessed website (www.sci-assessed.com) or contact SCI (Tel: 01344 636525).

For contact details of the technical department of *Frameclad* please refer to the *Frameclad SFS System Manual*.

Scope summary

Performance issues considered in the scope of this certification:

- Durability: Yes
- Strength and stability: Yes
- Additional details for volumetric construction: Not applicable
- Behavior in relation to fire: No
- Acoustic performance: No
- Moisture control, thermal performance, condensation risk and water ingress: No
- Wall construction: No
- Balconies, terraces and parapets: No

2. Description of the system

This certificate relates to the *Frameclad SFS* system; a light steel external infill wall system for use in residential and commercial buildings. As their basic components *Frameclad* use cold rolled galvanized C-sections for the wall studs and tracks.

The sections are produced to BS EN 10346: 2015, steel type S390GD to S450GD +Z275 and are available in a range of depths and gauges.

The system of construction is based on the ‘warm frame’ principle, where insulation is placed outside the steel frame. In this way, the risk of condensation is minimized. Insulation is also placed in the stud zone to achieve enhanced U-values. Appropriate acoustic performance is achieved by using multiple layers of board and quilt.

Component sizes are determined on a project basis.

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3. Scope of this certificate

The scope of this Stage 1 certificate is limited to the structural and durability aspects of the structural steel frame. System specific solutions for fire resistance, sound insulation, resistance to moisture and thermal performance must be assessed on a project specific basis. When presented with proposed use of the system, such solutions will be considered by NHBC in accordance with their internal processes and procedures for assessing and managing Buildmark Warranty and/or Building Regulation Approval applications. The submission of additional information, including project specific structural design calculations and durability assessments, demonstrating further compliance with NHBC Standards and/or the Building Regulations, as applicable, will be required.

Although it may be possible to use the *Frameclad SFS* system for applications beyond these limits, the scope of this certificate is restricted to the following:

- (i) Residential / domestic structures, hotels, student accommodation, commercial and other similar structures.
- (ii) Full calculations to be provided for every project based on the design philosophies presented in the *Frameclad SFS System Manual*.
- (iii) Lightweight finishes may be supported by the stud walls.
- (iv) Masonry and other heavy claddings should be laterally restrained by the light steel walls, but the vertical loads from such claddings must not be carried by the stud walls.
- (v) *Frameclad SFS* walls must be constructed with a deflection head detail to ensure the walls do not carry any of the vertical floor loads from the primary structural frame.

4. Information for designers and project reviewers

Designers and project reviewers must obtain a copy of the *Frameclad SFS System Manual*, which contains design data.

Additionally, for all projects particular attention should be paid to the following:

- a. Ensure the project falls within the scope of this certificate, or ensure acceptable solutions are provided for items outside the scope of this certificate.
- b. Confirm the grade of steel and determine the appropriate section properties.
- c. Ensure that a full set of calculations for the structure is available, following the philosophies agreed in the *Frameclad SFS System Manual*.

Signed 
SCI Chief Executive

Dated ...15th January 2019...

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Appendix A: Summary of the *Frameclad SFS System Manual*

A1 Contents

The contents of the *Frameclad SFS System Manual* covered by the Stage 1 certificate are:

Section Title	Page references
Cover	1
Contents	2
Frameclad SFS System	3
Design Philosophy	4
Structural Steel Components	9
Building Physics	13
Example Structural Calculations	14
Standard Details	15
References	21

A2 Design philosophy

The design philosophy follows BS EN 1993-1-3 in terms of section properties and member capacities using loading to BS EN 1991. Section properties take into account the influence of local buckling and the reduced thickness of the section to take account of the zinc coating.

Calculations are produced on a project basis using wind calculations that are specific to the site.

The *Frameclad SFS* system is very simple in concept. Connections are pin jointed. The infill wall panels do not contribute to the overall stability of the structure.

A3 Structural Integrity

Connections between infill wall panels and the primary structural frame are designed resist calculated site specific wind loads.

A4 Resistance to overturning

Not applicable for infill wall systems.

A5 Holes through members

Where service holes are required through sections, calculations will be provided to justify the size and location of such holes. In general such holes will feature a swaged edge or a protective rubber / plastic grommet to protect cables and pipes from damage.

Circular holes, not exceeding 60% of the depth of the member and positioned on the member centreline generally have a negligible influence on structural performance. The position of these holes relative to the end of the member and any significant point load should not be less than 1.5 times the size of the un-stiffened aperture.

A6 Wall ties

Wall ties are 'flat' stainless steel in vertical runners. For the *Frameclad SFS* system the ties are at a vertical spacing of not more than 450 mm and horizontal spacing of 600 mm. This gives an equivalent density which exceeds the requirements of Building Regulations (2.51 ties/m²) and meets the NHBC 6.10 requirement (3.7 ties/m²). Additional ties are placed directly around openings at not more than 300 mm vertically and set within 225 mm of the reveal.

A7 Tolerances

The *Frameclad SFS* system is accurately produced and constructed. The installed tolerance allows for inaccuracies in position and foundation levels, but a maximum positional tolerance of +/- 5 mm in a 3 m length can be achieved on site with good site control.

Appendix B: Certification Procedure

There are two stages to the NHBC certification process for light steel framing forming the primary structural system.

B1 Stage 1 - System Certification

The issue of this certificate confirms completion of Stage 1 for *Frameclad SFS - External Infill Walling*.

The scope of this Stage 1 Certificate and the procedures for assessing project specific solutions are described in Section 3.

B2 Stage 2 - Project Certification

Stage 2 is only applicable to light steel framing forming the primary structural system, therefore it is not applicable to external infill walling. However, refer to the procedures for assessing project specific solutions described in Section 3.

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