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NHBC acceptance of VRS wallplate straps

Due to some confusion regarding the specification of lightweight restraint straps for holding down wallplates to masonry walls and them meeting NHBC technical requirements the following information is to clarify the position and to be circulated where any questions are raised.

The traditional 30x2.5mm restraint strap that has been previously used has never had any performance data against this and always been accepted as the industry standard for holding down wallplates. While Cullen Building Products were developing the VRS (lightweight holding down strap 30x1.2mm) the benchmark for this was to be at least equal in performance to the 30x2.5mm traditional strap.

At the request of the NHBC independent testing was carried out on the traditional 30x2.5mm and the lightweight reinforced VRS (30x1.2mm) straps at Ceram Building Technology, these tests were carried out to BS EN846-4:2002. From these tests it has been shown that the VRS was at least equal in performance to the traditional 30x2.5mm strap. This information and test report was submitted to the NHBC technical department and the VRS approved for use as a wallplate holding down strap.

Based on these test results it was shown that the straps achieved the following declared values for performance.

VRS – 3840N

30x2.5mm – 2811N

While these values were achieved for the straps the limiting factor in most cases is the performance of the fixings used into the blockwork, if these are plugged and screwed into lightweight aircrete blocks or using proprietor fixings into dense concrete blocks.

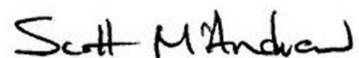
Dimensions	Fixings		Short term Safe Working Loads (kN) - 3.5N blockwork
	Wallplate (3.75x30mm)	Wall (No.8 screws and red rawl plugs)	
500/100	2	4	0.22* or 0.42
700/100	2	6	0.28* or 0.64
900/100 (NHBC approved strap)	2	6	0.33* or 0.64

Safe working loads based on * mass of masonry that the strap is fixed to or performance of the fixing used, by increasing the density of masonry and type of fixings used higher safe working loads can be achieved.

This should always be specified by the building design to suit the type of blockwork being used.

If you have any queries regarding this or wish to discuss this in further detail please do not hesitate to contact myself.

Regards

A handwritten signature in black ink that reads "Scott McAndrew". The signature is written in a cursive, slightly slanted style.

Scott McAndrew, MSc

Engineer / R&D Manager

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Dear Luke

Cullen VRS Vertical Restraint Strap

Thank you for the CERAM Test Report BT07655TMG of 20 September and TimberSolve Report Cull-VRS on the Cullen VRS 900/100 Vertical Restraint Strap of 30 mm x 1.2 mm cross-section.

We note from the CERAM Test Report that the performance of the VRS strap is comparable to that of the traditional vertical restraint strap. We observe that the failure load is lower but that performance is better at the deflection limit of 1.0 mm currently used in EN 845-1:2003.

In order to provide at least comparable durability performance we consider that the VRS strap should comply with at least the Material/coating reference 15 of Table A.1 of BS EN 845-1:2003 requiring a zinc coating of 600 g/m² (total mass per two sides).

Yours sincerely

Gopal Sangarapillai
Engineer, NHBC Standards & Technical

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