ACS

Technical Data Sheet

3000 Range
Wall Tie

3000 Range Wall Tie

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BS EN 845-1

Approved Type B

Product summary

The ACS 3000 Range Tie is a multi purpose frame cramp designed in accordance with the requirements of BS EN 845-1. The tie is designed to allow a masonry panel to be tied back to a range of structures/substrates meaning one tie can fulfil a range of applications on site. The advanced punched and pressed profile of the tie means that it is capable of withstanding high loads as a result of its increased sectional properties.

The 3000 Range Tie also has the added capability to be used as a movement tie, designed to tie two panels of masonry together at a vertical movement joint. The tie provides lateral resistance to wind loading whilst allowing expansion and contraction of the masonry panel to prevent cracking. Through the use of an ACS debonding sleeve, it is designed to allow in axis movement of up to +/- 10mm.

The tie's formed section and the integrated drip features act to prevent water from crossing the cavity. The minimum mortar joint thickness for which this tie is intended for use is 10mm.

The ACS 3000 Range Tie is available in Grades 304 (BS EN 1.4301) and Grade 316 (BS EN 1.4401) austenitic stainless steel.

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0113 391 8200
info@acsstainless.co.uk

acsstainless.co.uk/products/3000-range-frame-cramp

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Product highlights

Multi-purpose frame cramp
De-bondable
Post fix anchor to masonry
Austenitic stainless steel (Grade 304) Asymmetrical tie
0 – 187.5mm cavity Material reference 3
UKCA / CE+UKNI marked
Lucideon tested
A1 non-combustible

A1 non-combustible

The ACS 3000 Range Tie is a stainless steel product which satisfies the requirements for an A1 classification without testing as the below details outline. Referring to document 96/603/EC, the ACS 3000 Range Tie is produced from stainless steel and shall on account of the material's low level of combustibility, be classified in Classes A ("No contribution to fire") without need for further testing. The document shows all categories considered as non-combustible. For any further information please refer to the aforementioned standard.

Thermal properties

Due to the innovative design of the ACS 3000 Range Tie, the cross sectional area has been reduced while still achieving high load capacities. As the cross sectional area is reduced, this introduces the benefit of less thermal transfer across the cavity when compared to other ties. The cross sectional area of the tie is 24mm^2. Stainless steel has a thermal conductivity of 17W/mK. With these figures, the effect of wall ties upon the panel can be calculated.

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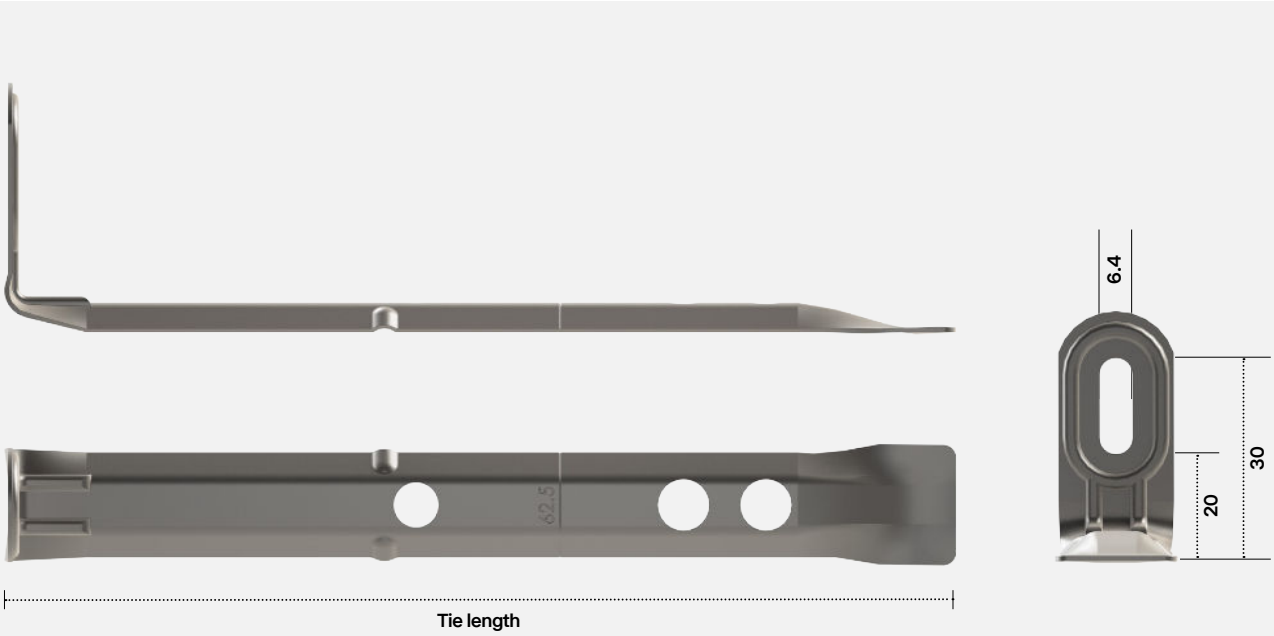

Tie dimensions and standard tie lengths

Tie reference	Tie length (mm)	Cavity length (mm)
ACS3000/75	75	0 – 20
ACS3000/100	100	21 – 45
ACS3000/100	125	46 – 70
ACS3000/150	150	71 – 95
ACS3000/175	175	96 – 120
ACS3000/200	200	121 – 145
ACS3000/225	225	146 – 170
ACS3000/250	250	171 – 187.5

Fixings

ACS can supply a range of corrosion resistant fixings to suit various applications. For more information please contact ACS.

Dynamic stiffness

Tests performed at Lucideon proved that the 3000 Range Tie has a measured dynamic stiffness of 8.8MN/m^3 in a 100mm cavity and therefore is classed as a Type B tie in-line with guidance of Approved Document E of the Building Regulations.

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1

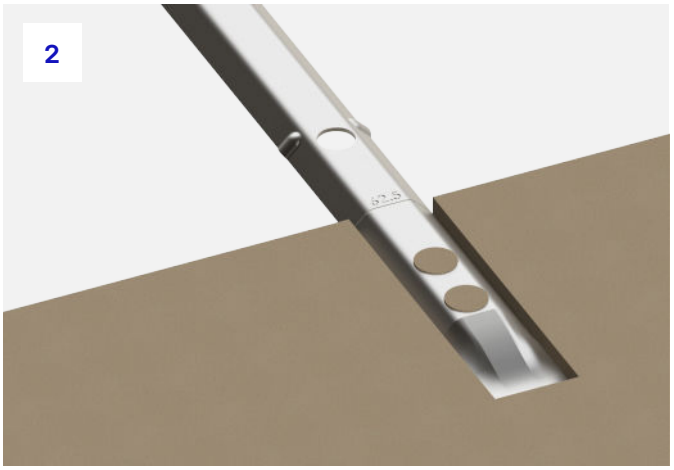
Installation and best practice

Cavity tie

1. When used as a cavity tie, ACS 3000 Range Ties should be installed in-line with the guidance of PD6697 which stipulates that ties should typically be installed at 900mm horizontal centres and 450mm vertical centres, staggered by 450mm between courses. This spacing should be reduced to 225mm around openings and at unbonded edges within 300mm of the edge or opening. However, the exact required spacing to suit each building should be calculated by the project structural/ facade engineer based upon test results within this data sheet.

The 3000 Range Tie includes clear embedment markings at 62.5mm to aid with installation. Tie lengths should be selected to provide a design embedment of between 50mm and 75mm into the masonry to ensure their performance under load as per the table on page 2.

2



Movement tie

2. When used as a movement tie, ACS 3000 Range Ties are designed for use in vertical movement joints at 225-450mm maximum centres. Required centres to suit each each scenario should be calculated by the project structural/facade engineer based upon declared values found on page 3.

The tie should be installed so the end of the tie aligns with the hole at the bottom of the debonding sleeve, allowing a minimum of 10mm of movement in both directions. The maxiumum gap the tie can be used across is 10mm.

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Declared load capacity

The ACS 3000 Range Tie has been tested in accordance with BS EN 846-6 for the determination of tensile and compressive load capacity and load displacement characteristics of wall ties (single end test). The tie has also been tested to BS EN 846-7 for the determination of shear load capacity as both a plain end and with the introduction of a debonding sleeve. Based on the results from the tests, the capacities declared in the table opposite were established.

BS 846-6 Single Test

Mode of test	Tie length (mm)	Maximum Declared Value (N)	Mortar class
Tension	75 – 250	790	M2 (iv)
Compression	75 – 250	1160	M2 (iv)

BS EN 846-7 Shear Test

Mode of test	Maximum Declared Value (N)	Design Shear Resistance per Metre (N/m)		Mortar class
		450mm centres	225mm centres	
Debonded	940	696	1392	M2 (iv)
Plain tie	980	725	1451	M2 (iv)

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