

**DYNAMIC STIFFNESS OF ACS 2300 STAINLESS STEEL WALL-TIES**

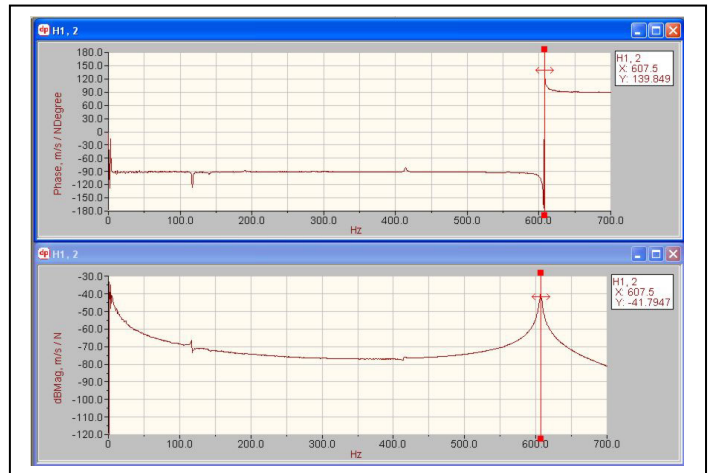
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**Product**

ACS 2300 225mm stainless steel wall ties were tested over a working cavity width of 100mm for dynamic stiffness to a method stated in BRE information paper IP 3/01 Dynamic stiffness of wall ties used in masonry cavity walls: measurement procedure.

**Client**

**ACS Stainless Steel Fixings**  
Cross Green Approach  
Cross Green Industrial Park  
Leeds  
LS9 0SG



Typical Dynamic Stiffness Graph

**Test Method**

The test specimens were formed by casting the two ends of the wall tie into concrete cubes of nominal dimensions 100mm x100mm. The distance between the two cubes into which the wall tie was cast was equal to the working cavity width for which the wall tie's dynamic stiffness was determined.

The concrete was a high strength mix prescribed in accordance with BS1881-125:1986. The wall tie was clamped into place in the cube mould and the mould was then half filled with the concrete mix and vibrated on a vibrating table until no air bubbles appeared. The mould was then completely filled and vibrated until no air bubbles appeared. The surface of the cube was struck off with a trowel and allowed to cure under a damp cloth and plastic sheeting for at least 24 hours before stripping. The process was then repeated on the other tie end. The cubes were allowed to cure for 28 days prior to testing.

**Test Results**

Sample No.	f (Hz)	K <sub>100mm</sub> (MN/m)
1	573.75	13.37
2	610.00	15.37
3	543.75	12.37
4	666.25	18.11
5	607.50	15.49
6	575.00	13.59
<b>Mean</b>		<b>14.72</b>

**Assessment**

At a standard tie density of 2.5 ties/m<sup>2</sup> the ACS 2300 225mm stainless steel wall tie at a 100mm working cavity achieved a measured dynamic stiffness of 36.8MN/m<sup>3</sup>. This meets the requirements of Part E of the Building Regulations for a Type B tie in external walls which states that a masonry cavity wall tie can only be used if the measured dynamic stiffness is less than 113MN/m<sup>3</sup>

Authorised by:

**Dave Dix** (Project Manager)

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**SUMMARY REPORT**