

# Stone Restraints



## Product highlights

- BS 8298: 2020 compliant
- Grade 304 or 316
- Bespoke design to suit application
- 1 or 3 hole ends
- Variety of dowel options available
- Holed or slotted upstand

## Product summary

ACS Stone Restraints are designed to provide lateral restraint against positive and negative windloads as well as any possible imposed loads that may be subjected to a stone façade in normal service. Stone restraints are typically designed complete with a one-way or two-way welded or loose dowel that should be embedded no less than 25mm into the stone. As standard, ACS stone restraints are supplied with 6mm diameter dowels, however alternative sizes can be supplied upon request.

Following guidance from BS8298-2, restraint fixings should be located at 1/5 points for stack bonded stones and 1/4 points for stretcher bonded stones. If this is not possible the fixing should be located at least 75mm from the edge of the stone.

The number of restraints per stone should be limited to a maximum of four fixing points. These can be located in either the horizontal or vertical joints.

ACS can provide stone restraints to suit a large number of scenarios, based upon factors including cavity, required water resistance, and the substrate into which the restraint tie is being fixed.

If required, ACS can provide fixings to work alongside the stone restraint for a variety of applications. For substrates such as blockwork, it is recommended that site testing is completed to validate capacities. Care and attention must be taken around spacing of fixings and proximity to substrate edges. For more details please contact ACS.

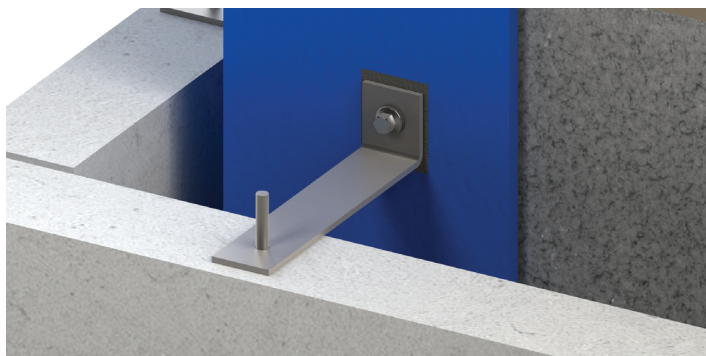
Substrate or structure	Recommended fixing
Concrete	M6 Plug and Screw
	M6 Expansion Anchor
Steel	M5.5 SS Self Drilling Tek Screw
Block	M6 Plug and Screw
Timber	M6 Stainless Coach Screw
	M6 Stainless Wood Screw

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## Restraint types

ACS can provide a number of restraint solutions based on the requirement for site tolerances. The main variants are shown below.



### C-P-HU

The first variant provides a single hole into the stone for a simple fixing method, however affords a minimal amount of site tolerance.



### M-P-HU

If a larger amount of site tolerance is required, restraint can be supplied with a multi hole end. This affords a higher range of lengths if site conditions are not as expected.

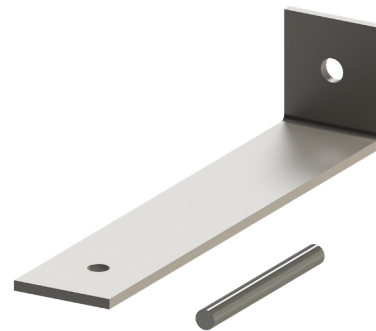
Both options of either a single hole or multi hole end are also available with a slotted upstand to allow for a vertical site tolerance. Due to the potential greater distance to the fixing, this tends to result in a larger section size of tie being required. For a slotted end please reference either C-P-SU for a single hole end, or M-P-SU for a multi hole end

## Dowel types

Dependent on the exact scenario and the installation sequence required, ACS can supply the stone restraints with a variety of dowel options. These are shown below.



Welded dowel



Loose dowel



Capped dowel