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Atlas

WIRE ROPE SEISMIC BRACING SOLUTION DATASHEET

THE B-SYSTEM

The B-System range of seismic braces are designed for light/medium duty brace applications and can be used as a seismic brace solution for new or retro-fit installations to non-structural components.

PLEASE NOTE: The selection of seismic braces requires correct seismic design. This must be carried out by a qualified structural engineer.

Installers must ensure that seismic design has been carried out prior to installation.

BRACE CAPACITY

Characteristic Strength (kN)	Design Strength (ULS) (kN)
5.7	3.7

- Characteristic strength is derived from static tensile destruction tests.
- Principles of AS/NZS 4671:2001 applied to test results to determine Characteristic Strength.
- Design strength calculated by applying a reduction factor of 0.65 to the Characteristic Strength.
- Values do not account for intended angle of use which must be taken into account.

AVAILABILITY

Part Number	Description	Bag Qty
IEEE2B	2 mtr B-system	2
IEEE3B	3 mtr B-system	2
IEEE5B	5 mtr B-system	2

Longer lengths available on request.

TESTING

Strength tested:

- Complying with NZS 4219: 2009
- Following ASCE-19

Seismically tested to:

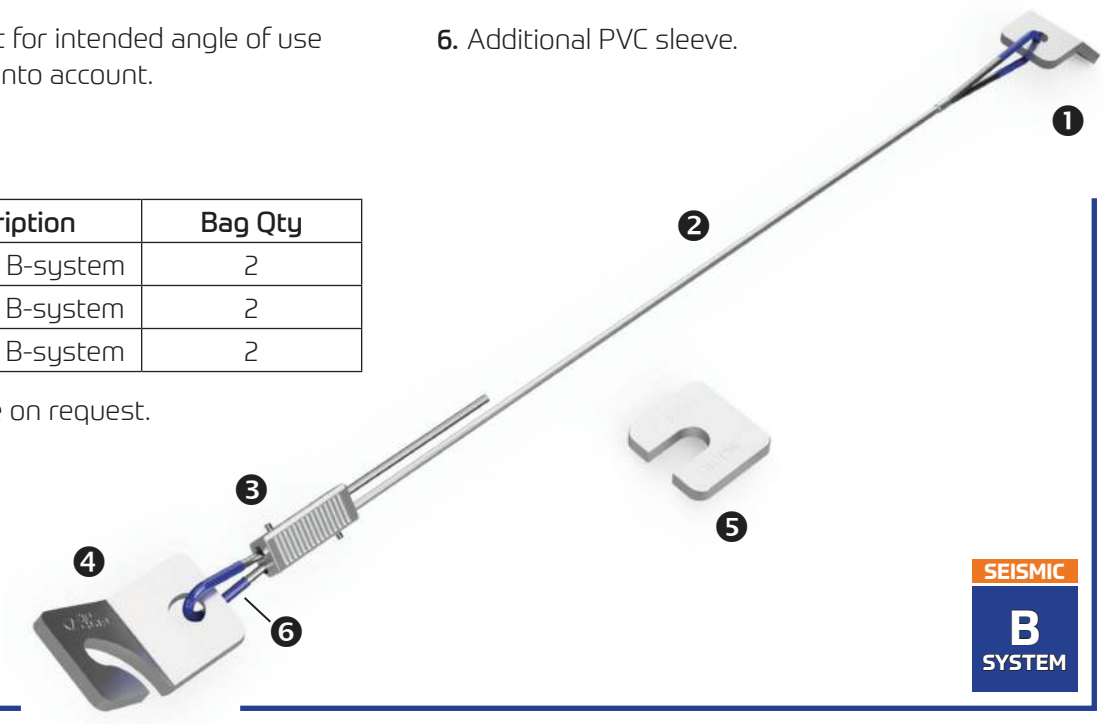
- IEEE 344-2013, standard for qualification of equipment for nuclear power generating stations.
- ICC ES AC156, acceptance criteria for seismic certification by shake table testing of non-structural components.

Third party certification is available for strength and seismic tests.

COMPONENT PARTS

Each brace comes complete with:

1. Seismic anchor bracket - steel, geomet finish.
2. Selected length of steel wire rope - 7×7, 1960N/mm² grade.
3. Wire locking device - Zinc alloy (ZAMAC5).
4. Retrofit bracket - steel, geomet finish.
5. Restraint washer - steel, geomet finish.
6. Additional PVC sleeve.



SEISMIC B SYSTEM

INSTALLATION

1. Attach seismic bracket to ceiling structure with appropriate anchor as per manufacturers instructions, and structural engineers recommendations.
2. Fit retro-fit bracket to existing primary support. Ensure seismic restraint washer is included, and bracket orientation is in-line with the brace.
3. Pass wire rope through the Zip-Clip seismic locking device.
4. Feed on additional pvc sleeve.
5. Loop wire through available hole in the retrofit bracket and position PVC sleeve against the through hole.
6. Feed wire back into Zip-Clip seismic locking device.
7. Apply tension by hand.

Coil excess wire and secure to main brace, if necessary trim excess leaving 150 mm tail.

GENERAL PRINCIPLES

- Braces should always be installed as opposing pairs.
- Wire rope should not be in contact with anything along the brace length.
- Brace angles from the horizontal should not exceed 60 degrees.
- Anchor brackets should be installed in-line with brace.
- Square plate washers should be utilised to secure retrofit brackets along with restraint washers where available.
- Where no square washer is available, a seismic restraint washer **MUST** be used along with the retro-fit bracket.

SPACING GUIDELINES

Seismic design standards require that nonstructural services must be braced at regular intervals. Appropriate brace spacing's must be determined by a qualified structural engineer.

MAINTENANCE

It is advised that braces should be subjected to checks for damage after the following:

1. Environmental factors
2. Human interaction
3. Fire exposure

All components parts should be checked for damage/ deformation/corrosion/missing parts. **Where damage is apparent, the complete brace should be replaced.**

WIRE CUTTERS

- Only use wire rope cutters to trim excess wire.
- Flat blade cutters should not be used.
- Always maintain exit tail of 150 mm wire rope.

ANCHORS

Connections to concrete must be designed using anchors that have been rated for use with cracked concrete and seismic loads.

Design and certification of concrete anchors needs to be completed by a qualified structural engineer.

For attachment to other ceiling structures, such as steel, appropriate assessment of the base material capacity should be undertaken by a qualified structural engineer.

ROD STIFFENERS

Primary threaded rod supports may require reinforcement to prevent buckling under compression loads during earthquakes.

The necessity for rod stiffeners must be evaluated by a qualified structural engineer.

TENSION

Braces should be tensioned by hand to remove any slack until no longer possible by hand.

CHECK LIST

- Seismic design has been carried out to determine correct use of the brace.
- Seismic design has been carried out to determine the correct seismic anchor has been specified.
- Restraint washer has been installed onto the retrofit bracket.
- The additional PVC has been installed on the rope where it passes through the retrofit bracket.

Contact seismic@zip-clip.com for assistance.

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