

Fo Tan, Shatin, N.T., Hong Kong. Tel: (852) 2605 5736 Fax: (852) 2692 0798 E-mail: nutek@nuteksystems.com

TEST REPORT

TITLE

Testing of New Patented Applied V-Shaped Tail Pipe Clip

OUR REFERENCE NO.

J13545-1

DESCRIPTION OF SAMPLE

Ø15mm (1/2") Stainless steel pipe clip supplied with plastic V-shaped

tail device; for BS3506/BS3506 uPVC/plastic pressure pipe; dimensions: 15mm width x 2.5mm thick ring; with Ø9mm support stem electrically welded onto the ring; with 3/16" x 5/8" screws and nuts. (Factory confirmed that M5x15mm screws and nuts are also available)

Patent No.: ZL2007 2 0183080.4

SAMPLE SUBMITTED BY

Cheung's Engineering Co. G/F., 90 Tak Cheong Street,

Kowloon, Hong Kong.

(web-site: http://www.pipe-clips.com)

MANUFACTURER

Cheung's Engineering Co.

BRAND / LOGO

COUNTRY OF ORIGIN

China

TEST REQUIRED

Loading test

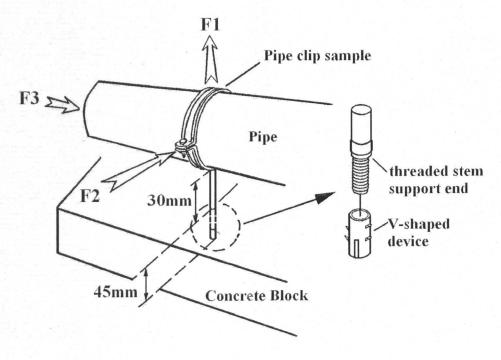
PERIOD OF TESTS

14th April to 14th May 2009

RESULTS: -

LOADING TEST

1. A concrete block made of concrete mix grade 30D10 (cement to BS12: 1978 and Aggregate to BS882: 1973) was prepared and used for the loading test.





TEST REPORT

Unit B, 13/F., Universal Ind. Ctr., 23-25 Shan Mei Street, Fo Tan, Shatin, N.T., Hong Kong. Tel: (852) 2605 5736 Fax: (852) 2692 0798 E-mail: nutek@nuteksystems.com

OUR REFERENCE NO.J13545-1 (P.2)

- 3. The concrete block was secured to the loading test frame. A hole was drilled on the concrete block; the pipe clip's support stem was hammered into the hole. The pipe clip was further screwed into the hole until it was hand-tight; the length of the concealed part of the support stem was now about 40mm to 50mm. A 15mm uPVC pressure pipe of BS3505 was then clamped by the pipe clip.
- 4. The vertical pulling force F1 applied to detach the pipe clip from the concrete block was measured.
- 5. Steps 1 to 3 were repeated. A horizontal force **F2** applied to the pipe clip (perpendicular to the pipe axis) to result in a 20mm horizontal deflection was measured.
- 6. Steps 1 to 3 were repeated. A horizontal force **F3** acting on the pipe along its longitudinal axis to slip the pipe from the pipe clip by 20mm was measured.

7. Result:

Vertical force F1 to detach the pipe clip from the concrete block	Horizontal force F2 to result in a 20mm horizontal deflection	Horizontal force F3 to slip the pipe by 20mm
(kgf)	(kgf)	(kgf)
280	200	84

Date: 4th Tue 2009

Authorized signature:

Nutek Systems is a testing agency, approved by the Water Authority and Government Supplies Department, for testing water supply fittings.

Samson W.K. Yiu



Fo Tan, Shatin, N.T., Hong Kong.

Tel: (852) 2605 5736 Fax: (852) 2692 0798 E-mail: nutek@nuteksystems.com

TEST REPORT

TITLE Testing of New Patented Applied V-Shaped Tail Pipe Clip

OUR REFERENCE NO. J13545-2

DESCRIPTION OF SAMPLE Ø20mm (¾") Stainless steel pipe clip supplied with plastic V-shaped

tail device; for BS3506/BS3506 uPVC/plastic pressure pipe; dimensions:

15mm width x 2.5mm thick ring; with Ø9mm support stem electrically welded onto the ring; with 3/16" x 5/8" screws and nuts. (Factory confirmed that M5x15mm screws and nuts are also available)

Patent No.: ZL2007 2 0183080.4

SAMPLE SUBMITTED BY Cheung's Engineering Co.

G/F., 90 Tak Cheong Street, Kowloon, Hong Kong.

(web-site: http://www.pipe-clips.com)

Cheung's Engineering Co. **MANUFACTURER**

COUNTRY OF ORIGIN China

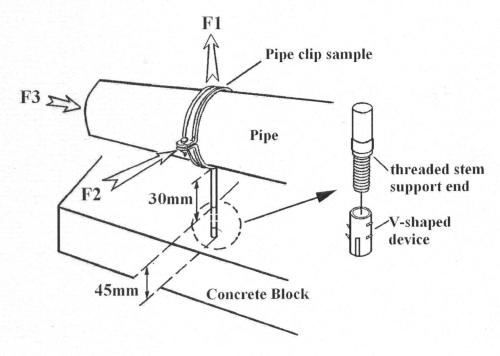
TEST REQUIRED Loading test

14th April to 14th May 2009 PERIOD OF TESTS

RESULTS: -LOADING TEST

BRAND / LOGO

1. A concrete block made of concrete mix grade 30D10 (cement to BS12: 1978 and Aggregate to BS882: 1973) was prepared and used for the loading test.





TEST REPORT

Unit B, 13/F., Universal Ind. Ctr., 23-25 Shan Mei Street, Fo Tan, Shatin, N.T., Hong Kong. Tel: (852) 2605 5736 Fax: (852) 2692 0798 E-mail: nutek@nuteksystems.com

OUR REFERENCE NO.J13545-2 (P.2)

- 3. The concrete block was secured to the loading test frame. A hole was drilled on the concrete block; the pipe clip's support stem was hammered into the hole. The pipe clip was further screwed into the hole until it was hand-tight; the length of the concealed part of the support stem was now about 40mm to 50mm. A 20mm uPVC pressure pipe of BS3505 was then clamped by the pipe clip.
- 4. The vertical pulling force F1 applied to detach the pipe clip from the concrete block was measured.
- 5. Steps 1 to 3 were repeated. A horizontal force **F2** applied to the pipe clip (perpendicular to the pipe axis) to result in a 20mm horizontal deflection was measured.
- 6. Steps 1 to 3 were repeated. A horizontal force **F3** acting on the pipe along its longitudinal axis to slip the pipe from the pipe clip by 20mm was measured.

7. Result:

Vertical force F1 to detach the pipe clip from the concrete block	Horizontal force F2 to result in a 20mm horizontal deflection	Horizontal force F3 to slip the pipe by 20mm
(kgf)	(kgf)	(kgf)
280	178	109

Date: 4th Ture 2009

Authorized signature:

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Samson W.K. Yiu



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TEST REPORT

TITLE

Testing of New Patented Applied V-Shaped Tail Pipe Clip

OUR REFERENCE NO.

J13545-3

DESCRIPTION OF SAMPLE

Ø25mm (1") Stainless steel pipe clip supplied with plastic V-shaped tail device; for BS3506/BS3506 uPVC/plastic pressure pipe; dimensions: 15mm width x 2.5mm thick ring; with Ø9mm support stem

electrically welded onto the ring; with 3/16" x 5/8" screws and nuts. (Factory confirmed that M5x15mm screws and nuts are also available)

Patent No.: ZL2007 2 0183080.4

SAMPLE SUBMITTED BY

Cheung's Engineering Co. G/F., 90 Tak Cheong Street,

Kowloon, Hong Kong.

(web-site: http://www.pipe-clips.com)

MANUFACTURER

Cheung's Engineering Co.

BRAND / LOGO

COUNTRY OF ORIGIN

China

TEST REQUIRED

Loading test

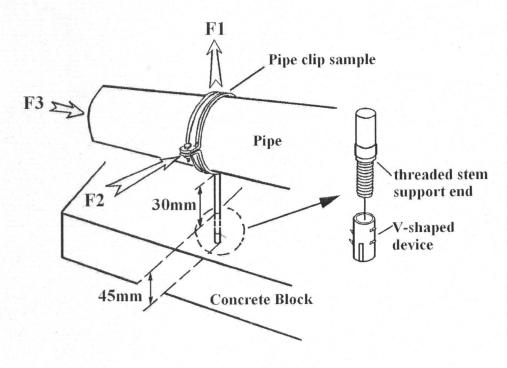
PERIOD OF TESTS

14th April to 14th May 2009

RESULTS: -

LOADING TEST

1. A concrete block made of concrete mix grade 30D10 (cement to BS12: 1978 and Aggregate to BS882: 1973) was prepared and used for the loading test.





TEST REPORT

Unit B, 13/F., Universal Ind. Ctr., 23-25 Shan Mei Street, Fo Tan, Shatin, N.T., Hong Kong. Tel: (852) 2605 5736 Fax: (852) 2692 0798 E-mail: nutek@nuteksystems.com

OUR REFERENCE NO.J13545-3 (P.2)

- 3. The concrete block was secured to the loading test frame. A hole was drilled on the concrete block; the pipe clip's support stem was hammered into the hole. The pipe clip was further screwed into the hole until it was hand-tight; the length of the concealed part of the support stem was now about 40mm to 50mm. A 25mm uPVC pressure pipe of BS3505 was then clamped by the pipe clip.
- 4. The vertical pulling force F1 applied to detach the pipe clip from the concrete block was measured.
- 5. Steps 1 to 3 were repeated. A horizontal force **F2** applied to the pipe clip (perpendicular to the pipe axis) to result in a 20mm horizontal deflection was measured.
- 6. Steps 1 to 3 were repeated. A horizontal force **F3** acting on the pipe along its longitudinal axis to slip the pipe from the pipe clip by 20mm was measured.

7. Result:

Vertical force F1 to detach the pipe clip from the concrete block	Horizontal force F2 to result in a 20mm horizontal deflection	Horizontal force F3 to slip the pipe by 20mm
(kgf)	(kgf)	(kgf)
280	170	181

Date: 4th Ture 2009

Authorized signature:

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TEST REPORT

TITLE

Testing of New Patented Applied V-Shaped Tail Pipe Clip

OUR REFERENCE NO.

J13545-4

DESCRIPTION OF SAMPLE

Ø32mm (11/4") Stainless steel pipe clip supplied with plastic V-shaped tail device; for BS3506/BS3506 uPVC/plastic pressure pipe; dimensions: 15mm width x 2.5mm thick ring; with Ø9mm support stem

electrically welded onto the ring; with 3/16" x 5/8" screws and nuts. (Factory confirmed that M5x15mm screws and nuts are also available)

Patent No.: ZL2007 2 0183080.4

SAMPLE SUBMITTED BY

Cheung's Engineering Co. G/F., 90 Tak Cheong Street, Kowloon, Hong Kong.

(web-site: http://www.pipe-clips.com)

MANUFACTURER

Cheung's Engineering Co.

BRAND / LOGO

COUNTRY OF ORIGIN

China

TEST REQUIRED

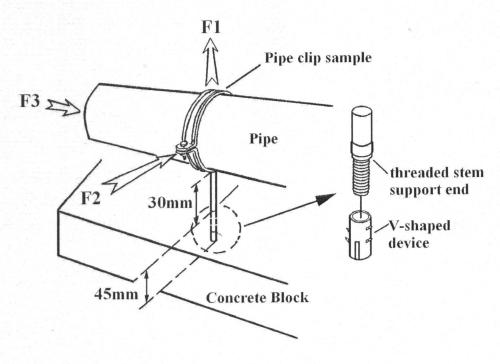
Loading test

PERIOD OF TESTS

14th April to 14th May 2009

RESULTS: -LOADING TEST

1. A concrete block made of concrete mix grade 30D10 (cement to BS12: 1978 and Aggregate to BS882: 1973) was prepared and used for the loading test.





TEST REPORT

Unit B, 13/F., Universal Ind. Ctr., 23-25 Shan Mei Street, Fo Tan, Shatin, N.T., Hong Kong. Tel: (852) 2605 5736 Fax: (852) 2692 0798 E-mail: nutek@nuteksystems.com

OUR REFERENCE NO.J13545-4 (P.2)

- 3. The concrete block was secured to the loading test frame. A hole was drilled on the concrete block; the pipe clip's support stem was hammered into the hole. The pipe clip was further screwed into the hole until it was hand-tight; the length of the concealed part of the support stem was now about 40mm to 50mm. A 32mm uPVC pressure pipe of BS3505 was then clamped by the pipe clip.
- 4. The vertical pulling force F1 applied to detach the pipe clip from the concrete block was measured.
- 5. Steps 1 to 3 were repeated. A horizontal force **F2** applied to the pipe clip (perpendicular to the pipe axis) to result in a 20mm horizontal deflection was measured.
- 6. Steps 1 to 3 were repeated. A horizontal force **F3** acting on the pipe along its longitudinal axis to slip the pipe from the pipe clip by 20mm was measured.

7. Result:

Vertical force F1 to detach the pipe clip from the concrete block	Horizontal force F2 to result in a 20mm horizontal deflection	Horizontal force F3 to slip the pipe by 20mm
(kgf)	(kgf)	(kgf)
280	168	180

Date: 4th Sure 2009

Authorized signature:

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Samson W.K. Yiu



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TEST REPORT

TITLE

Testing of New Patented Applied V-Shaped Tail Pipe Clip

OUR REFERENCE NO.

J13545-5

DESCRIPTION OF SAMPLE

Ø40mm (1½") Stainless steel pipe clip supplied with plastic V-shaped

tail device; for BS3506/BS3506 uPVC/plastic pressure pipe; dimensions: 15mm width x 2.5mm thick ring; with Ø9mm support stem electrically welded onto the ring; with 3/16" x 5/8" screws and nuts. (Factory confirmed that M5x15mm screws and nuts are also available)

Patent No.: ZL2007 2 0183080.4

SAMPLE SUBMITTED BY

Cheung's Engineering Co. G/F., 90 Tak Cheong Street,

Kowloon, Hong Kong.

(web-site : http://www.pipe-clips.com)

MANUFACTURER

Cheung's Engineering Co.

BRAND / LOGO

COUNTRY OF ORIGIN

China

TEST REQUIRED

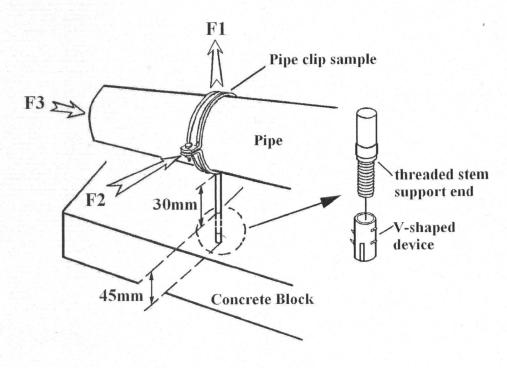
Loading test

PERIOD OF TESTS

14th April to 14th May 2009

RESULTS: -LOADING TEST

1. A concrete block made of concrete mix grade 30D10 (cement to BS12: 1978 and Aggregate to BS882: 1973) was prepared and used for the loading test.





TEST REPORT

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OUR REFERENCE NO.J13545-5 (P.2)

- 3. The concrete block was secured to the loading test frame. A hole was drilled on the concrete block; the pipe clip's support stem was hammered into the hole. The pipe clip was further screwed into the hole until it was hand-tight; the length of the concealed part of the support stem was now about 40mm to 50mm. A 40mm uPVC pressure pipe of BS3505 was then clamped by the pipe clip.
- 4. The vertical pulling force F1 applied to detach the pipe clip from the concrete block was measured.
- 5. Steps 1 to 3 were repeated. A horizontal force **F2** applied to the pipe clip (perpendicular to the pipe axis) to result in a 20mm horizontal deflection was measured.
- 6. Steps 1 to 3 were repeated. A horizontal force **F3** acting on the pipe along its longitudinal axis to slip the pipe from the pipe clip by 20mm was measured.

7. Result:

Vertical force F1 to detach the pipe clip from the concrete block	Horizontal force F2 to result in a 20mm horizontal deflection	Horizontal force F3 to slip the pipe by 20mm
(kgf)	(kgf)	(kgf)
280	158	178

Date: 4th Thre 2009

_Authorized signature :

Samson W.K. Yiu

(Director)

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TEST REPORT

TITLE

Testing of New Patented Applied V-Shaped Tail Pipe Clip

OUR REFERENCE NO.

J13545-6

DESCRIPTION OF SAMPLE

Ø50mm (2") Stainless steel pipe clip supplied with plastic V-shaped tail device; for BS3506/BS3506 uPVC/plastic pressure pipe; dimensions: 18mm width x 2.5mm thick ring; with Ø9mm support stem

electrically welded onto the ring; with 1/4" x 3/4" screws and nuts. (Factory confirmed that M6x20mm screws and nuts are also available)

Patent No.: ZL2007 2 0183080.4

SAMPLE SUBMITTED BY

Cheung's Engineering Co. G/F., 90 Tak Cheong Street,

Kowloon, Hong Kong.

(web-site : http://www.pipe-clips.com)

MANUFACTURER

Cheung's Engineering Co.

BRAND / LOGO

COUNTRY OF ORIGIN

China

TEST REQUIRED

Loading test

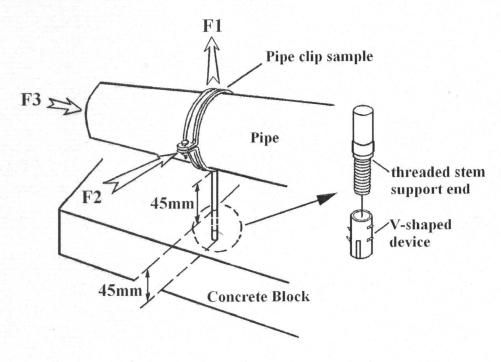
PERIOD OF TESTS

14th April to 14th May 2009

RESULTS: -

LOADING TEST

1. A concrete block made of concrete mix grade 30D10 (cement to BS12: 1978 and Aggregate to BS882: 1973) was prepared and used for the loading test.





TEST REPORT

Unit B, 13/F., Universal Ind. Ctr., 23-25 Shan Mei Street, Fo Tan, Shatin, N.T., Hong Kong. Tel: (852) 2605 5736 Fax: (852) 2692 0798 E-mail: nutek@nuteksystems.com

OUR REFERENCE NO.J13545-6 (P.2)

- 3. The concrete block was secured to the loading test frame. A hole was drilled on the concrete block; the pipe clip's support stem was hammered into the hole. The pipe clip was further screwed into the hole until it was hand-tight; the length of the concealed part of the support stem was now about 40mm to 50mm. A 50mm uPVC pressure pipe of BS3505 was then clamped by the pipe clip.
- 4. The vertical pulling force F1 applied to detach the pipe clip from the concrete block was measured.
- 5. Steps 1 to 3 were repeated. A horizontal force **F2** applied to the pipe clip (perpendicular to the pipe axis) to result in a 20mm horizontal deflection was measured.
- 6. Steps 1 to 3 were repeated. A horizontal force **F3** acting on the pipe along its longitudinal axis to slip the pipe from the pipe clip by 20mm was measured.

7. Result:

Vertical force F1 to detach the pipe clip from the concrete block	Horizontal force F2 to result in a 20mm horizontal deflection	Horizontal force F3 to slip the pipe by 20mm
(kgf)	(kgf)	(kgf)
280	118	175

Date: 4th June 2009

_Authorized signature:

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Samson W.K. Yiu



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TEST REPORT

TITLE

Testing of New Patented Applied V-Shaped Tail Pipe Clip

OUR RIEFERENCE NO.

J13545-7

DESCRIPTION OF SAMPLE

Ø65mm (2½") Stainless steel pipe clip supplied with plastic V-shaped tail device; for BS3506/BS3506 uPVC/plastic pressure pipe; dimensions:

18mm width x 2.5mm thick ring; with Ø9mm support stem

electrically welded onto the ring; with 1/4" x 3/4" screws and nuts.

(Factory confirmed that M6x20mm screws and nuts are also available)

Patent No.: ZL2007 2 0183080.4

SAMPLE SUBMITTED BY

Cheung's Engineering Co. G/F., 90 Tak Cheong Street,

Kowloon, Hong Kong.

(web-site: http://www.pipe-clips.com)

MANUFACTURER

Cheung's Engineering Co.

BRAND/LOGO

+(S)

COUNTRY OF ORIGIN

China

TEST REQUIRED

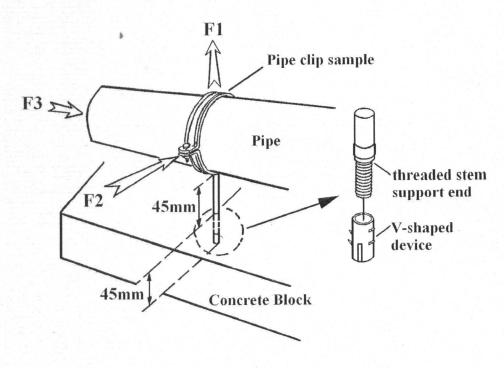
Loading test

PERIOD OF TESTS

14th April to 14th May 2009

RESULTS: -LOADING TEST

1. A concrete block made of concrete mix grade 30D10 (cement to BS12: 1978 and Aggregate to BS82: 1973) was prepared and used for the loading test.





TEST REPORT

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OUR REFERENCE NO.J13545-7 (P.2)

- 3. The concrete block was secured to the loading test frame. A hole was drilled on the concrete block; the pipe clip's support stem was hammered into the hole. The pipe clip was further screwed into the hole until it was hand-tight; the length of the concealed part of the support stem was now about 40mm to 50mm. A 65mm uPVC pressure pipe of BS3505 was then clamped by the pipe clip.
- 4. The vertical pulling force **F1** applied to detach the pipe clip from the concrete block was measured.
- 5. Steps 1 to 3 were repeated. A horizontal force **F2** applied to the pipe clip (perpendicular to the pipe axis) to result in a 20mm horizontal deflection was measured.
- 6. Steps 1 to 3 were repeated. A horizontal force **F3** acting on the pipe along its longitudinal axis to slip the pipe from the pipe clip by 20mm was measured.

7. Result:

Vertical force F1 to detach the pipe clip from the concrete block	Horizontal force F2 to result in a 20mm horizontal deflection	Horizontal force F3 to slip the pipe by 20mm
(kgf)	(kgf)	(kgf)
280	117	170

Date: 4th Tune 2009

_Authorized signature:

Samson W.K. Yiu

(Director)

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TEST REPORT

TITLE

Testing of New Patented Applied V-Shaped Tail Pipe Clip

OUR REFERENCE NO.

J13545-8

DESCRIPTION OF SAMPLE

Ø80mm (3") Stainless steel pipe clip supplied with plastic V-shaped tail device; for BS3506/BS3506 uPVC/plastic pressure pipe; dimensions:

19mm width x 2.5mm thick ring; with Ø12mm support stem electrically welded onto the ring; with ½" x ¾" screws and nuts.

(Factory confirmed that M6x20mm screws and nuts are also available)

Patent No.: ZL2007 2 0183080.4

SAMPLE SUBMITTED BY

Cheung's Engineering Co. G/F., 90 Tak Cheong Street,

Kowloon, Hong Kong.

(web-site : http://www.pipe-clips.com)

MANUFACTURER

Cheung's Engineering Co.

BRAND / LOGO

₹(S)

COUNTRY OF ORIGIN

China

TEST REQUIRED

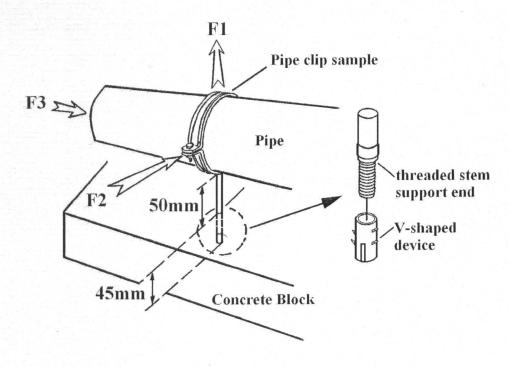
Loading test

PERIOD OF TESTS

14th April to 14th May 2009

RESULTS: -LOADING TEST

1. A concrete block made of concrete mix grade 30D10 (cement to BS12: 1978 and Aggregate to BS82: 1973) was prepared and used for the loading test.





TEST REPORT

Unit B, 13/F., Universal Ind. Ctr., 23-25 Shan Mei Street, Fo Tan, Shatin, N.T., Hong Kong. Tel: (852) 2605 5736 Fax: (852) 2692 0798 E-mail: nutek@nuteksystems.com

OUR REFERENCE NO.J13545-8 (P.2)

- 3. The concrete block was secured to the loading test frame. A hole was drilled on the concrete block; the pipe clip's support stem was hammered into the hole. The pipe clip was further screwed into the hole until it was hand-tight; the length of the concealed part of the support stem was now about 40mm to 50mm. A 80mm uPVC pressure pipe of BS3505 was then clamped by the pipe clip.
- 4. The vertical pulling force **F1** applied to detach the pipe clip from the concrete block was measured.
- 5. Steps 1 to 3 were repeated. A horizontal force **F2** applied to the pipe clip (perpendicular to the pipe axis) to result in a 20mm horizontal deflection was measured.
- 6. Steps 1 to 3 were repeated. A horizontal force **F3** acting on the pipe along its longitudinal axis to slip the pipe from the pipe clip by 20mm was measured.

7. Result:

Vertical force F1 to detach the pipe clip from the concrete block	Horizontal force F2 to result in a 20mm horizontal deflection	Horizontal force F3 to slip the pipe by 20mm
(kgf)	(kgf)	(kgf)
380	115	168

Date : 4 th June 2009

Authorized signature:

Nutek Systems is a testing agency, approved by the Water Authority and Government Supplies Department, for testing water supply fittings.

Samson W.K. Yiu



Fo Tan, Shatin, N.T., Hong Kong. Tel: (852) 2605 5736 Fax: (852) 2692 0798 E-mail: nutek@nuteksystems.com

TEST REPORT

TITLE

Testing of New Patented Applied V-Shaped Tail Pipe Clip

OUR REFERENCE NO.

DESCRIPTION OF SAMPLE

Ø100mm (4") Stainless steel pipe clip supplied with plastic V-shaped tail device; for BS3506/BS3506 uPVC/plastic pressure pipe; dimensions: 19mm width x 3mm thick ring; with Ø12mm support stem

electrically welded onto the ring; with 1/4" x 3/4" screws and nuts.

(Factory confirmed that M6x20mm screws and nuts are also available)

Patent No.: ZL2007 2 0183080.4

SAMPLE SUBMITTED BY

Cheung's Engineering Co. G/F., 90 Tak Cheong Street,

Kowloon, Hong Kong. (web-site: http://www.pipe-clips.com)

MANUFACTURER

Cheung's Engineering Co.

BRAND / LOGO

COUNTRY OF ORIGIN

China

TEST REQUIRED

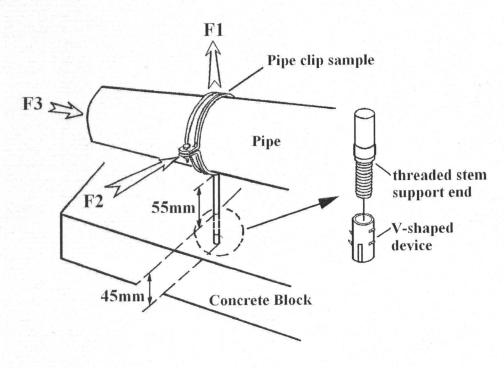
Loading test

PERIOD OF TESTS

14th April to 14th May 2009

RESULTS: -LOADING TEST

1. A concrete block made of concrete mix grade 30D10 (cement to BS12: 1978 and Aggregate to BS882: 1973) was prepared and used for the loading test.





TEST REPORT

Unit B, 13/F., Universal Ind. Ctr., 23-25 Shan Mei Street, Fo Tan, Shatin, N.T., Hong Kong. Tel: (852) 2605 5736 Fax: (852) 2692 0798 E-mail: nutek@nuteksystems.com

OUR REFERENCE NO.J13545-9 (P.2)

- 3. The concrete block was secured to the loading test frame. A hole was drilled on the concrete block; the pipe clip's support stem was hammered into the hole. The pipe clip was further screwed into the hole until it was hand-tight; the length of the concealed part of the support stem was now about 40mm to 50mm. A 100mm uPVC pressure pipe of BS3505 was then clamped by the pipe clip.
- 4. The vertical pulling force F1 applied to detach the pipe clip from the concrete block was measured.
- 5. Steps 1 to 3 were repeated. A horizontal force **F2** applied to the pipe clip (perpendicular to the pipe axis) to result in a 20mm horizontal deflection was measured.
- 6. Steps 1 to 3 were repeated. A horizontal force **F3** acting on the pipe along its longitudinal axis to slip the pipe from the pipe clip by 20mm was measured.

7. Result:

Vertical force F1 to detach the pipe clip from the concrete block	Horizontal force F2 to result in a 20mm horizontal deflection	Horizontal force F3 to slip the pipe by 20mm
(kgf)	(kgf)	(kgf)
380	112	160

Date: 4 hre 2009

Authorized signature:

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Samson W.K. Yiu