CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LIMITED

Report of the Structural Fixings

Tensile Loading Test in Concrete

BS 5080: Part 1: 1993

Test Provider	:	Castco Testing Centre Limited
Customer	:	fischer (Taicang) Fixings Company Limited
Job Title	:	Rebar connection test for fischer - FIS EB II
Test Location	:	Castco Testing Centre Limited (Zhong Shan)
Date of Test	:	May to June 2022

香港粉嶺安居街33號得利中心6樓 • 6/F, Techno Centre, 33, On Kui Street, Fanling, Hong Kong.
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Contents

1. Introduction

Castco Testing Centre Limited was commissioned by **fischer (Taicang) Fixings Company Limited** to conduct **Tensile Test** of steel bars on concrete based on the requirement of the standard **BS 5080: Part 1: 1993** at our laboratory in Zhongshan.

2. Test specimen information

a) The bonding agent was **fischer FIS EB II** epoxy mortar.

b) The standard base material was Grade 25 concrete mix containing 20mm aggregate and water cement ratio of 0.42. The dimensions of concrete block for the test were constructed according to the requirement stated in the standard BS 5080: Part 1: 1993. Compressice strength test of concrete cubes had been carried out on the date of tensile loading test to verify the compressive strength of the concrete blocks. The report of compressive strength of concrete cubes are attached in Appendix B.

c) The deformed high yield steel bars were purchased from Hong Kong Stockist for the size Y10, Y12, Y16, Y20, Y25, Y32 to Y40. The mill test certificates and stockist certificates are attached in Appendix C.

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Specimen No.	Rebar size	Total length (mm)	Embedded length (mm)	Concrete block size (L)x(W)x(H) (mm)
Y10-1 to 5	Y10	1000	100	600 x 600 x 200
Y12-1 to 5	Y12	1000	120	720 x 720 x 240
Y16-1 to 5	Y16	1200	160	960 x 960 x 320
Y20-1 to 5	Y20	1200	200	1200 x 1200 x 400
Y25-1 to 5	Y25	1500	250	1500 x 1500 x 500
Y32-1 to 5	Y32	1800	320	1920 x 1920 x 640
Y40-1 to 5	Y40	2000	400	2400 x 2400 x 800

3. Method of test

a) The method of test is based on BS 5080: Part 1: 1993 Clause 6 and 7.1.3 by incremental loading.

b) The designed maximum test loads are given by customer which represent the target test load. Set up the apparatus according to set-up diagram.

c) Apply an initial load sufficient to take up any slack in the testing apparatus which shall not exceed 1% of the designed maximum test load.

d) For incremental loading, divide the designed maximum test load into 12 equal increments. Apply the loading in according to the established increments, record the relative movement at each increment.

e) Loading shall continue until failure of the fixing or base material or until the fixing has pulled at least 5mm past the point at which the applied load reaches a maximum at which stage the test shall be terminated.

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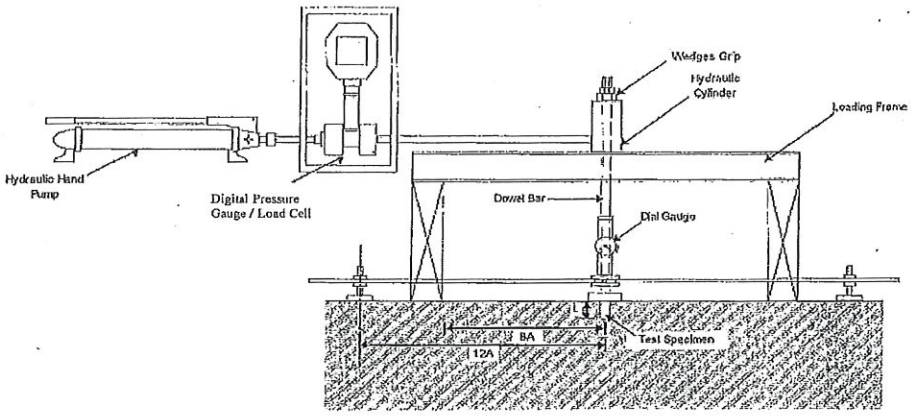
4. Set-up diagram



5 Summary of test results

Specimen size		Y10	Y12	Y16	Y20
Ultimated test load (Failure load)	1	46.19 kN	67.49 kN	123.67 kN	171.12 kN
	2	43.73 kN	67.76 kN	125.54 kN	169.33 kN
	3	47.45 kN	66.39 kN	125.02 kN	170.69 kN
	4	45.38 kN	67.40 kN	125.81 kN	169.34 kN
	5	44.20 kN	65.35 kN	127.21 kN	170.83 kN
Mean		45.39 kN	66.88 kN	125.45 kN	170.26 kN
Standard deviation		1.50 kN	1.00 kN	1.28 kN	0.86 kN
Specimen size		Y25	Y32	Y40	
Ultimated test load (Failure load)	1	265.20 kN	427.78 kN	641.51 kN	
	2	266.83 kN	424.45 kN	643.85 kN	
	3	265.90 kN	418.88 kN	642.71 kN	
	4	266.24 kN	419.11 kN	643.08 kN	
	5	266.12 kN	419.63 kN	641.55 kN	
Mean		266.06 kN	421.97 kN	642.54 kN	
Standard deviation		0.59 kN	3.97 kN	1.01 kN	

The details of test result should refer to testing reports in Appendix A.

Reported by:

FONG SAI KIT
Technical Manager

Certified by:

CHAN MAN KWONG
Senior Manager

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Appendix A

Test reports of structural fixings

tensile loading test in concrete block

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HOKLAS 032 TEST

Test Report
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 16-06-2022

 Castco LRN : 220616-2287-1

Details As Supplied By Customer:

Customer : fischer (Taicang) Fixings Company Limited Customer Ref. No. : - -

Address : Building 1, Suntec Industrial Park ,No.105 Dongcang Road(North), Taicang, Jiangsu P.R.C. Contract No. : - -

Job title : Rebar connection test for fischer - FIS EB II

Test location : Castco Testing Laboratory (Zhongshan)

Sample Description : Bonded fixings (fischer FIS EB II + Y40 Grade 500B)

Total Length : 2000 mm Embedded length in base material : 400 mm

Fixing diameter : 40 mm Fixing maximum dimension : - - mm

Designed maximum test load : 640.5 kN

Base material description : Concrete

Drill hole diameter : 52 mm

Base material cast date : 05-06-2022 Fixing installation date : 10-06-2022

Concrete grade : C25 Concrete age : 8 days Base material dimension : 2400 mm (L) × 2400 mm (W) × 800 mm (H)

Laboratory Test Results Date of Test : 13-06-2022

A. Loading Method : Incremental Loading

B. Characteristic Dimension "A"

Bonded fixing = the maximum diameter of the fixing or 1/4 of the embedded length, whichever is greater
= 100 mm

C. Position of Fixings

1. Thickness below maximum depth of the fixing or of the hole into which it is inserted; minimum 4A.
   = 400 mm
2. Minimum distance between centres of two fixings.
   = N/A mm
3. Minimum distance of fixing from the edge; minimum 12A.
   = 1200 mm

D. Position of Test Equipment

1. Loading frame span width = 8A + 8A = 1600 mm

E. Test results

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[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 16-06-2022

 Castco LRN : 220616-2287-1

Laboratory Test Results

Applied Load (kN)	Relative movement (mm)				
	Sample No. Y40-1	Sample No. Y40-2	Sample No. Y40-3	Sample No. Y40-4	Sample No. Y40-5
0.0	0.00	0.00	0.00	0.00	0.00
Pre-load 6.4	0.00	0.00	0.00	0.00	0.00
53.4	0.02	0.48	0.00	0.00	0.00
106.8	0.12	0.66	0.15	0.15	0.11
160.1	0.26	0.90	0.18	0.25	0.21
213.5	0.43	1.05	0.25	0.35	0.41
266.9	0.56	1.18	0.35	0.46	0.47
320.3	0.76	1.25	0.44	0.55	0.57
373.6	0.83	1.50	0.58	0.66	0.76
427.0	1.00	1.67	0.70	0.86	0.94
480.4	1.15	1.98	0.95	1.00	1.21
533.8	1.30	2.35	1.26	1.33	1.38
587.1	2.76	2.83	2.30	1.58	2.55
640.5	3.95	4.11	3.89	4.45	4.03
The required time period of apply load :					
Actual apply load period (s)					
Within the loading rate yes : ✓ No : ×					
Failure Load (kN)	641.51	643.85	642.71	643.08	641.55
Failure Mode *(can be more than one mode)*	RM	RM	RM	RM	RM
Average Failure Load (kN)	642.54				
Standard Deviation (kN)	1.01				

Failure mode legend :

RM = The fixing has a relative movement exceeding 5 mm past the point at which the applied load reaches a maximum

Remarks :

1. Designed maximum test load and loading method are as specified by customer.
2. Test location is instructed by customer.
3. Test result relates only to the fixing and specimen tested.

Checked by : CHEUNG LAP KEI Assistant Supervisor

Approved Signatory : FONG SAI KIT Technical Manager

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

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[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

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Castco LRN : 220616-2287-1

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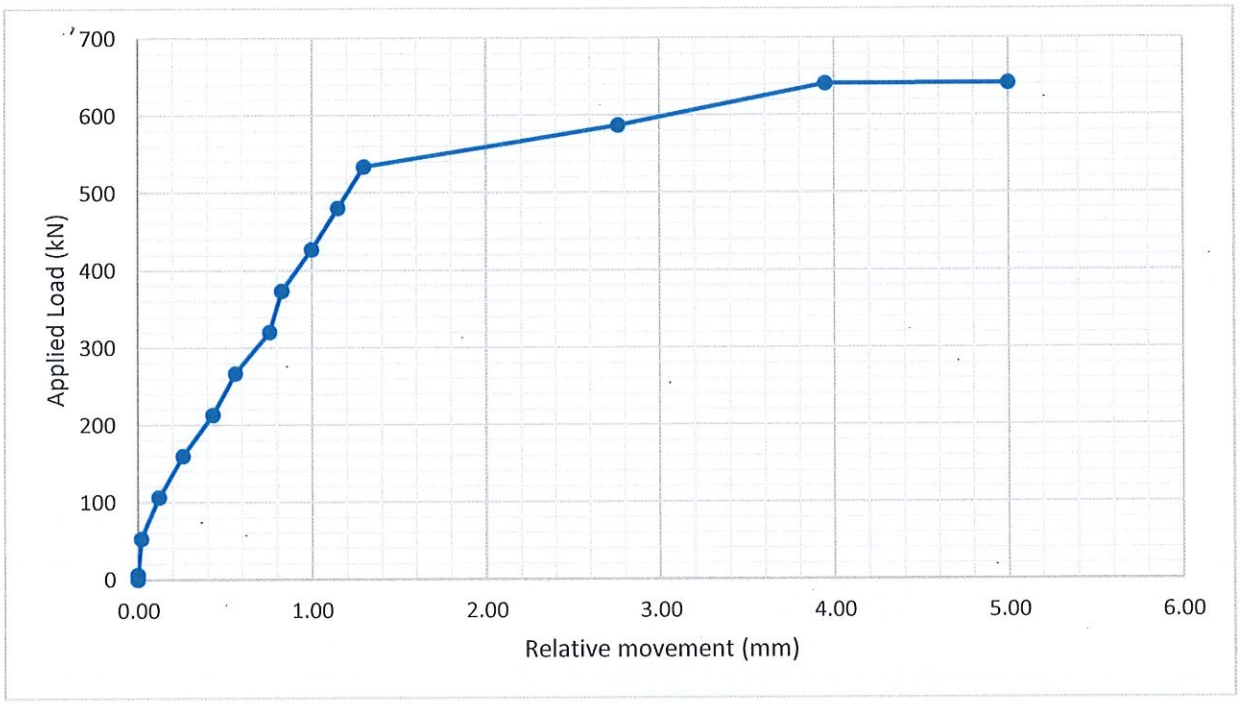

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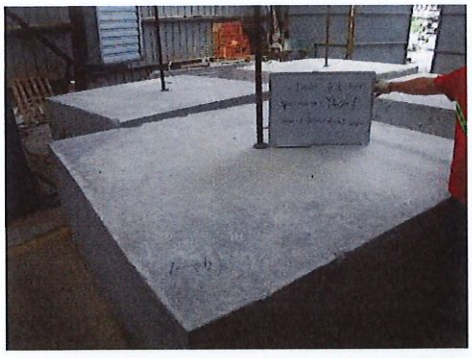

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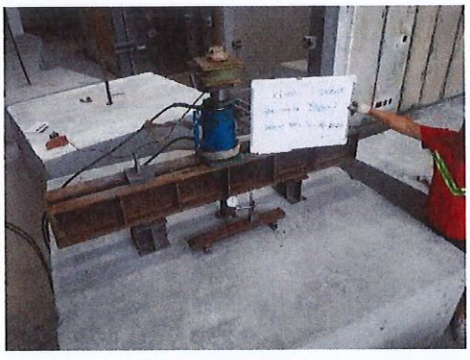

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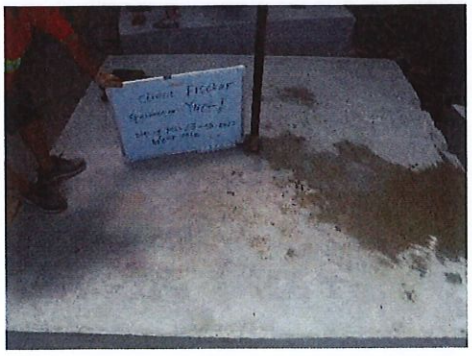

After

Failure load

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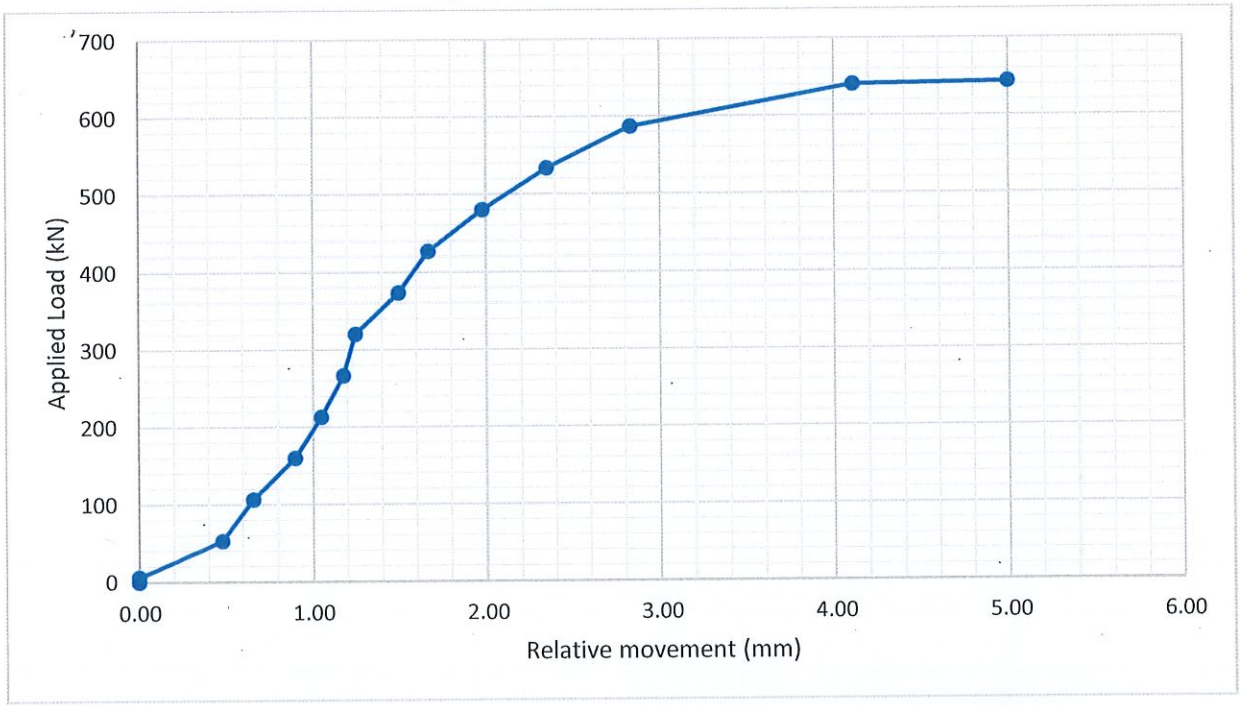
Date of issue : 16-06-2022

Castco LRN : 220616-2287-1

Graphical Presentation (Y40-2)



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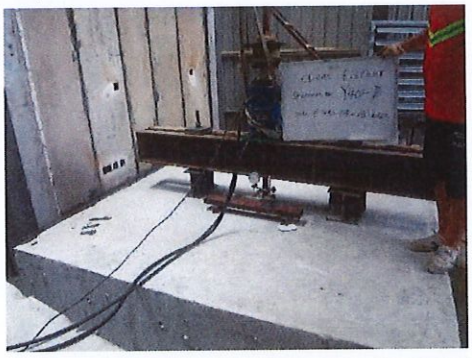

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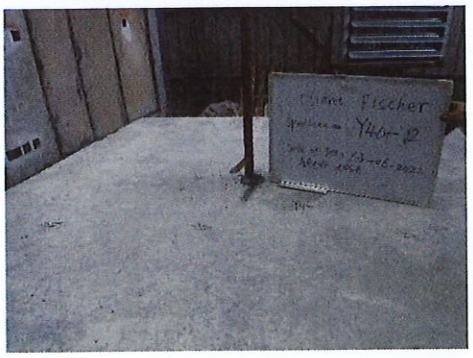

After

Failure load

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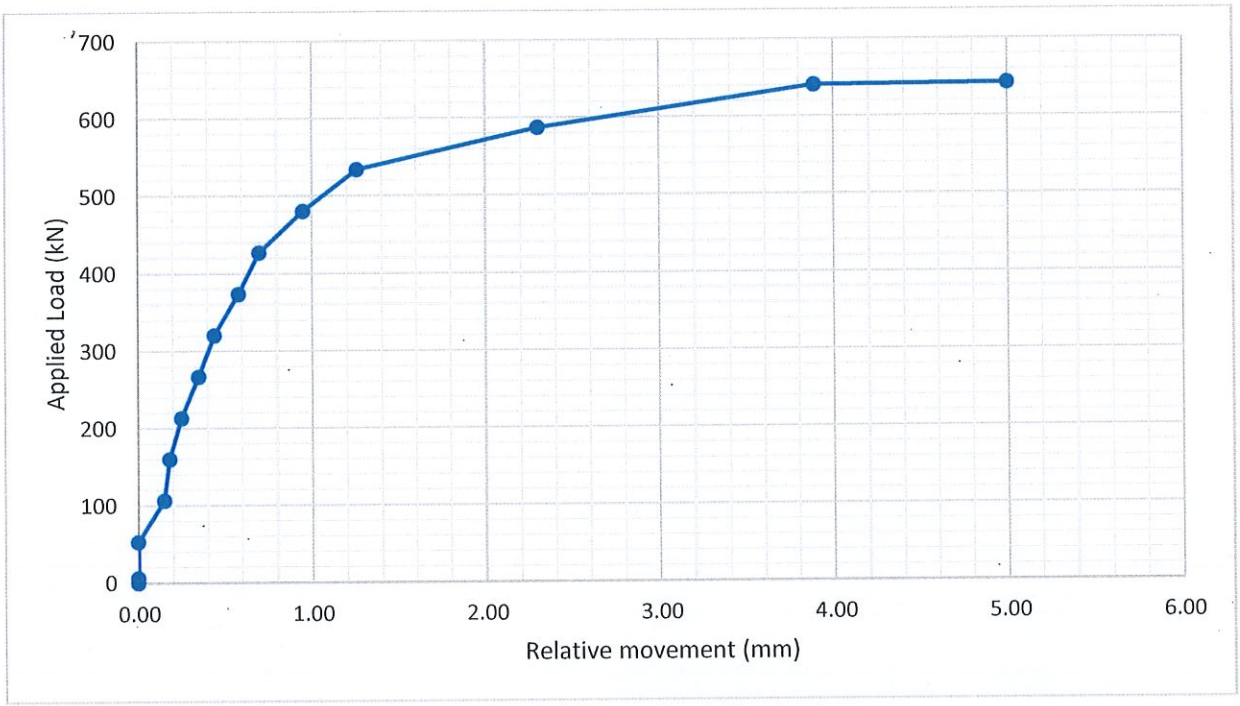
[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 16-06-2022

Castco LRN : 220616-2287-1

Graphical Presentation (Y40-3)



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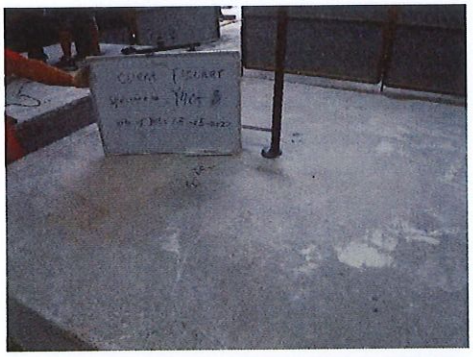

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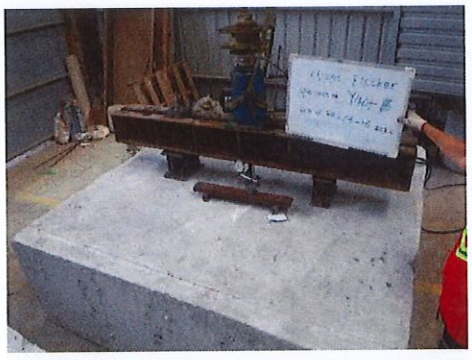

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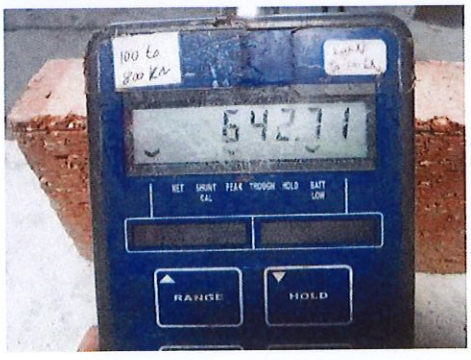

Failure load

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[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 16-06-2022

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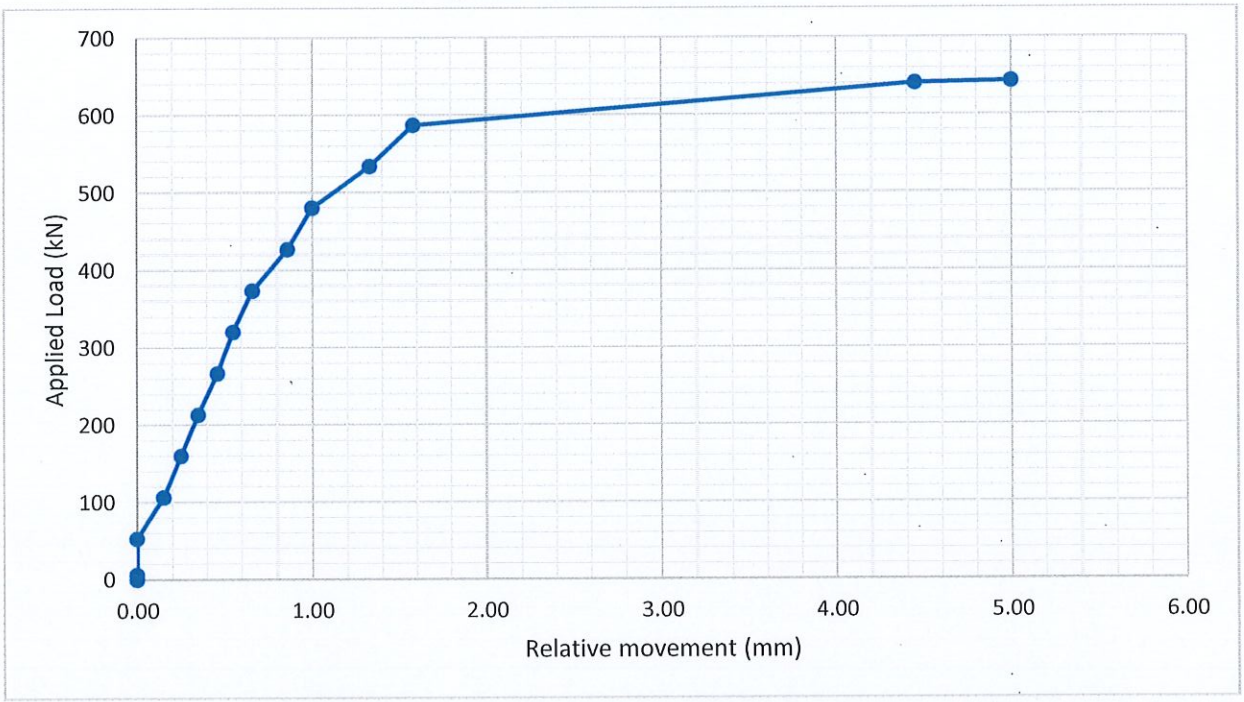
Graphical Presentation (Y40-4)



Record Photo (Y40-4)

Before

Setup

After

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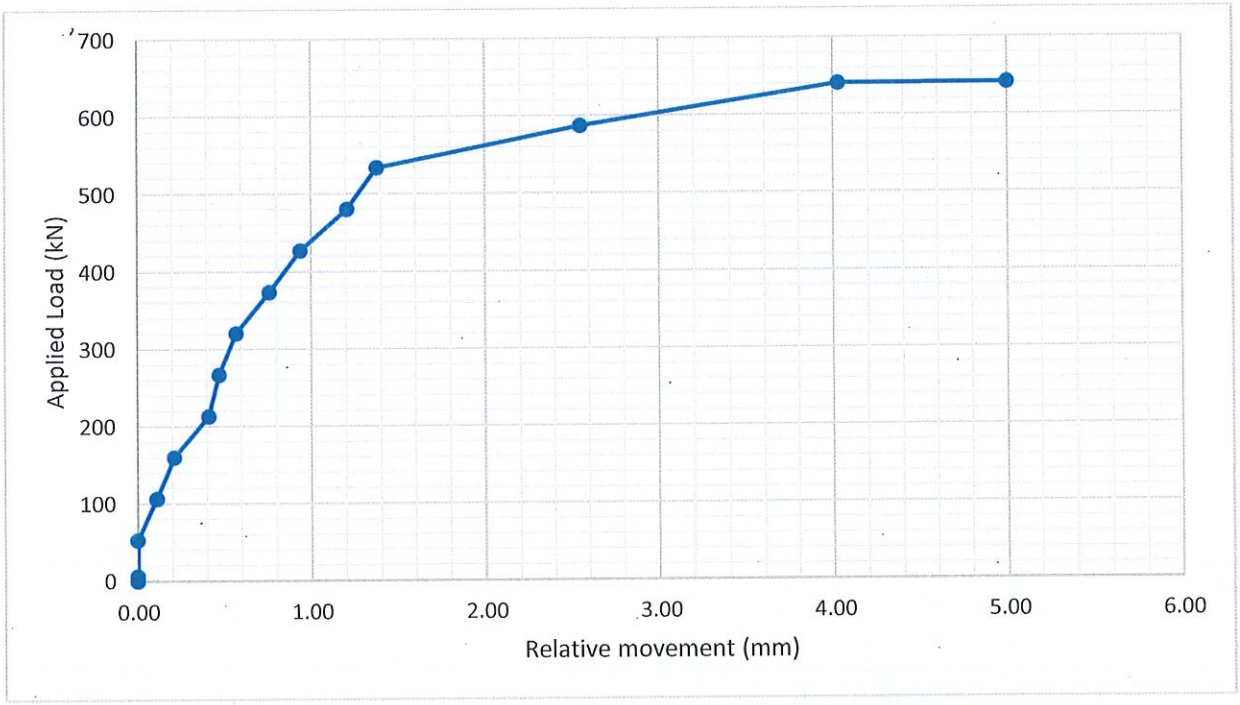
Castco LRN : 220616-2287-1

Graphical Presentation (Y40-5)



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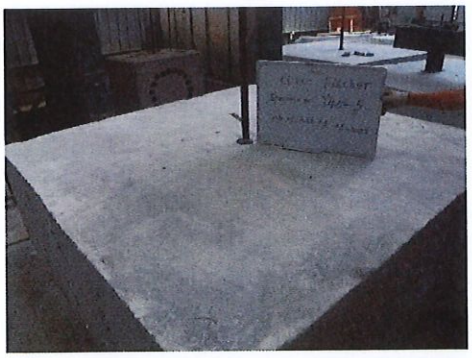

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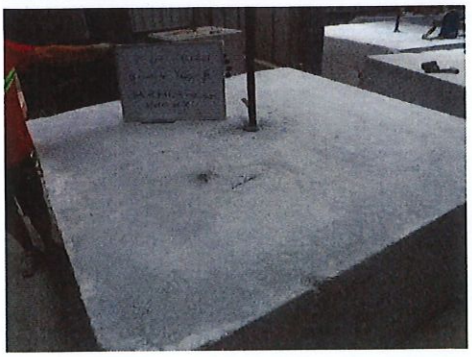

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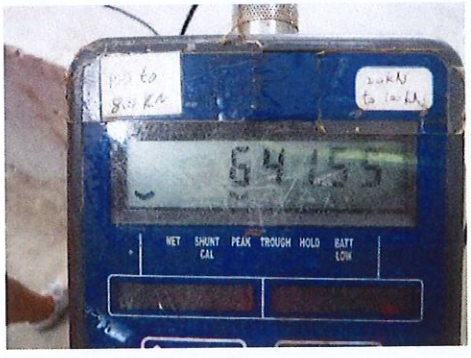

Failure load

End of Report

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[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

 Castco LRN : 220616-2287-2

Details As Supplied By Customer:

Customer : fischer (Taicang) Fixings Company Limited Customer Ref. No. : - -

Address : Building 1, Suntec Industrial Park ,No.105 Dongcang Road(North), Taicang, Jiangsu P.R.C. Contract No. : - -

Job title : Rebar connection test for fischer - FIS EB II

Test location : Castco Testing Laboratory (Zhongshan)

Sample Description : Bonded fixings (fischer FIS EB II + Y32 Grade 500B)

Total Length : 1800 mm Embedded length in base material : 320 mm

Fixing diameter : 32 mm Fixing maximum dimension : - - mm

Designed maximum test load : 419.7 kN

Base material description : Concrete

Drill hole diameter : 40 mm

Base material cast date : 27-05-2022 Fixing installation date : 07-06-2022

Concrete grade : C25 Concrete age : > 8 days Base material dimension : 1920 mm (L) × 1920 mm (W) × 640 mm (H)

Laboratory Test Results Date of Test : 10-06-2022

A. Loading Method : Incremental Loading

B. Characteristic Dimension "A"

Bonded fixing = the maximum diameter of the fixing or 1/4 of the embedded length, whichever is greater
= 80 mm

C. Position of Fixings

1. Thickness below maximum depth of the fixing or of the hole into which it is inserted; minimum 4A.
   = 320 mm
2. Minimum distance between centres of two fixings.
   = N/A mm
3. Minimum distance of fixing from the edge; minimum 12A.
   = 960 mm

D. Position of Test Equipment

1. Loading frame span width = 8A + 8A = 1280 mm

E. Test results

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Laboratory Test Results

Applied Load (kN)	Relative movement (mm)				
	Sample No. Y32-1	Sample No. Y32-2	Sample No. Y32-3	Sample No. Y32-4	Sample No. Y32-5
0.0	0.00	0.00	0.00	0.00	0.00
Pre-load 4.1	0.00	0.00	0.01	0.00	0.00
35.0	0.09	0.09	0.12	0.00	0.17
70.0	0.20	0.25	0.14	0.00	0.20
104.9	0.35	0.45	0.31	0.02	0.36
139.9	0.47	0.59	0.39	0.06	0.46
174.9	0.76	0.81	0.45	0.26	0.56
209.9	1.10	1.05	0.59	0.38	0.72
244.8	1.36	1.42	0.78	0.56	0.88
279.8	1.65	1.62	0.82	0.71	0.98
314.8	2.08	1.86	1.11	0.87	1.26
349.8	2.32	2.35	3.54	1.15	1.88
384.7	3.13	3.00	4.87	1.65	2.35
419.7	4.50	3.78			
The required time period of apply load :					
Actual apply load period (s)					
Within the loading rate yes : ✓ No : ×					
Failure Load (kN)	427.78	424.45	418.88	419.11	419.63
Failure Mode *(can be more than one mode)*	RM, CF	RM, CF	RM, CF	RM, CF	RM, CF
Average Failure Load (kN)	421.97				
Standard Deviation (kN)	3.97				

Failure mode legend :
CF = Crack in base material
RM = The fixing has a relative movement exceeding 5 mm past the point at which the applied load reaches a maximum

Remarks :
1. Designed maximum test load and loading method are as specified by customer.
2. Test location is instructed by customer.
3. Test result relates only to the fixing and specimen tested.

Checked by : CHEUNG LAP KEI Assistant Supervisor

Approved Signatory : FONG SAI KIT Technical Manager

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LIMITED
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E-mail: info@castco.com.hk Website: www.castco.com.hk

HOKLAS 032 TEST

Test Report

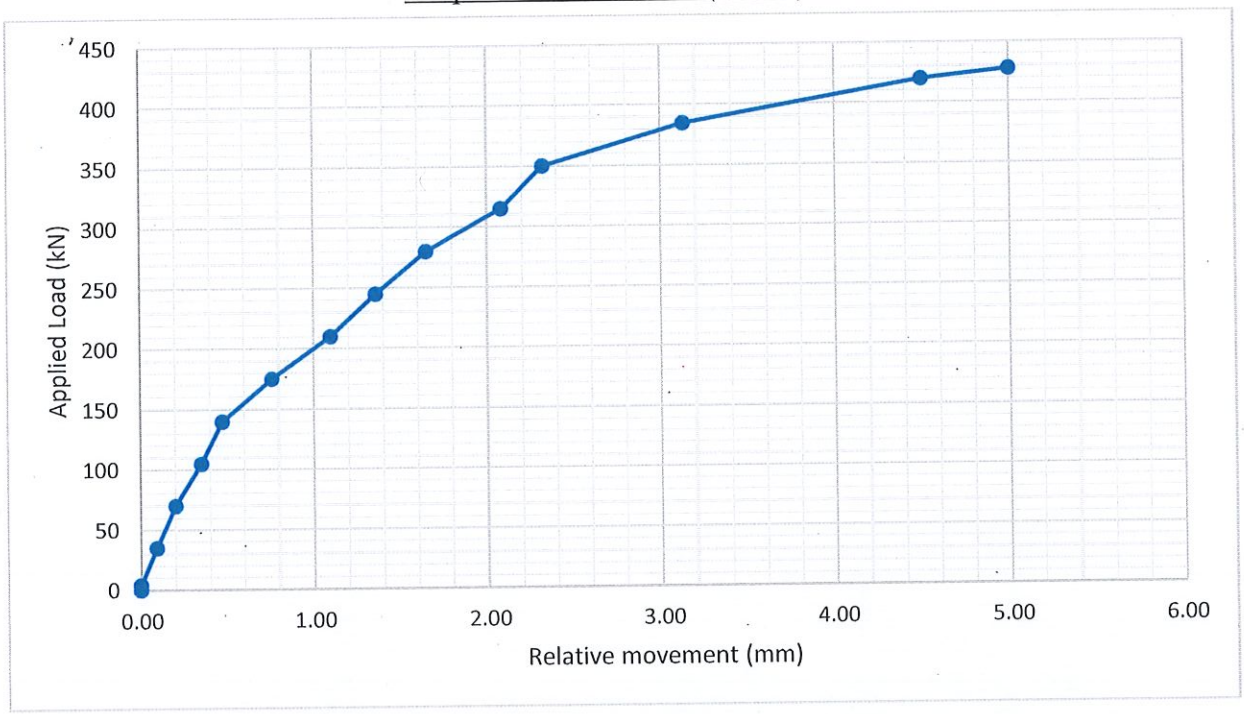
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

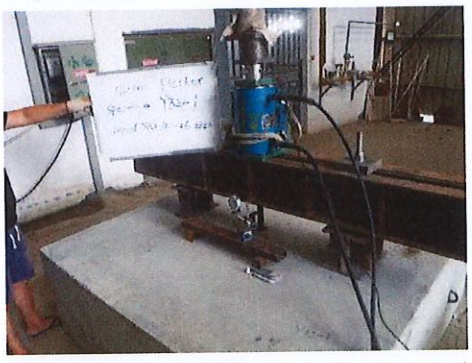
Castco LRN : 220616-2287-2

Graphical Presentation (Y32-1)



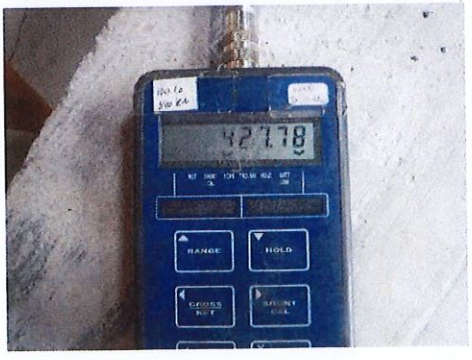
Record Photo (Y32-1)

Before



Setup

After



Failure load

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

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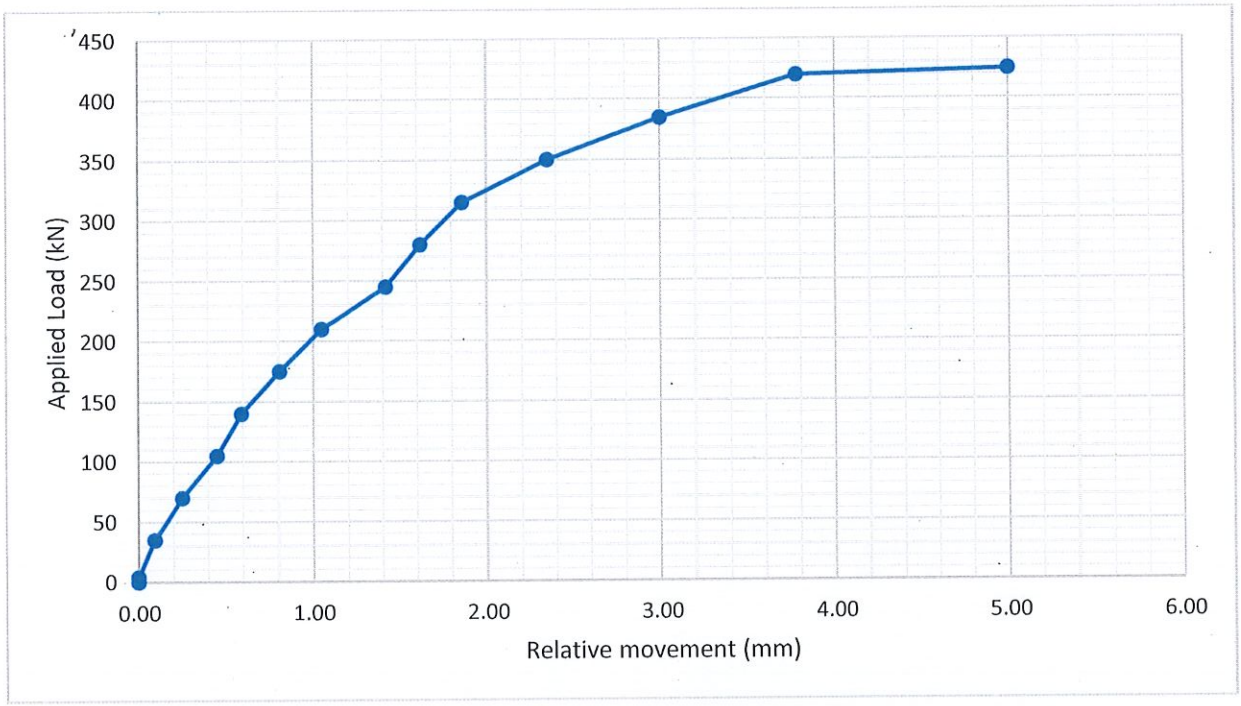
[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

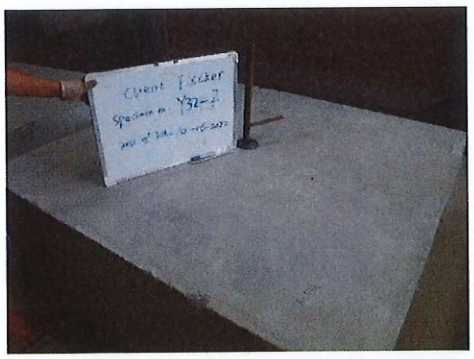
Date of issue : 17-06-2022

Castco LRN : 220616-2287-2

Graphical Presentation (Y32-2)



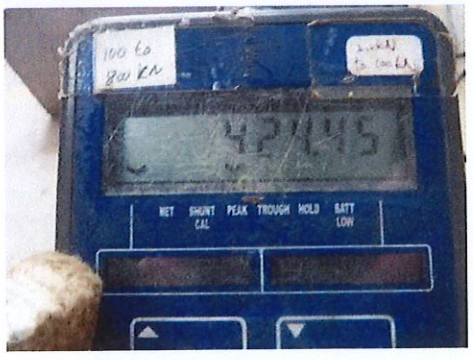
Record Photo (Y32-2)



Before

Setup

After



Failure load

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Test Report

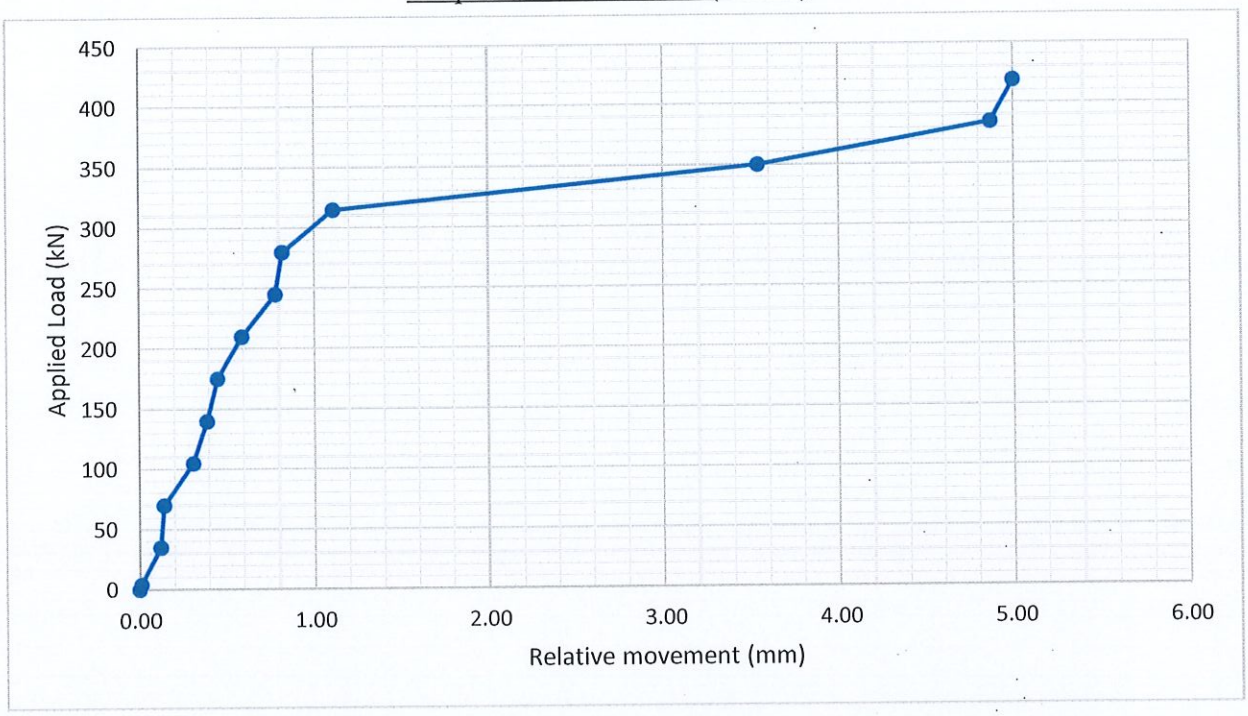
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

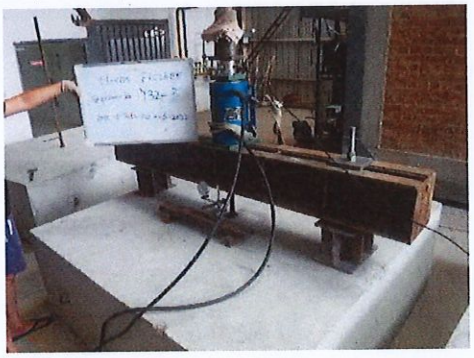
Castco LRN : 220616-2287-2

Graphical Presentation (Y32-3)

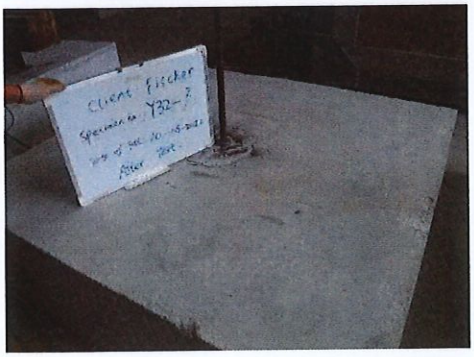


Record Photo (Y32-3)

Before



Setup



After

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HKAS HOKLAS 032 TEST

Test Report

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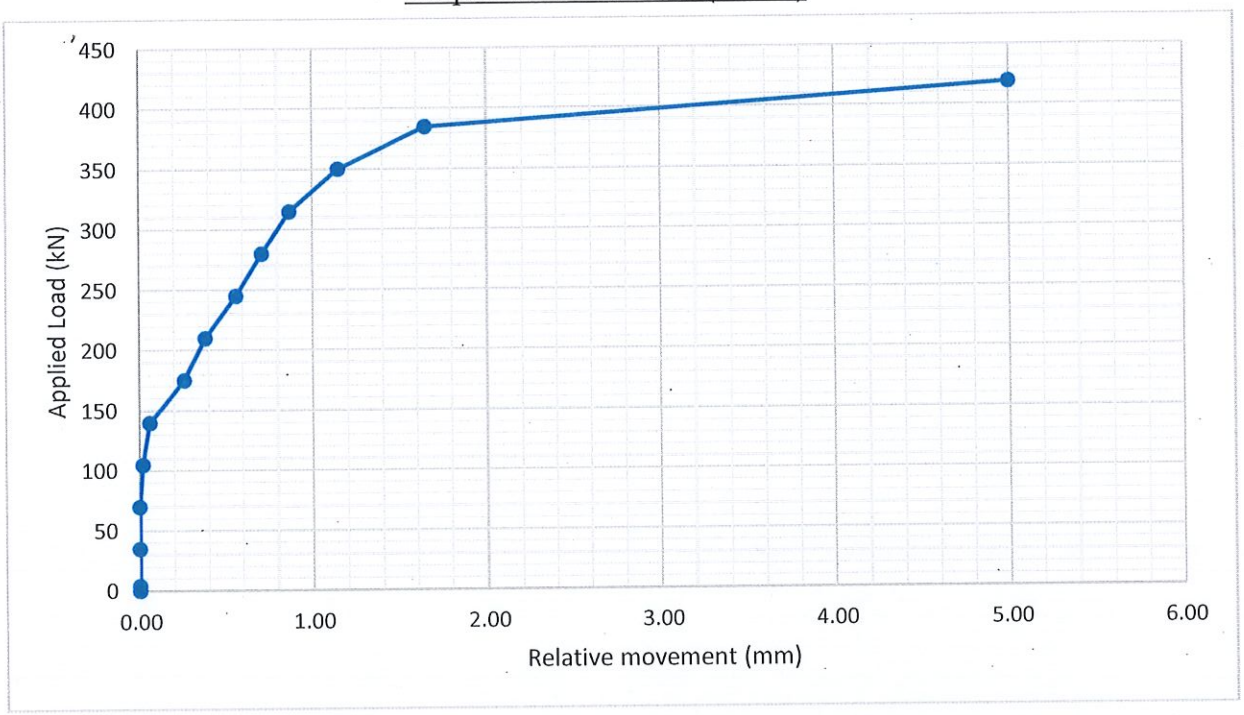
[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

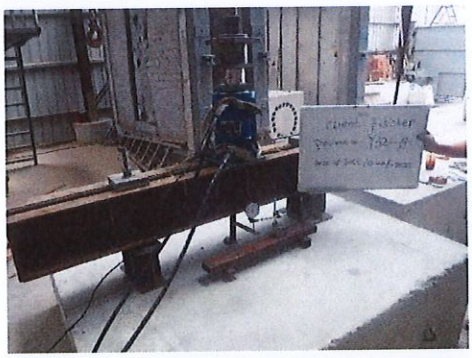
Castco LRN : 220616-2287-2

Graphical Presentation (Y32-4)



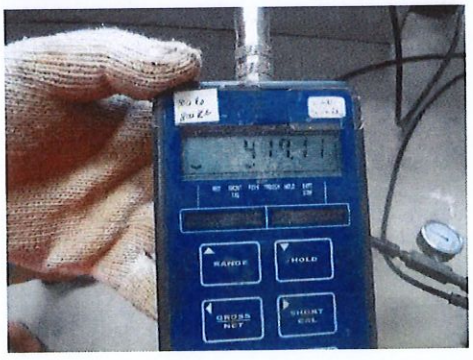
Record Photo (Y32-4)

Before



Setup

After



Failure load

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

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HOKLAS 032 TEST

Test Report

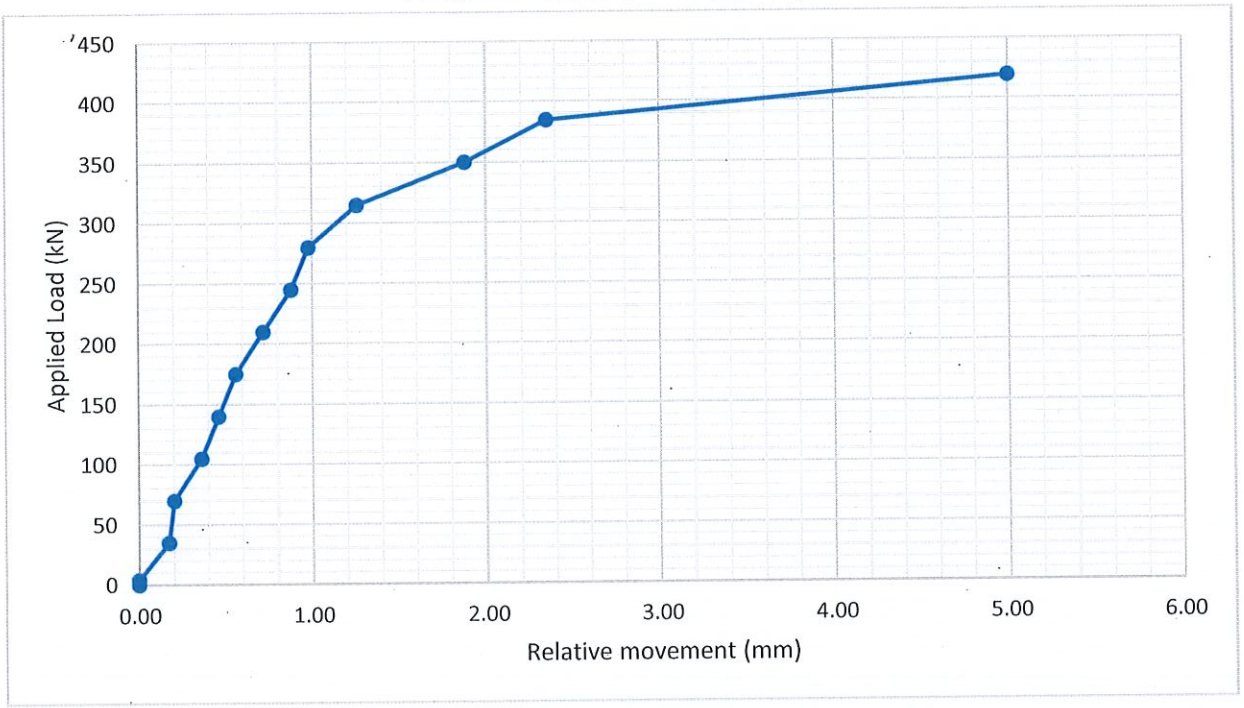
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

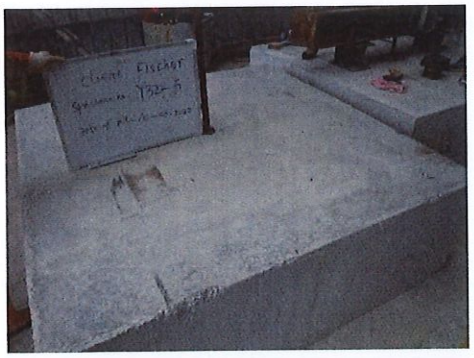
Date of issue : 17-06-2022

Castco LRN : 220616-2287-2

Graphical Presentation (Y32-5)

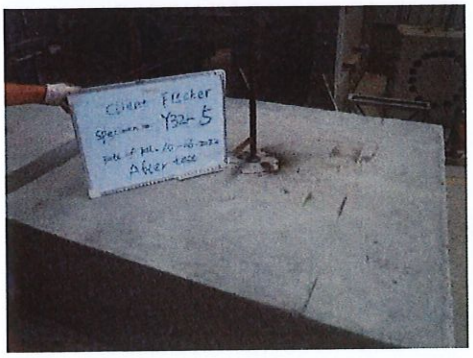


Record Photo (Y32-5)



Before

Setup



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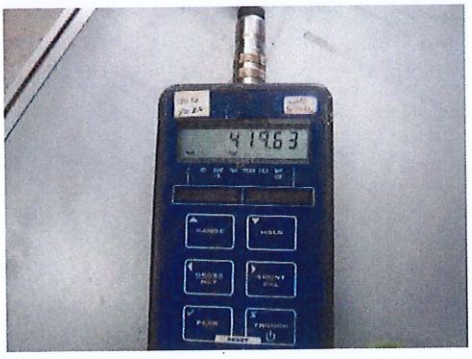

Failure load

End of Report

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HKAS HOKLAS 032 TEST

Test Report
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

 Castco LRN : 220616-2287-3

Details As Supplied By Customer:

Customer : fischer (Taicang) Fixings Company Limited Customer Ref. No. : - -

Address : Building 1, Suntec Industrial Park ,No.105 Dongcang Road(North), Taicang, Jiangsu P.R.C. Contract No. : - -

Job title : Rebar connection test for fischer - FIS EB II

Test location : Castco Testing Laboratory (Zhongshan)

Sample Description : Bonded fixings (fischer FIS EB II + Y25 Grade 500B)

Total Length : 1500 mm Embedded length in base material : 250 mm

Fixing diameter : 25 mm Fixing maximum dimension : - - mm

Designed maximum test load : 262.5 kN

Base material description : Concrete

Drill hole diameter : 30 mm

Base material cast date : 27-05-2022 Fixing installation date : 01-06-2022

Concrete grade : C25 Concrete age : 8 days Base material dimension : 1500 mm (L) × 1500 mm (W) × 500 mm (H)

Laboratory Test Results Date of Test : 04-06-2022

A. Loading Method : Incremental Loading

B. Characteristic Dimension "A"

Bonded fixing = the maximum diameter of the fixing or 1/4 of the embedded length, whichever is greater
= 62.5 mm

C. Position of Fixings

1. Thickness below maximum depth of the fixing or of the hole into which it is inserted; minimum 4A.
   = 250 mm
2. Minimum distance between centres of two fixings.
   = N/A mm
3. Minimum distance of fixing from the edge; minimum 12A.
   = 750 mm

D. Position of Test Equipment

1. Loading frame span width = 8A + 8A = 1000 mm

E. Test results

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HOKLAS 032 TEST

Test Report

Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

 Castco LRN : 220616-2287-3

Laboratory Test Results

Applied Load (kN)	Relative movement (mm)				
	Sample No. Y25-1	Sample No. Y25-2	Sample No. Y25-3	Sample No. Y25-4	Sample No. Y25-5
0.0	0.00	0.00	0.00	0.00	0.00
Pre-load 2.6	0.00	0.00	0.00	0.00	0.00
21.9	0.05	0.35	0.00	0.00	0.18
43.8	0.10	0.40	0.00	0.00	0.66
65.6	0.25	0.42	0.00	0.36	1.10
87.5	0.39	0.53	0.03	0.46	1.61
109.4	0.55	0.66	0.21	0.66	1.95
131.3	0.78	0.66	0.28	0.96	2.53
153.1	1.05	0.66	0.42	1.17	3.12
175.0	1.35	0.85	0.43	1.50	3.23
196.9	1.65	1.00	0.70	1.76	3.78
218.8	2.15	1.10	0.96	2.16	4.53
240.6	2.86	1.25	1.10	2.65	4.62
262.5	4.06	1.56	1.95	3.40	4.88
The required time period of apply load :					
Actual apply load period (s)					
Within the loading rate yes : ✓ No : ×					
Failure Load (kN)	265.20	266.83	265.90	266.24	266.12
Failure Mode *(can be more than one mode)*	RM, CF, RU	RM	RM	RM	RM
Average Failure Load (kN)	266.06				
Standard Deviation (kN)	0.59				

Failure mode legend :
CF = Crack in base material
RU = Rupture of base material
RM = The fixing has a relative movement exceeding 5 mm past the point at which the applied load reaches a maximum

Remarks :
1. Designed maximum test load and loading method are as specified by customer.
2. Test location is instructed by customer.
3. Test result relates only to the fixing and specimen tested.

Checked by : CHEUNG LAP KEI Assistant Supervisor

Approved Signatory : FONG SAI KIT Technical Manager

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

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HKLAS 032 TEST

Test Report

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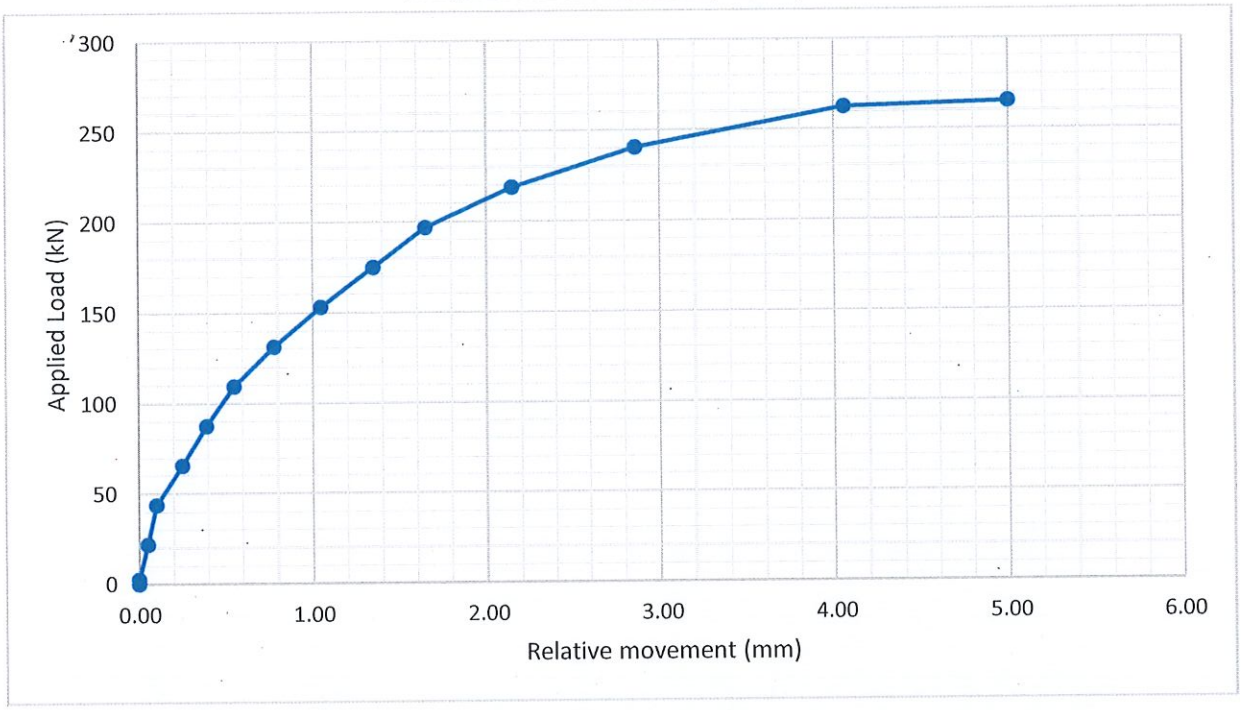
[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

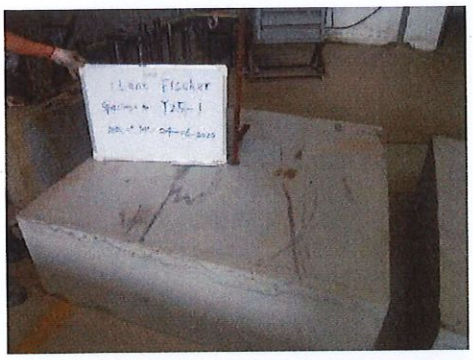
Date of issue : 17-06-2022

Castco LRN : 220616-2287-3

Graphical Presentation (Y25-1)



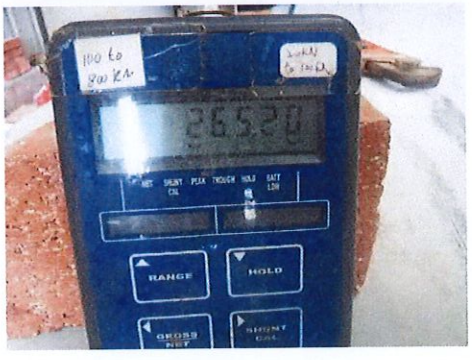
Record Photo (Y25-1)



Before

Setup

After



Failure load

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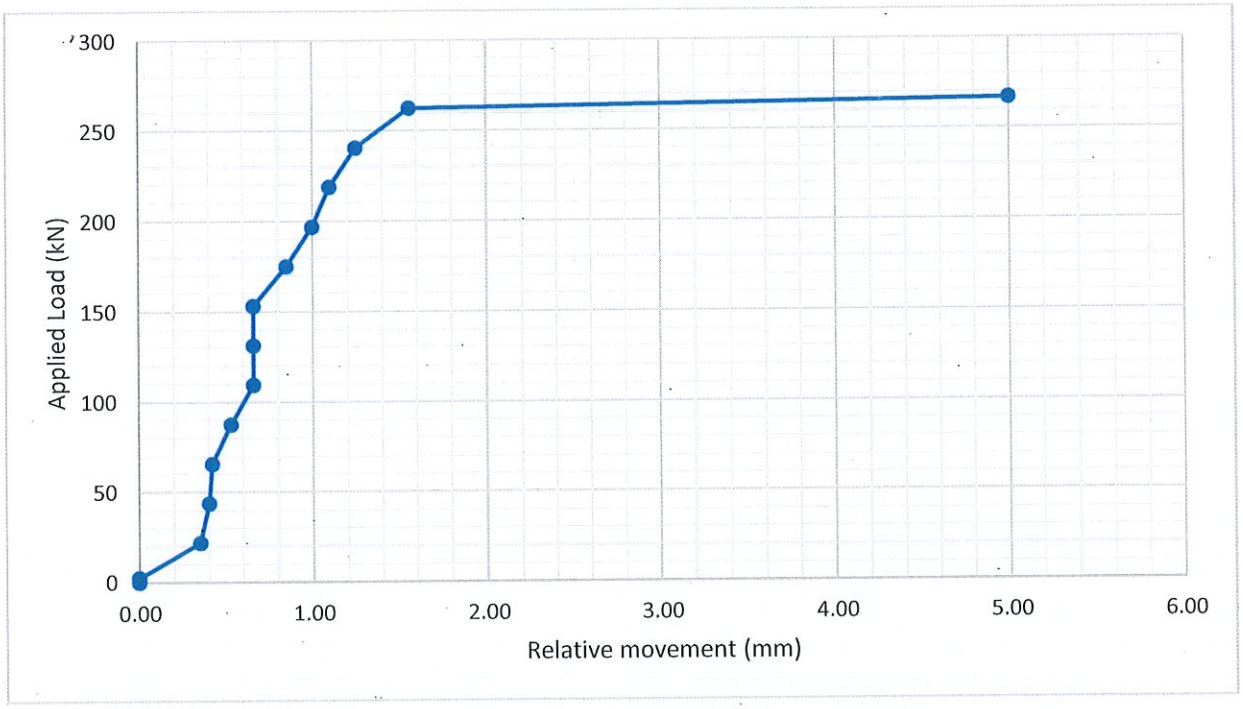
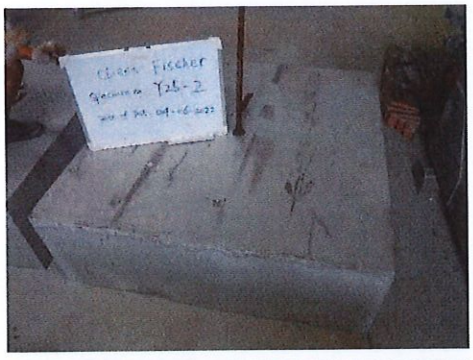
Castco LRN : 220616-2287-3

Graphical Presentation (Y25-2)



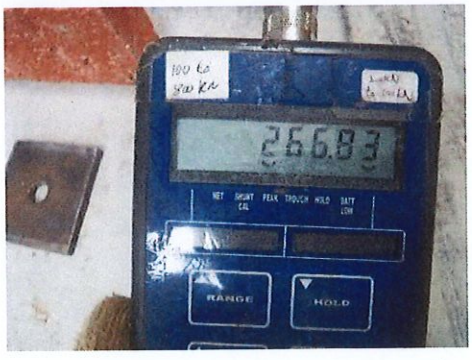
Record Photo (Y25-2)



Before

Setup

After



Failure load

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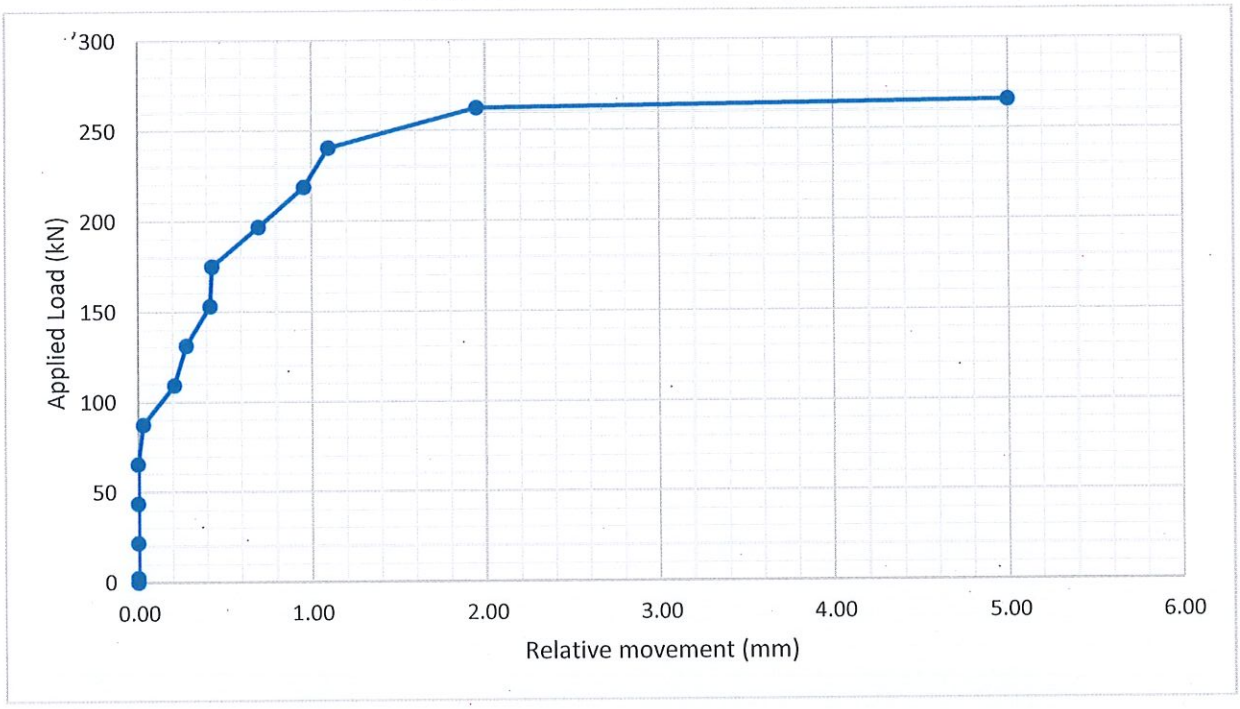
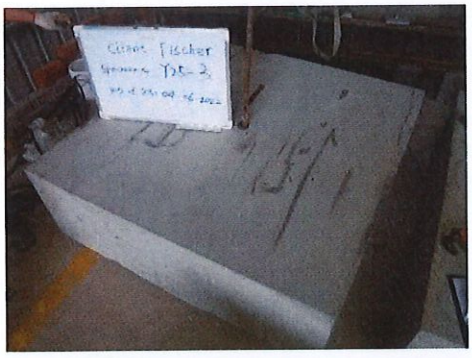
Graphical Presentation (Y25-3)

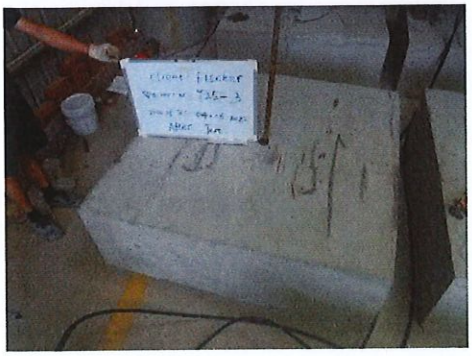


Record Photo (Y25-3)

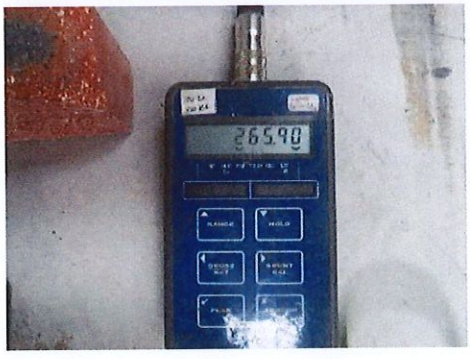


Before

Setup



After



Failure load

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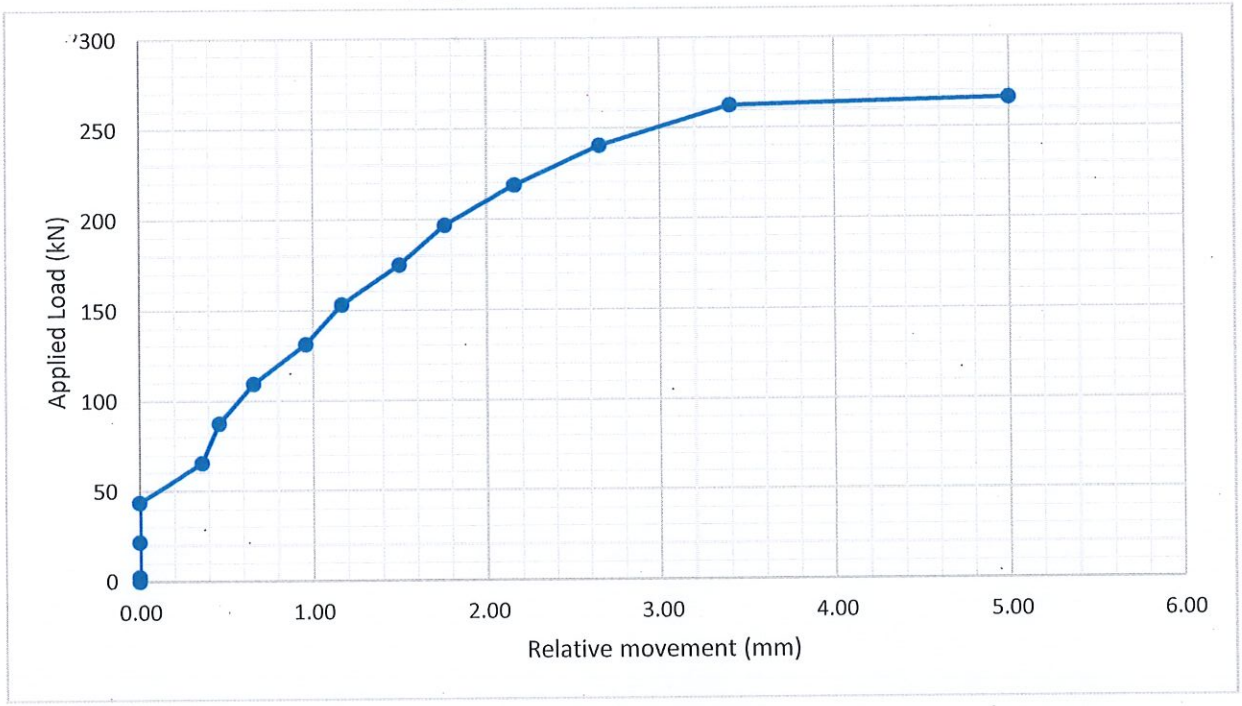
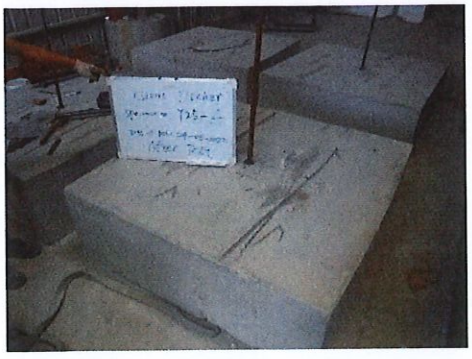
Graphical Presentation (Y25-4)



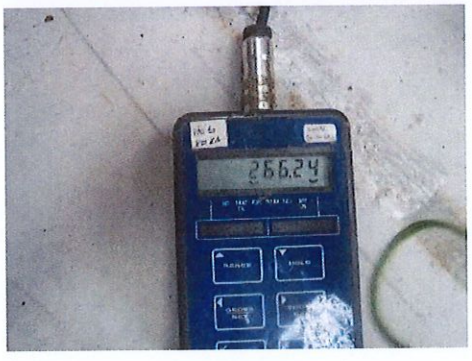
Record Photo (Y25-4)

Before

Setup



After



Failure load

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HKLAS 032 TEST

Test Report

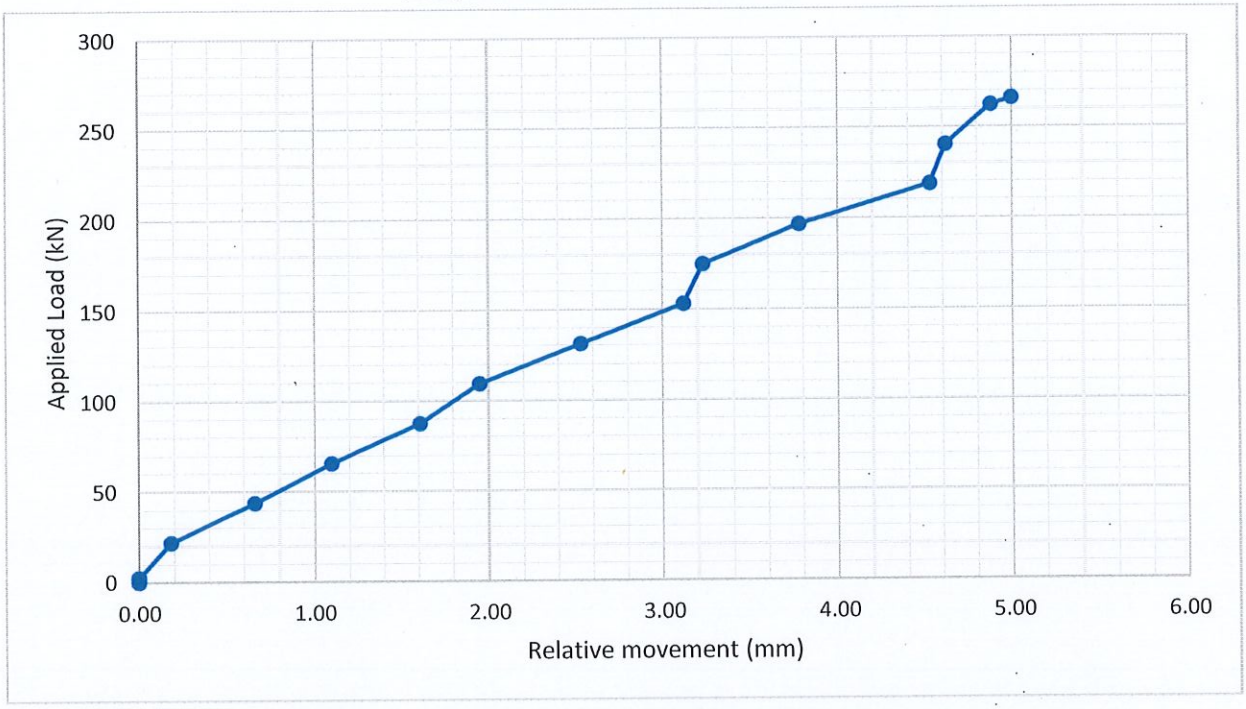
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

Castco LRN : 220616-2287-3

Graphical Presentation (Y25-5)



Record Photo (Y25-5)

Before

After

Failure load

End of Report

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

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HOKLAS 032
TEST

Test Report
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

Castco LRN : 220616-2287-4

Details As Supplied By Customer:

Customer : fischer (Taicang) Fixings Company Limited
Customer Ref. No. : - -
Address : Building 1, Suntec Industrial Park ,No.105 Dongcang Road(North), Taicang, Jiangsu P.R.C.
Contract No. : - -
Job title : Rebar connection test for fischer - FIS EB II
Test location : Castco Testing Laboratory (Zhongshan)
Sample Description : Bonded fixings (fischer FIS EB II + Y20 Grade 500B)
Total Length : 1200 mm Embedded length in base material : 200 mm
Fixing diameter : 20 mm Fixing maximum dimension : - - mm
Designed maximum test load : 168.7 kN
Base material description : Concrete
Drill hole diameter : 25 mm
Base material cast date : 20-05-2022 Fixing installation date : 25-05-2022
Concrete grade : C25 Concrete age : 8 days Base material dimension : 1200 mm (L) × 1200 mm (W) × 400 mm (H)

Laboratory Test Results Date of Test : 28-05-2022

A. Loading Method : Incremental Loading

B. Characteristic Dimension "A"
Bonded fixing = the maximum diameter of the fixing or 1/4 of the embedded length, whichever is greater
= 50 mm

C. Position of Fixings
1. Thickness below maximum depth of the fixing or of the hole into which it is inserted; minimum 4A.
= 200 mm
2. Minimum distance between centres of two fixings.
= N/A mm
3. Minimum distance of fixing from the edge; minimum 12A.
= 600 mm

D. Position of Test Equipment
1. Loading frame span width = 8A + 8A = 800 mm

E. Test results

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HOKLAS 032 TEST

Test Report

Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

 Castco LRN : 220616-2287-4

Laboratory Test Results

Applied Load (kN)	Relative movement (mm)				
	Sample No. Y20-1	Sample No. Y20-2	Sample No. Y20-3	Sample No. Y20-4	Sample No. Y20-5
0.0	0.00	0.00	0.00	0.00	0.00
Pre-load 1.6	0.00	0.00	0.00	0.05	0.07
14.1	0.00	0.00	0.00	0.13	0.07
28.2	0.00	0.07	0.01	0.13	0.07
42.2	0.00	0.08	0.15	0.15	0.07
56.2	0.12	0.12	0.24	0.24	0.07
70.3	0.16	0.12	0.37	0.35	0.16
84.4	0.26	0.12	0.47	0.44	0.22
98.4	0.38	0.19	0.59	0.54	0.38
112.5	0.46	0.21	0.72	0.65	0.49
126.5	0.62	0.22	0.81	0.77	0.60
140.6	0.76	0.27	0.95	0.89	0.72
154.6	0.89	0.27	1.01	1.04	0.81
168.7	1.42	2.10	1.45	2.07	1.08
The required time period of apply load :					
Actual apply load period (s)					
Within the loading rate yes : ✓ No : ×					
Failure Load (kN)	171.12	169.33	170.69	169.34	170.83
Failure Mode *(can be more than one mode)*	RM	RM	RM	RM	RM
Average Failure Load (kN)	170.26				
Standard Deviation (kN)	0.86				

Failure mode legend :

RM = The fixing has a relative movement exceeding 5 mm past the point at which the applied load reaches a maximum

Remarks :

1. Designed maximum test load and loading method are as specified by customer.
2. Test location is instructed by customer.
3. Test result relates only to the fixing and specimen tested.

Checked by : CHEUNG LAP KEI Assistant Supervisor

Approved Signatory : FONG SAI KIT Technical Manager

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

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HKAS HOKLAS 032 TEST

Test Report

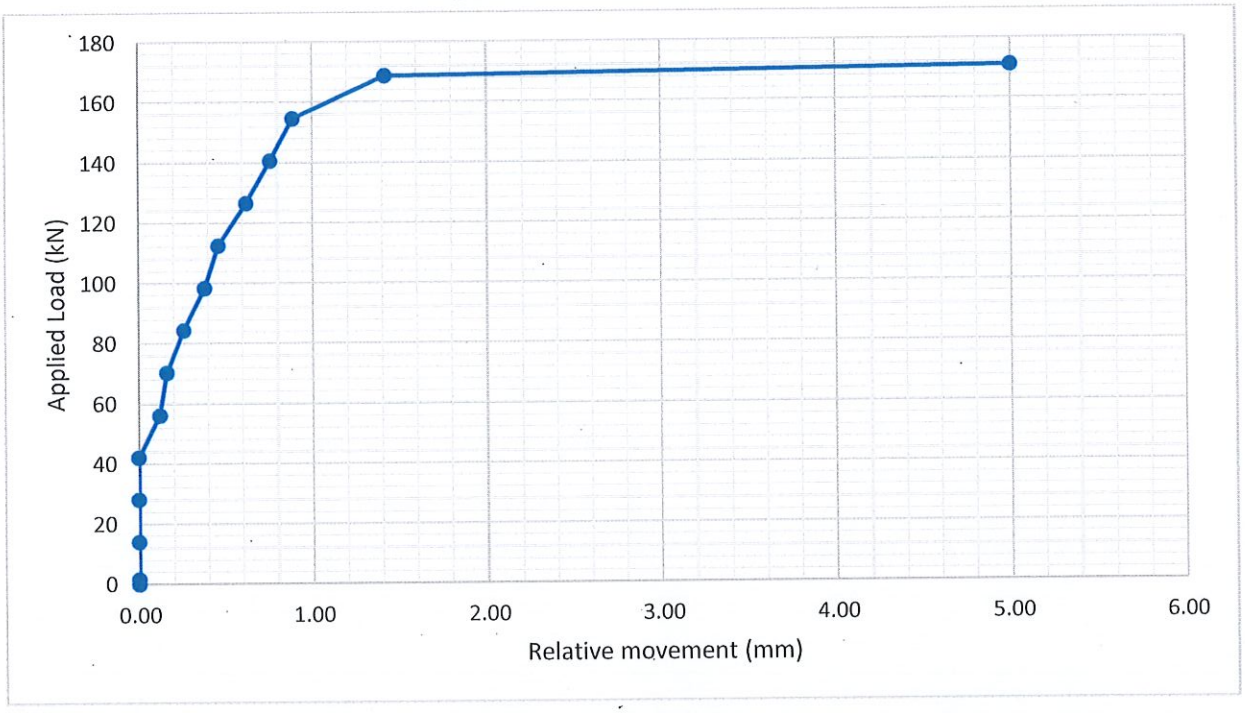
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

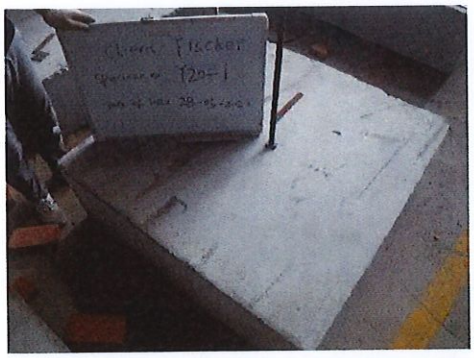
Date of issue : 17-06-2022

Castco LRN : 220616-2287-4

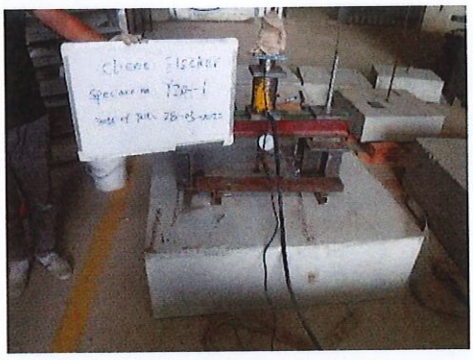
Graphical Presentation (Y20-1)



Record Photo (Y20-1)

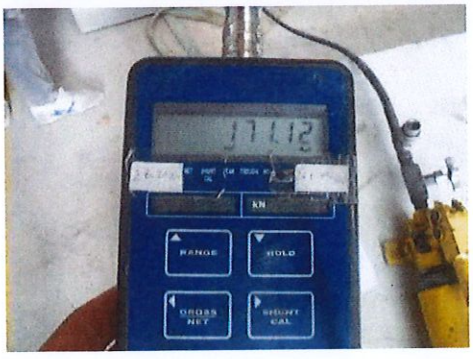


Before



Setup

After



Failure load

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HKAS HOKLAS 032 TEST

Test Report

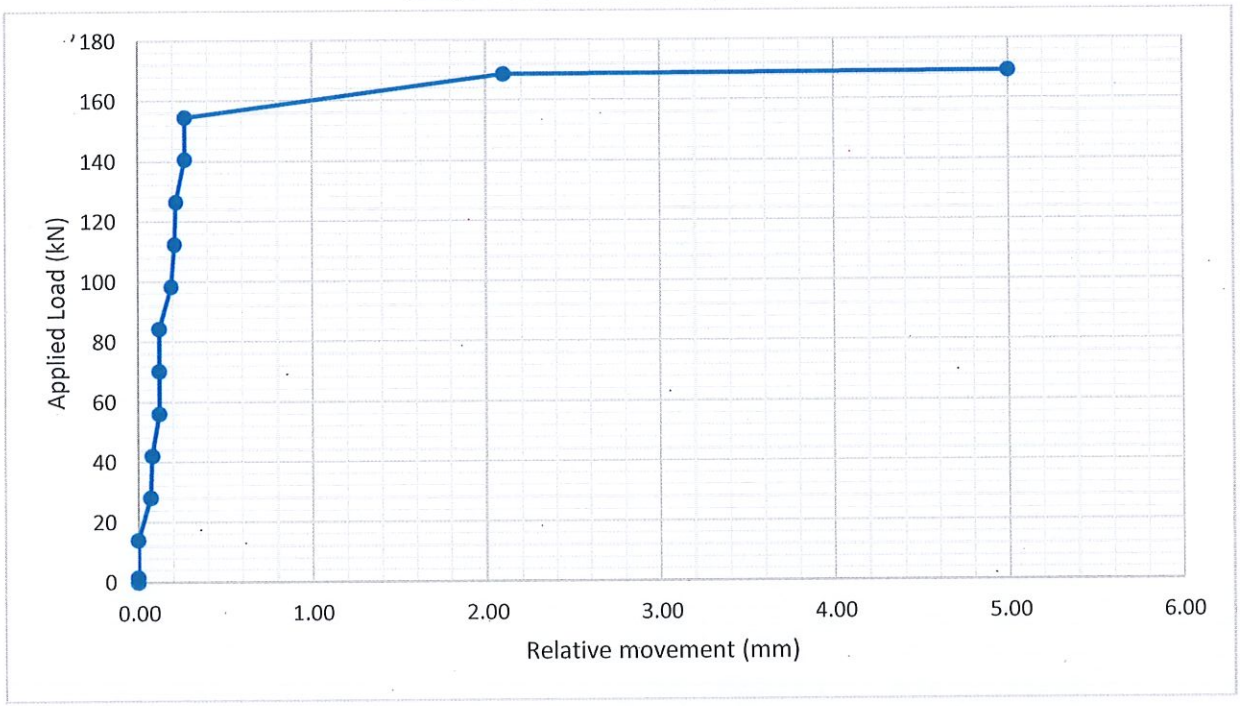
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

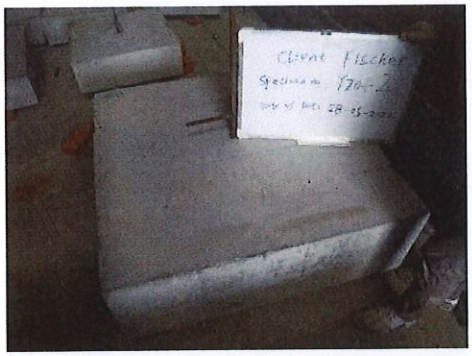
Date of issue : 17-06-2022

Castco LRN : 220616-2287-4

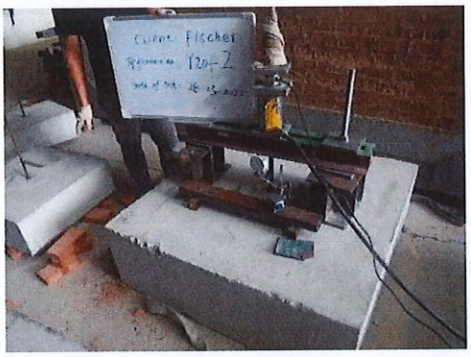
Graphical Presentation (Y20-2)



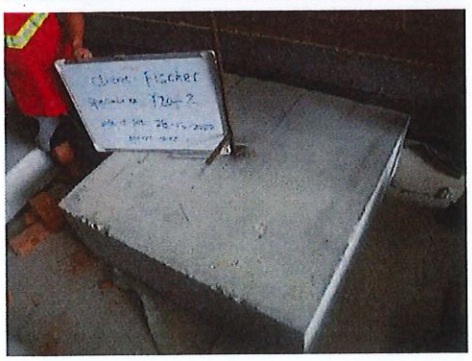
Record Photo (Y20-2)



Before



Setup



After

Failure load

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HKLAS 032 TEST

Test Report

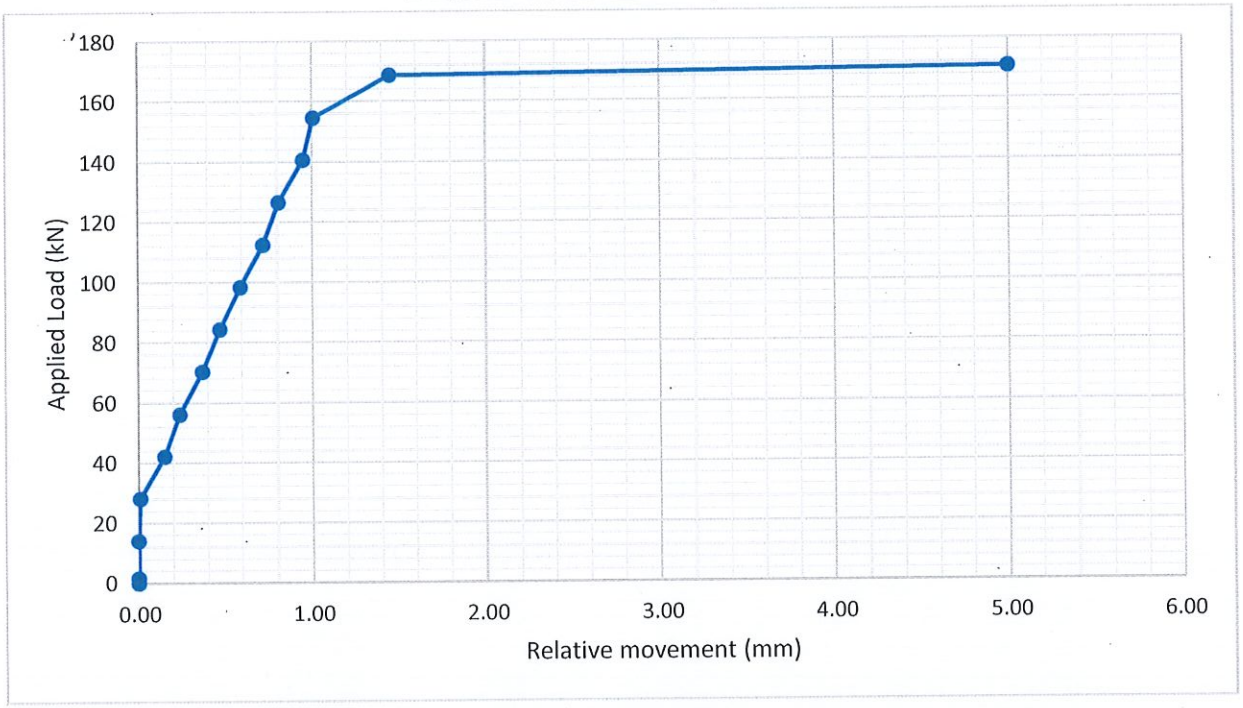
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

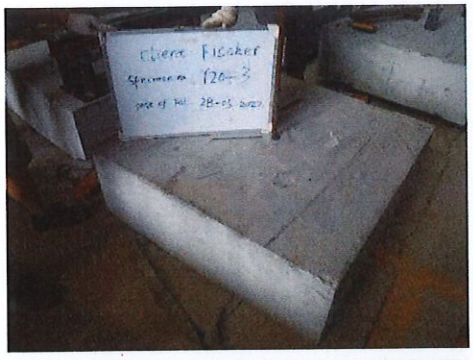
Date of issue : 17-06-2022

Castco LRN : 220616-2287-4

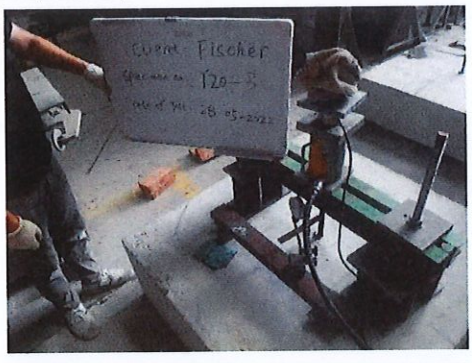
Graphical Presentation (Y20-3)



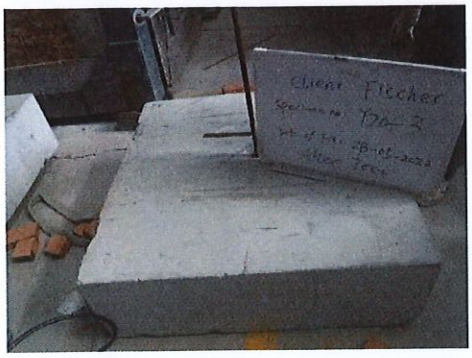
Record Photo (Y20-3)



Before



Setup



After

Failure load

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HKLAS 032 TEST

Test Report

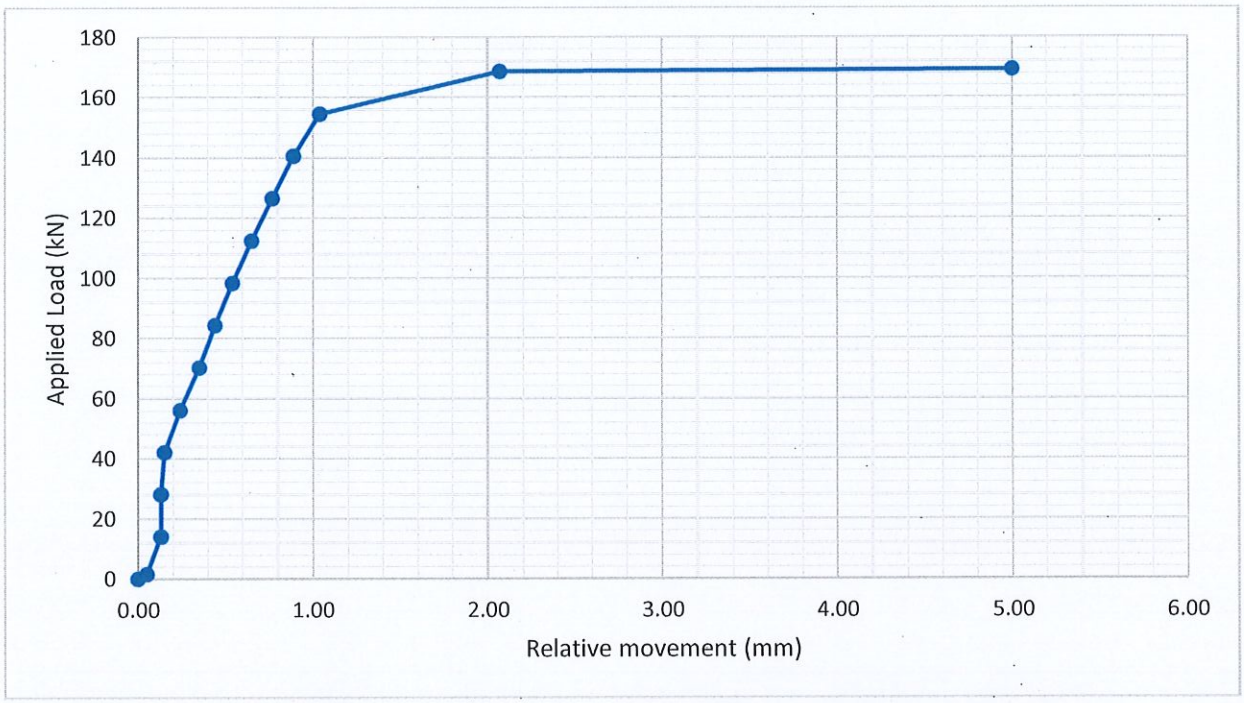
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

 Castco LRN : 220616-2287-4

Graphical Presentation (Y20-4)



Record Photo (Y20-4)

Before

Setup

After

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HKAS HOKLAS 032 TEST

Test Report

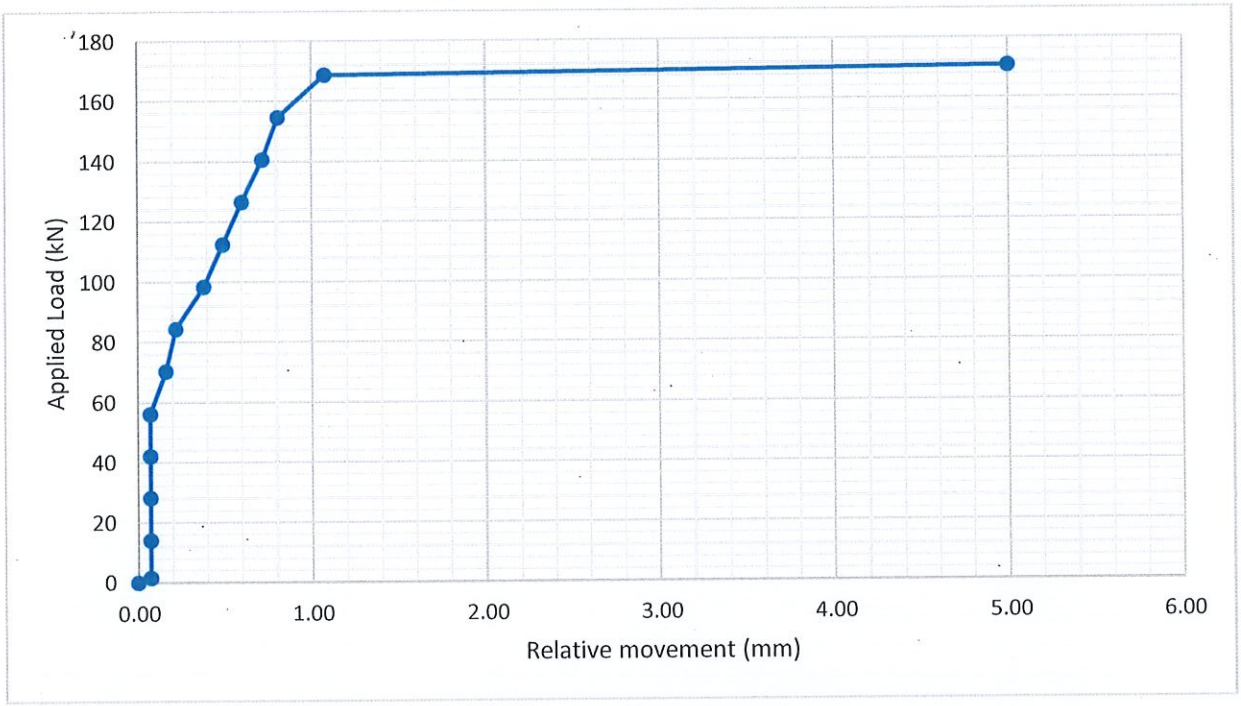
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

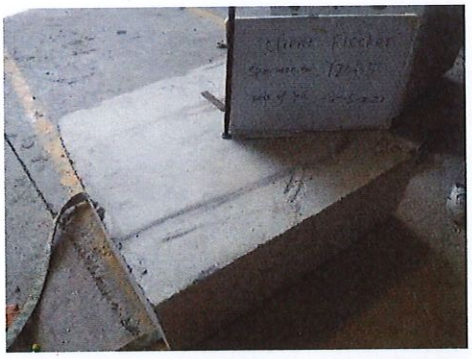
Date of issue : 17-06-2022

Castco LRN : 220616-2287-4

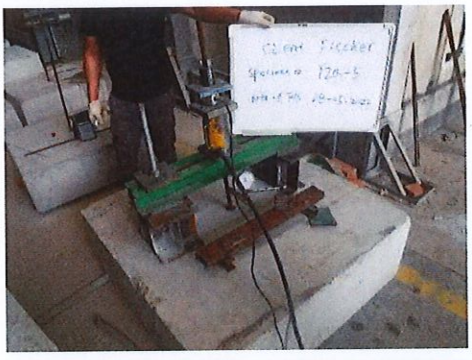
Graphical Presentation (Y20-5)



Record Photo (Y20-5)

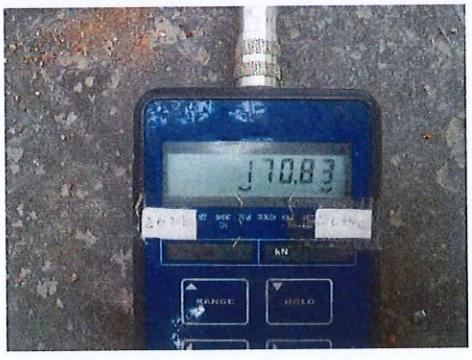


Before



Setup

After



Failure load

End of Report

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HOKLAS 032 TEST

Test Report
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

 Castco LRN : 220616-2287-5

Details As Supplied By Customer:

Customer : fischer (Taicang) Fixings Company Limited Customer Ref. No. : - -

Address : Building 1, Suntec Industrial Park ,No.105 Dongcang Road(North), Taicang, Jiangsu P.R.C. Contract No. : - -

Job title : Rebar connection test for fischer - FIS EB II

Test location : Castco Testing Laboratory (Zhongshan)

Sample Description : Bonded fixings (fischer FIS EB II + Y16 Grade 500B)

Total Length : 1200 mm Embedded length in base material : 160 mm

Fixing diameter : 16 mm Fixing maximum dimension : - - mm

Designed maximum test load : 109.0 kN

Base material description : Concrete

Drill hole diameter : 20 mm

Base material cast date : 20-05-2022 Fixing installation date : 25-05-2022

Concrete grade : C25 Concrete age : 8 days Base material dimension : 960 mm (L) × 960 mm (W) × 320 mm (H)

Laboratory Test Results Date of Test : 28-05-2022

A. Loading Method : Incremental Loading

B. Characteristic Dimension "A"

Bonded fixing = the maximum diameter of the fixing or 1/4 of the embedded length, whichever is greater
= 40 mm

C. Position of Fixings

1. Thickness below maximum depth of the fixing or of the hole into which it is inserted; minimum 4A.
   = 160 mm
2. Minimum distance between centres of two fixings.
   = N/A mm
3. Minimum distance of fixing from the edge; minimum 12A.
   = 480 mm

D. Position of Test Equipment

1. Loading frame span width = 8A + 8A = 640 mm

E. Test results

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HKLAS 032 TEST

Test Report

Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

Castco LRN : 220616-2287-5

Laboratory Test Results

Applied Load (kN)	Relative movement (mm)				
	Sample No. Y16-1	Sample No. Y16-2	Sample No. Y16-3	Sample No. Y16-4	Sample No. Y16-5
0.0	0.00	0.00	0.00	0.00	0.00
Pre-load 1.0	0.00	0.00	0.00	0.00	0.00
9.1	0.00	0.21	0.00	0.01	0.00
18.2	0.00	0.25	0.01	0.03	0.03
27.3	0.02	0.27	0.05	0.05	0.04
36.3	0.08	0.39	0.22	0.08	0.05
45.4	0.12	0.46	0.32	0.13	0.06
54.5	0.12	0.58	0.40	0.18	0.09
63.6	0.22	0.68	0.52	0.22	0.13
72.7	0.35	0.79	0.59	0.30	0.24
81.8	0.41	0.90	0.79	0.37	0.33
90.8	0.45	0.95	0.85	0.48	0.40
99.9	0.58	1.09	0.95	0.67	0.47
109.0	0.77	1.22	1.12	0.92	0.64
The required time period of apply load :					
Actual apply load period (s)					
Within the loading rate yes : ✓ No : ×					
Failure Load (kN)	123.67	125.54	125.02	125.81	127.21
Failure Mode *(can be more than one mode)*	RM	RM	RM	RM	RM
Average Failure Load (kN)	125.45				
Standard Deviation (kN)	1.28				

Failure mode legend :

RM = The fixing has a relative movement exceeding 5 mm past the point at which the applied load reaches a maximum

Remarks :

1. Designed maximum test load and loading method are as specified by customer.
2. Test location is instructed by customer.
3. Test result relates only to the fixing and specimen tested.

Checked by : CHEUNG LAP KEI Assistant Supervisor

Approved Signatory : FONG SAI KIT Technical Manager

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HKAS HOKLAS 032 TEST

Test Report

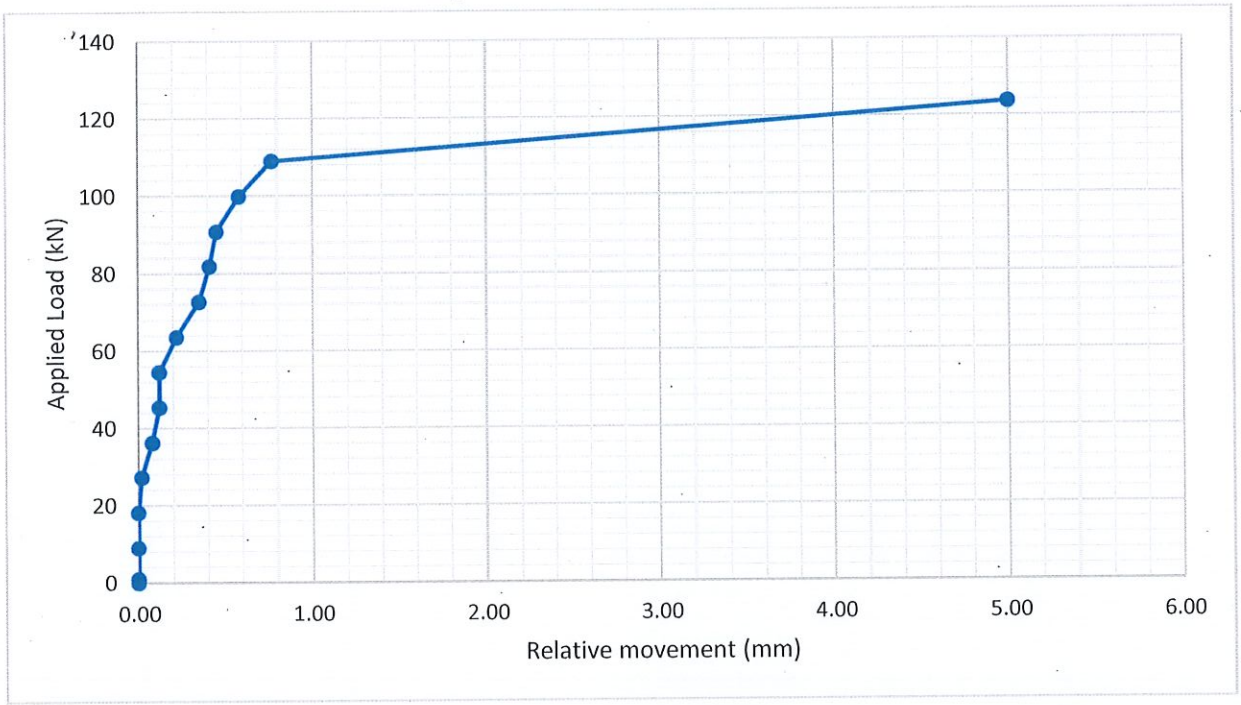
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

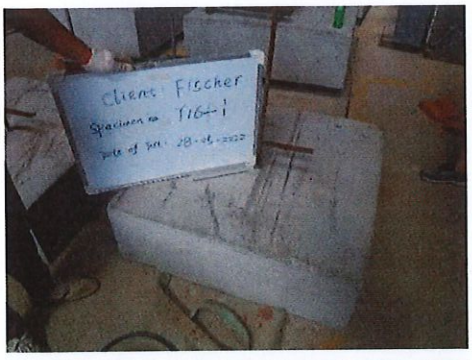
Date of issue : 17-06-2022

Castco LRN : 220616-2287-5

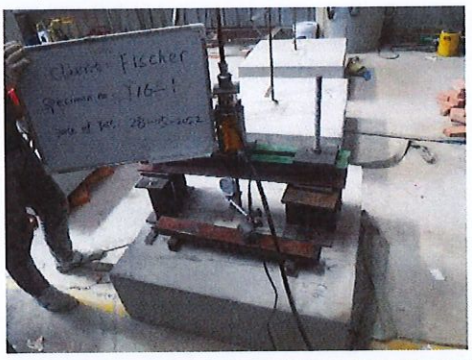
Graphical Presentation (Y16-1)



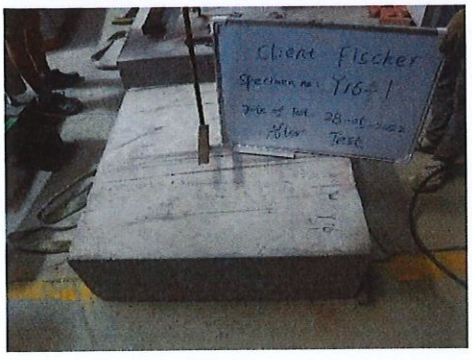
Record Photo (Y16-1)



Before



Setup



After

Failure load

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香港粉嶺安全街29A號 29A, On Chuen Street, Fanling, Hong Kong. Fax: 2597 8399
E-mail: info@castco.com.hk Website: www.castco.com.hk

HOKLAS 032 TEST

Test Report

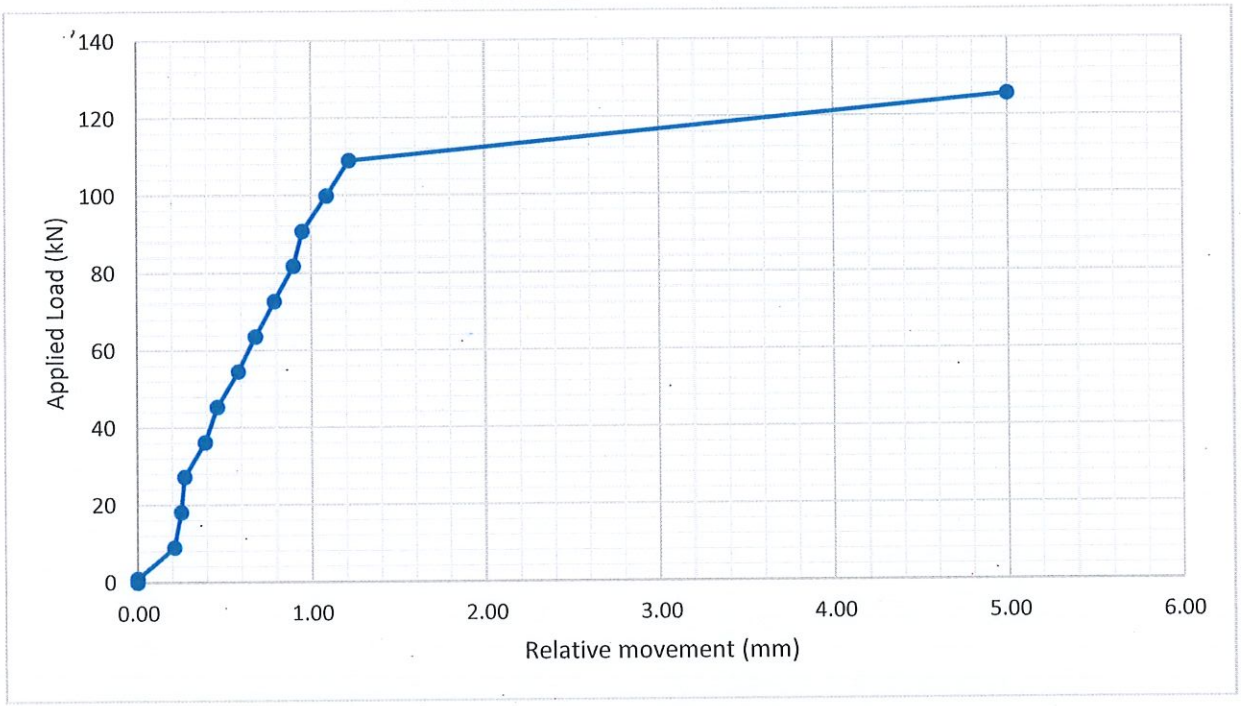
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 17-06-2022

Castco LRN : 220616-2287-5

Graphical Presentation (Y16-2)



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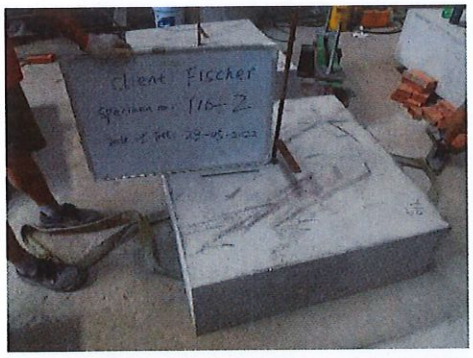

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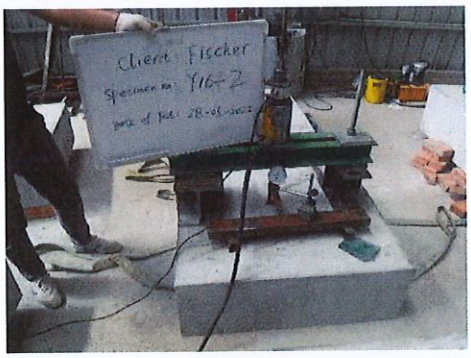
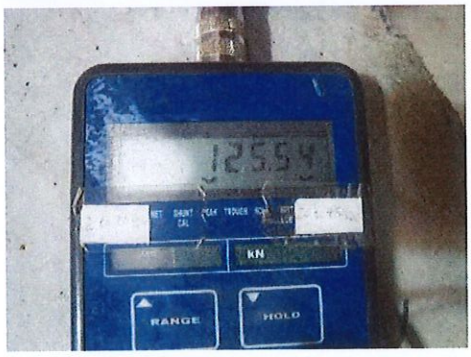


Setup

After



Failure load

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

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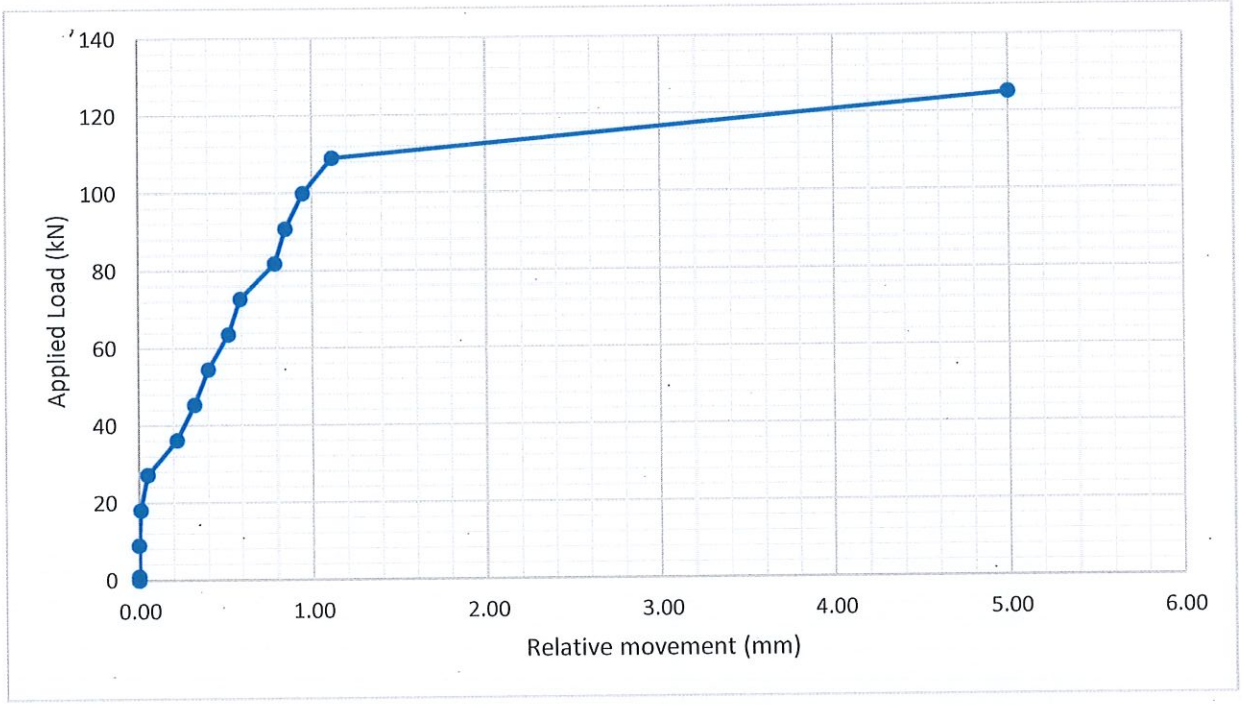
Graphical Presentation (Y16-3)



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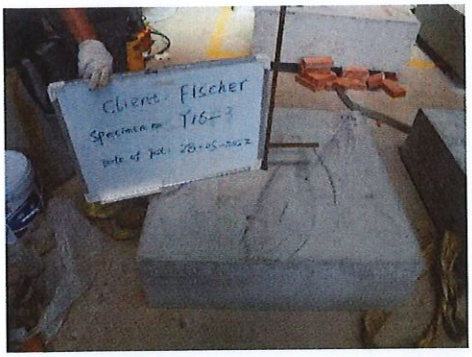

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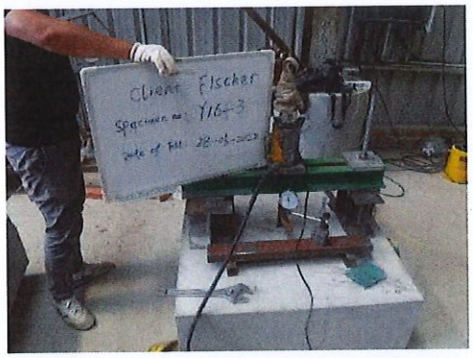

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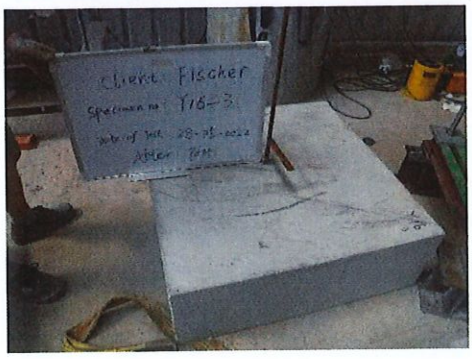

After

Failure load

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[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

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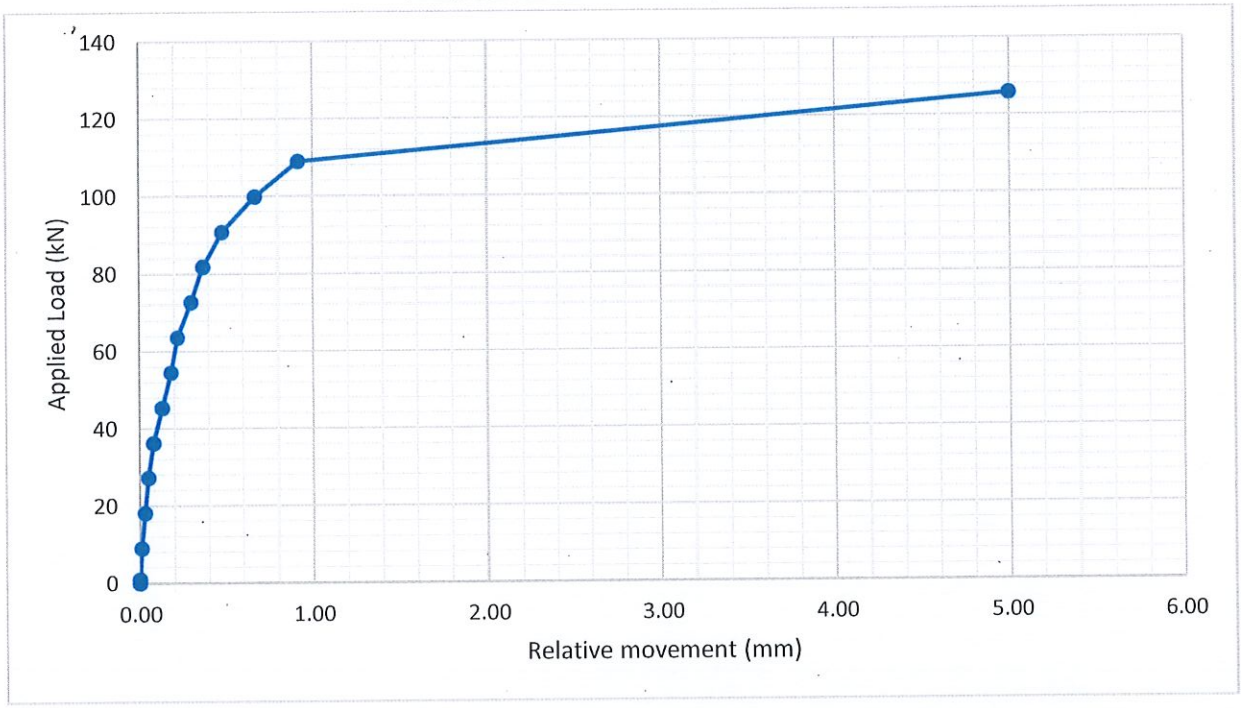
Graphical Presentation (Y16-4)



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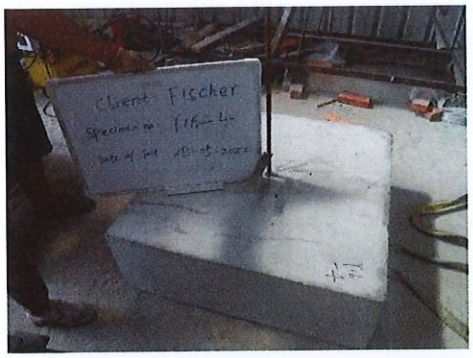

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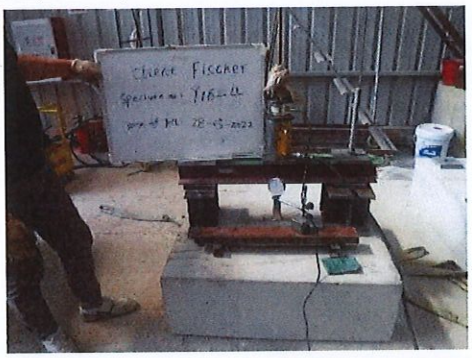

Setup

After

Failure load

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[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

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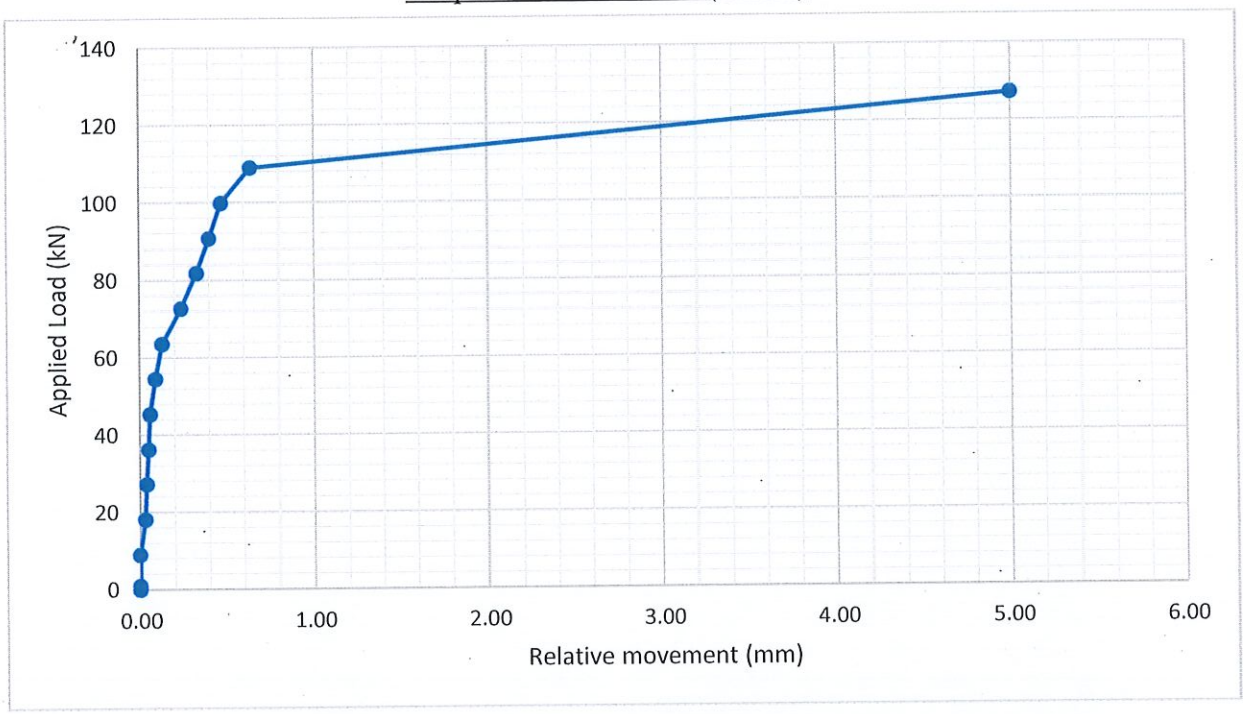
Graphical Presentation (Y16-5)



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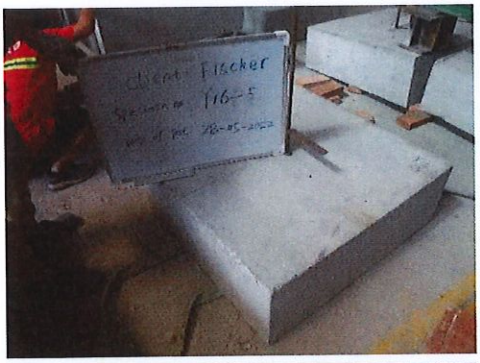

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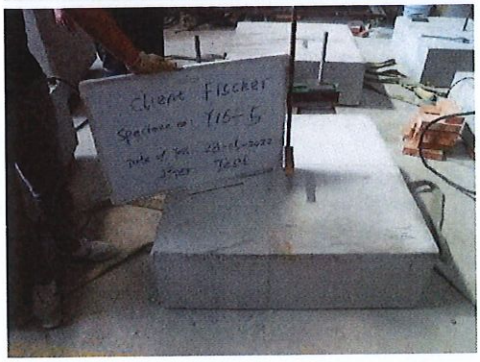
Setup



After

Failure load

End of Report

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[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 20-06-2022

 Castco LRN : 220616-2287-6

Details As Supplied By Customer:

Customer : fischer (Taicang) Fixings Company Limited Customer Ref. No. : - -

Address : Building 1, Suntec Industrial Park ,No.105 Dongcang Road(North), Taicang, Jiangsu P.R.C. Contract No. : - -

Job title : Rebar connection test for fischer - FIS EB II

Test location : Castco Testing Laboratory (Zhongshan)

Sample Description : Bonded fixings (fischer FIS EB II + Y12 Grade 500B)

Total Length : 1000 mm Embedded length in base material : 120 mm

Fixing diameter : 12 mm Fixing maximum dimension : - - mm

Designed maximum test load : 61.6 kN

Base material description : Concrete

Drill hole diameter : 16 mm

Base material cast date : 20-05-2022 Fixing installation date : 25-05-2022

Concrete grade : C25 Concrete age : 8 days Base material dimension : 720 mm (L) × 720 mm (W) × 240 mm (H)

Laboratory Test Results Date of Test : 28-05-2022

A. Loading Method : Incremental Loading

B. Characteristic Dimension "A"

Bonded fixing = the maximum diameter of the fixing or 1/4 of the embedded length, whichever is greater
= 30 mm

C. Position of Fixings

1. Thickness below maximum depth of the fixing or of the hole into which it is inserted; minimum 4A.
   = 120 mm
2. Minimum distance between centres of two fixings.
   = N/A mm
3. Minimum distance of fixing from the edge; minimum 12A.
   = 360 mm

D. Position of Test Equipment

1. Loading frame span width = 8A + 8A = 480 mm

E. Test results

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[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 20-06-2022

 Castco LRN : 220616-2287-6

Laboratory Test Results

Applied Load (kN)	Relative movement (mm)				
	Sample No. Y12-1	Sample No. Y12-2	Sample No. Y12-3	Sample No. Y12-4	Sample No. Y12-5
0.0	0.00	0.00	0.00	0.00	0.00
Pre-load 0.6	0.00	0.00	0.00	0.00	0.03
5.1	0.09	0.28	0.00	0.02	0.10
10.3	0.18	0.35	0.01	0.02	0.13
15.4	0.18	0.35	0.01	0.03	0.17
20.5	0.18	0.35	0.01	0.04	0.34
25.7	0.19	0.35	0.02	0.06	0.49
30.8	0.19	0.35	0.02	0.12	0.64
35.9	0.26	0.38	0.03	0.16	0.72
41.1	0.26	0.44	0.03	0.24	0.81
46.2	0.40	0.48	0.03	0.26	0.94
51.3	0.57	0.55	0.05	0.33	1.15
56.5	0.65	0.62	0.09	0.36	1.30
61.6	0.83	0.67	0.13	0.36	1.47
The required time period of apply load :					
Actual apply load period (s)					
Within the loading rate yes : ✓ No : ×					
Failure Load (kN)	67.49	67.76	66.39	67.40	65.35
Failure Mode *(can be more than one mode)*	RM	RM	RM	RM	RM
Average Failure Load (kN)	66.88				
Standard Deviation (kN)	1.00				

Failure mode legend :
RM = The fixing has a relative movement exceeding 5 mm past the point at which the applied load reaches a maximum

Remarks :
1. Designed maximum test load and loading method are as specified by customer.
2. Test location is instructed by customer.
3. Test result relates only to the fixing and specimen tested.

Checked by : CHEUNG LAP KEI Assistant Supervisor

Approved Signatory : FONG SAI KIT Technical Manager

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

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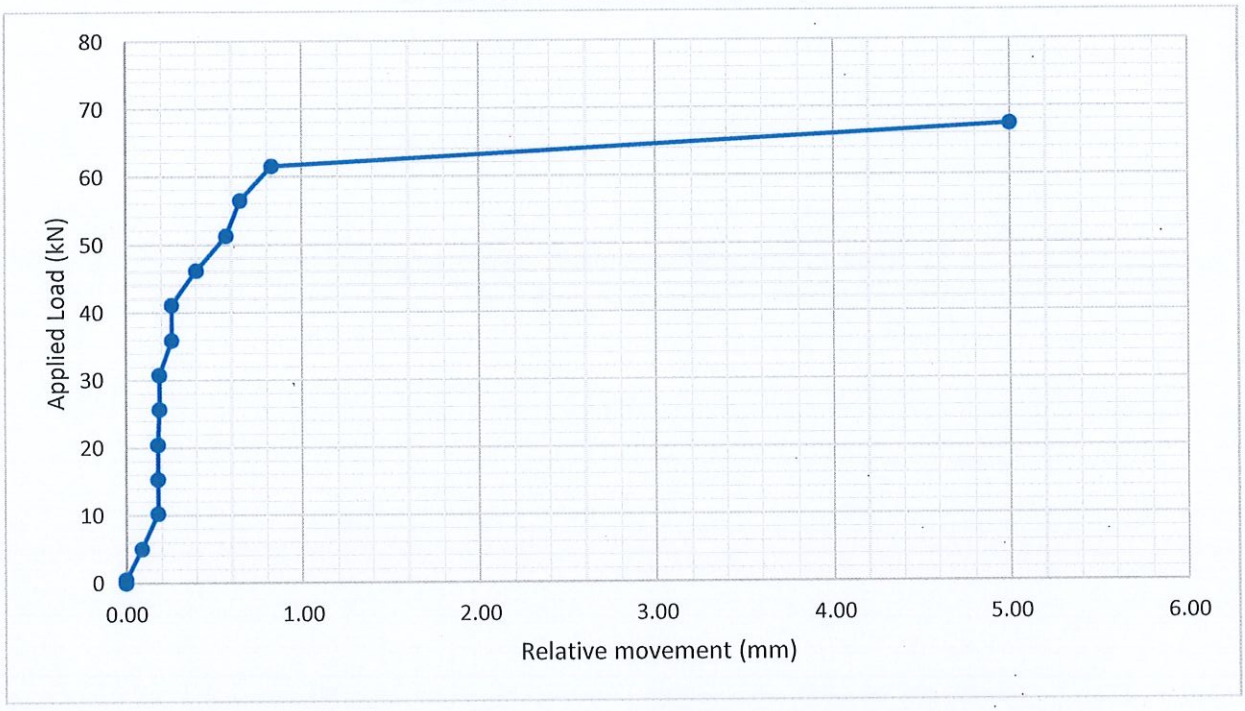
Graphical Presentation (Y12-1)



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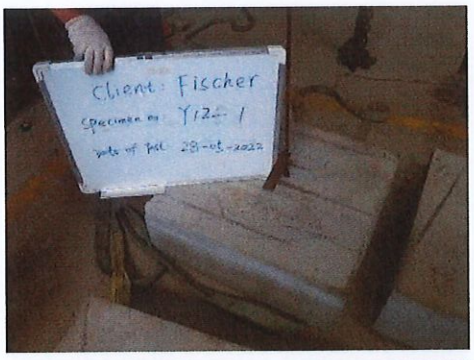

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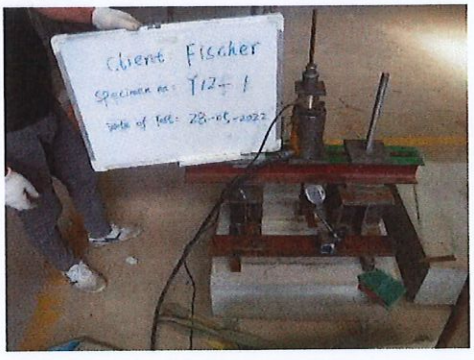

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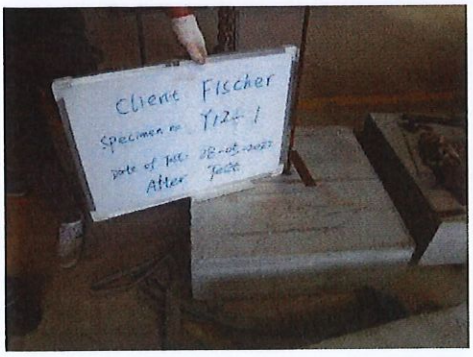

After

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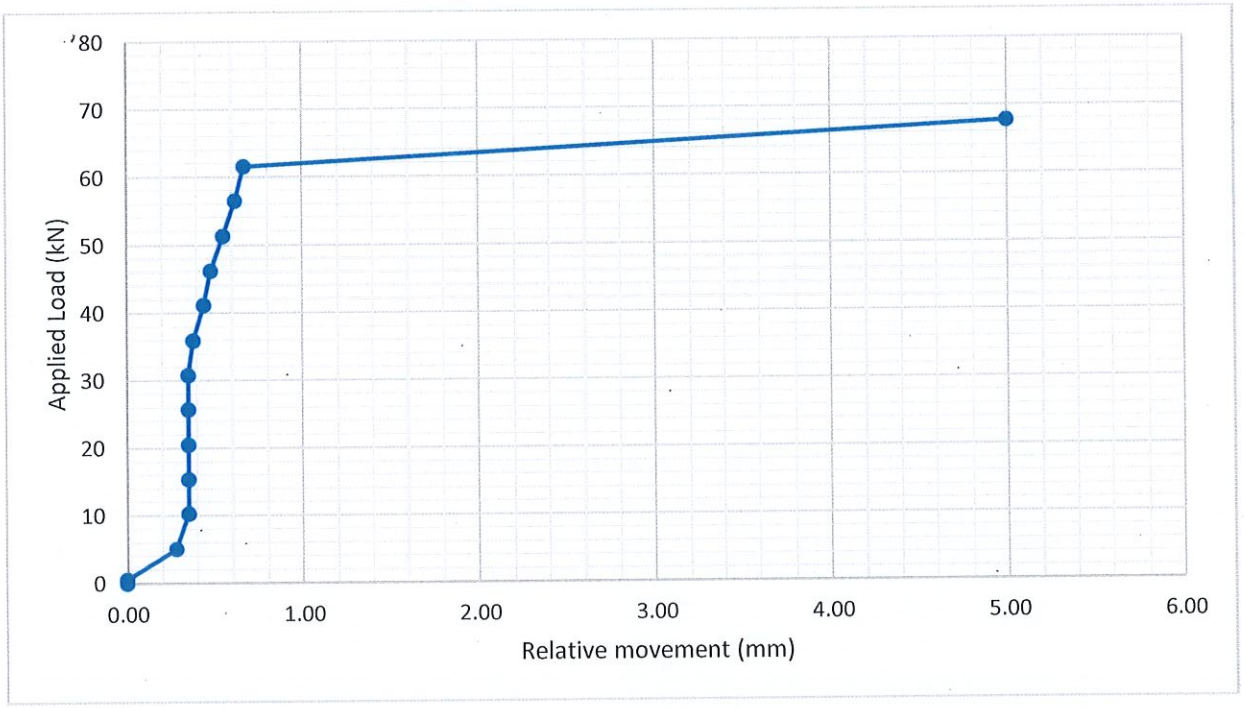
Graphical Presentation (Y12-2)



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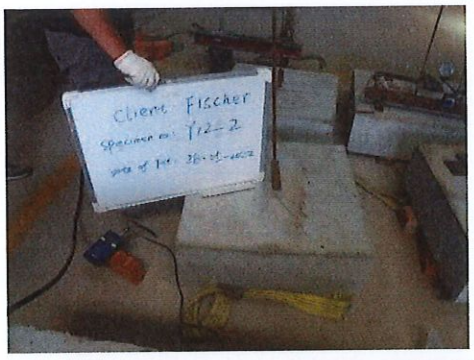

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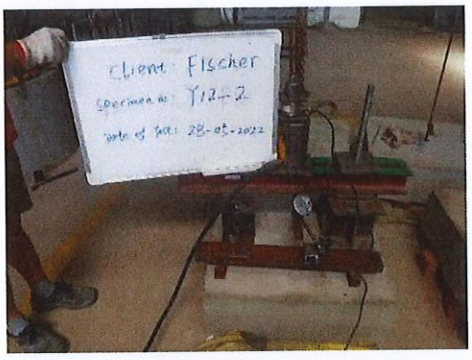

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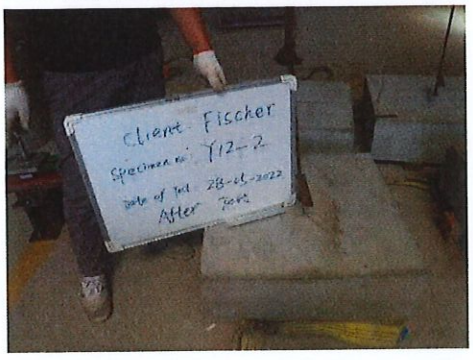

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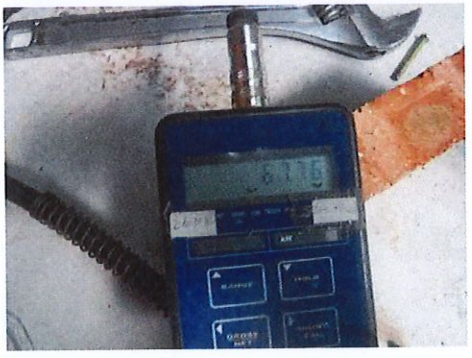

Failure load

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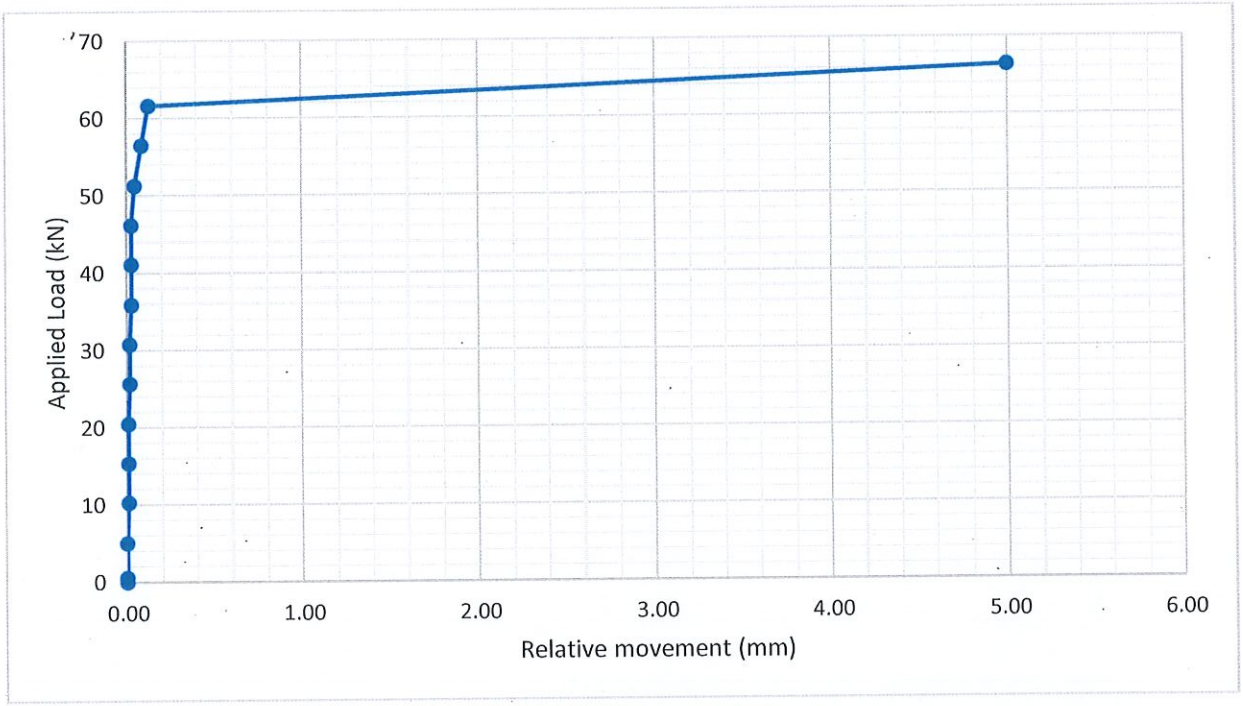
Graphical Presentation (Y12-3)



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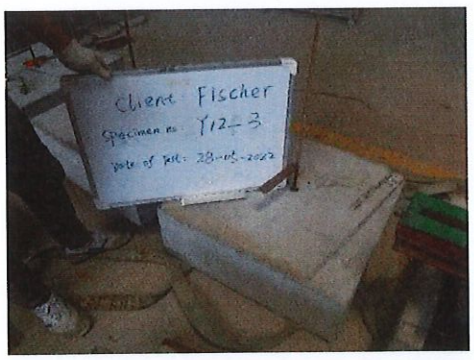

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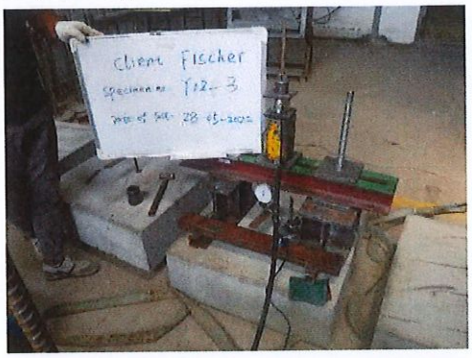

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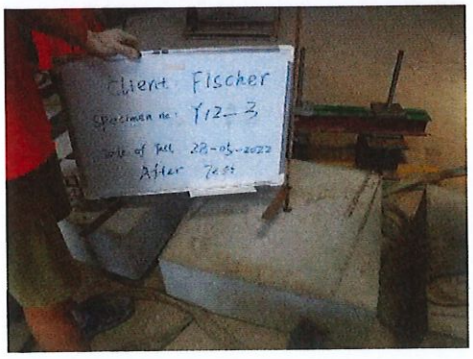

After

Failure load

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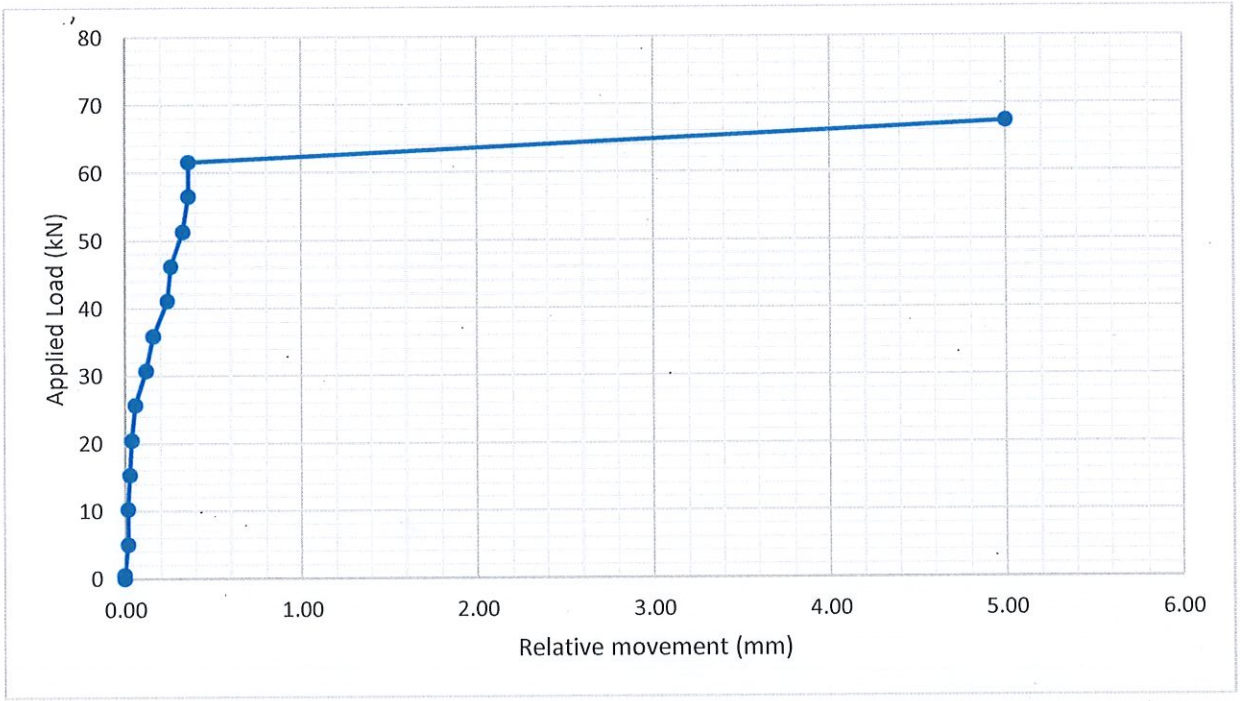
Graphical Presentation (Y12-4)



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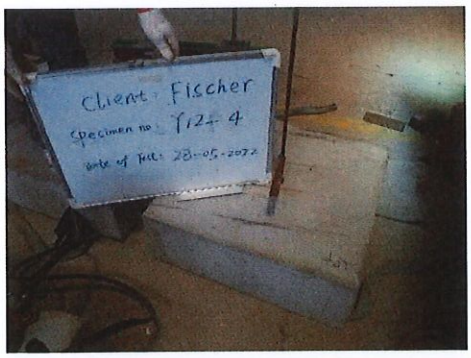

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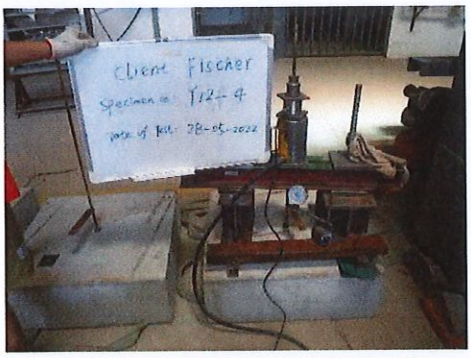

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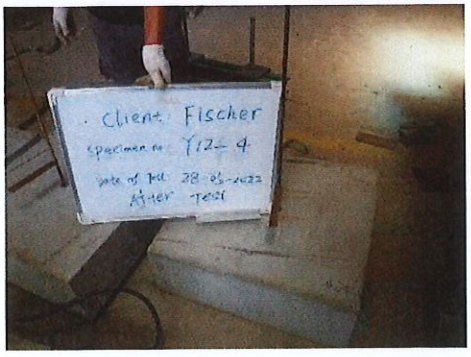

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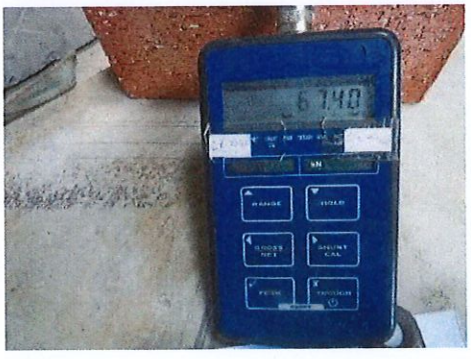

Failure load

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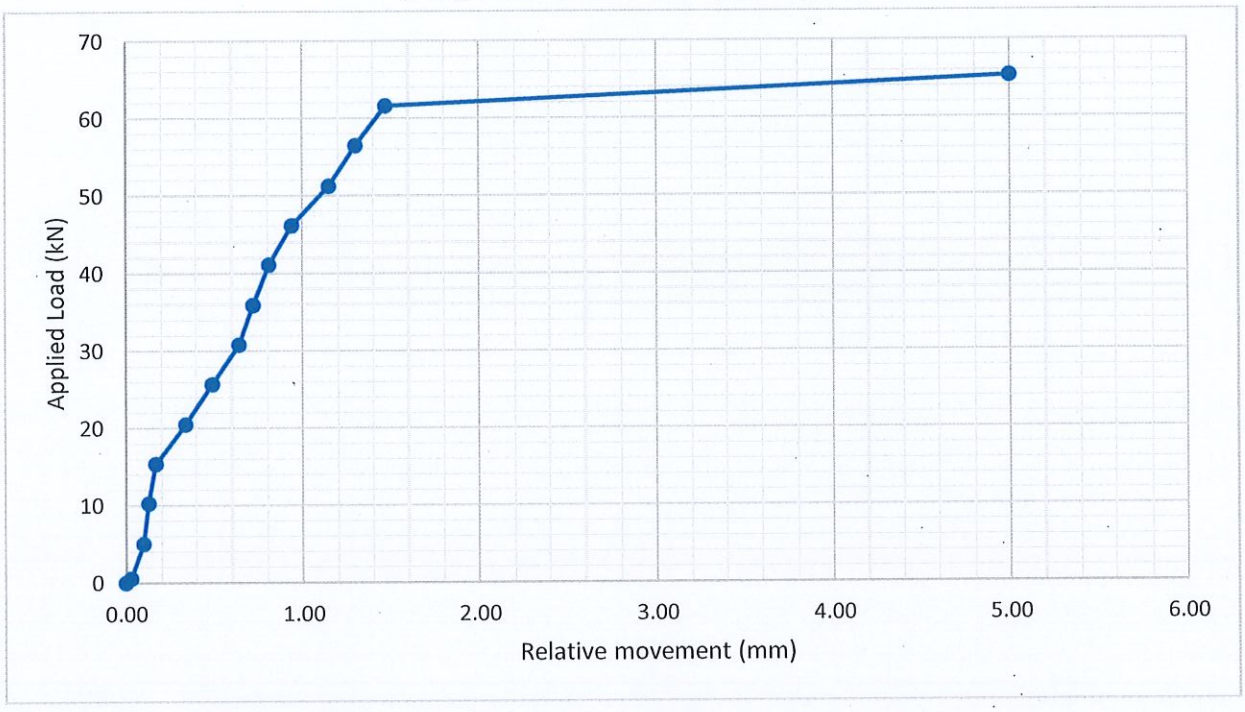
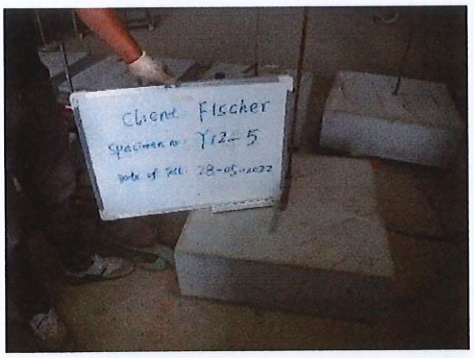
Castco LRN : 220616-2287-6

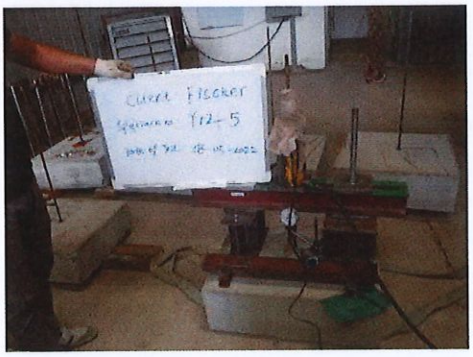
Graphical Presentation (Y12-5)



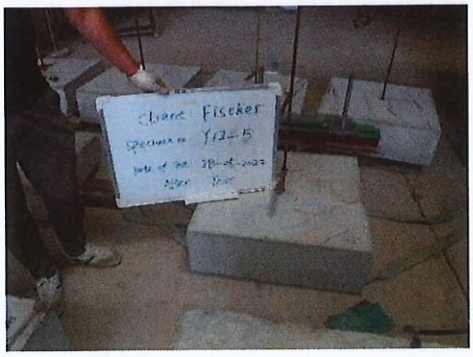
Record Photo (Y12-5)



Before



Setup



After

End of Report

CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LIMITED
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E-mail: info@castco.com.hk Website: www.castco.com.hk

HOKLAS 032 TEST

Test Report
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 20-06-2022

 Castco LRN : 220616-2287-7

Details As Supplied By Customer:

Customer : fischer (Taicang) Fixings Company Limited Customer Ref. No. : - -

Address : Building 1, Suntec Industrial Park ,No.105 Dongcang Road(North), Taicang, Jiangsu P.R.C. Contract No. : - -

Job title : Rebar connection test for fischer - FIS EB II

Test location : Castco Testing Laboratory (Zhongshan)

Sample Description : Bonded fixings (fischer FIS EB II + Y10 Grade 500B)

Total Length : 1000 mm Embedded length in base material : 100 mm

Fixing diameter : 10 mm Fixing maximum dimension : - - mm

Designed maximum test load : 42.4 kN

Base material description : Concrete

Drill hole diameter : 12 mm

Base material cast date : 20-05-2022 Fixing installation date : 25-05-2022

Concrete grade : C25 Concrete age : 8 days Base material dimension : 600 mm (L) × 600 mm (W) × 200 mm (H)

Laboratory Test Results Date of Test : 28-05-2022

A. Loading Method : Incremental Loading

B. Characteristic Dimension "A"

Bonded fixing = the maximum diameter of the fixing or 1/4 of the embedded length, whichever is greater
= 25 mm

C. Position of Fixings

1. Thickness below maximum depth of the fixing or of the hole into which it is inserted; minimum 4A.
   = 100 mm
2. Minimum distance between centres of two fixings.
   = N/A mm
3. Minimum distance of fixing from the edge; minimum 12A.
   = 300 mm

D. Position of Test Equipment

1. Loading frame span width = 8A + 8A = 400 mm

E. Test results

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HOKLAS 032 TEST

Test Report

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[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 20-06-2022

 Castco LRN : 220616-2287-7

Laboratory Test Results

Applied Load (kN)	Relative movement (mm)				
	Sample No. Y10-1	Sample No. Y10-2	Sample No. Y10-3	Sample No. Y10-4	Sample No. Y10-5
0.0	0.00	0.00	0.00	0.00	0.00
Pre-load 0.4	0.08	0.15	0.00	0.29	0.08
3.5	0.09	0.23	0.00	0.35	0.09
7.1	0.10	0.29	0.00	0.44	0.09
10.6	0.11	0.31	0.06	0.49	0.09
14.1	0.11	0.31	0.12	0.54	0.16
17.7	0.11	0.31	0.16	0.54	0.17
21.2	0.11	0.33	0.23	0.55	0.24
24.7	0.11	0.34	0.26	0.55	0.25
28.3	0.11	0.35	0.35	0.55	0.25
31.8	0.11	0.36	0.39	0.58	0.28
35.3	0.12	0.37	0.48	0.58	0.31
38.9	0.16	0.39	0.55	0.76	0.40
42.4	2.21	1.40	0.64	0.77	1.36
The required time period of apply load :					
Actual apply load period (s)					
Within the loading rate yes : ✓ No : ×					
Failure Load (kN)	46.19	43.73	47.45	45.38	44.20
Failure Mode *(can be more than one mode)*	RM	RM	RM	RM	RM
Average Failure Load (kN)	45.39				
Standard Deviation (kN)	1.50				

Failure mode legend :
RM = The fixing has a relative movement exceeding 5 mm past the point at which the applied load reaches a maximum

Remarks :
1. Designed maximum test load and loading method are as specified by customer.
2. Test location is instructed by customer.
3. Test result relates only to the fixing and specimen tested.

Checked by : CHEUNG LAP KEI Assistant Supervisor

Approved Signatory : FONG SAI KIT Technical Manager

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

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HOKLAS 032 TEST

Test Report

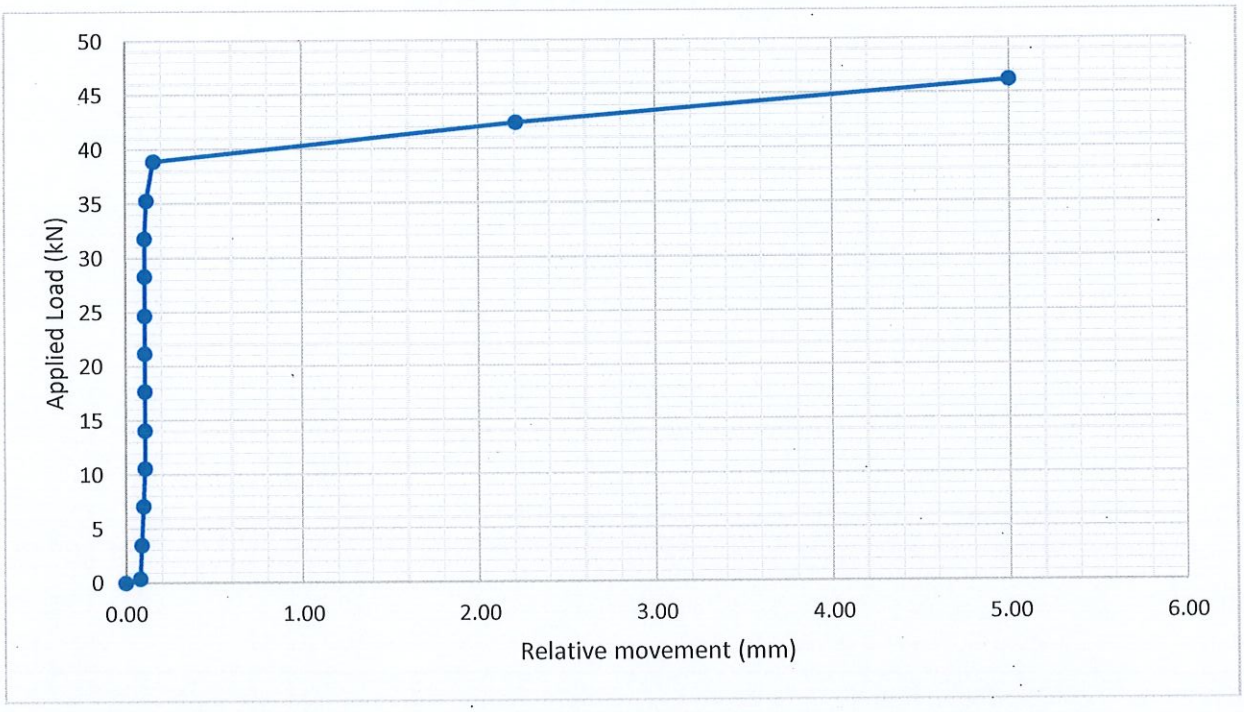
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

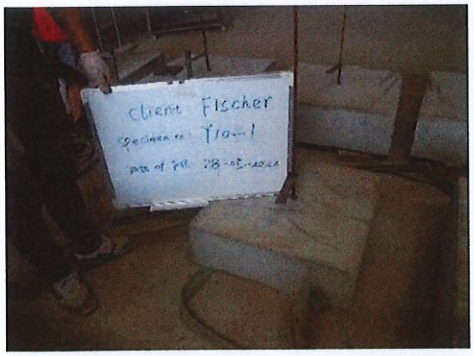
Date of issue : 20-06-2022

Castco LRN : 220616-2287-7

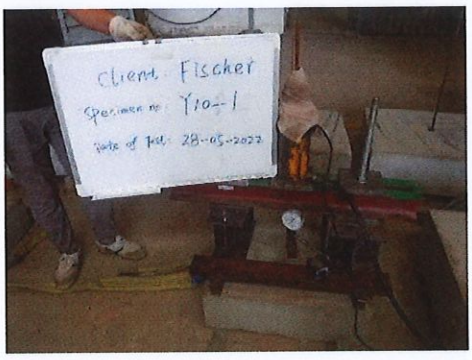
Graphical Presentation (Y10-1)



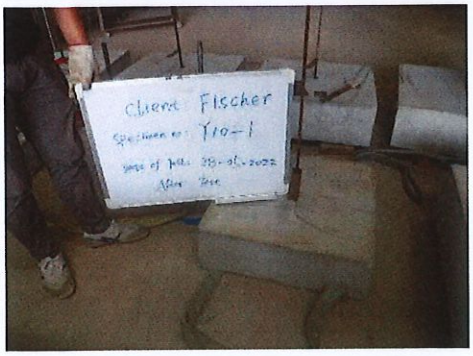
Record Photo (Y10-1)



Before



Setup



After

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HOKLAS 032 TEST

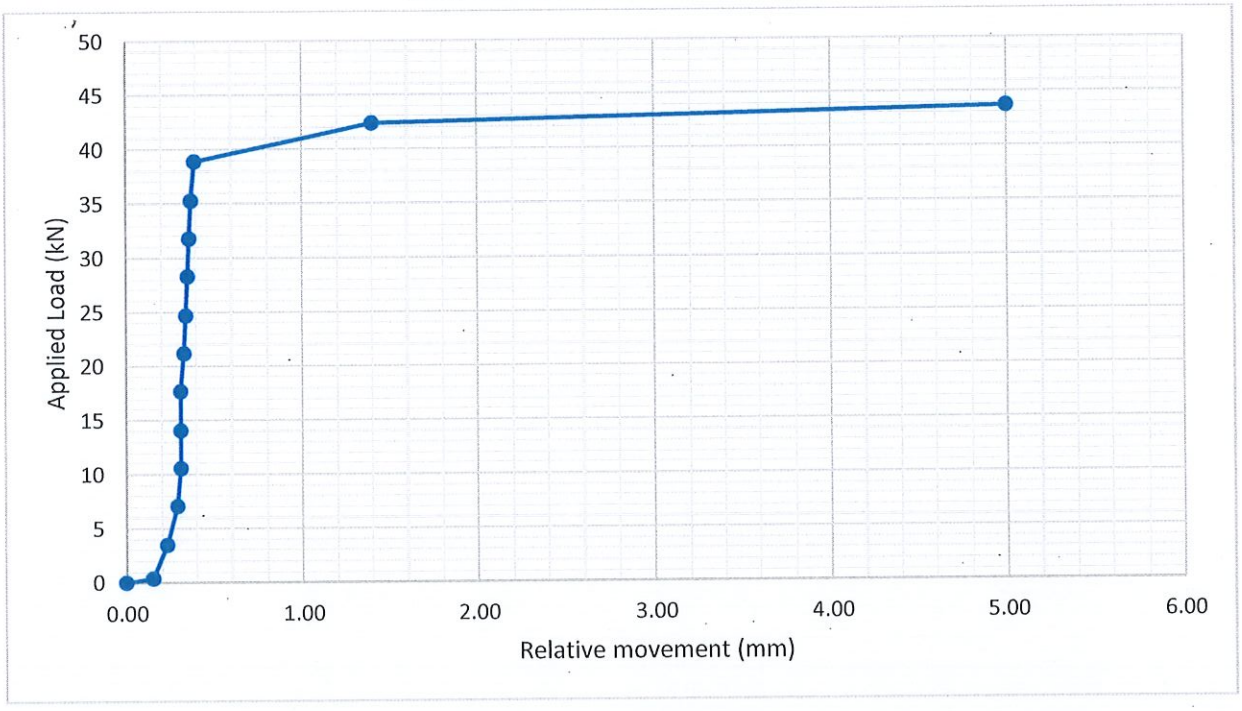
Test Report
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

Date of issue : 20-06-2022

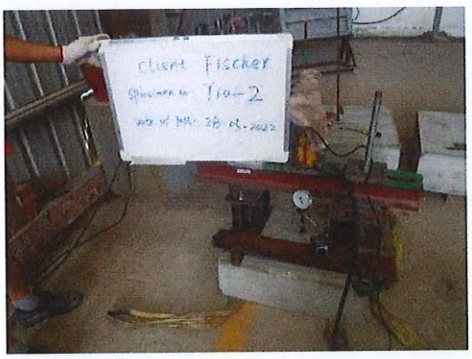
Castco LRN : 220616-2287-7

Graphical Presentation (Y10-2)

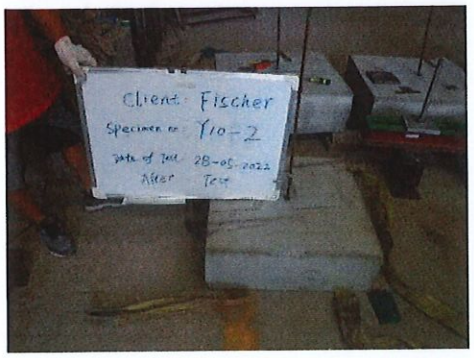


Record Photo (Y10-2)

Before



Setup



After

Failure load

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HOKLAS 032 TEST

Test Report

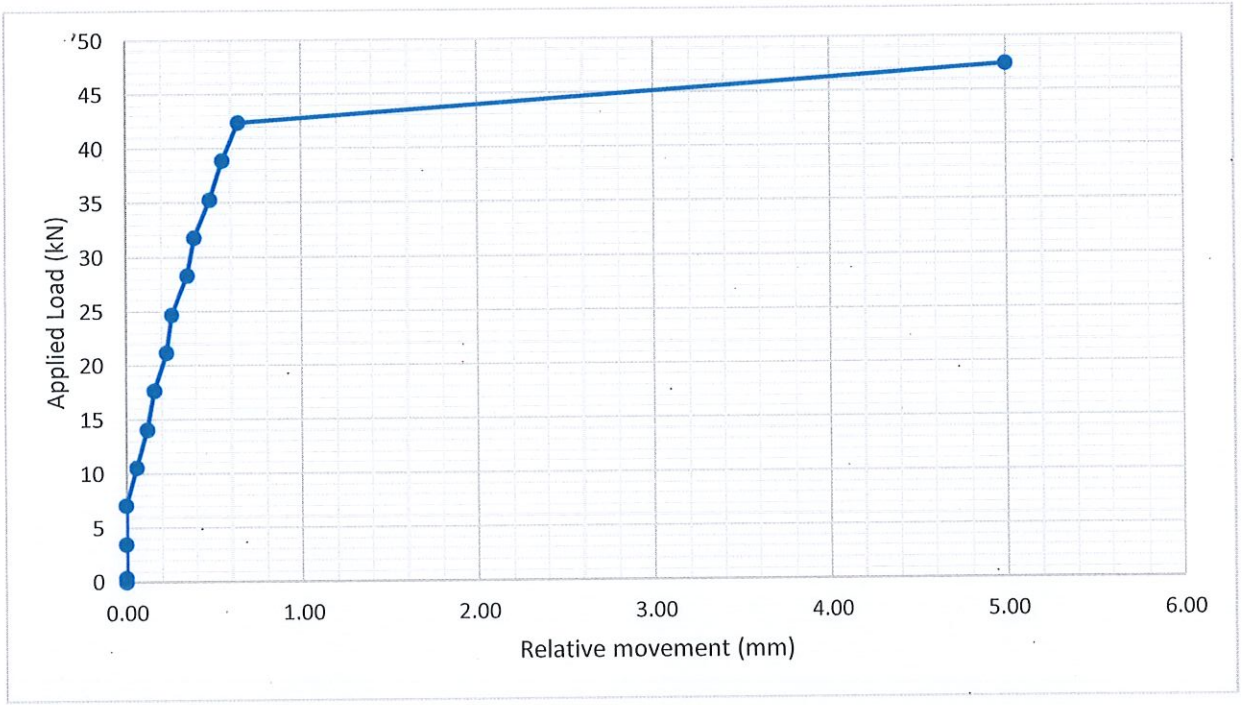
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

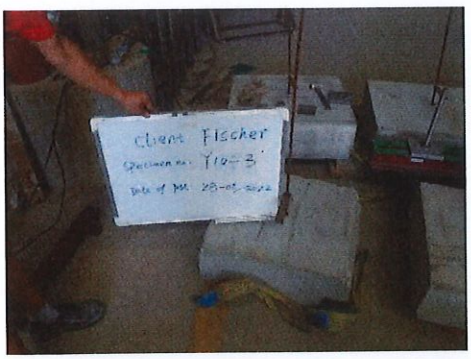
Date of issue : 20-06-2022

Castco LRN : 220616-2287-7

Graphical Presentation (Y10-3)



Record Photo (Y10-3)



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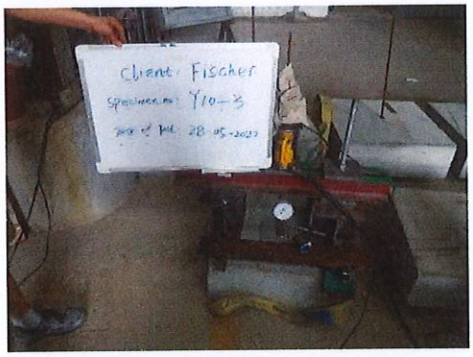
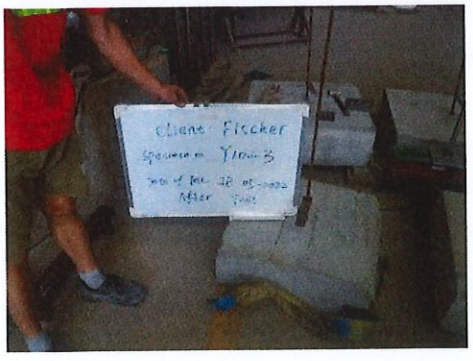
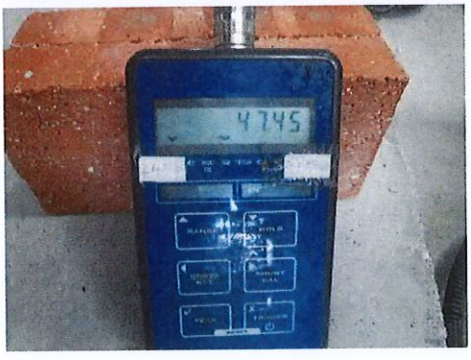


Setup



After



Failure load

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HKLAS 032 TEST

Test Report

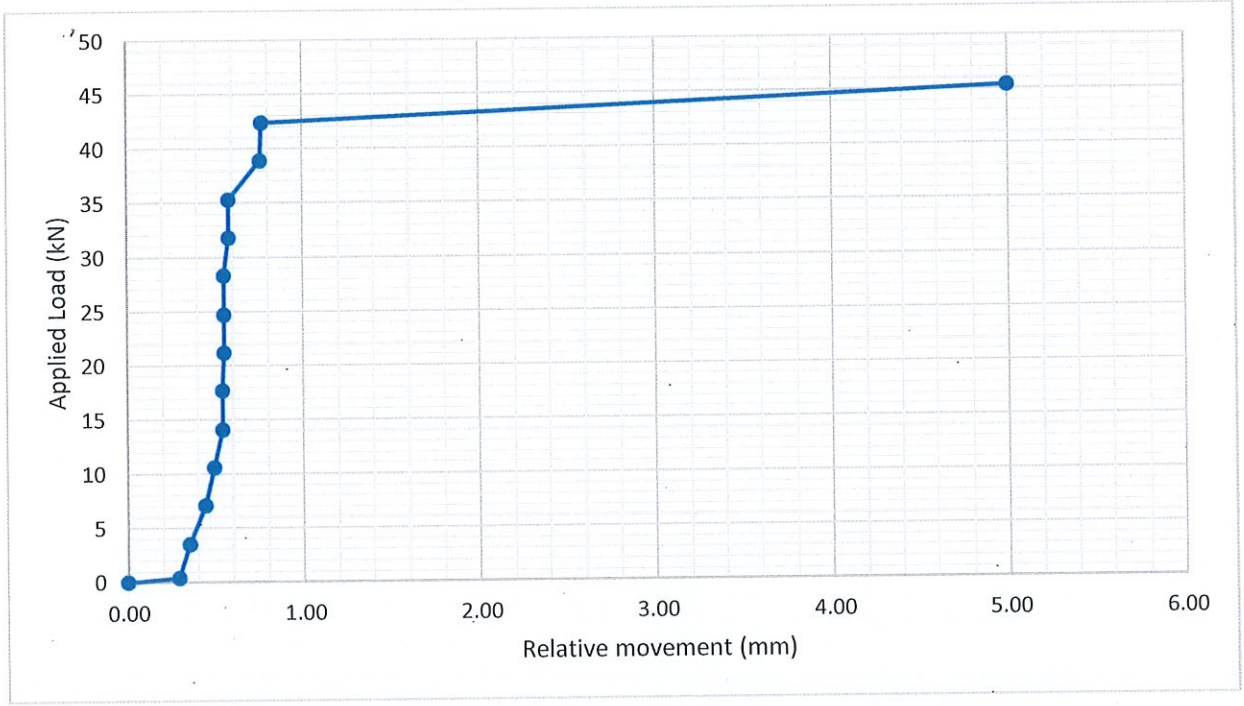
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

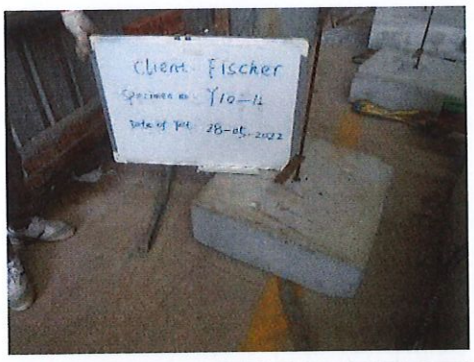
Date of issue : 20-06-2022

Castco LRN : 220616-2287-7

Graphical Presentation (Y10-4)



Record Photo (Y10-4)



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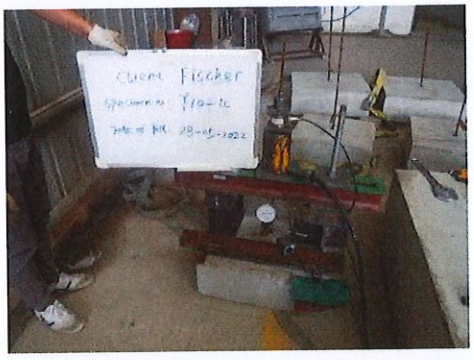

Setup

After

Failure load

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

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HKLAS 032 TEST

Test Report

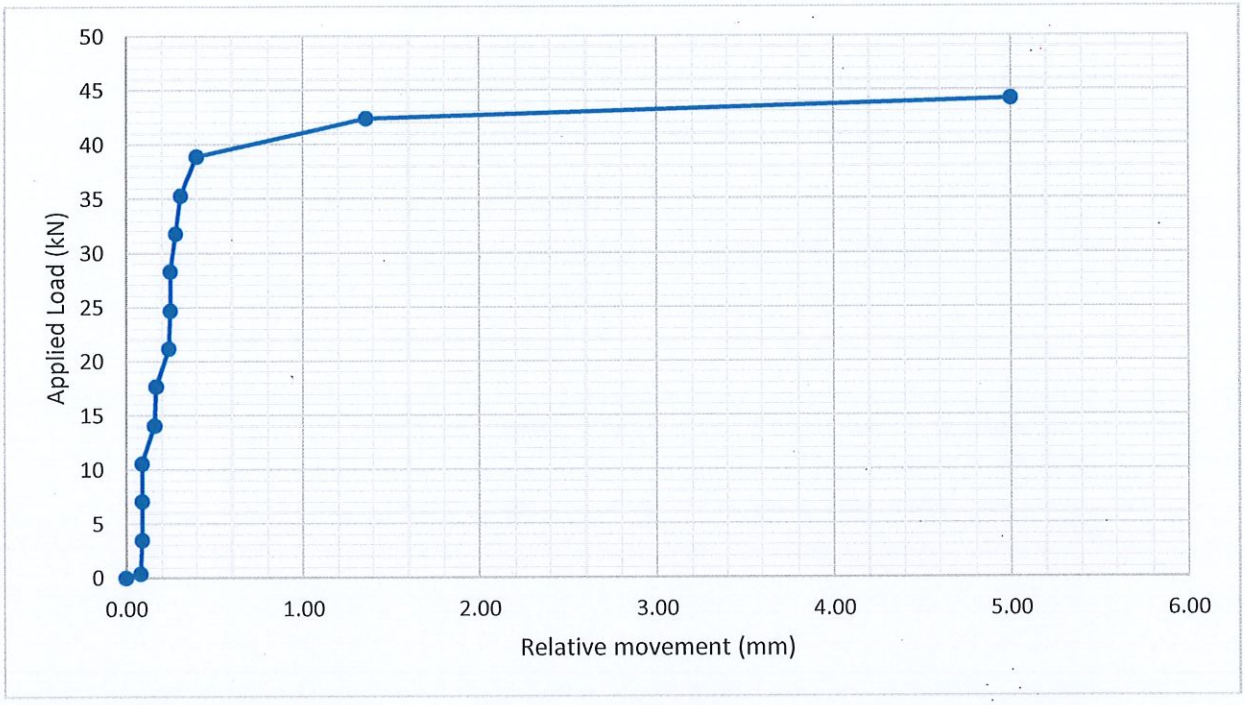
Structural Fixings (Anchor Bolts & Dowel Bars) - Tensile Test of Anchor Bolts and Dowel Bars

[BS5080 : Part 1 : 1993 cl.6, 7.1.2 & 7.1.3 (by continuous and incremental loading)]

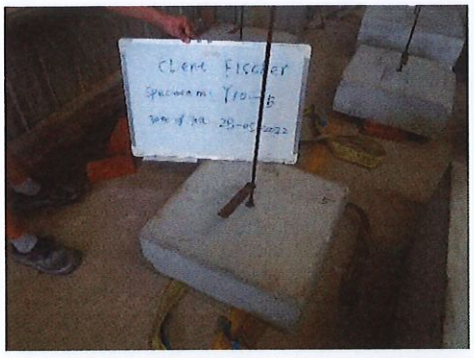
Date of issue : 20-06-2022

Castco LRN : 220616-2287-7

Graphical Presentation (Y10-5)

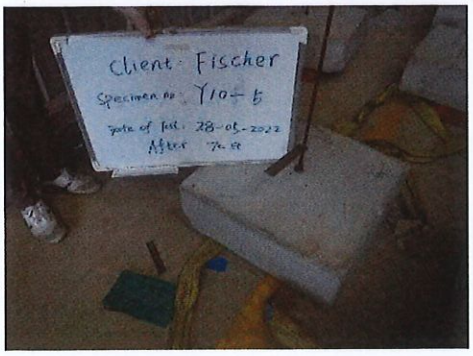


Record Photo (Y10-5)



Before

Setup



After

End of Report

Form No. BD_PROOF LOAD_AB&DB_BS5080 T dd 14/06/2022

CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LIMITED

Appendix B

Test reports of compressive strength of concrete cube

香港粉嶺安居街33號得利中心6樓 • 6/F, Techno Centre, 33, On Kui Street, Fanling, Hong Kong.
香港粉嶺安居街30號新寧中心1樓 • 1/F, Sun Ling Plaza, 30, On Kui Street, Fanling, Hong Kong.
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E-mail: info@castco.com.hk Website: www.castco.com.hk

HOKLAS 032 TEST

Test Report
测试报告
Concrete - Compressive Strength of Concrete Cubes
混凝土抗压强度测定
(CS1: 2010 Section 12)

Date of issue 颁发日期: 20-06-2022

Castco LRN 试验编号 : 220620-2053

1. *Sample details as supplied by customer 客户提供样本资料*:-

Customer 客户 : fischer (Taicang) Fixings Compang Limited
Customer's ref. no. 客户编号 : --
Address 地址: --
Contract no. 合约编号 : --
Job title 项目名称 : Rebar connection test for fischer-FIS EB II
Location in works of concrete batch sampled 施工地点 : --
Concrete mix I.D. 混凝土配合比识别 : S3520
Grade 强度 : 25/20
Designed 设计 / Measured slump 实际塌落度 : --
W/C ratio 水灰比 : 0.42 A/C ratio 集灰比 : --
Cement content 水泥用量 (OPC 普通水泥/PFA 飞灰) : 420/0 kg/m³
Supplier 供应商 : 中山市坚正水泥预制件有限公司
Plant 厂房 : 广东省中山市火炬开发区横门大桥脚
Source of coarse aggregate 粗骨料来源 : 江门市玮泰石业有限公司
Cement brand 水泥品牌 : 海螺牌 P.II 52.5R
Source of fine aggregate 细骨料来源 : 江门市玮泰石业有限公司
Admixture brand 外加剂品牌 : --
Dosage 外加剂用量 : -- ml/m³
Date of sampling 取样日期: 20-05-2022 Time of adding water to cement 水泥加水时间: 9:37 a.m Place of sampling 取样地点: 搅拌站
Date / Time of making cubes 试块制造日期及时间: --/ 10:00
Place of making cubes 试块制造地点: 搅拌站
Name of person making cubes 试块制造人员: 黄志强
Method of compaction 压实方法: 震台
Nominal size (mm) 尺寸 (毫米): 100 mm
Test at 测试于: 8 days
Site curing method 工地养护方式: 水池养护
Curing temp.(max/min.) 养护最高 / 最低温度: 29.8 °C / 28.0 °C

2. *Reports of sampling, slump test, cube making and curing 采样、塌落度测试、试块制造和养护证书*:-

A report of sampling, slump test, cube make and curing 采样, 塌落度测试, 试块制造和养护证书
[ ] is available and a copy is attached 有提供并附有副本 / [X] is not available 无提供

3. *Laboratory test results 实验室测试结果*:-

Date received 试块接收日期 : 27-05-2022 Date of test 测试日期 : 28-05-2022 Age at test 测试龄期: 8 days
Laboratory curing method 实验室养护方法: WATER TANK Moisture condition at test 测试时湿度: WET
Tank no. 养护池编号: ZS-C12-002 Temperature 温度 : Max 最高 30°C / Min. 最低 24°C

Cube Mark 试块编号		Y10-Y20 A	Y10-Y20 B	--	--	--	--
Mould no. 试模号码		--	--	--	--	--	--
Mass in air 空气中重量 (kg 公斤)		2.336	2.327	--	--	--	--
Mass in water 水中重量 (kg 公斤)		--	--	--	--	--	--
Measured dimensions 量度尺寸 (mm 毫米)	Height 高	100.0	100.1	--	--	--	--
	Width 阔	99.8	99.7	--	--	--	--
	Length 长	99.7	99.9	--	--	--	--
Saturated Density 饱和密度 (kg/m³)	Vol. by calculation 计算法	2350	2330	--	--	--	--
	Vol. by water disp. 排水法	--	--	--	--	--	--
Load at failure 碎裂荷重 kN		252.3	251.3	--	--	--	--
Compressive strength 抗压强度 MPa		25.3	25.2	--	--	--	--
Observation code 观察情况		K	K	--	--	--	--

Observation Legend 观察情况说明: -
A - Dry on Receipt 干燥 B - Irregular shape 不规则形状 C - Damaged corners 掉角 D - Damaged edges 掉边 E - Oversize 过大 F - Undersize 过小
G - Segregation 分离 H - Honeycombing 蜂窝 I - Voids 空洞 J - Abnormal fracture 异常碎裂 K- Satisfactory failures 正常碎裂

Remark(s) 备注:
1. Test results relate only to the specimen tested. 此测试结果只与受测试试件有关。
2. Laboratory curing commenced from date cubes received. 实验室试块接收后马上进行养护。
3.The time of water added to cement has not been given by customer, the exact age at test is therefore not determined to Cl.10.4 of CS1: 2010.
如客户没有说明加水进英泥的时间，测试龄期就不能根据CS1: 2010 Cl. 10.4 判定。
4. Test location Torch Development Zone, Zhongshan City, China.

Checked by
查核员: TANG SIU KEUNG
Assistant Technical Manager

Approved Signatory
核准签署: LEUNG MAN YUI
Assistant Technical Manager

End of Report

CASTCO

佳力高試驗中心有限公司
CASTCO TESTING CENTRE LIMITED

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HKLAS 032 TEST

Test Report
测试报告
Concrete - Compressive Strength of Concrete Cubes
混凝土抗压强度测定
(CS1: 2010 Section 12)

Date of issue 颁发日期: 20-06-2022

Castco LRN 试验编号 : 220620-2210

1. *Sample details as supplied by customer 客户提供样本资料:-*

Customer 客户 : fischer (Taicang) Fixings Compang Limited
Customer's ref. no. 客户编号 : --
Address 地址: --
Contract no. 合约编号 : --
Job title 项目名称 : Rebar connection test for fischer-FIS EB II
Location in works of concrete batch sampled 施工地点 : --
Concrete mix I.D. 混凝土配合比识别 : S3520
Grade 强度 : 25/20
Designed 设计 / Measured slump 实际塌落度 : --
W/C ratio 水灰比 : 0.42 A/C ratio 集灰比 : --
Cement content 水泥用量 (OPC 普通水泥/PFA 飞灰) : 420/0 kg/m³
Supplier 供应商 : 中山市坚正水泥预制件有限公司
Plant 厂房 : 广东省中山市火炬开发区横门大桥脚
Source of coarse aggregate 粗骨料来源 : 江门市玮泰石业有限公司
Cement brand 水泥品牌 : 海螺牌 P.II 52.5R
Source of fine aggregate 细骨料来源 : 江门市玮泰石业有限公司
Admixture brand 外加剂品牌 : --
Dosage 外加剂用量 : -- ml/m³
Date of sampling 取样日期: 27-05-2022 Time of adding water to cement 水泥加水时间: 2:31 p.m Place of sampling 取样地点: 搅拌站
Date / Time of making cubes 试块制造日期及时间: --/ 15:00
Place of making cubes 试块制造地点: 搅拌站
Name of person making cubes 试块制造人员: 黄志强
Method of compaction 压实方法: 震台
Nominal size (mm) 尺寸 (毫米): 100 mm
Test at 测试于: 8 days
Site curing method 工地养护方式: 水池养护
Curing temp.(max/min.) 养护最高 / 最低温度: 29.8 °C / 28.0 °C

2. *Reports of sampling, slump test, cube making and curing 采样, 塌落度测试, 试块制造和养护证书:-*

A report of sampling, slump test, cube make and curing 采样, 塌落度测试, 试块制造和养护证书
[ ] is available and a copy is attached 有提供并附有副本 / [X] is not available 无提供

3. *Laboratory test results 实验室测试结果:-*

Date received 试块接收日期 : 02-06-2022 Date of test 测试日期 : 04-06-2022 Age at test 测试龄期: 8 days
Laboratory curing method 实验室养护方法: WATER TANK Moisture condition at test 测试时湿度: WET
Tank no. 养护池编号: ZS-C12-002 Temperature 温度 : Max 最高 30°C / Min. 最低 24°C

Cube Mark 试块编号		Y25 A	Y25 B	--	--	--	--
Mould no. 试模号码		--	--	--	--	--	--
Mass in air 空气中重量 (kg 公斤)		2.327	2.343	--	--	--	--
Mass in water 水中重量 (kg 公斤)		--	--	--	--	--	--
Measured dimensions 量度尺寸 (mm 毫米)	Height 高	99.8	100.1	--	--	--	--
	Width 阔	99.7	100.3	--	--	--	--
	Length 长	100.2	99.8	--	--	--	--
Saturated Density 饱和密度 (kg/m³)	Vol. by calculation 计算法	2330	2340	--	--	--	--
	Vol. by water disp. 排水法	--	--	--	--	--	--
Load at failure 碎裂荷重 kN		256.4	261.4	--	--	--	--
Compressive strength 抗压强度 MPa		25.8	26.0	--	--	--	--
Observation code 观察情况		K	K	--	--	--	--

Observation Legend 观察情况说明: -
A - Dry on Receipt 干燥 B - Irregular shape 不规则形状 C - Damaged corners 掉角 D - Damaged edges 掉边 E - Oversize 过大 F - Undersize 过小
G - Segregation 分离 H - Honeycombing 蜂窝 I - Voids 空洞 J - Abnormal fracture 异常碎裂 K- Satisfactory failures 正常碎裂

Remark(s) 备注:
1. Test results relate only to the specimen tested. 此测试结果只与受测试试件有关。
2. Laboratory curing commenced from date cubes received. 实验室试块接收后马上进行养护。
3. The time of water added to cement has not been given by customer, the exact age at test is therefore not determined to Cl.10.4 of CS1: 2010.
如客户没有说明加水进英泥的时间，测试龄期就不能根据CS1: 2010 Cl. 10.4 判定。
4. Test location Torch Development Zone, Zhongshan City, China.

Checked by 查核员: TANG SIU KEUNG Assistant Technical Manager
Approved Signatory 核准签署: LEUNG MAN YUI Assistant Technical Manager

End of Report

CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LIMITED
香港粉嶺安居街33號 33, On Kui Street, Fanling, Hong Kong. Tel : 2597 8333
香港粉嶺安全街29A號 29A, On Chuen Street, Fanling, Hong Kong. Fax: 2597 8399
E-mail: info@castco.com.hk Website: www.castco.com.hk

HKLAS 032 TEST

Test Report
测试报告
Concrete - Compressive Strength of Concrete Cubes
混凝土抗压强度测定
(CS1: 2010 Section 12)

Date of issue 颁发日期: 20-06-2022

Castco LRN 试验编号 : 220620-2218

1. *Sample details as supplied by customer 客户提供样本资料:-*

Customer 客户 : fischer (Taicang) Fixings Compang Limited
Customer's ref. no. 客户编号 : --
Address 地址: --
Contract no. 合约编号 : --
Job title 项目名称 : Rebar connection test for fischer-FIS EB II
Location in works of concrete batch sampled 施工地点 : --
Concrete mix I.D. 混凝土配合比识别 : S3520
Grade 强度 : 25/20
Designed 设计 / Measured slump 实际塌落度 : --
W/C ratio 水灰比 : 0.42 A/C ratio 集灰比 : --
Cement content 水泥用量 (OPC 普通水泥/PFA 飞灰) : 420/0 kg/m³
Supplier 供应商 : 中山市坚正水泥预制件有限公司
Plant 厂房 : 广东省中山市火炬开发区横门大桥脚
Source of coarse aggregate 粗骨料来源 : 江门市玮泰石业有限公司
Cement brand 水泥品牌 : 海螺牌 P.II 52.5R
Source of fine aggregate 细骨料来源 : 江门市玮泰石业有限公司
Admixture brand 外加剂品牌 : --
Dosage 外加剂用量 : -- ml/m³
Date of sampling 取样日期: 27-05-2022 Time of adding water to cement 水泥加水时间: 2:31 p.m Place of sampling 取样地点: 搅拌站
Date / Time of making cubes 试块制造日期及时间: --/ 15:00
Place of making cubes 试块制造地点: 搅拌站
Name of person making cubes 试块制造人员: 黄志强
Method of compaction 压实方法: 震台
Nominal size (mm) 尺寸 (毫米): 100 mm
Test at 测试于: 14 days
Site curing method 工地养护方式: 水池养护
Curing temp.(max/min.) 养护最高 / 最低温度: 29.8 °C / 28.0 °C

2. *Reports of sampling, slump test, cube making and curing 采样, 塌落度测试, 试块制造和养护证书:-*

A report of sampling, slump test, cube make and curing 采样, 塌落度测试, 试块制造和养护证书
[ ] is available and a copy is attached 有提供并附有副本 / [X] is not available 无提供

3. *Laboratory test results 实验室测试结果:-*

Date received 试块接收日期 : 02-06-2022 Date of test 测试日期 : 10-06-2022 Age at test 测试龄期: 14 days
Laboratory curing method 实验室养护方法: WATER TANK Moisture condition at test 测试时湿度: WET
Tank no. 养护池编号: ZS-C12-002 Temperature 温度 : Max 最高 30°C / Min. 最低 24°C

Cube Mark 试块编号		Y32 A	Y32 B	--	--	--	--
Mould no. 试模号码		--	--	--	--	--	--
Mass in air 空气中重量 (kg 公斤)		2.341	2.330	--	--	--	--
Mass in water 水中重量 (kg 公斤)		--	--	--	--	--	--
Measured dimensions 量度尺寸 (mm 毫米)	Height 高	100.0	100.2	--	--	--	--
	Width 阔	99.8	100.1	--	--	--	--
	Length 长	100.3	99.7	--	--	--	--
Saturated Density 饱和密度 (kg/m³)	Vol. by calculation 计算法	2340	2330	--	--	--	--
	Vol. by water disp. 排水法	--	--	--	--	--	--
Load at failure 碎裂荷重 kN		286.8	286.3	--	--	--	--
Compressive strength 抗压强度 MPa		28.7	28.5	--	--	--	--
Observation code 观察情况		K	K	--	--	--	--

Observation Legend 观察情况说明: -
A - Dry on Receipt 干燥 B - Irregular shape 不规则形状 C - Damaged corners 掉角 D - Damaged edges 掉边 E - Oversize 过大 F - Undersize 过小
G - Segregation 分离 H - Honeycombing 蜂窝 I - Voids 空洞 J - Abnormal fracture 异常碎裂 K- Satisfactory failures 正常碎裂

Remark(s) 备注:
1. Test results relate only to the specimen tested. 此测试结果只与受测试试件有关。
2. Laboratory curing commenced from date cubes received. 实验室试块接收后马上进行养护。
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如客户没有说明加水进英泥的时间，测试龄期就不能根据CS1: 2010 Cl. 10.4 判定。
4. Test location Torch Development Zone, Zhongshan City, China.

Checked by 查核员: TANG SIU KEUNG Assistant Technical Manager
Approved Signatory 核准签署: LEUNG MAN YUI Assistant Technical Manager

End of Report

CASTCO

佳力高試驗中心有限公司
CASTCO TESTING CENTRE LIMITED

香港粉嶺安居街33號 33, On Kui Street, Fanling, Hong Kong. Tel : 2597 8333
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HOKLAS 032 TEST

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(CS1: 2010 Section 12)

Date of issue 颁发日期: 20-06-2022
Page 第 1 页 of 共 1 pages 页

Castco LRN 试验编号 : 220620-2231

1. *Sample details as supplied by customer 客户提供样本资料:-*

Customer 客户 : fischer (Taicang) Fixings Compang Limited
Customer's ref. no. 客户编号 : --
Address 地址: --
Contract no. 合约编号 : --
Job title 项目名称 : Rebar connection test for fischer-FIS EB II
Location in works of concrete batch sampled 施工地点 : --
Concrete mix I.D. 混凝土配合比识别 : S3520
Grade 强度 : 25/20
Designed 设计 / Measured slump 实际塌落度 : --
W/C ratio 水灰比 : 0.42 A/C ratio 集灰比 : --
Cement content 水泥用量 (OPC 普通水泥/PFA 飞灰) : 420/0 kg/m³
Supplier 供应商 : 中山市坚正水泥预制件有限公司
Plant 厂房 : 广东省中山市火炬开发区横门大桥脚
Source of coarse aggregate 粗骨料来源 : 江门市玮泰石业有限公司
Cement brand 水泥品牌 : 海螺牌 P.II 52.5R
Source of fine aggregate 细骨料来源 : 江门市玮泰石业有限公司
Admixture brand 外加剂品牌 : --
Dosage 外加剂用量 : -- ml/m³
Date of sampling 取样日期: 05-06-2022 Time of adding water to cement 水泥加水时间: 3:15 p.m Place of sampling 取样地点: 搅拌站
Date / Time of making cubes 试块制造日期及时间: --/ 3:30
Place of making cubes 试块制造地点: 搅拌站
Name of person making cubes 试块制造人员: 黄志强
Method of compaction 压实方法: 震台
Nominal size (mm) 尺寸 (毫米): 100 mm
Test at 测试于: 8 days
Site curing method 工地养护方式: 水池养护
Curing temp.(max/min.) 养护最高 / 最低温度: 29.8 °C / 28.0 °C

2. *Reports of sampling, slump test, cube making and curing 采样，塌落度测试，试块制造和养护证书:-*

A report of sampling, slump test, cube make and curing 采样, 塌落度测试, 试块制造和养护证书
[ ] is available and a copy is attached 有提供并附有副本 / [X] is not available 无提供

3. *Laboratory test results 实验室测试结果:-*

Date received 试块接收日期 : 11-06-2022 Date of test 测试日期 : 13-06-2022 Age at test 测试龄期: 8 days
Laboratory curing method 实验室养护方法: WATER TANK Moisture condition at test 测试时湿度: WET
Tank no. 养护池编号: ZS-C12-002 Temperature 温度 : Max 最高 30°C / Min. 最低 24°C

Cube Mark 试块编号		Y40 A	Y40 B	--	--	--	--
Mould no. 试模号码		--	--	--	--	--	--
Mass in air 空气中重量 (kg 公斤)		2.340	2.329	--	--	--	--
Mass in water 水中重量 (kg 公斤)		--	--	--	--	--	--
Measured dimensions 量度尺寸 (mm 毫米)	Height 高	100.2	100.1	--	--	--	--
	Width 阔	99.7	99.9	--	--	--	--
	Length 长	100.3	100.1	--	--	--	--
Saturated Density 饱和密度 (kg/m³)	Vol. by calculation 计算法	2340	2330	--	--	--	--
	Vol. by water disp. 排水法	--	--	--	--	--	--
Load at failure 碎裂荷重 kN		279.0	274.7	--	--	--	--
Compressive strength 抗压强度 MPa		27.9	27.5	--	--	--	--
Observation code 观察情况		K	K	--	--	--	--

Observation Legend 观察情况说明: -
A - Dry on Receipt 干燥 B - Irregular shape 不规则形状 C - Damaged corners 掉角 D - Damaged edges 掉边 E - Oversize 过大 F - Undersize 过小
G - Segregation 分离 H - Honeycombing 蜂窝 I - Voids 空洞 J - Abnormal fracture 异常碎裂 K- Satisfactory failures 正常碎裂

Remark(s) 备注:
1. Test results relate only to the specimen tested. 此测试结果只与受测试试件有关。
2. Laboratory curing commenced from date cubes received. 实验室试块接收后马上进行养护。
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如客户没有说明加水进英泥的时间，测试龄期就不能根据CS1: 2010 Cl. 10.4 判定。
4. Test location Torch Development Zone, Zhongshan City, China.

Checked by
查核员: TANG SIU KEUNG Assistant Technical Manager

Approved Signatory
核准签署: LEUNG MAN YUI Assistant Technical Manager

End of Report

CASTCO
佳力高試驗中心有限公司
CASTCO TESTING CENTRE LIMITED

Appendix C

Stocklist certificates and Mill test certificates of steel bar

香港粉嶺安居街33號得利中心6樓 • 6/F, Techno Centre, 33, On Kui Street, Fanling, Hong Kong.
香港粉嶺安居街30號新寧中心1樓 • 1/F, Sun Ling Plaza, 30, On Kui Street, Fanling, Hong Kong.
香港粉嶺安全街29A號 • 29A, On Chuen Street, Fanling, Hong Kong.
Tel: 2597 8333 Fax: 2597 8399 E-mail: info@castco.com.hk Website: www.castco.com.hk

華勝建築工程材料有限公司
Ever Success Construction Eng. Materials Ltd

ISO 9001 : 2015
Certificate No.: CC 6416
ISO 9001 : 2015
Certificate No.: CC 6416

Certification No. : 038197

Issue Date : 12 Apr., 2022

STOCKIST CERTIFICATE

Client : Castco Testing Centre Ltd.

Project Location : 29A, On Chuen Street Fanling, Hong Kong

Delivery No. : D22769

Date of Delivery : On/abt. 11 Apr., 2022

Product Description : Deformed High Yield Steel Bars in Grade 500B

Classification of Reinforcement : Class 2 in Accordance with CS2:2012 or BS4449:2005

We wish to advice that the steel bars are delivered to above job site as listed below:

Lot No.	Size	Qty. (MT)	Pattern	Origin	Mill's Name	Mill's ISO Cert. No.	Test Cert No.
KCH-0388	Y10mm x 12M	0.007	CHA86	China	Jiangsu Yonggang Group Co., Ltd.	02216Q2030R6L	180828C00403
DUM18B/21/21-118B	Y12mm x 12M	0.009	VNM 4	Vietnam	HOA PHAT HAI DUONG STEEL JOINT STOCK COMPANY	HT 3986/2.20.17	0375 - 0621
DUM12B/21/21-112B	Y16mm x 12M	0.019	INA 2	India	JINDAL STEEL & POWER LTD.	FM 620708	20210145
KCH-0329	Y20mm x 12M	0.030	CHA 155	China	Shandong Laigang Yongfeng Steel Corp.	02215Q2090R3L	180201H0401

For and on behalf of
Ever Success Constr. Eng. Materials Ltd.

EVER SUCCESS CONSTR. ENG. MATERIALS LTD. 華勝 證書專用

Authorized Operations Manager

DD 77, Lot 1507, Ping Che, Fanling, N.T. Tel: 23424899 Fax: 23424299 e-mail:ever_success@hotmail.com

DUM04B/20/20-204B	Y25mm x 12M	0.058	RUS 5	Russia	JSC "EVRAZ CONSOLIDATED WEST SIBERIAN METALLURGICAL PLANT"	RU 228098Q-U	DB65910VSC-PF
DUM14B/20 20-114B	Y32mm x 12M	0.114	RUS 5	Russia	JSC "EVRAZ CONSOLIDATED WEST SIBERIAN METALLURGICAL PLANT"	RU 228098Q-U	DE67797VSC-SH
DUM01B/18/18-101B	Y40mm x 12M	0.198	INA 1	India	JSW Steel Limited	01 100 99572	2017-18/0400744612_000070_7280096454

Y10mm Heat No.: 18B211309
Y12mm Heat No.: SD345A-11A14073/1
Y16mm Heat No.: B12260
Y20mm Heat No.: D201801034002
Y25mm Heat No.: 496912
Y32mm Heat No.: 501837
Y40mm Heat No.: 10022063

For and on behalf of
Ever Success Constr. Eng. Materials Ltd.

EVER SUCCESS CONSTR. ENG. MATERIALS LTD. 華勝 授言專用

Authorized Operations Manager

江苏永钢集团有限公司产品质量证明书

Jiangsu Yonggang Group Co., Ltd. Mill Test Certificate

YG14-R-14047

Certificate No: 180828C00403

需方 Customer	KAM CHUN HONG CO.,LTD.			产品名称 Commodity	钢筋混凝土用热轧带肋钢筋 HOT-ROLLED RIBBED STEEL BARS FOR THE REINFORCEMENT OF CONCRETE
合同号 Contract No.	A9001807008-DB	生产许可证号 Production Cert. No.		技术标准 Standard	BS 4449:2005/CS2:2012
牌号 Grade	B500B/500B	生产工艺 Manufacturing processes	淬火自回火 QST	钢筋标识 Rolling mark	CHA86 //SI/ZE
提货日期 Date of Delivery	20180829	出库单号 No. of Delivery	SD18080058	交货状态 Condition of delivery	直条 Debar in straight

综合判定 Comprehensive judgment: 合格 Pass

轧制批号 Batch No.	炉号 Heat No.	产品规格 Size (mm)	生产日期 Producing Date	长度 Length (m)	件数 Bundles	重量 Weigh (t)	化学成份(%) Chemical Composition C	Si	Mn	P	S	Ceq	V	Cr	Mo	Ni	Cu	N	A01 屈服强度	A02 抗拉强度	A04 强屈比	A12 最大总伸长率	B05 反弯试验	Y01 每米重量	Y02 有效截面积	Z99 肋纹测试
							10^{-2}	10^{-2}	10^{-2}	10^{-3}	10^{-3}	10^{-2}	10^{-3}	10^{-2}	10^{-2}	10^{-3}	10^{-2}	10^{-4}	MPa	MPa		%		Kg		
B61807034001	18B211307	10	20180722	12	22	42.961	19	24	33	17	19	31	3	34	1	10	1	21	567	649	1.14	8.0	OK	0.599	76.20	OK
																			570	649	1.14	9.5		0.593	75.50	OK
																			564	646	1.15	9.0		0.600	76.40	OK
B61807034002	18B211308	10	20180722	12	22	42.993	21	25	33	18	13	33	3	33	1	8	1	23	577	646	1.12	9.0	OK	0.602	76.60	OK
																			577	645	1.12	8.5		0.604	76.90	OK
																			573	642	1.12	8.5		0.602	76.60	OK
B61807034003	18B211309	10	20180722	12	22	43.097	18	25	35	24	15	31	3	32	1	6	1	70	565	646	1.14	8.5	OK	0.595	75.80	OK
																			568	648	1.14	8.5		0.597	76.00	OK
																			570	647	1.14	8.5		0.597	76.00	OK
合计Total:					66	129.051																				

注释 Annotation

A01=屈服强度 Yield Strength (Re)
A02=抗拉强度 Tensile Strength (Rm)
A04=强屈比 ratio of Tensile and yield strength
A12=最大力总伸长率 Total elongation at maximum force
B05=反弯试验 Rebend Test
Y01=每米重量 Mass per meter
Y02=有效截面积 Effective Cross sectional area
Z99=肋纹测试 Surface Geometry Test
Ceq=[C]+[Mn]/6+([Cr]+[V]+[Mo])/5+([Cu]+[Ni])/15

备注 Remarks

1.我司证实以上产品之肋纹测试结果符合BS4449:2005及CS2:2012标准，肋纹测试结果采用辛普森公式计算。
2.碳当量Ceq按照以下公式计算：Ceq=C+Mn/6+(Cr+V+Mo)/5+(Cu+Ni)/15。
3、ISO证书号：02216Q2030R6L；ISO证书有效期：2019-5-25
4、CNAS证书号：CNASL3062；CNAS证书有效期：2024-05-13
1. We hereby certify that the results of surface geometry measurement of above products are in compliance with standards BS4449:2005 AND CS2:2012, Surface Geometry results tested by "Simpson's formula".
2. The carbon equivalent value Ceq computed using the following formula: Ceq=C+Mn/6+(Cr+V+Mo)/5+(Cu+Ni)/15.
3. ISO No.: 02216Q2030R6L; Date of Expiry ISO: 2019-5-25
4. CNAS No.: CNASL3062; Date of Expiry CNAS: 2024-05-13

质检检验专用章(Seal):

检 验(Test):

制单(Signature):徐燕

签证日期(Data of Issue): 20180829

营销电话(Sales Tel):0086-512-58619836 0086-512-58619588
邮政编码(Post Code):215628
地址(Address):江苏省张家港市南丰镇永联(Yonglian Village, Nanfeng Town, Zhangjiagang City, Jiangsu, China)

江苏永钢集团有限公司 JIANGSU YONGGANG GROUP CO.,LTD.

KCH-0388 Y10 CHA86

KCH-0388 Y10 CHA86

ORIGINAL

W

1. Exporter

JIANGSU YONGGANG GROUP CO., LTD.
YONGLIAN INDUSTRIAL PARK,
ZHANGJIAGANG CITY,
JIANGSU, CHINA 215628

Certificate No. (PAGE 1 OF 3)

C183205160060249

CERTIFICATE OF ORIGIN OF THE PEOPLE' S REPUBLIC OF CHINA

2. Consignee

KAM CHUN HONG CO., LTD.,
RM 2809, 28/F., WU CHUNG HOUSE, 213 QUEEN'S ROAD EAST, WAN CHAI, HONG KONG

3. Means of transport and route

FROM ZHANGJIAGANG PORT OF CHINA TO HONG KONG BY SEA

5. For certifying authority use only

ISSUED RETROSPECTIVELY

4. Country / region of destination

HONG KONG(CHINA)

Verification:www.chinaorigin.gov.cn

6. Marks and numbers	7. Number and kind of packages;description of goods	8. H.S.Code	9. Quantity	10. Number and date of invoices
N/M	TWO HUNDRED AND FIFTY EIGHT (258) BUNDLES OF HOT-ROLLED RIBBED STEEL BARS FOR THE REINFORCEMENT OF CONCRETE SPECIFICATION: BS4449:2005 AND HKCS2:2012 GRADE B500B/500B DIA. 10MM×12M	72.28	504.312MT N.W.	A9001807008-DB-1 AUG. 28, 2018
	TWO HUNDRED AND EIGHT (208) BUNDLES OF HOT-ROLLED RIBBED STEEL BARS FOR THE REINFORCEMENT OF CONCRETE SPECIFICATION: BS4449:2005 AND HKCS2:2012 GRADE B500B/500B DIA. 12MM×12M	72.28	400.906MT N.W.	
	TWO HUNDRED AND SIXTY FOUR (264) BUNDLES OF HOT-ROLLED RIBBED STEEL BARS FOR THE REINFORCEMENT OF CONCRETE SPECIFICATION: BS4449:2005 AND HKCS2:2012 GRADE B500B/500B DIA. 16MM×12M	72.28	509.506MT N.W.	

We Ever Success Construction Eng. Materials Ltd.
Certify that this is a true copy issued to
Client: Castco Testing Centre Ltd.
Location: 29A, On Chuen Street Fanling, Hong Kong
Size: Y10mm x 12M *Tonnage:* 0.007 MT
Date: 11 Apr., 2022 *D/O No.:* D22769

11. Declaration by the exporter

The undersigned hereby declares that the above details and statements are correct, that all the goods were produced in China and that they comply with the Rules of Origin of the People's Republic of China.

For and on behalf of
JIANGSU YONGGANG GROUP CO.,LTD.
江苏永钢集团有限公司

Authorized Signature

Nanjing , China, AUG. 30, 2018

Place and date, signature and stamp of authorized signatory

12. Certification

It is hereby certified that the declaration by the exporter is correct.

NANJING CUSTOMS
中华人民共和国
南京
ORIGIN
海关
THE PEOPLE'S REPUBLIC OF CHINA

0000071379037

Nanjing, China, AUG. 30, 2018

Place and date, signature and stamp of certifying authority

185791932

DUM18B/21/21-118B

BAR PATTERN : VNM4

YB12MM X 12M

HÒA PHÁT
THÉP XÂY DỰNG

PHIẾU CHỨNG NHẬN CHẤT LƯỢNG
MILL TEST CERTIFICATE

0375 - 0621

VILAS 472 — QUACERT ISO 9001 — QUACERT — Vietnam Value

Mill/ NHÀ SẢN XUẤT	HOA PHAT HAI DUONG STEEL JOINT STOCK COMPANY/ CÔNG TY CỔ PHẦN THÉP HÒA PHÁT HẢI DƯƠNG
ADD/ ĐỊA CHỈ	Hiep Son Ward, Kinh Mon Town, Hai Duong Province, Vietnam. Phường Hiệp Sơn - Thị xã Kinh Môn - Tỉnh Hải Dương - Việt Nam. Tel: 0220 3535250 Fax: 0220 3535251 Website: www.hoaphat.com.vn
CUSTOMER/ KHÁCH HÀNG	: TO WHOM IT MAY CONCERN
Address	:

PRODUCT NAME/ TÊN SẢN PHẨM:	HIGH YIELD STEEL DEFORMED BAR
SIZE / KÍCH THƯỚC	: Dia 12mm x 12M
STANDARD/ TIÊU CHUẨN	: CS2:2012
GRADE/ MÁC THÉP	: 500B
BAR PATTERN CODE	: VNM4
BAR PATTERN	: / / ⟁ /H/O/A/P/H/A/T/ /9/ /1/2/ /
PRODUCTION DATE/ NGÀY SẢN XUẤT	: 05 - 06/06/2021
CERTIFICATE DATE/ NGÀY CẤP	: 30/06/2021
TOTAL NUMBER OF BUNDLE/ TỔNG SỐ	: 223 Bundle/ Bó
TOTAL WEIGHT/ TỔNG TRỌNG LƯỢNG	: 545.264 Ton/ Tấn
CERTIFICATE NUMBER/ CHỨNG CHỈ SỐ	: 0375 - 0621
ISO CERTIFICATE NUMBER/GIẤY CHỨNG NHẬN ISO SỐ	: HT 3986/2.20.17

Technical Requirement/ Đặc tính kỹ thuật:				Chemical Composition/ Thành phần hóa học:												Mechanical Properties/ Cơ tính				
No/ STT	Heat number/ Mẻ số	Net/ Gross weight (kg)	Mass (Kg/m)	%C	%Si	%Mn	%S	%P	%Cu	%Ni	%Cr	%Mo	%V	%N	%Ceq	Yield strength (N/mm2)	Tensile strength (N/mm2)	Rm/Re	Elongation Agt (%)	Rebent Test
1	SD345A-11A13962/1	44.025	0.868	0.21	0.37	0.89	0.024	0.029	0.057	0.021	0.042	0.013	0.004	0.006	0.378	581.038	652.613	1.12	8.70	OK
																576.052	639.937	1.11	9.10	OK
																575.115	642.994	1.12	9.00	OK
2	SD345A-11A14041/1	24.425	0.866	0.21	0.34	0.93	0.023	0.038	0.044	0.022	0.071	0.007	0.003	0.007	0.384	568.116	648.340	1.14	8.90	OK
																573.739	659.202	1.15	8.50	OK
																586.980	647.401	1.10	8.90	OK
3	SD345A-11A14073/1	39.089	0.868	0.19	0.35	0.90	0.022	0.027	0.047	0.025	0.050	0.015	0.003	0.005	0.361	571.302	648.345	1.13	8.50	OK
																588.494	657.803	1.12	8.30	OK
																578.035	645.695	1.12	9.20	OK
4	SD345A-11A14074/1	2.438	0.865	0.20	0.33	0.88	0.029	0.027	0.046	0.024	0.042	0.011	0.003	0.005	0.361	588.660	655.535	1.11	8.50	OK
																576.853	650.779	1.13	8.50	OK
																568.535	647.498	1.14	8.80	OK
5	SD345A-11A14103/1	39.182	0.864	0.21	0.37	0.87	0.016	0.035	0.055	0.020	0.058	0.016	0.003	[illegible]	[illegible]	585.277	646.097	1.10	8.80	OK
																579.828	642.305	1.11	9.00	OK
																575.200	640.300	1.11	8.60	OK

* Ceq = C+Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15
* *Manufacturing process Route: Blast Furnace - Converter - Continuous casting - Hot rolling*
* *Statement: We certify that the material supplied complies with the requirements of BS 4449:2005 & CS2:2012 and have been tested at the frequency specified in BS 4449:2005 and CS2:2012. The results of Surface Geometry Measurement are in compliance with BS 4449:2005 and CS2:2012.*

AS THE MANUFACTURER/ NHÀ SẢN XUẤT

CÔNG TY CỔ PHẦN THÉP HÒA PHÁT HẢI DƯƠNG

SUCCESS CONSTR. ENG. MATERIALS 華勝 證書專用

QUYỀN TRƯỞNG PHÒNG QUẢN LÝ CHẤT LƯỢNG

Nguyễn Thái An

DUM18B/21/21-118B BAR PATTERN:VNM4 YB12MM X 12M

1. Goods consigned from (Exporter's business name, address, country)

HOA PHAT HAI DUONG STEEL JOINT STOCK COMPANY
HIEP THUONG RESIDENTIAL AREA, HIEP SON WARD,
KINH MON TOWN, HAI DUONG PROVINCE, VIETNAM

Reference No.

21HD[illegible]

CERTIFICATE OF ORIGIN

(Combined declaration and certificate)

FORM B

Issued in Vietnam

2. Goods consigned to (Consignee's name, address, country)

VSC STEEL COMPANY LIMITED
17 TSING KING STREET, TSING YI, HONG KONG

4. Competent authority (name, address, country)

CHAMBER OF COMMERCE & INDUSTRY OF VIETNAM
9 Dao Duy Anh St., Dong Da Dist., Ha Noi City, Viet Nam
Tel: 84-24 3574 2022 (215,208,268) Fax: 84-24 3574 2020

3. Means of transport and route (as far as known)

BY SEA ; M/V EPIC TRADER V.S21198
FROM : DA LONG ANCHORAGE, QUANG NINH, VIETNAM
TO: HONG KONG
B/L No. HPHS DATED 02 JULY 2021

5. For official use

6. Marks, numbers and kind of packages; description of goods	7. Gross weight or other quantity	8. Number and date of invoices
REINFORCING STEEL BAR	3,612.624 MT	30.21-1
HS CODE: 7214.20.31		
SPECIFICATION: CS2:2012 GRADE: 500B		
NUMBER OF BUNDLES:	1,499 BUNDLES	
NET WEIGHT/ GROSS WEIGHT:	3,612.624 MT	
TOTAL NUMBER OF BUNDLES:	1,499 BUNDLES	
TOTAL QUANTITY/ NET WEIGHT/ GROSS WEIGHT:	3,612.624 MT	

We Ever Success Construction Eng. Materials Ltd.
Certify that this is a true copy issued to:
Client: Casco Testing Centre Ltd.
Location: 29A, On Chuen Street, Tsing Yi, Hong Kong
Size: Y12mm x 12M *Tonnage:* 0.009 MT
Date: 11 Apr, 2022 *D/O No.:* D22769

9. Certification

It is hereby certified, on the basis of control carried out, that the declaration by the exporter is correct.

HANOI, VIETNAM 7 JULY 2021

(Place and date, signature and stamp of certifying authority)

10. Declaration by the exporter

The undersigned hereby declares that the above details and statements are correct; that all the goods were produced in Vietnam and that they comply with the origin requirements specified for goods exported to HONG KONG

CÔNG TY CỔ PHẦN TIẾP NHẬN NGÀY 05 JULY 2021 HẢI DƯƠNG

PHO GIAM DOC

(Place and date, signature of authorized signatory)

Seri No: HD01165866

DUM12B/21/21-112B

BAR PATTERN:INA2

YB16MM X 12M

JINDAL STEEL & POWER LTD.

Works : Chandippada Road,SH - 63,At/Post: Jindal Nagar, Dist: Angul, Odisha- 759111.
E-Mail: barmillqc@angul.jspl.com
Registered Office: Post Box No.6, O.P. Jindal Marg,Hisar (Haryana)
Corporate Office: Jindal center, 12 Bhikaji Cama Palace, New Delhi - 110066 (INDIA)
Phone : (06761) 262181-95; Fax : 06761-264141-44

JINDAL PANTHER™ TMT REBARS

MILL TEST CERTIFICATE

Test Certificate No : 20210145
TC Date : 09.04.2021
Customer Name: M/S VSC STEEL COMPANY LIMITED.

Process Route: BF-EAF/BOF - LRF - CCM - BRM

Product : Prime Newly Produces High Yield Steel Deformed Bars					Unit Mass	Cross-sectional area	Chemical Composition												Mechanical Properties					
							C	Mn	S	P	Si	Cu	Ni	Cr	Mo	V	N	Ceq	YS	UTS	Agt	UTS/YS	Rebend Test	
					Kg/Mtr	mm2	%	%	%	%	%	%	%	%	%	%	PPM	%	N/mm2	N/mm2	%	Ratio		
Specification & Grade: CS2 : 2012 & 500B				Min →	1.508	192.095	---	---	---	---	---	---	---	---	---	---	---	---	500	---	5	1.08	20°	
				Max→	1.579	201.146	0.22	---	0.05	0.05	---	0.80	---	---	---	---	120	0.50	650	---	---	---		
Nominal size (mm)	Heat No	Length (Mtr)	No of Bundles	Net Wt. (MT)	Unit Mass	An	C	Mn	S	P	Si	Cu	Ni	Cr	Mo	V	N	Ceq	YS	UTS	Agt	UTS/YS	Rebend Test	Remarks
16	B11941	12.00	1	2.468	1.528	194.688	0.20	0.73	0.020	0.024	0.19	0.003	0.008	0.015	0.001	0.001	57	0.322	557	656	8.10	1.18	SATISFACTORY	
					1.542	196.425	0.20	0.73	0.020	0.024	0.19	0.003	0.008	0.015	0.001	0.001	57	0.322	561	651	8.16	1.16	SATISFACTORY	
					1.554	197.999	0.20	0.73	0.020	0.024	0.19	0.003	0.008	0.015	0.001	0.001	57	0.322	565	658	7.99	1.16	SATISFACTORY	
16	B12151	12.00	9	22.262	1.559	198.623	0.19	0.85	0.018	0.023	0.22	0.003	0.009	0.020	0.001	0.001	55	0.341	584	672	7.83	1.15	SATISFACTORY	
					1.564	199.189	0.19	0.85	0.018	0.023	0.22	0.003	0.009	0.020	0.001	0.001	55	0.341	600	677	8.20	1.13	SATISFACTORY	
					1.545	196.835	0.19	0.85	0.018	0.023	0.22	0.003	0.009	0.020	0.001	0.001	55	0.341	601	698	7.87	1.16	SATISFACTORY	
16	B12220	12.00	7	17.261	1.558	198.476	0.20	0.72	0.016	0.012	0.18	0.004	0.007	0.018	0.001	0.001	60	0.325	588	705	7.82	1.20	SATISFACTORY	
					1.539	196.014	0.20	0.72	0.016	0.012	0.18	0.004	0.007	0.018	0.001	0.001	60	0.325	609	721	7.72	1.18	SATISFACTORY	
					1.551	197.582	0.20	0.72	0.016	0.012	0.18	0.004	0.007	0.018	0.001	0.001	60	0.325	589	673	7.98	1.14	SATISFACTORY	
16	B12242	12.00	7	17.264	1.538	195.870	0.22	0.71	0.011	0.013	0.19	0.003	0.007	0.016	0.001	0.001	48	0.343	575	664	7.92	1.15	SATISFACTORY	
					1.552	197.679	0.22	0.71	0.011	0.013	0.19	0.003	0.007	0.016	0.001	0.001	48	0.343	597	682	8.15	1.14	SATISFACTORY	
					1.539	196.014	0.22	0.71	0.011	0.013	0.19	0.003	0.007	0.016	0.001	0.001	48	0.343	567	660	7.92	1.16	SATISFACTORY	
16	B12253	12.00	14	34.648	1.543	196.536	0.20	0.71	0.009	0.016	0.12	0.004	0.007	0.025	0.001	0.001	55	0.320	578	657	7.71	1.14	SATISFACTORY	
					1.558	198.436	0.20	0.71	0.009	0.016	0.12	0.004	0.007	0.025	0.001	0.001	55	0.320	574	650	7.97	1.13	SATISFACTORY	
					1.544	196.678	0.20	0.71	0.009	0.016	0.12	0.004	0.007	0.025	0.001	0.001	55	0.320	581	671	8.00	1.15	SATISFACTORY	
16	B12254	12.00	12	29.768	1.531	195.070	0.21	0.73	0.014	0.022	0.15	0.004	0.006	0.024	0.001	0.001	57	0.338	582	695	8.31	1.19	SATISFACTORY	
					1.534	195.358	0.21	0.73	0.014	0.022	0.15	0.004	0.006	0.024	0.001	0.001	57	0.338	579	688	8.09	1.19	SATISFACTORY	
					1.535	195.486	0.21	0.73	0.014	0.022	0.15	0.004	0.006	0.024	0.001	0.001	57	0.338	587	689	7.75	1.17	SATISFACTORY	
16	B12260	12.00	7	17.301	1.555	198.089	0.21	0.71	0.005	0.013	0.18	0.004	0.007	0.017	0.001	0.001	54	0.333	554	647	8.07	1.17	SATISFACTORY	
					1.556	198.222	0.21	0.71	0.005	0.013	0.18	0.004	0.007	0.017	0.001	0.001	54	0.333	585	668	7.80	1.14	SATISFACTORY	
					1.559	198.559	0.21	0.71	0.005	0.013	0.18	0.004	0.007	0.017	0.001	0.001	54	0.333	581	675	7.70	1.16	SATISFACTORY	
16	B12264	12.00	51	125.482	1.535	195.540	0.20	0.71	0.006	0.020	0.18	0.004	0.008	0.020	0.001	0.001	58	0.319	568	651	8.12	1.15	SATISFACTORY	
					1.545	196.873	0.20	0.71	0.006	0.020	0.18	0.004	0.008	0.020	0.001	0.001	58	0.319	571	652	7.97	1.14	SATISFACTORY	
					1.543	196.574	0.20	0.71	0.006	0.020	0.18	0.004	0.008	0.020	0.001	0.001	58	0.319	571	669	7.91	1.17	SATISFACTORY	
					1.539	196.043	0.20	0.71	0.006	0.020	0.18	0.004	0.008	0.020	0.001	0.001	58	0.319	560	651	7.92	1.16	SATISFACTORY	
					1.548	197.172	0.20	0.71	0.006	0.020	0.18	0.004	0.008	0.020	0.001	0.001	58	0.319	567	657	8.00	1.16	SATISFACTORY	
16	B12265	12.00	50	123.155	1.541	196.258	0.20	0.71	0.008	0.020	0.17	0.005	0.007	0.022	0.001	0.001	55	0.319	559	648	7.96	1.16	SATISFACTORY	
					1.556	198.201	0.20	0.71	0.008	0.020	0.17	0.005	0.007	0.022	0.001	0.001	55	0.319	560	641	7.93	1.14	SATISFACTORY	
					1.541	196.314	0.20	0.71	0.008	0.020	0.17	0.005	0.007	0.022	0.001	0.001	55	0.319	567	658	7.74	1.16	SATISFACTORY	
					1.549	197.292	0.20	0.71	0.008	0.020	0.17	0.005	0.007	0.022	0.001	0.001	55	0.319	555	641	7.98	1.15	SATISFACTORY	
					1.543	196.566	0.20	0.71	0.008	0.020	0.17	0.005	0.007	0.022	0.001	0.001	55	0.319	568	647	7.81	1.14	SATISFACTORY	

We hereby certify that the material described herein have been inspected with satisfactory results in accordance with the requirements of the above specification.

This is to certify that the above mentioned product produced & supplied by JSPL,Angul do not contain any harmful radio active element higher than the natural level.

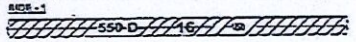
Sales Order No. : 909701776

ISO Certificate No. : FM 520708 (ISO 9001:2015)

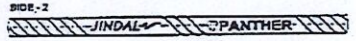
Chemistry: Laddle sample analysis
1 MPa=1 N/mm2
YS-Yield Strength
UTS-Ultimate Tensile Strength
Ceq=[C+Mn/6+(Cr+Mo+V)/5+(Ni+Cu)/15]

The result of surface geometry measurement are in compliance with BS4449:2005,B500B & CS2:2012 Latest

SIDE - 1



SIDE - 2



INA2

Certified By

Authorized Signatory (Quality Assurance)
For Jindal Steel & Power Ltd

DUM12B/21/21-112B BAR PATTERN:INA2 YB16MM X 12M

CERTIFICATE OF INDIAN ORIGIN
(NON PREFERENTIAL)

Name and Address of Manufacturers and Exporter
JINDAL STEEL AND POWER LIMITED
JINDAL CENTRE, 12 BHIKHAIJI CAMA PLACE,
NEW DELHI -110066 INDIA

CONSIGNEE : TO THE ORDER OF CTBC BANK CO., LTD.
HONG KONG BRANCH

NOTIFY : VSC STEEL COMPANY LIMITED 17 TSING KEUNG STREET, TSING YI, HONG KONG

Port of Loading: PARADIP PORT IN INDIA

Port of Discharge:
HONG KONG

M 87208

Chamber of Commerce & Industry
Recognized by Ministry of Commerce & Industry
Govt. of India

Federation of Indian Micro and Small & Medium Enterprises
B-4/161, Safdarjung Enclave, New Delhi – 110029
Tel. : 26187948, 26109470
E-mail : info@fisme.org.in
Web address : http://www.fisme.org.in

DESCRIPTION OF GOODS

COMMODITY : HIGH YIELD STEEL DEFORMED BARS

TOTAL NUMBER OF BUNDLES : 2305

SIZE	QUANTITY(MT)	NO. OF BUNDLES
10MM X 12M	283.969	113
12MM X 12M	476.100	191
16MM X 12M	476.201	193
20MM X 12M	453.056	184
25MM X 12M	949.708	386
32MM X 12M	474.754	191
40MM X 12M	2564.026	1047
TOTAL	5677.814	2305

GROSS WEIGHT (MT)
5677.814

NET WEIGHT (MT)
5677.814

It is hereby certified that goods Are of Indian Origin

Signature of Exporter

We Ever Success Construction Eng. Materials Ltd.
Certify that this is a true copy issued to:
Client: Castco Testing Centre Ltd.
Location: 29A, On Chuen Street Fanling, Hong Kong
Size: Y16mm x 12M *Tonnage:* 0.019 MT
Date: 11 April 2022 *D/O No:* D22769

CERTIFICATION

It is hereby certified that to the best of our knowledge and belief the above mentioned GOODS ARE OF INDIA ORIGIN.

Secy. General / Joint Secretary / Dy. Secretary

Federation of Indian Micro and Small & Medium Enterprises
New Delhi

Date:

Federation of Indian Micro And Small & Medium Enterprises (FISME)

山东莱钢永锋钢铁有限公司
Shandong Laigang Yongfeng Steel Corp.

山东省德州市齐河县经济开发区
QIHE ECONOMIC DEVELOPMENT ZONE, SHANDONG, CHINA

产品质量证明书
MILL TEST CERTIFICATE

KCH-0329 Y20 CHA155

订货单位 Customer	To whom it may concern	合同号 Contract No.	Winstone2017-061	运输方法 Transportation	船运 By Vessel	证书编号 Certificate No.	18020lH0401
产品名称 Commodity	HIGH TENSILE STEEL DEFORMED BARS	质量体系证书编号 ISO Number	02215Q2090R3L	交货日期 Date of delivery	20180201	证书日期 Date of Issue	20180201
执行标准 Specification	CS2 : 2012	交货状态 Delivery	余热处理（江苏） R.H.P (S.R.B.)	Bar Mark Code : CHA155			

序号 No.	炉号 Heat No.	牌号 Grade	直径 Dia. (mm)	长度 Length (M)	支数 Bundles (件)	重量 WEIGHT (MT)	化学成分 (%) CHEMICAL PROPERTIES C	Si	Mn	P	S	Cr	Ni	Cu	Mo	V	N	Ceq	每米重量 Mass Kg/M	横截面面积 Cross Sectional Area mm²	形状测试 Surface Geometry Test	拉伸试验 Tensile Test 屈服强度 Yield Strength (Mpa) Re	抗拉强度 TENSILE STRENGTH (Mpa) Rm	强屈比 Tensile/yield strength ratio. R_m/R_e	最大力总伸长率 Total elongation at maximum force, Agt (%)	反弯曲试验 RB
1	D201801034001	500B	20	12	6	17.529	0.190	0.234	1.032	0.032	0.026	0.373	0.005	0.001	0.001	0.003	0.003	0.439	2.433942	310.05631	OK	610	695	1.14	8	OK
																			2.431476	309.74217	OK	600	690	1.15	7.6	OK
																			2.42901	309.42803	OK	605	695	1.15	7.6	OK
2	D201801034002	500B	20	12	1	2.934	0.190	0.250	1.027	0.032	0.028	0.322	0.005	0.001	0.002	0.003	0.004	0.425	2.426544	309.11389	OK	565	655	1.16	10	OK
																			2.424078	308.79975	OK	585	675	1.15	7.3	OK
																			2.433942	310.05631	OK	590	675	1.14	8.5	OK
3	D201801034012	500B	20	12	17	50.084	0.208	0.260	1.060	0.025	0.028	0.337	0.006	0.001	0.001	0.003	0.003	0.455	2.431476	309.74217	OK	580	680	1.17	9	OK
																			2.42901	309.42803	OK	580	680	1.17	10.3	OK
																			2.426544	309.11389	OK	575	670	1.17	10.5	OK
4	D201801034013	500B	20	12	19	55.994	0.193	0.262	1.039	0.025	0.029	0.337	0.006	0.002	0.002	0.003	0.006	0.436	2.424078	308.79975	OK	565	665	1.18	10.3	OK
																			2.421612	308.48561	OK	565	660	1.17	9.6	OK
																			2.419146	308.17146	OK	565	665	1.18	8	OK
5	D201801034014	500B	20	12	18	53.811	0.190	0.239	1.012	0.033	0.028	0.338	0.006	0.001	0.001	0.003	0.005	0.426	2.41668	307.85732	OK	595	695	1.17	9.3	OK
																			2.414214	307.54318	OK	590	690	1.17	10	OK
																			2.411748	307.22904	OK	590	695	1.18	9	OK
6	D201801034015	500B	20	12	15	44.293	0.196	0.266	1.085	0.031	0.027	0.346	0.006	0.001	0.001	0.003	0.007	0.449	2.409282	306.9149	OK	575	675	1.17	8	OK
																			2.421612	308.48561	OK	570	675	1.18	11	OK
																			2.431476	309.74217	OK	570	670	1.18	9.2	OK
合计 Total					76	224.645																				

备注 Remarks

1. We hereby certify that above products have been tested in accordance with the named specification and that they comply with the Mechanical, Chemical and surface geometry requirements only.
2. The relative rib area, fR.forribbed steel reinforcing bars calculated by using the Simpon's rule formula.
3. The Carbon equivalent value Ceq computed using the following formula :Ceq=C+Mn/6+ (Cr+V+Mo) /5+ (Cu+Ni) /15
4. V is a nitrogen binding elements. (N % - 0.012 %) < (V %/7)

1. 我司证实以上产品已经按照标准检验并符合标准关于机械性能，化学成分和表面形状的要求。
2. 相对肋面积，fR，对肋纹钢筋采用辛普森公式计算的。
3. 碳当量Ceq按照以下公式计算：Ceq=C+Mn/6+ (Cr+V+Mo) /5+ (Cu+Ni) /15

制表人 Inspector 张恒

审核人 Auditor

山东莱钢永锋钢铁有限公司 质量保证章

检验合格专用章 Signed By Detection

EVER SUCCESS CONSTR. ENG. MATERIAL LTD. 華勝 證書專用

ORIGINAL KCH-0329 Y20 CHA155

CERTIFICATE OF ORIGIN OF THE PEOPLE'S REPUBLIC OF CHINA

Certificate No. C18372200623000[illegible]

1. Exporter
SHANDONG LAIGANG YONGFENG STEEL CORP.
[illegible]THE ECONOMIC DEVELOPMENT ZONE, SHANDONG, CHINA

2. Consignee
TO ORDER

3. Means of transport and route
FROM QINGDAO PORT, CHINA TO HONGKONG BY SEA

4. Country / region of destination
HONG KONG, CHINA

5. For certifying authority use only
Verification: www.chinaorigin.gov.cn

6. Marks and numbers	7. Number and kind of packages; description of goods	8. H.S.Code	9. Quantity	10. Number and date of invoices
N/M	ONE THOUSAND SEVEN HUNDRED AND THIRTY TWO (1732) BUNDLES OF NEWLY PRIME HOT ROLLED HIGH TENSILE STEEL DEFORMED BARS QUALITY CS2/2012 GRADE 100B H.S. CODE: 7228309000 SIZE/QUANTITY/NO. OF BUNDLES 10MMX12M 710.382MT 243BUNDLES 12MMX12M 697.798MT 239BUNDLES 16MMX12M 82[illegible].012MT 279BUNDLES 20MMX12M 3[illegible].317MT 129BUNDLES 25MMX12M 722.640MT 249BUNDLES 32MMX12M 827.001MT 282BUNDLES 40MMX12M 907.010MT 311BUNDLES *** *** *** *** ***	72.28	5061.350MT	2017-05[illegible] FEB. 02, 2018

We Ever Success Construction Eng. Materials Ltd.
Certify that this is a true copy issued to:

Client:	Casico Testing Centre Ltd.
Location:	22[illegible]29A, On Chuen Street Fanling, Hong Kong
Size:	Y20mm x 12M *Tonnage:* 0.[illegible]30 MT
Date:	11 Apr. 2022 *D/O No.:* D32769

11. Declaration by the exporter
The undersigned hereby declares that the above details and statements are correct, that all the goods were produced in China and that they comply with the Rules of Origin of the People's Republic of China.

For and on behalf of
山东莱钢永锋钢铁有限公司
Shandong Laigang Yongfeng Steel Corp.
Shandong, China, FEB. 08, 2018

Place and date, signature and stamp of authorized signatory

12. Certification
It is hereby certified that the declaration by the exporter is correct.

Shandong, China, FEB. 08, 2018

Place and date, signature and stamp of certifying authority

00000672082441

AQSIQ 162099821

DUM04B/20/20-204B BAR PATTERN:RUS5 YB25MM X 12M

MILL`S TEST CERTIFICATE

ЗАПСИБ ZAPSIB WEST-SIBERIAN STEEL WORKS

MILL'S TEST CERTIFICATE OF CHEMICAL ANALYSIS
AND MECHANICAL PROPERTIES

BUYER COUNTRY: HK CERTIFICATE DATE 28.12.2019
CUSTOMER: VSC STEEL COMPANY LIMITED
SPECIFICATION: GRADE 500B MANUFACTURED TO CS2:2012
DESCRIPTION OF GOODS: NEWLY ROLLED STEEL DEFORMED BARS
REFERENCE NUMBER: DB65910VSC-PF

FULL NAME AND ADDRESS OF MANUFACTURER: ISO CERT NO. RU 228098Q-U
JSC "EVRAZ CONSOLIDATED WEST SIBERIAN METALLURGICAL PLANT" ISO 9001:2015
16, KOSMIT CHESKOYE SHOSSE, NOVOKUZNETSK, 654043 RUSSIA
NAME OF CARRYING VESSEL: AQUAMARINE SW
THE MATERIAL SUPPLIED COMPLIES WITH THE REQUIREMENTS OF AND HAS BEEN TESTED AT THE FREQUENCY SPECIFIED IN CS2:2012. WE CONFIRM THAT THE RESULTS OF SURFACE GEOMETRY MEASUREMENT OR BEAM TEST ARE IN COMPLIANCE WITH THIS STANDARD

ZAPSIB RUSSIA WEST - SIBERIAN STEEL WORKS

Chemical analysis and mechanical properties are the same for all sizes:

*Ceq = C + Mn/6 + (Cr+V+Mo)/5 + (Cu+Ni)/15

Size	Heat No.	Cross-sectional area	Weight of linear mass	MECHANICAL PROPERTIES/VALUES							Chemical analysis/composition for each cast/heat of the goods (%):										
				TENSILE TEST				BEND TEST	REBEND TEST	RELATIVE RIB AREA											
				Yield Point	Tensile Strength	Tensile/Yield	Elongation			Fr	C	Mn	P	S	Cr	Cu	Ni	Mo	V	N	Carbon Equivalent Value(Ceq*)
25MMX12M		(mm2)	(kg/m)	N/mm2			%														
	195248	490.60	3.851	586.0	720.0	1.23	7.1	OK	OK	0.072	0.19	0.49	0.027	0.021	0.05	0.03	0.03	0.003	0.002	0.005	0.29
		479.90	3.767	590.0	729.0	1.24	8.5	OK	OK	0.072											
		478.90	3.759	583.0	717.0	1.23	8.3	OK	OK	0.073											
	195257	477.80	3.751	597.0	752.0	1.26	6.4	OK	OK	0.071	0.19	0.47	0.025	0.025	0.05	0.04	0.03	0.003	0.005	0.008	0.28
		476.70	3.742	564.0	715.0	1.27	6.9	OK	OK	0.070											
		480.30	3.770	600.0	743.0	1.24	7.4	OK	OK	0.072											
	195851	476.60	3.741	571.0	660.0	1.16	6.6	OK	OK	0.080	0.20	0.46	0.017	0.019	0.03	0.04	0.07	0.001	0.004	0.004	0.29
		475.30	3.731	556.0	640.0	1.15	7.5	OK	OK	0.079											
		479.70	3.766	561.0	640.0	1.14	7.3	OK	OK	0.081											
	195853	480.10	3.769	548.0	712.0	1.30	7.6	OK	OK	0.073	0.19	0.49	0.017	0.021	0.03	0.04	0.03	0.002	0.004	0.008	0.28
		480.50	3.772	538.0	704.0	1.31	6.9	OK	OK	0.073											
		482.90	3.791	548.0	711.0	1.30	8.1	OK	OK	0.074											
	295025	479.10	3.761	557.0	754.0	1.35	7.4	OK	OK	0.077	0.19	0.46	0.022	0.019	0.04	0.04	0.05	0.002	0.003	0.008	0.28
		483.20	3.793	567.0	771.0	1.36	7.0	OK	OK	0.076											
		481.00	3.776	557.0	744.0	1.34	7.6	OK	OK	0.077											
	295319	477.20	3.746	587.0	741.0	1.26	6.8	OK	OK	0.072	0.19	0.48	0.024	0.021	0.04	0.04	0.06	0.003	0.003	0.007	0.29
		481.00	3.776	597.0	755.0	1.26	6.5	OK	OK	0.073											
		478.30	3.755	588.0	745.0	1.27	6.9	OK	OK	0.073											
	295535	477.20	3.746	548.0	698.0	1.27	8.5	OK	OK	0.076	0.19	0.47	0.032	0.018	0.02	0.02	0.04	0.001	0.002	0.007	0.28
		476.70	3.742	553.0	701.0	1.27	8.1	OK	OK	0.076											
		479.40	3.763	535.0	694.0	1.30	7.2	OK	OK	0.075											
	295549	482.50	3.788	571.0	686.0	1.20	7.8	OK	OK	0.076	0.19	0.48	0.035	0.020	0.02	0.05	0.03	0.002	0.002	0.007	0.28
		481.40	3.779	558.0	723.0	1.30	7.5	OK	OK	0.076											
		481.10	3.777	539.0	687.0	1.27	7.4	OK	OK	0.076											

EVER SUCCESS CONSTR. ENG. MATERIALS LTD. 華勝 證書專用

DUM04B/20/20-204B

BAR PATTERN:RUS5

YB25MM X 12M

Size	Heat No.	Cross-sectional area	Weight of linear mass	MECHANICAL PROPERTIES/VALUES							Chemical analysis/composition for each cast/heat of the goods (%):										
				TENSILE TEST				BEND TEST	REBEND TEST	RELATIVE RIB AREA											
				Yield Point	Tensile Strength	Tensile/Yield	Elongation														
25MMX12M		(mm2)	(kg/m)	N/mm2			%			Fr	C	Mn	P	S	Cr	Cu	Ni	Mo	V	N	Carbon Equivalent Value(Ceq*)
	496200	486.10	3.816	551.0	695.0	1.26	7.3	OK	OK	0.073	0.20	0.46	0.036	0.028	0.03	0.03	0.05	0.001	0.002	0.005	0.29
		475.30	3.731	556.0	706.0	1.27	8.8	OK	OK	0.074											
		486.00	3.815	557.0	698.0	1.25	7.4	OK	OK	0.073											
	496901	485.60	3.812	560.0	704.0	1.26	8.3	OK	OK	0.077	0.20	0.46	0.045	0.033	0.03	0.03	0.05	0.001	0.003	0.006	0.29
		485.40	3.810	547.0	704.0	1.29	8.4	OK	OK	0.077											
		482.40	3.787	567.0	733.0	1.29	9.1	OK	OK	0.078											
	496912	479.10	3.761	576.0	712.0	1.24	6.8	OK	OK	0.083	0.20	0.46	0.045	0.036	0.03	0.06	0.03	0.002	0.003	0.005	0.29
		479.70	3.766	563.0	714.0	1.27	5.9	OK	OK	0.082											
		481.50	3.780	579.0	714.0	1.23	8.8	OK	OK	0.083											
	596411	487.30	3.825	547.0	692.0	1.27	7.9	OK	OK	0.078	0.19	0.48	0.027	0.040	0.02	0.03	0.05	0.001	0.002	0.006	0.28
		477.20	3.746	549.0	698.0	1.27	7.5	OK	OK	0.078											
		481.40	3.779	535.0	688.0	1.29	8.0	OK	OK	0.078											
	596509	482.30	3.786	559.0	709.0	1.27	8.6	OK	OK	0.077	0.18	0.47	0.022	0.018	0.04	0.03	0.04	0.002	0.003	0.005	0.27
		475.50	3.733	557.0	698.0	1.25	7.8	OK	OK	0.076											
		476.10	3.737	560.0	708.0	1.26	7.1	OK	OK	0.077											

Gross weight: 806.554MT

Net weight: 802.970MT

No. of bundles: 326 Bundles

JSC "EVRAZ Consolidated West Siberian Metallurgical Plant"

ZAPSIB / ZSMK

The address at which the record of test results is available for inspection:
Bond classification:
The nominal ratio of effective to gross cross-sectional area of bars below 3%
Bar pattern code RUS5 - Actual drawing:

JSC "EVRAZ Consolidated West Siberian Metallurgical Plant"
654043 NOVOKUZNETSK, RUSSIA
GRADE 500B MANUFACTURED TO CS2:2012

Signatures:
the representative of
JSC "EVRAZ Consolidated
West Siberian Metallurgical Plant"

2019

DUM04B/20/20-204B BAR PATTERN:RUS5 YB25MM X 12M

1. Exporter (name, address, country)

East Metals AG
Baarerstrasse 131, 6300 Zug, Switzerland

ORIGINAL № 0001004253

5942344

CERTIFICATE OF ORIGIN

Issued in the Russian Federation

2. Consignee (name, address, country)

TO ORDER OF SHANGHAI COMMERCIAL BANK LTD., HONG KONG

3. Means of transport and route

FROM NAKHODKA, Russia
TO HONG KONG, Hong Kong
BY m/v AQUAMARINE SW

4. For official use

5. Country of origin

RUSSIA

6. Supplementary details

7. Item number	8. Description of goods	9. Number and kind of packages	10. Gross weight or other quantity
	DEFORMED STEEL BAR	29 BUNDLES	Gross weight 69.200 MT Net weight 68.910 MT

We Ever Success Construction Eng. Materials Ltd.
Certify that this is a true copy issued to:
Client: Castco Testing Centre Ltd.
Location: 29A, On Chuen Street Fanling, Hong Kong
Size: Y25mm x 12M *Tonnage:* 0.058 MT
Date: 11 Apr., 2022 *D/O No.:* D22769

11. Certification
It is hereby certified, that the declaration by the exporter is correct

RUSSIAN FEDERATION
CHAMBER OF COMMERCE
ILYENKA 6
MOSCOW, RUSSIA

MOSCOW 02.02.2020

Place, date, signature, name and stamp of certifying authority

12. Declaration by the exporter
The undersigned hereby declares that the above details and statements are correct; that the goods are of origin of the country shown in box No 5; that the goods are exported to HONG KONG

(Importing country)

EAST METALS AG
MOSCOW 02.02.2020

Place, date, stamp and signature of authorized signatory

DUM14B/20/20-114B BAR PATTERN:RUS5 YB32MM X 12M

MILL`S TEST CERTIFICATE

MILL'S TEST CERTIFICATE OF CHEMICAL ANALYSIS AND MECHANICAL PROPERTIES

BUYER COUNTRY: HK CERTIFICATE DATE 30.04.2020

CUSTOMER: VSC STEEL COMPANY LIMITED

SPECIFICATION: GRADE 500B MANUFACTURED TO CS2-2012

DESCRIPTION OF GOODS: NEWLY ROLLED STEEL DEFORMED BARS

REFERENCE NUMBER: DE67797VSC-SH

Manufacturing process: Basic oxygen furnace (Steel Making), Quenching and tempering (rolling)

FULL NAME AND ADDRESS OF MANUFACTURER: ISO CERT NO. RU728095Q-U

JSC "EVRAZ CONSOLIDATED WEST SIBERIAN METALLURGICAL PLANT" ISO 9001:2015

16, KOSMITCHESKOYE SHOSSE, NOVOKUZNETSK, 654043 RUSSIA

NAME OF CARRYING VESSEL: CSC RUI HAI

THE MATERIAL SUPPLIED COMPLIES WITH THE REQUIREMENTS OF AND HAS BEEN TESTED AT THE FREQUENCY SPECIFIED IN CS2-2012. WE CONFIRM THAT THE RESULTS OF SURFACE GEOMETRY MEASUREMENT OR BEAM TEST ARE IN COMPLIANCE WITH THIS STANDARD

◎ = total elongation at maximum force. Agt (%). $Ceq^* = C + Mn/6 + (Cr+V+Mo)/5 + (Cu+Ni)/15$

Size	Heat No.	Cross-sectional area	Weight of linear mass	MECHANICAL PROPERTIES/VALUES							Chemical analysis/composition for each cast/heat of the goods (%):										
				TENSILE TEST				BEND TEST	REBEND TEST	RELATIVE RIB AREA											
				Yield Point	Tensile Strength	Tensile/Yield	Elongation ◎														
32MMX12M		(mm2)	(kg/m)	N/mm2			%			Fr	C	Mn	P	S	Cr	Cu	Ni	Mo	V	N	Carbon Equivalent Value(Ceq*)
	401735	802.50	6.300	608.0	689.0	1.13	13.0	OK	OK	0.080	0.19	1.08	0.027	0.043	0.04	0.04	0.07	0.002	0.006	0.007	0.39
		800.90	6.287	584.0	671.0	1.15	11.0	OK	OK	0.080											
		801.40	6.291	595.0	680.0	1.14	13.5	OK	OK	0.080											
	501834	795.50	6.230	594.0	684.0	1.15	14.0	OK	OK	0.080	0.21	1.15	0.043	0.017	0.04	0.04	0.07	0.001	0.002	0.009	0.41
		791.00	6.209	592.0	684.0	1.16	11.0	OK	OK	0.080											
		789.40	6.197	566.0	664.0	1.17	13.5	OK	OK	0.080											
	501836	797.50	6.260	619.0	705.0	1.14	12.5	OK	OK	0.082	0.22	0.95	0.026	0.023	0.04	0.03	0.06	0.005	0.006	0.009	0.39
		794.80	6.239	610.0	704.0	1.15	9.5	OK	OK	0.082											
		798.00	6.264	597.0	687.0	1.15	12.5	OK	OK	0.083											
	501837	794.30	6.235	577.0	679.0	1.18	11.5	OK	OK	0.080	0.21	1.21	0.017	0.021	0.03	0.04	0.05	0.001	0.003	0.008	0.42
		795.00	6.241	580.0	681.0	1.17	11.5	OK	OK	0.081											
		792.10	6.218	579.0	679.0	1.17	15.0	OK	OK	0.080											

Gross weight: 474.150MT

Net weight: 472.190MT

No. of bundles: 196 Bundles

JSC "EVRAZ Consolidated West Siberian Metallurgical Plant"

Signatures of the representative of JSC "EVRAZ Consolidated West Siberian Metallurgical Plant"

ZAPSIB / ZSMK

30.04.2020

The address at which the record of test results is available for inspection:

Bond classification:

The nominal ratio of effective to gross cross-sectional area of bars below 3%.

Bar pattern code RUS5 - Actual drawing:

JSC "EVRAZ Consolidated West Siberian Metallurgical Plant"

654043 NOVOKUZNETSK, RUSSIA

GRADE 500B MANUFACTURED TO CS2-2012

DUM14B/20/20-114B BAR PATTERN:RUS5 YB32MM X 12M

1. Exporter (name, address, country) East Metals AG Bahnerstrasse 131, 6300 Zug, Switzerland	ORIGINAL № 0001012189 5055403 CERTIFICATE OF ORIGIN Issued in the Russian Federation
2. Consignee (name, address, country) TO ORDER OF SHANGHAI COMMERCIAL BANK LTD., HONG KONG	
3. Means of transport and route FROM: NAKHODKA SEA FISHING PORT IN RUSSIA TO HONG KONG BY M/V CSC RUI HAI	4. For official use
5. Country of origin RUSSIA	6. Supplementary details

7. Item number	8. Description of goods	9. Number and kind of packages	10. Gross weight or other quantity
	DEFORMED STEEL BARS	4173 bundles	Gross weight 10,088.876 MT Net weight 10,046.450 MT

We Ever Success Construction Eng. Materials Ltd.
Certify that this is a true copy issued to:
Client: Castco Testing Centre Ltd.
Location: 29A, On Chuen Street Fanling, Hong Kong
Size: Y32mm x 12M *Tonnage:* 0.114 MT
Date: 11 Apr., 2022 *D/O No.:* D22769

11. Certification It is hereby certified, that the declaration by the exporter is correct RUSSIAN FEDERATION CHAMBER OF COMMERCE AND INDUSTRY ILYINKA 6 MOSCOW, RUSSIA MOSCOW 26.05.2020 Place, date, signature, name and stamp of certifying authority	12. Declaration by the exporter The undersigned hereby declares that the above details and statements are correct; that the goods are of origin of the country shown in box No 6; that the goods are exported to Hong Kong (importing country) EAST METALS AG MOSCOW 26.05.2020 Place, date, stamp and signature of authorized signatory

DUM01B/18 / 18-101B **BAR PATTERN:INA1** **YB40mmX12M**

JSW Steel Limited
Vijayanagar works, P O Vidyanagar, Toranagallu, Dist: Bellary – 583275 (Karnataka)
Registered Office: JSW CENTRE,Bandra Kurla Complex, Bandra (East), Mumbai – 400051

MILL TEST CERTIFICATE (According to BS EN 10204 - Type 3.1)

TO : Duferco Asia PTE LTD
3 Fraser Street
No. 08-23 Duo Tower
Hong kong 189352

Ship To Party and Destination : VSC STEEL CO., LTD
Hong Kong

Test Certificate No:2017-18/0400744612_000070_7280096454 Page No : 01
Date: 28.12.2017

Product: Thermo-mechanically treated rebars(QST)		Chemical composition													Mechanical Properties					
	Unit	C	Mn	S	P	Si	Cr	Ni	Cu	Mo	V	N	Ceq	YS	UTS	Agt	UTS/YS	Re Bend	
	Kg/Mtr	%	%	%	%	%	%	%	%	%	%	%	%	N/mm²	N/mm²	%	Ratio	Test	
Specification: BS 4449:2005+A3:2016 B500B Min →	9.416	-	-	-	-	-	-	-	-	-	-	-	-	500	-	5	1.08	OK/Not	
& also meet CS2:2012 500B Std. Max →	9.860	0.22	-	0.05	0.05	-	-	-	0.80	-	-	0.012	0.50	650	-	-	-	Ok	
Nominal size (mm)	Heat No	Length (mtr)	Net Wt (MT)	Unit Mass	C	Mn	S	P	Si	Cr	Ni	Cu	Mo	V	N	Ceq	YS	UTS	Agt	UTS/YS	Re Bend	Remarks
40	10022048	12	20.706	9.615	0.189	0.75	0.015	0.023	0.207	0.03	0.02	0.019	0.005	0.001	0.006	0.324	594	720	7.76	1.21	OK	
				9.596	0.189	0.75	0.015	0.023	0.207	0.03	0.02	0.019	0.005	0.001	0.006	0.324	590	706	8.42	1.20	OK	
				9.592	0.189	0.75	0.015	0.023	0.207	0.03	0.02	0.019	0.005	0.001	0.006	0.324	584	698	8.63	1.20	OK	
40	10022063	12	45.467	9.587	0.18	0.77	0.016	0.015	0.216	0.012	0.02	0.007	0.003	0.001	0.0074	0.313	560	679	9.01	1.21	OK	
				9.472	0.18	0.77	0.016	0.015	0.216	0.012	0.02	0.007	0.003	0.001	0.0074	0.313	561	678	8.96	1.21	OK	
				9.494	0.18	0.77	0.016	0.015	0.216	0.012	0.02	0.007	0.003	0.001	0.0074	0.313	562	675	7.93	1.20	OK	
40	10022064	12	155.017	9.557	0.19	0.75	0.015	0.015	0.192	0.013	0.019	0.007	0.003	0.001	0.0071	0.32	552	675	9.21	1.22	OK	
				9.581	0.19	0.75	0.015	0.015	0.192	0.013	0.019	0.007	0.003	0.001	0.0071	0.32	553	673	9.01	1.22	OK	
				9.525	0.19	0.75	0.015	0.015	0.192	0.013	0.019	0.007	0.003	0.001	0.0071	0.32	558	679	8.91	1.22	OK	
				9.521	0.19	0.75	0.015	0.015	0.192	0.013	0.019	0.007	0.003	0.001	0.0071	0.32	556	669	7.94	1.20	OK	
				9.52	0.19	0.75	0.015	0.015	0.192	0.013	0.019	0.007	0.003	0.001	0.0071	0.32	554	672	9.12	1.21	OK	
				9.542	0.19	0.75	0.015	0.015	0.192	0.013	0.019	0.007	0.003	0.001	0.0071	0.32	551	670	9.24	1.22	OK	
40	10022066	12	150.63	9.521	0.191	0.76	0.015	0.022	0.204	0.012	0.02	0.006	0.003	0.001	0.0073	0.323	554	675	9.81	1.22	OK	
				9.526	0.191	0.76	0.015	0.022	0.204	0.012	0.02	0.006	0.003	0.001	0.0073	0.323	552	679	8.21	1.23	OK	
				9.531	0.191	0.76	0.015	0.022	0.204	0.012	0.02	0.006	0.003	0.001	0.0073	0.323	563	669	8.24	1.21	OK	
				9.552	0.191	0.76	0.015	0.022	0.204	0.012	0.02	0.006	0.003	0.001	0.0073	0.323	560	680	9.01	1.21	OK	
				9.541	0.191	0.76	0.015	0.022	0.204	0.012	0.02	0.006	0.003	0.001	0.0073	0.323	553	670	7.92	1.21	OK	
				9.531	0.191	0.76	0.015	0.022	0.204	0.012	0.02	0.006	0.003	0.001	0.0073	0.323	563	672	8.34	1.19	OK	
40	10022065	12	149.093	9.543	0.194	0.77	0.011	0.016	0.217	0.011	0.013	0.007	0.002	0.001	0.0076	0.326	562	679	8.32	1.21	OK	
				9.543	0.194	0.77	0.011	0.016	0.217	0.011	0.013	0.007	0.002	0.001	0.0076	0.326	561	684	8.34	1.22	OK	
				9.473	0.194	0.77	0.011	0.016	0.217	0.011	0.013	0.007	0.002	0.001	0.0076	0.326	566	694	8.72	1.23	OK	
				9.498	0.194	0.77	0.011	0.016	0.217	0.011	0.013	0.007	0.002	0.001	0.0076	0.326	558	675	8.21	1.21	OK	
				9.525	0.194	0.77	0.011	0.016	0.217	0.011	0.013	0.007	0.002	0.001	0.0076	0.326	561	680	8.11	1.21	OK	

We hereby certify that the material described herein have been tested and inspected with satisfactory results in accordance with the requirements of the above specification.

This is to certify that the above mentioned product produced & supplied by JSW Steel Ltd do not contain any harmful radio active element higher than the natural level

The product or packing material does not contain any hazardous substances as per RoHS

Commercial Invoice no: 7280096454
Sales contract no: 9024-01
Colour Code: Yellow
Product: Thermo-mechanically treated rebars(QST)
The Results of surface geometry measurement are also in compliance with CS2:2012
INA1
ISO9001:2008 certificate registration no. 01 100 99572

Chemistry – Laddle sample analysis

1MPa= 1N/mm²
YS- Yield Strength
UTS – Ultimate Tensile Strength

Ceq- [C + Mn/6 + (Cr+Mo+V)/5 + (Ni+Cu)/15]

NOTE-CARES Certifies Std. BS4449:2005 B500B.

Certified By

Authorised signatory
(Technology Excellence, BRM & WRM)
For JSW Steel Ltd..

EVER SUCCESS CONSTR. ENG. MATERIALS LTD. 華勝 證書專用

DUM01B/18 / 18-101B BAR PATTERN:INA1 YB40mmX12M

125324

CERTIFICATE OF ORIGIN (NON PREFERENTIAL)

NP/17 *(COMBINED DECLARATION & CERTIFICATE ISSUED IN INDIA)*

IMC 997

1. Goods consigned from (exporter's business name, address, country)

JSW STEEL LIMITED
TORNAGALLU, TALUKA SANDUR
BELLARY, DISTRICT KARNATAKA 583123, INDIA

REFERENCE NO. _____ I.M.C. CODE NO. _____

IMC
Chamber of Commerce and Industry
An ISO 9001 : 2008 Certified Organisation
(Established In 1907)
(Formerly Indian Merchants' Chamber)

HEAD OFFICE :
IMC Bldg , IMC Marg, Churchgate , Mumbai - 400 020 (INDIA)
Tel.: 2204 6633 FAX : (91-22) 2284 4380 / 2204 8508 / 2283 8261
E-mail : imc@imcnet.org Web Address : http://www.imcnet.org

BRANCH OFFICE :
The Commodity Exchange, Room No. 616 & 617, 6th Floor,
P. O. Box 87, Sector 19, Vashi, Navi Mumbai - 400 705 . (INDIA)
Tel.: 2784 2466 Telefax: 2784 2467 E-mail : imcvashi@imcnet.org

BRANCH OFFICE :
405, Centre Square, A-Wing, 4th Floor, Opp. Bharat Petrol Pump,
S.V. Road ,Andheri (West),Mumbai - 400058.(INDIA)Tel: 26231937
Telefax : 26703689 E-mail : imcandheri@imcnet.org

BRANCH OFFICE :
16-A, 16th Floor, Atma Ram House, 1-Tolstoy Marg,New Delhi - 110 001.
(INDIA) Tel : 91-11-2373 0978 - Telefax : 91-11-2373 0979
E-mail : imcdelhi@imcnet.org

2. Goods consigned to (consignee's business name, address, country)

GOLIK STEEL (HK) LIMITED
SUITE 6505 CENTRAL PLAZA
18 HARBOUR ROAD WANCHAI HK HONG KONG

3. Means of transport / Port of loading & Discharge

BY SEA
FROM : KRISHNAPATNAM PORT, INDIA
TO : HONG KONG

4. For office use (IMC)

5.Item no.	6. Marks & no. of packages	7. No. & Kind of packages description of goods	8.Origin criteria	9.Gross wt. or other quantity	10. No. & dt. of invoice
		4949 BUNDLES REINFORCED STEEL BARS SPECIFICATION BS4449 2005 B500B	INDIAN	10429.915 MT NETT WT 10454.660 MT GROSS WT.	
		SIZE IN MM NET WT GROSS WT 10 MM 12 1035.927 1038.302 12 MM 12 1038.774 1041.274 16 MM 12 1034.801 1037.321 25 MM 12 1042.711 1045.171 32 MM 12 2087.196 2091.991 40 MM 12 4190.506 4200.601 **TOTAL 10429.915 10454.660**			
		PO NO 9023 TOTAL NUMBER OF PIECES: 385275			
	TOTAL 4949 BUNDLES	WE CERTIFY THAT GOODS ARE OF 'INDIAN' ORIGIN			

We Ever Success Construction Eng. Materials Ltd.
Certify that this is a true copy issued to:
Client: Casco Testing Centre Ltd.
Location: 29A, On Chuen Street Fanling, Hong Kong
Size: Y40mm x 12M *Tonnage:* 0.193 MT
Date: 11 Apr., 2022 *D/O No.:* D22769

11. CERTIFICATION (IMC)

It is hereby certified on the basis of control carried out , that the declaration by the exporter is correct

No 71126

IMC CHAMBER OF COMMERCE AND INDUSTRY 11 JAN 2018 MUMBAI, INDIA

Authorised Signatory, Indian Merchants' Chamber of Commerce and Industry

12. DECLARATION BY THE EXPORTER

The undersigned hereby declares that the above details & statements are correct that all the goods were produced in INDIA

(Name of Country)

and that they comply with the origin requirements for exports to HONG KONG

(Name of Importing Country)

FOR JSW STEEL LTD.

MUMBAI, INDIA DT.09.01.2018

Place & Date, Exporters Signature,Rubber Stamp of Co.