

THAI CONST & BUILDING MANUFACTURING PUBLIC COMPANY LIMITED  
NO.120 MOO 1, SOI MOHBANG, SUKSAWAD ROAD, LAEMFAHPA, PHRASAMUTCHEDI  
SAMUTPRAKAN 10290 THAILAND  
TEL (+662) 815-3600 FAX (+662) 815-2850

The following sample(s) was/ were submitted and identified on behalf of the client as:

|                       |                                                              |
|-----------------------|--------------------------------------------------------------|
| Sample Name           | : SCAFFOLD SWIVEL COUPLER                                    |
| Sample Number         | : SHCCM140400659                                             |
| Test Required         | : Please see the next page(s)                                |
| Test method           | : EN 74-1:2005                                               |
| Product specification | : 48.3*48.3mm                                                |
| Material and Mark     | : Q235                                                       |
| Date of Receipt       | : Apr. 02, 2014                                              |
| Test Period           | : Apr. 02, 2014 to Apr. 14, 2014                             |
| Test result(s)        | : For further details, please refer to the following page(s) |

\*\*\*\*\* To be continued\*\*\*\*\*

Signed for SGS-CSTC Standards  
Technical Services (Shanghai) Co., Ltd.

*Vivien Zhang*  
Vivien Zhang  
Authorized signatory

# TCB

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



## Annex A Detailed test results

## 1. Slipping force

| Specimens   | $F_s$ (kN, $\Delta_1=7\text{mm}$ ) | $F_s$ (kN, $1\text{mm}\leq\Delta_2\leq2\text{mm}$ ) |
|-------------|------------------------------------|-----------------------------------------------------|
| No.1        | 11.37                              | * $F_s = 20.0\text{kN}$ , $\Delta_2 < 1\text{mm}$   |
| No.2        | 10.43                              | * $F_s = 20.0\text{kN}$ , $\Delta_2 < 1\text{mm}$   |
| No.3        | 11.08                              | * $F_s = 20.0\text{kN}$ , $\Delta_2 < 1\text{mm}$   |
| No.4        | 11.12                              | * $F_s = 20.0\text{kN}$ , $\Delta_2 < 1\text{mm}$   |
| No.5        | 10.87                              | * $F_s = 20.0\text{kN}$ , $\Delta_2 < 1\text{mm}$   |
| No.6        | 10.13                              | * $F_s = 20.0\text{kN}$ , $\Delta_2 < 1\text{mm}$   |
| No.7        | 11.54                              | * $F_s = 20.0\text{kN}$ , $\Delta_2 < 1\text{mm}$   |
| No.8        | 10.87                              | * $F_s = 20.0\text{kN}$ , $\Delta_2 < 1\text{mm}$   |
| No.9        | 11.22                              | * $F_s = 20.0\text{kN}$ , $\Delta_2 < 1\text{mm}$   |
| No.10       | 10.69                              | * $F_s = 20.0\text{kN}$ , $\Delta_2 < 1\text{mm}$   |
| $F_{s,5\%}$ | 10.1                               | -                                                   |

\*Note: In accordance with EN 74-1:2005, the test can be ended when the test load reached twice the specified  $F_s$  given in Table 8 of EN 74-1:2005.

## 2. Failure force

| Specimens       | $F_t$ (kN) |
|-----------------|------------|
| No.1            | 24.60      |
| No.2            | 30.10      |
| No.3            | 28.30      |
| No.4            | 32.03      |
| No.5            | 33.96      |
| $F_{t,5\%}/YR2$ | 17.5       |

\*\*\*\*\* To be continued\*\*\*\*\*

TCB

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



## Annex A Detailed test results

## 1. Slipping force

| Specimens   | $F_s$ (kN, $\Delta_1=7\text{mm}$ ) | $F_s$ (kN, $1\text{mm}\leq\Delta_2\leq2\text{mm}$ ) |
|-------------|------------------------------------|-----------------------------------------------------|
| No.1        | 11.37                              | * $F_s=20.0\text{kN}$ , $\Delta_2<1\text{mm}$       |
| No.2        | 10.43                              | * $F_s=20.0\text{kN}$ , $\Delta_2<1\text{mm}$       |
| No.3        | 11.08                              | * $F_s=20.0\text{kN}$ , $\Delta_2<1\text{mm}$       |
| No.4        | 11.12                              | * $F_s=20.0\text{kN}$ , $\Delta_2<1\text{mm}$       |
| No.5        | 10.87                              | * $F_s=20.0\text{kN}$ , $\Delta_2<1\text{mm}$       |
| No.6        | 10.13                              | * $F_s=20.0\text{kN}$ , $\Delta_2<1\text{mm}$       |
| No.7        | 11.54                              | * $F_s=20.0\text{kN}$ , $\Delta_2<1\text{mm}$       |
| No.8        | 10.87                              | * $F_s=20.0\text{kN}$ , $\Delta_2<1\text{mm}$       |
| No.9        | 11.22                              | * $F_s=20.0\text{kN}$ , $\Delta_2<1\text{mm}$       |
| No.10       | 10.69                              | * $F_s=20.0\text{kN}$ , $\Delta_2<1\text{mm}$       |
| $F_{s,5\%}$ | 10.1                               | -                                                   |

\*Note: In accordance with EN 74-1:2005, the test can be ended when the test load reached twice the specified  $F_s$  given in Table 8 of EN 74-1:2005.

## 2. Failure force

| Specimens       | $F_t$ (kN) |
|-----------------|------------|
| No.1            | 24.60      |
| No.2            | 30.10      |
| No.3            | 28.30      |
| No.4            | 32.03      |
| No.5            | 33.96      |
| $F_{t,5\%}/YR2$ | 17.5       |

\*\*\*\*\* To be continued\*\*\*\*\*

TCB

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



## TEST REPORT

No. : SHCCM140400659

Date : Apr. 14, 2014

Page: 4 of 5

### 3. Indentation

| Specimens | $\Delta_{10}$ (mm, F=4.7kN) |
|-----------|-----------------------------|
| No.1      | 0.20                        |
| No.2      | 0.11                        |
| No.3      | 0.21                        |
| No.4      | 0.17                        |
| No.5      | 0.14                        |

Statement: Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Test photos:



Sample photo



Test arrangement for slipping force test

\*\*\*\*\* To be continued\*\*\*\*\*

# TCB

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



## TEST REPORT

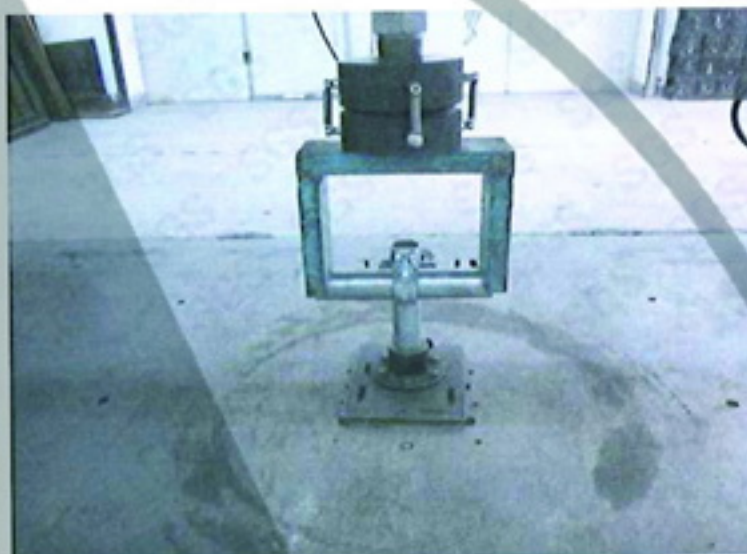
No. : SHCCM140400659

Date : Apr. 14, 2014

Page: 5 of 5



Test arrangement for failure force test



Test arrangement for indentation test

\*\*\*\*\* End of report \*\*\*\*\*

# TCB

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.