

PRODUCT CATALOG

**20
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HKL SCAFFOLDING & FROMWORK PTE LTD

HKL SCAFFOLDING & FORMWORK PTE LTD

Address: No 4 Tuas South 10 Singapore 637099

Tel: 6898 1111 (9 LINE) Fax: 6898 2617

Email: enquiry@hklscaffolding.com.sg

Co.Reg No: 199804679M

H.K.L. Scaffolding & Formwork Pte Ltd was set up in 1998 that specializes in providing Scaffolding Materials, Leasing, Trading, Construction, Marine Hardware and Services.

We aim to be your one-stop industrial supplier by being the best in pricing, services and inventory range. Today we have established a wide base of customers in the local and oversea region showing reliability in producing quality competitive products and services to meet our entire customer's request. We are committed to maintain and improved high standard in the quality for our products and services as we progress in the 21st Century, to make sure that the quality of the product or services is not only satisfactory but exceptional.

Why choose us?

We believe that long-term customer relationships are build by 3 factors:

Our Pricing

Most, if not all, of our items are directly imported from manufacturers all over the world. Therefore we have the ability to give you competitive prices.

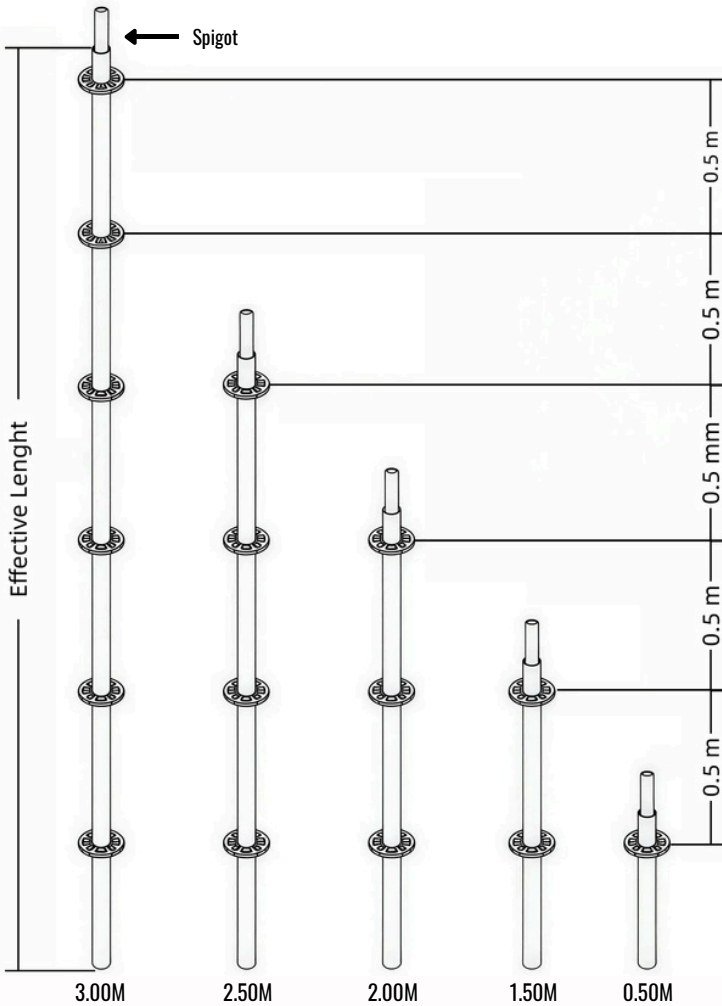
Our Services

"We Believe in Service!" is our company motto and we live by it. Our friendly, fast, efficient and reliable sales personnel are always available to take your orders and assist you and meet your requirements.

Our Inventory

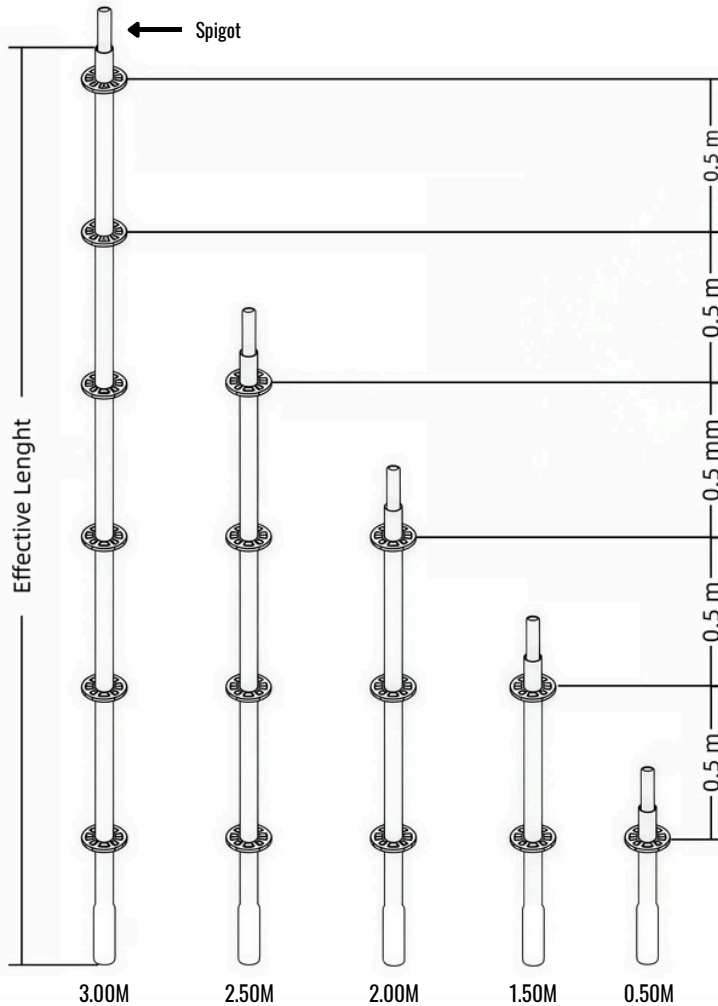
Being one of Singapore's largest supply companies enable us to keep stocks of our items in sizeable quantities any time ready to ensure on-the time concept in our delivery and commitment with maximum to ensure no delays.

R48 Ring Lock Standards



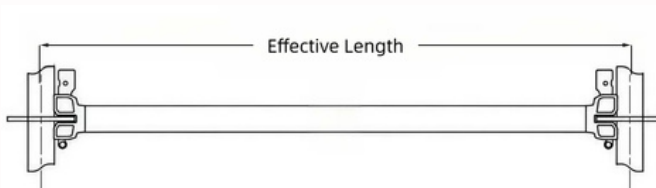
| Product Code | Description | Length | Weight |
|--------------|-------------------------------------|--------|---------|
| RSS0.5M | R48 RINGLOCK SYSTEM STANDARD-0500MM | 0.50M | 3.24KG |
| RSS1M | R48 RINGLOCK SYSTEM STANDARD-1000MM | 1.00M | 5.59KG |
| RSS1.5M | R48 RINGLOCK SYSTEM STANDARD-1500MM | 1.50M | 7.94KG |
| RSS2M | R48 RINGLOCK SYSTEM STANDARD-2000MM | 2.00M | 10.29KG |
| RSS2.5M | R48 RINGLOCK SYSTEM STANDARD-2500MM | 2.50M | 12.64KG |
| RSS3.0M | R48 RINGLOCK SYSTEM STANDARD-3000MM | 3.00M | 14.99KG |

R60 Ring Lock Standards



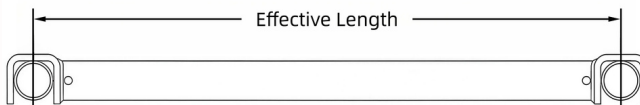
| Product Code | Description | Length | Weight |
|--------------|-------------------------------------|--------|---------|
| R60S0.5M-S | R60 RINGLOCK SLEEVE STANDARD 0500MM | 0.50M | 4.40KG |
| R60S1M-S | R60 RINGLOCK SLEEVE STANDARD 1000MM | 1.00M | 7.40KG |
| R60S1.5M-S | R60 RINGLOCK SLEEVE STANDARD 1500MM | 1.50M | 10.00KG |
| R60S2M-S | R60 RINGLOCK SLEEVE STANDARD 2000MM | 2.00M | 12.80KG |
| R60S2.5M-S | R60 RINGLOCK SLEEVE STANDARD 2500MM | 2.50M | 16.00KG |

Ring Lock Ledgers



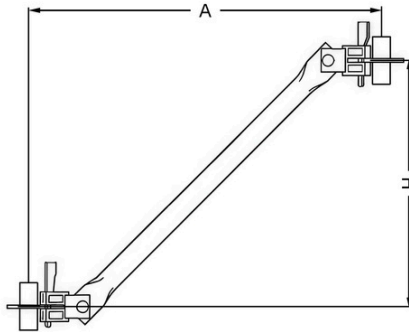
| Product Code | Description | Length | Weight |
|--------------|-------------------------------|--------|--------|
| RL500 | RINGLOCK SYSTEM LEDGER-0500MM | 500MM | 2.30KG |
| RL630 | RINGLOCK SYSTEM LEDGER-0630MM | 630MM | 2.79KG |
| RL732 | RINGLOCK SYSTEM LEDGER-0732MM | 732MM | 2.80KG |
| RL914 | RINGLOCK SYSTEM LEDGER-0914MM | 914MM | 3.75KG |
| RL1219 | RINGLOCK SYSTEM LEDGER-1219MM | 1219MM | 4.87KG |
| RL1524 | RINGLOCK SYSTEM LEDGER-1524MM | 1524MM | 6.16KG |
| RL1829 | RINGLOCK SYSTEM LEDGER-1829MM | 1829MM | 7.23KG |
| RL2440 | RINGLOCK SYSTEM LEDGER-2440MM | 2440MM | 9.43KG |

Ring Lock Intermediate Transom



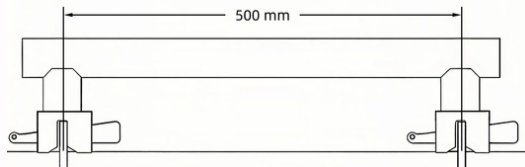
| Product Code | Description | Length | Weight |
|--------------|--------------------------------|--------|--------|
| RST914 | RINGLOCK SYSTEM TRANSOM-0914MM | 914MM | 3.36KG |
| RST1219 | RINGLOCK SYSTEM TRANSOM-1219MM | 1219MM | 4.20KG |
| RST1524 | RINGLOCK SYSTEM TRANSOM-1524MM | 1524MM | 5.06KG |
| RST1829 | RINGLOCK SYSTEM TRANSOM-1829MM | 1829MM | 5.84KG |

Ring Lock Diagonal Brace



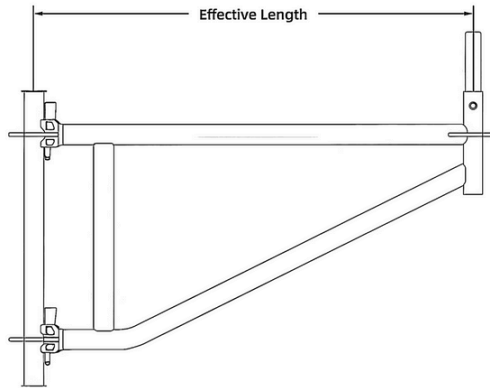
| Product Code | Description | A | H | Weight |
|--------------|--------------------------------|--------|-------|--------|
| RDB500-15 | RINGLOCK SYSTEM DIAGONAL BRACE | 500MM | 1500M | 4.91KG |
| RDB630-15 | RINGLOCK SYSTEM DIAGONAL BRACE | 630MM | 1500M | 4.98KG |
| RDB732-15 | RINGLOCK SYSTEM DIAGONAL BRACE | 732MM | 1500M | 5.12KG |
| RDB914-15 | RINGLOCK SYSTEM DIAGONAL BRACE | 914MM | 1500M | 5.23KG |
| RDB1219-15 | RINGLOCK SYSTEM DIAGONAL BRACE | 1219MM | 1500M | 5.59KG |
| RDB1524-15 | RINGLOCK SYSTEM DIAGONAL BRACE | 1524MM | 1500M | 6.08KG |
| RDB1829-15 | RINGLOCK SYSTEM DIAGONAL BRACE | 1829MM | 1500M | 6.58KG |
| RDB2440-20 | RINGLOCK SYSTEM DIAGONAL BRACE | 2440MM | 1500M | 8.76KG |

Ring Lock Suspended Device



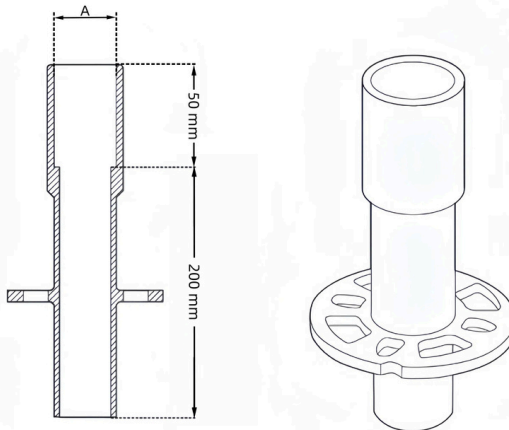
| Product Code | Description | Length | Weight |
|--------------|---------------------------------|--------|--------|
| RSD500 | RINGLOCK SUSPENDED DEVICE-500MM | 0.50M | 2.8KG |

Ring Lock Bracket



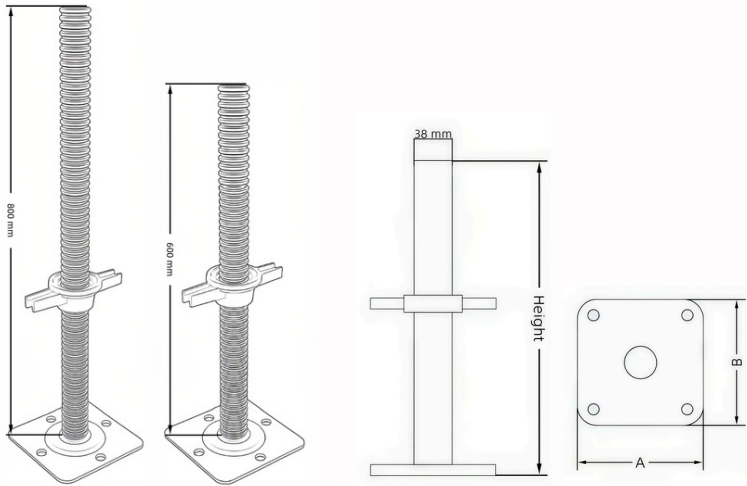
| Product Code | Description | Length | Weight |
|--------------|--------------------------------|--------|--------|
| RSSB0914M | RINGLOCK SYSTEM BRACKET-0914MM | 0914M | 9.5KG |
| RSSB1M | RINGLOCK SYSTEM BRACKET-1000MM | 1000M | 9.8KG |

Ring Lock Base-Collar



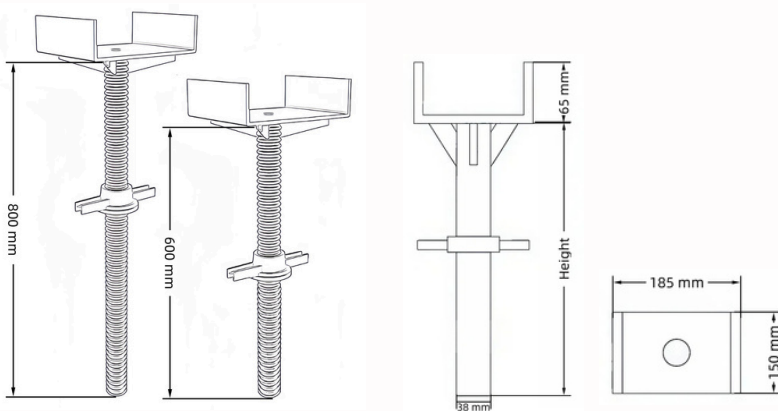
| Product Code | Description | A | Weight |
|--------------|---------------------------------|------|--------|
| RBC250 | R48 RINGLOCK SYSTEM BASE COLLAR | 50MM | 1.77KG |
| R60BC350 | R60 RINGLOCK SYSTEM BASE COLLAR | 62MM | 2.15KG |

Ring Lock Jack Base



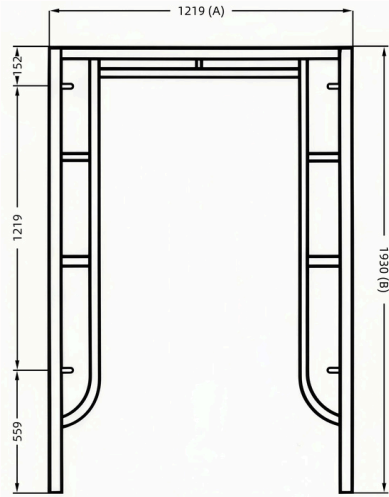
| Product Code | Description | Height | Weight |
|--------------|--------------------------------------|--------|--------|
| RJ600 | Ringlock System Jack Base 600mm OD38 | 600MM | 4.5KG |
| RJ800 | Ringlock System Jack Base 800mm OD38 | 800MM | 5.0KG |

Ring Lock U-Head Jack

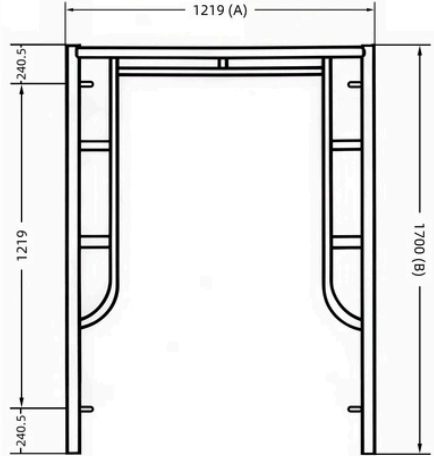


| Product Code | Description | Height | Weight |
|--------------|---------------------------------------|--------|--------|
| RU600 | R48 RINGLOCK SYSTEM U-HEAD JACK 600MM | 600MM | 6.5KG |
| RU800 | R48 RINGLOCK SYSTEM U-HEAD JACK 800MM | 800MM | 6.4KG |

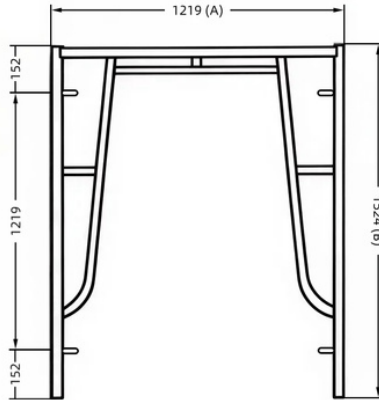
MAIN FRAME



| Product Code | A (MM) | B (MM) | Weight (KG) |
|--------------|--------|--------|-------------|
| FS-F1930 | 1219 | 1930 | 17.00KG |

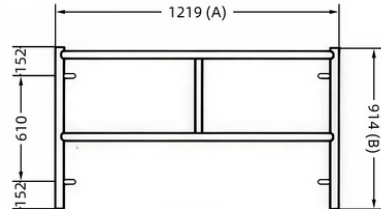
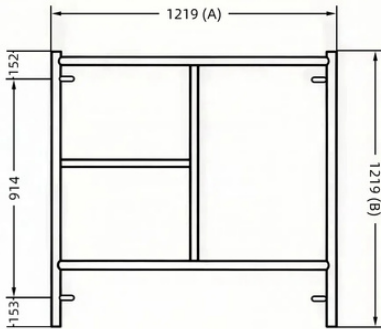


| Product Code | A (MM) | B (MM) | Weight (KG) |
|--------------|--------|--------|-------------|
| FS-F1700 | 1219 | 1700 | 15.00KG |



| Product Code | A (MM) | B (MM) | Weight (KG) |
|--------------|--------|--------|-------------|
| FS-F1524 | 1219 | 1524 | 12.50KG |

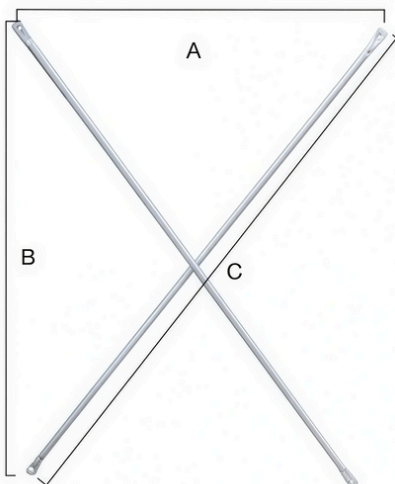
LADDER FRAME



| Product Code | A (MM) | B (MM) | Weight (KG) |
|--------------|--------|--------|-------------|
| FS-F1219 | 1219 | 1219 | 11.90KG |

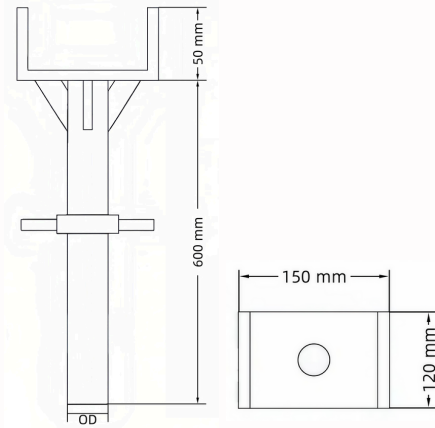
| Product Code | A (MM) | B (MM) | Weight (KG) |
|--------------|--------|--------|-------------|
| FS-F914 | 1219 | 914 | 10.00KG |

CROSS BRACE SS280



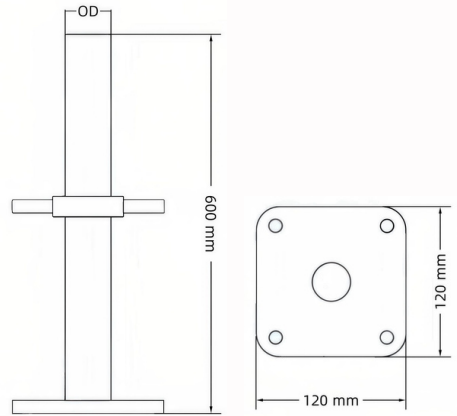
| Product Code | A (MM) | B (MM) | C (MM) | Weight (KG) |
|--------------|--------|--------|--------|-------------|
| FS-CB1099 | 914 | 610 | 1099 | 0.50KG |
| FS-CB1363 | 1219 | 610 | 1363 | 1.93KG |
| FS-CB1524 | 1219 | 914 | 1524 | 2.16KG |
| FS-CB1724 | 1219 | 1219 | 1724 | 2.43KG |
| FS-CB1928 | 1829 | 610 | 1928 | 2.72KG |
| FS-CB2198 | 1829 | 1219 | 2198 | 3.08KG |

U-HEAD JACK



| Product Code | OD (MM) | Weight (KG) |
|--------------|---------|-------------|
| J-JB30 | 30 | 0.0KG |
| J-JB35 | 35 | 3.50KG |

JACK BASE



| Product Code | OD (MM) | Weight (KG) |
|--------------|---------|-------------|
| J-UH30 | 30 | 0.0KG |
| J-UH35 | 35 | 4.00KG |

JIONT PIN



| Product Code | OD (MM) | Weight (KG) |
|--------------|---------|-------------|
| FS-PIN | 36.4MM | 0.30KG |

CASTER WHEEL



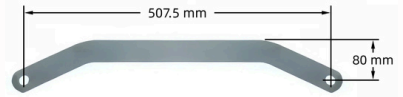
| Product Code | Wheel Diameter | Weight (KG) |
|--------------|----------------|-------------|
| CW-8PU | 8 Inches | 6.5KG |

CATWALK PANEL



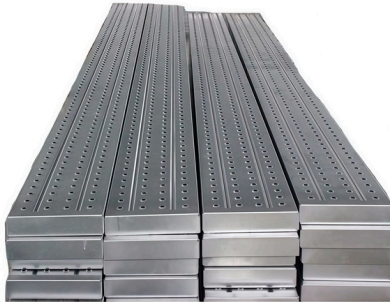
| Product Code | A (MM) | B (MM) | WEIGHT (KG) |
|--------------|--------|--------|-------------|
| CW1829 | 500 | 1829 | 20.4KG |

ARM LOCK



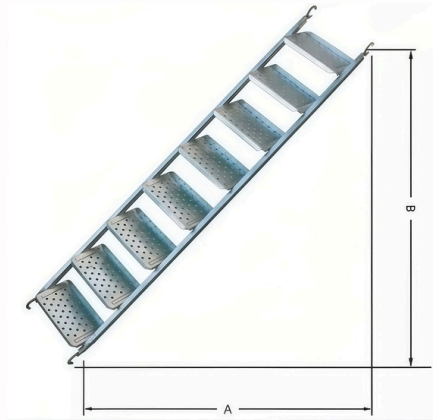
| Product Code | LENGTH (MM) | WEIGHT (KG) |
|--------------|-------------|-------------|
| J-AL507.5 | 507.5 | 0.4KG |

METAL PLANK SS280



| Product Code | W | H | L | WEIGHT |
|--------------|-------|------|------|----------|
| MP-210X1M | 210MM | 45MM | 1.0M | 3.30KG |
| MP-210X1.5M | 210MM | 45MM | 1.5M | 4.80KG |
| MP-210X2M | 210MM | 45MM | 2.0M | 6.67KG |
| MP-210X2.5M | 210MM | 45MM | 2.5M | 9.20KG |
| MP-210X3M | 210MM | 45MM | 3.0M | 9.60KG |
| MP-210X4M | 210MM | 45MM | 4.0M | 13.60 KG |
| MP-240X1M | 240MM | 45MM | 1.0M | 3.80 KG |
| MP-240X1.5M | 240MM | 45MM | 1.5M | 5.50 KG |
| MP-240X2M | 240MM | 45MM | 2.0M | 7.80 KG |
| MP-240X3M | 240MM | 45MM | 3.0M | 10.85 KG |
| MP-240X4M | 240MM | 45MM | 4.0M | 14.00 KG |

STAIRCASE



| Product Code | A (MM) | B (MM) | WIDTH (MM) | WEIGHT (KG) |
|--------------|--------|--------|------------|-------------|
| SC-1.7M | 1829MM | 1725MM | 450MM | 22.70 KG |
| SC-1.9M | 1829MM | 1955MM | 450MM | 24.62 KG |

HOLLOW SECTION LADDER



| Product Code | L (MM) | W (MM) |
|--------------|--------|--------|
| LA3M-HS-HDG | 3000MM | 330MM |
| LA4M-HS-HDG | 4400MM | 330MM |

MONKEY LADDER



| Product Code | L (MM) | W (MM) |
|--------------|--------|--------|
| LA3M-HS-HDG | 3300MM | 330MM |

SCAFFOLDING PIPE



BS STANDARD PIPE (HDG) BS1139/EN39

Code: BSPIPE48X4X6M

| OD (MM) | THK (MM) | L (M) | WEIGHT (KG) |
|------------|-------------|----------|----------------|
| 48.6 | 4.0 | 6 | 24.72 |

JIS STANDARD PIPE (HDG)

STK400

Code: PIPE-48.6X2.2X6M-HDG(R)

| OD (MM) | THK (MM) | L (M) | WEIGHT (KG) |
|------------|-------------|----------|----------------|
| 48.6 | 2.2 | 6 | 13.75 |

KSK STK500 SS311

Code: PIPE-48.6X2.4X6M-HDG

| OD (MM) | THK (MM) | L (M) | WEIGHT (KG) |
|------------|-------------|----------|----------------|
| 48.6 | 2.4 | 6 | 15.00 |



JIS STANDARD CLAMP KSK SS311:2005

BASE PLATE



SWIVEL CLAMP



FIXED CLAMP



PLANK CLAMP



**FIXED
BEAM CLAMP**



**SWIVEL
BEAM CLAMP**



BONE JOINT



**CLAMP 60.5
FIXED**



**CLAMP 60.5
SWIVEL**



BS STANDARD PRESSED STEEL WES BS1139

BS SWIVEL CLAMP



BS FIXED CLAMP



BS LADDER CLAMP



BS PUT LOG CLAMP



BS SLEEVE COUPLER



BS JOINT PIN



BS STANDARD DROP FORGED WES BS1139

BS SWIVEL CLAMP



BS FIXED CLAMP



**BS LADDER
CLAMP**



**BS SWIVEL
BEAM CLAMP**



**BS FIXED
BEAM CLAMP**



**BS PUT LOG
CLAMP**



H.K.L. SCAFFOLDING & FORMWORK PTE LTD

U-CLIP



CLAMP COVER



PIPE CAP



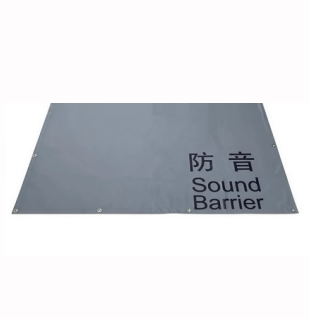
**SAFETY NET
1.8M X 5M**



**SAFETY NET
JAPAN TYPE**



**SOUND BARRIER SHEET
JAPAN TYPE**



U- BOLT



**SPANNER
(WRENCH)**



SCAFFOLD TAG

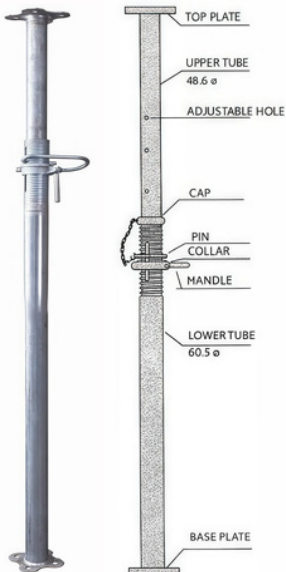


TRIANGLE PROP



| Product Code | CLOSED SIZE | FULLY EXTENDED SIZE | WEIGHT |
|--------------|-------------|---------------------|--------|
| TRP-0.75M | 870 | 1200 | 10.2KG |
| TRP-1M | 1120 | 1450 | 11.2KG |
| TRP-1.5M | 1620 | 1950 | 13.2KG |
| TRP-2M | 2120 | 2450 | 15.6KG |
| TRP-3M | 3120 | 3450 | 20.4KG |
| TRP-4.4M | 4520 | 4850 | 23.6KG |
| TRP-6M | 6120 | 6450 | 0.00KG |

STEEL PROP



| Product Code | CLOSED SIZE | FULLY EXTENDED SIZE | WEIGHT |
|--------------|-------------|---------------------|---------|
| M50 | 1500 | 2580 | 0.00KG |
| M60 | 1800 | 3000 | 0.00KG |
| M70 | 2180 | 3500 | 11.00KG |
| M90 | 2580 | 3900 | 12.00KG |
| M120 | 2880 | 4200 | 0.00KG |

CERTIFICATE



H.K.L. SCAFFOLDING & FORMWORK PTE LTD

Ring Lock Materials Testing Report

Singapore Test Services
A Division of S&S

Report No: **8027-014-0309-MEME**
Date of Report: **09 May 2014** Page 1 of 1

Client's Reference: Lead Testing of Conventional RINGLOCK SYSTEM 1.3mm Vertical

Client Details: H.K.L. Scaffolding & Formwork Pte Ltd
10, Tuong Suah Street
Singapore 437014

Site: No. 10 Tuong Suah St.

Sample Description: Three (3) pieces of galvanneal RINGLOCK SYSTEM 1.3mm Vertical (Figure 1)

Test Method: The vertical standard test method (EN 12813-1) is a compression test used to determine the strength of a material. For the vertical standard test method, the test specimen is a ring lock (see Figure 1) and is tested under a gradually applied load until failure occurs (EN 12813-1).

Test Equipment: ENKEMAC P/MT with Column RCH 100 and Single Pneumatic Pump (ENKEMAC)

Date of Report: 09 May 2014

Date of Test: 09 May 2014

Location of Test: 240 Jooat Street Ln, Singapore 610023

Test Conducted On: Tan Chee Kheng

Results Reported By: Tan Chee Kheng
Senior Officer

Report Approved By: Lim Yee Yee
Senior Manager
Materials Engineering Division

Singapore Test Services
A Division of S&S

Report No: **8021-014-0304-MEME**
Date of Report: **13 February 2014**

Client's Reference: Lead Testing on Vertical Standard (Diagonal Bracing)

Client Details: H.K.L. Scaffolding & Formwork Pte Ltd
10, Tuong Suah Street
Singapore 437014

Site: No. 10 Tuong Suah St.

Sample Description: Three (3) pieces of studs of vertical standard for Modular Scaffold Ringlock System.

Test Method: Singapore Standard S209 Part 1: 2008 "Specification for Metal Scaffolding" - Part 2: Modular scaffolding (Annex D)

Test Equipment: Sarsco Universal Testing Machine, Model: 1000000

Date of Report: 13 February 2014

Date of Test: 13 February 2014

Location of Test: 240 Jooat Street Ln, Singapore 610023

Test Conducted On: Png Ming Kuo & Lim Cheong Kai

Results Reported By: Png Ming Kuo
Senior Officer

Report Approved By: Lim Cheong Kai
Senior Manager
Materials Engineering Division

Singapore Test Services
A Division of S&S

Report No: **0321-014-0341-MEME**
Date of Report: **13 September 2012** Page 1 of 1

Client's Reference: Lead Testing

Client Details: H.K.L. Scaffolding & Formwork Pte Ltd
10, Tuong Suah Street
Singapore 437014

Site: No. 10 Tuong Suah St.

Sample Description: One (01) piece of 1.3mm of Galvalume Steel Sheet Diagonal Bracing Stud with Ringlock Part of Ringlock System as shown in Figure 1.

Test Method: The Test of Vertical Standard Sheet Diagonal Bracing Stud with Ringlock Part of Ringlock System as shown in Figure 1. The vertical standard test method (EN 12813-1) is a compression test used to determine the strength of a material. For the vertical standard test method, the test specimen is a ring lock (see Figure 1) and is tested under a gradually applied load until failure occurs (EN 12813-1).

Test Equipment: ENKEMAC P/MT with Column RCH 100 and Single Pneumatic Pump (ENKEMAC)

Date of Report: 13 September 2012

Date of Test: 13 September 2012

Location of Test: 240 Jooat Street Ln, Singapore 610023

Results Reported By: Tan Chee Kheng
Senior Officer

Report Approved By: Lim Yee Yee
Senior Manager
Materials Engineering Division

TEST REPORT

Report No: **8028-0322-01205-MEME**
Date of Report: **05 April 2012**

Client's Reference: Lead Testing

Client Details: H.K.L. Scaffolding & Formwork Pte Ltd
10, Tuong Suah Street
Singapore 437014

Site: No. 10 Tuong Suah St.

Sample Description: One (01) piece of New R&R60 Ringlock System Adjustable Jack Base (ENKEMAC) - 1.3mm Vertical (Figure 1) as shown in Figure 1.

Test Method: ENKEMAC P/MT with Column RCH 100 and Single Pneumatic Pump (ENKEMAC)

Date of Report: 05 April 2012

Date of Test: 05 April 2012

Location of Test: 240 Jooat Street Ln, Singapore 610023

Test Conducted On: Tan Chee Kheng

Results Reported By: Tan Chee Kheng
Senior Officer

Report Approved By: Lim Yee Yee
Senior Manager
Materials Engineering Division

Singapore Test Services
A Division of S&S

Report No: **8028-0322-01205-MEME**
Date of Report: **05 April 2012**

Client's Reference: Lead Testing

Client Details: H.K.L. Scaffolding & Formwork Pte Ltd
10, Tuong Suah Street
Singapore 437014

Site: No. 10 Tuong Suah St.

Sample Description: One (01) piece of New R&R60 Ringlock System Adjustable Jack Base (ENKEMAC) - 1.3mm Vertical (Figure 1) as shown in Figure 1.

Test Method: ENKEMAC P/MT with Column RCH 100 and Single Pneumatic Pump (ENKEMAC)

Date of Report: 05 April 2012

Date of Test: 05 April 2012

Location of Test: 240 Jooat Street Ln, Singapore 610023

Test Conducted On: Tan Chee Kheng

Results Reported By: Tan Chee Kheng
Senior Officer

Report Approved By: Lim Yee Yee
Senior Manager
Materials Engineering Division

Singapore Test Services
A Division of S&S

Report No: **0516-0322-01809-MEME**
Date of Report: **21 May 2012**

Client's Reference: Lead Testing

Client Details: H.K.L. Scaffolding & Formwork Pte Ltd
10, Tuong Suah Street
Singapore 437014

Site: No. 10 Tuong Suah St.

Sample Description: One (01) piece of New R&R60 Ringlock System Adjustable Jack Base (ENKEMAC) - 1.3mm Vertical (Figure 1) as shown in Figure 1.

Test Method: ENKEMAC P/MT with Column RCH 100 and Single Pneumatic Pump (ENKEMAC)

Date of Report: 21 May 2012

Date of Test: 21 May 2012

Location of Test: 240 Jooat Street Ln, Singapore 610023

Test Conducted On: Tan Chee Kheng

Results Reported By: Tan Chee Kheng
Senior Officer

Report Approved By: Lim Yee Yee
Senior Manager
Materials Engineering Division

Singapore Test Services
A Division of S&S

Report No: **8028-0322-01205-MEME**
Date of Report: **27 December 2013**

Client's Reference: Lead Testing

Client Details: H.K.L. Scaffolding & Formwork Pte Ltd
10, Tuong Suah Street
Singapore 437014

Site: No. 10 Tuong Suah St.

Sample Description: One (01) piece of vertical standard for Modular Scaffold Ringlock System.

Test Method: ENKEMAC P/MT with Column RCH 100 and Single Pneumatic Pump (ENKEMAC)

Date of Report: 27 December 2013

Date of Test: 27 December 2013

Location of Test: 240 Jooat Street Ln, Singapore 610023

Test Conducted On: Tan Chee Kheng

Results Reported By: Tan Chee Kheng
Senior Officer

Report Approved By: Lim Yee Yee
Senior Manager
Materials Engineering Division

Singapore Test Services
A Division of S&S

Report No: **8028-0322-01205-MEME**
Date of Report: **27 December 2013**

Client's Reference: Lead Testing on Ringlock System U-Block Jack Base With

Client Details: H.K.L. Scaffolding & Formwork Pte Ltd
10, Tuong Suah Street
Singapore 437014

Site: No. 10 Tuong Suah St.

Sample Description: One (01) piece of Ringlock System U-Block Jack Base With

Test Method: ENKEMAC P/MT with Column RCH 100 and Single Pneumatic Pump (ENKEMAC)

Date of Report: 27 December 2013

Date of Test: 27 December 2013

Location of Test: 240 Jooat Street Ln, Singapore 610023

Test Conducted On: Tan Chee Kheng

Results Reported By: Tan Chee Kheng
Senior Officer

Report Approved By: Lim Yee Yee
Senior Manager
Materials Engineering Division

Singapore Test Services
A Division of S&S

Report No: **8028-0322-01205-MEME**
Date of Report: **04 April 2013**

Client's Reference: Lead Testing

Client Details: H.K.L. Scaffolding & Formwork Pte Ltd
10, Tuong Suah Street
Singapore 437014

Site: No. 10 Tuong Suah St.

Sample Description: One (01) piece of Conventional H&L&S Vertical Standard 1.3mm (Figure 1) as shown in Figure 1.

Test Method: The vertical standard test method (EN 12813-1) is a compression test used to determine the strength of a material. For the vertical standard test method, the test specimen is a ring lock (see Figure 1) and is tested under a gradually applied load until failure occurs (EN 12813-1).

Test Equipment: ENKEMAC P/MT with Column RCH 100 and Single Pneumatic Pump (ENKEMAC)

Date of Report: 04 April 2013

Date of Test: 04 April 2013

Location of Test: 240 Jooat Street Ln, Singapore 610023

Test Conducted On: Tan Chee Kheng

Results Reported By: Tan Chee Kheng
Senior Officer

Report Approved By: Lim Yee Yee
Senior Manager
Materials Engineering Division