acrow.
ENGINEERING & CONSTRUCTION

# TECHNICAL GUIDE
# ACROW GASS

FALSEWORK & SHORING

Any safety provisions as directed by the appropriate governing agencies must be observed when using our products. The pictures in this document are snapshots of situations at different stages of assembly, and therefore are not complete images. For the purpose of safety, they should not be deemed as definitive.

The loads featured in this document, related to the parts of the product, are approximate.

The company reserves the right to introduce any modifications deemed necessary for the technical development of the product.



DOCUMENT NO: ACROWGASS_SEP024_ISSUE_C

# Technical Manual Release Notes

This page is intended to record all changes to the **GASS** technical manual pages.

Changes or additions to this manual will be itemised with a brief description and date when the amendments were made.

| ISSUE | DATE | Amendment Description |
|---|---|---|
| A | 09/2023 | First Release |
| B | 02/2024 | Second Release |
| C | 09/2024 | Third Release |
| | | |
| | | |
| | | |

## Contents

# 1. Technical Specifications

## System Description

Acrow **GASS** Aluminium Shoring System is a lightweight shoring system that provides a fast, efficient and versatile falsework structure with the benefit of providing load capacity up to 140kN. The primary product attributes of **GASS** are:

- Provision of load capacity up to 140kN
- Light weight and easy to erect
- Can provide bay size up to 3 meters
- Ideally suited to "table form" applications along with conventional strike and fix flexibility.

In addition the high strength light weight Acrow **GASS** system is easy to erect and dismantle leading to significant labour savings on site.

## Purpose of the Document

The purpose of this document is to provide guidelines for design, safe handling, transport and installation of the **GASS** system.

The document also outlines the various components of the system and it features illustrations, working load limits, typical assembly arrangements and safe transport and handling measures.

The information contained in this document is provided as a general guide only and does not replace the need for the design to be reviewed and checked by a qualified person in the field of temporary works design and installation, concrete, steel, building construction and services.

This material has been prepared in the context of relevant Australian Standards and the National Construction Code (NCC). Users should make themselves aware of any recent changes to these documents referred to therein and to local variations or requirements.

This document is NOT a substitute for site-specific Safe Operation Procedures. It is the Installation Contractors responsibility to prepare safe work method statements and observe and comply with site specific health and safety regulations, standards and policies.

Acrow has dedicated engineering services available for project assistance. We can provide design support for clients to determine the best way to specify and document. Our technical experts can identify the most efficient temporary work design meeting project requirements, specifications and installation process.

Should the users require any further information or guidance, they are encouraged to contact their local Acrow branch.

## Safety Information

This safety information is to draw the user's attention to possible musculoskeletal disorders as a result of manual handling during assembly and dismantling of the **GASS** system

It is recommended that users of the **GASS** system employ and implement appropriate procedures and control measures to eliminate or control any risk of Musculoskeletal disorder/injury while handling.

Refer to the Code of Practice on manual handling published by local Workcover Authority or other approved and recognised guidelines for correct and appropriate manual handling procedures.

# 1. Technical Specifications

## Important Information

The erection and application instructions contained in this manual are the recommended methods to be used for **GASS** products.

The technical function related instructions must be accurately followed to obtain the correct performance of the product. Any deviation from the recommended usage will require a separate design and/or verification by Acrow Engineering.

The safe use and application of the system must be in accordance with Australian Standard AS 3610 Formwork for Concrete, Occupational Health & Safety regulations, approved industry codes of practice and relevant regulatory authority requirements.

The illustrations in these assembly configurations are minimum guidelines only.

The combined use of the **GASS** system with equipment from other suppliers may entail performance issues and therefore requires a design check and/or verification by Acrow Engineering or a qualified experienced engineer.

Hazard Identification/Risk Assessments for the erection and dismantling of the system are available from Acrow branches. Site specific Hazard and Risk assessments may need to be generated for specific projects.

## Disclaimer

1. The photographs/illustrations shown within this manual are intended as expressing the diversity and possible applications of the product and as such must not be used as assembly instructions.
2. In line with Acrow commitment to continuous product development and improvement, the information contained in this manual may be changed without notice. Please confirm with Acrow Engineering for latest update.
3. While all reasonable effort has been taken to ensure the accuracy and adequacy of the information contained herein, Acrow, accepts no responsibility or liability for any loss or damage suffered by any person acting or refraining from action as a result of this information.

Should users require any expert assistance, they are encouraged to contact Acrow Engineering department.

## Applicable Codes and Standards

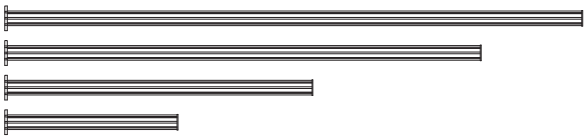
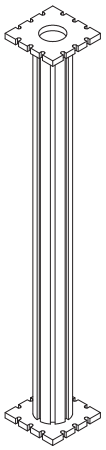
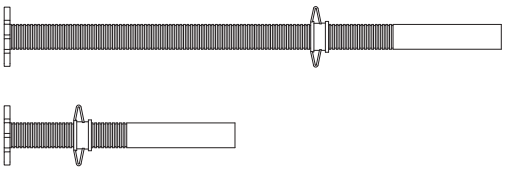
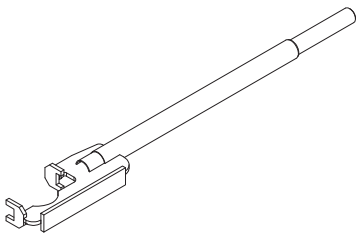
The structural design information and guide provided in this document are limited to the relevant codes nominated below. It does not include certification of any structures or works associated with a project.

| ELEMENT | DESCRIPTION | CODE |
|---|---|---|
| **LOADING** | Structural Design Actions – General Principles | AS/NZS 1170.0-2002 |
| | Structural Design Actions – Permanent, Imposed And Other Actions | AS/NZS 1170.1-2002 |
| **FORMWORK** | Formwork for Concrete | AS 3610-1995 |
| | Formwork for Concrete Part 1- Specifications | AS 3610.1-2018 |

# 2. GENERAL PRODUCT INFORMATION

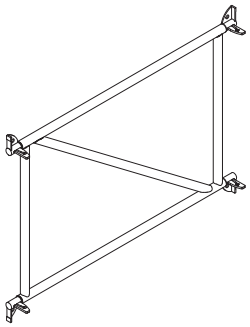
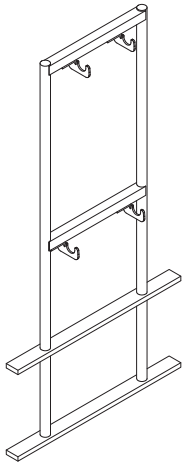
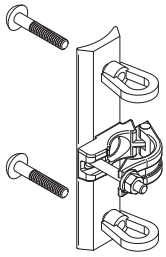
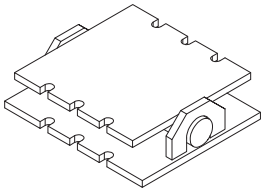
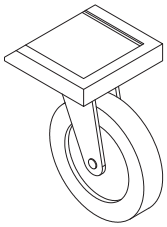
## 2. General Product Information

### Gass Legs

| PRODUCT | DESCRIPTION | PRODUCT CODE | MASS (kg) |
|---|---|---|---|
|  | **Acrow Aluminium GASS Prop Outer Legs**<br>The Outer Leg extrusion has eight slots which allows attachment of Bracing Frames in multiple directions. The end plates have interlocking features that eliminates eccentricity. The spring loaded latch at the bottom of the Outer Leg provides means of securing the Inner leg to Outer. | | |
| | Outer Leg 4670 | GHOUT467 | 22.1 |
| | Outer Leg 3580 | GHOUT358 | 17.4 |
| | Outer Leg 2490 | GHOUT249 | 12.7 |
| | Outer Leg 1400 | GHOUT140 | 8.0 |
|  | **Acrow GASS Extension Legs**<br>Extension Legs allow to extent the height of the legs. Where used the serration's on the edges of the end plates must match each other. 4- M12 x 65 Grade 8.8 bolts and nuts with washers are required for each connection. | | |
| | Extension Leg 4670 | GHEXT467 | 23.6 |
| | Extension Leg 3580 | GHEXT358 | 18.9 |
| | Extension Leg 2490 | GHEXT249 | 14.2 |
| | Extension Leg 1400 | GHEXT140 | 9.5 |
| | Extension Leg 500 | GHEXT050 | 5.6 |
|  | **Acrow Aluminium GASS Prop Inner Legs (Adjustable Jacks)**<br>Provide adjustment for Outer Leg up to 1314mm. The stem has a removable nut restraint screw to prevent over extension and ensure minimum engagement into the Outer Leg. | | |
| | Inner Leg 1680 | GHINL168 | 10.2 |
| | Inner Leg 780 | GHINL078 | 5.5 |
|  | **Acrow GASS Spanner**<br>Used to release the collar of the Inner Leg. | | |
| | GASS Spanner | GLLSP001 | 8.0 |

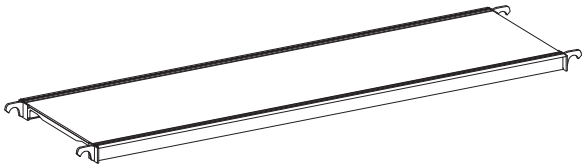
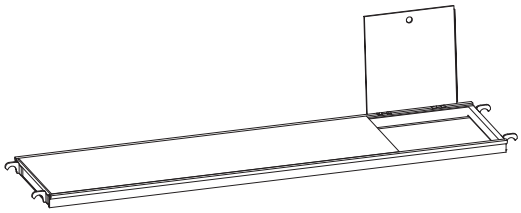
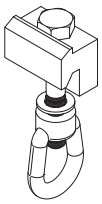
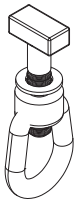
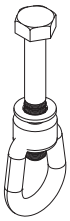
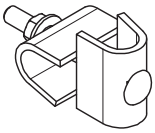
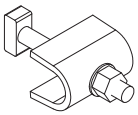
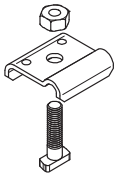
## 2. General Product Information

### Bracing Frames / Guardrail /

| PRODUCT | DESCRIPTION | PRODUCT CODE | MASS (kg) |
|---|---|---|---|
|  | **Acrow GASS Bracing Frames**<br>Each Bracing Frame is secured in place with four wedge connections. The wedge system has a visible feature for ease of correct installation identifi cation. The top cord of the Bracing Frame provides guardrailing when Access Platforms are used. | | |
| | Bracing Frame 3000 | GHGTE300 | 15.8 |
| | Bracing Frame 2400 | GHGTE240 | 13.4 |
| | Bracing Frame 1800 | GHGTE180 | 10.3 |
| | Bracing Frame 1200 | GHGTE120 | 9.4 |
|  | **Acrow GASS Advanced Guardrail**<br>Used as a temporary guardrail. They are clamped to both cords of the Bracing Frames to provide edge protection from level below (not to be used for attachment of fall prevention equipment). | | |
| | Advanced Guardrail 1655 | GHAGR165 | 11.0 |
| | Advanced Guardrail 1065 | GHAGR106 | 9.5 |
|  | **Acrow GASS Leg Bracing Coupler** | | |
| | Leg Bracing Coupler | GHLBC001 | TBA |
|  | **Acrow GASS Rocking Head / Base Plate**<br>Caters for slopes of up to 15°. | | |
| | Rocking Head/Base Plate MKI | GHRHBP | 8.3 |
|  | **Acrow GASS Castor Shoe**<br>They are attached to underside of legs and used to move assembled units around on a level and smooth surface for a short distance. | | |
| | Caster Shoe 200 | GHCS200 | 9.8 |
| | Caster Shoe 250 | GHCS250 | 12.0 |
| | Castor Wheel | GHCWH001 | 1.5 |

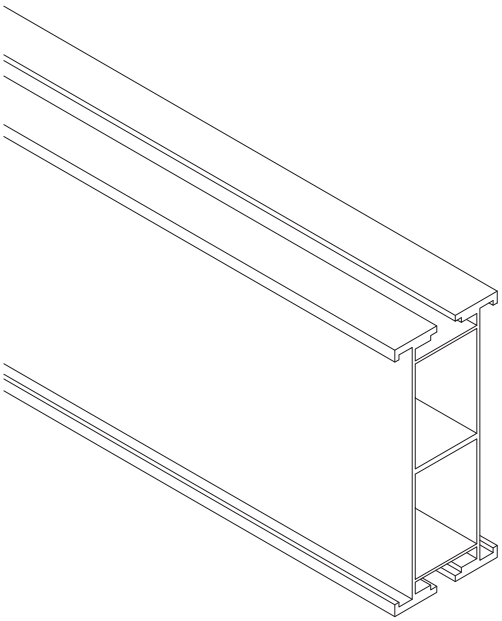
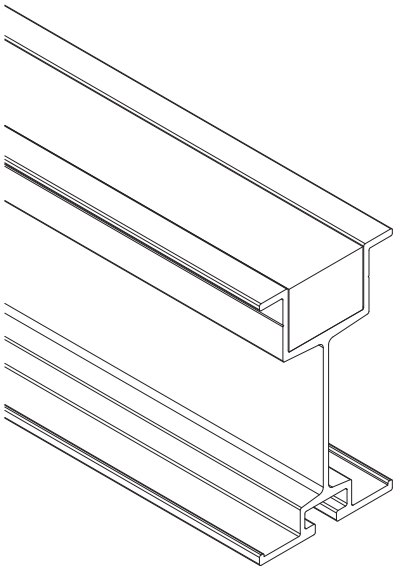
## 2. General Product Information

### Platforms / Accessories / Clamps / Retainers

| PRODUCT | DESCRIPTION | PRODUCT CODE | MASS (kg) |
|---|---|---|---|
|  | **Acrow GASS Access Platforms**<br>Used between Bracing Frames to provide access. Each has locking mechanism to ensure resistance against wind loads. | | |
| | Access Platform 3000 | GLPLT300 | 23.0 |
| | Access Platform 2400 | GLPLT240 | 19.0 |
| | Access Platform 1800 | GLPLT180 | 16.4 |
|  | **Acrow GASS Access Platform Trapdoors**<br>Used to provides an opening for ladders. | | |
| | Access Platform Trapdoor 3000 | GAPTD300 | 26.2 |
| | Access Platform Trapdoor 2400 | GAPTD240 | 19.9 |
| | Access Platform Trapdoor 1800 | GAPTD180 | 15.3 |
|  | **Acrow GASS Ring Bolt Soldier Clamp**<br>Used to connect Slim-Max Soldiers to legs. Two Clamps are required per leg. | | |
| | Ring Bolt Soldier Clamp | GHHSB001 | 0.5 |
|  | **Acrow GASS T-Bolt Clamp (head to beam)**<br>Used to connect Aluminium Beams to legs. Two Clamps are required per leg. | | |
| | T-Bolt Clamp | GHHBB001 | 0.4 |
|  | **Acrow GASS Ring Bolt Clamp (head to head)**<br>Used to connect legs end plates together. Four Clamps are required per connection. | | |
| | Ring Bolt Clamp | GHHRB001 | 0.3 |
|  | **Acrow GASS Universal Clamp**<br>Connects secondary beams to primary beams. | | |
| | Universal Clamp | GHUC001 | 0.6 |
|  | **Acrow GASS Universal Anchor Clamp**<br>Used to clamp Aluminium beams to each other or to Slim-Max Soldiers. | | |
| | Universal Anchor Clamp | GHUAC001 | 0.3 |
|  | **A-Beam Clamp**<br>Clamps Acrow Aluminium Beams to Slim-Lite Soldier. | | |
| | Clamp | ABC | 0.25 |
| | T-Bolt | ABTB | |
| | M12 Nut | ABN | |

## 2. General Product Information

### Aluminium Beam

| PRODUCT | DESCRIPTION | PRODUCT CODE | MASS (kg) |
|---|---|---|---|
|  | **Acrow GASS T225 Aluminium Beam**<br>Used mostly as a primary beam. | | |
| | T225 Aluminium Beam 1.5m | GT22515 | 13.3 |
| | T225 Aluminium Beam 1.6m | GT22516 | 14.2 |
| | T225 Aluminium Beam 1.8m | GT22518 | 16.0 |
| | T225 Aluminium Beam 2.0m | GT22520 | 17.8 |
| | T225 Aluminium Beam 2.1m | GT22521 | 18.7 |
| | T225 Aluminium Beam 2.4m | GT22524 | 21.4 |
| | T225 Aluminium Beam 2.7m | GT22527 | 24.0 |
| | T225 Aluminium Beam 3.0m | GT22530 | 26.7 |
| | T225 Aluminium Beam 3.2m | GT22532 | 28.5 |
| | T225 Aluminium Beam 3.6m | GT22536 | 32.0 |
| | T225 Aluminium Beam 3.7m | GT22537 | 32.9 |
| | T225 Aluminium Beam 4.2m | GT22542 | 37.4 |
| | T225 Aluminium Beam 4.6m | GT22546 | 40.9 |
| | T225 Aluminium Beam 4.8m | GT22548 | 42.7 |
| | T225 Aluminium Beam 5.0m | GT22550 | 44.5 |
| | T225 Aluminium Beam 5.2m | GT22552 | 46.3 |
| | T225 Aluminium Beam 5.4m | GT22554 | 48.0 |
| | T225 Aluminium Beam 6.0m | GT22560 | 53.4 |
| | T225 Aluminium Beam 6.4m | GT22564 | 56.9 |
|  | **Acrow Aluminium A-Beam** | | |
| | A-Beam 1.2m | AB12 | 6.5 |
| | A-Beam 1.5m | AB15 | 8.1 |
| | A-Beam 1.8m | AB18 | 9.7 |
| | A-Beam 2.1m | AB21 | 11.3 |
| | A-Beam 2.4m | AB24 | 12.9 |
| | A-Beam 2.7m | AB27 | 14.6 |
| | A-Beam 3.0m | AB30 | 16.2 |
| | A-Beam 3.3m | AB33 | 17.8 |
| | A-Beam 3.5m | AB35 | 18.9 |
| | A-Beam 3.6m | AB36 | 19.4 |
| | A-Beam 3.9m | AB39 | 21.0 |
| | A-Beam 4.2m | AB42 | 22.7 |
| | A-Beam 4.5m | AB45 | 24.3 |
| | A-Beam 4.8m | AB48 | 25.9 |
| | A-Beam 5.1m | AB51 | 27.5 |
| | A-Beam 5.4m | AB54 | 29.1 |
| | A-Beam 5.7m | AB57 | 30.8 |
| | A-Beam 6.0m | AB60 | 32.4 |
| | A-Beam 6.4m | AB64 | 34.6 |
| | A-Beam 6.5m | AB65 | 35.1 |
| | A-Beam 7.0m | AB70 | 37.8 |

## 2. General Product Information

### Aluminium Beam

| PRODUCT | DESCRIPTION | PRODUCT CODE | MASS (kg) |
|---|---|---|---|
| | **S150 Aluminium Beam** | | |
| | S150 Aluminium Beam 1.8m | GS15018 | |
| | S150 Aluminium Beam 2.4m | GS15024 | |
| | S150 Aluminium Beam 2.7m | GS15027 | |
| | S150 Aluminium Beam 3.0m | GS15030 | |
| | S150 Aluminium Beam 3.2m | GS15032 | |
| | S150 Aluminium Beam 3.6m | GS15036 | |
| | S150 Aluminium Beam 4.2m | GS15042 | |
| | S150 Aluminium Beam 5.7m | GS15057 | |
| | S150 Aluminium Beam 6.4m | GS15064 | |

# 3. WORKING LOAD LIMITS (WLL)

# 3. Working Load Limits (WLL)

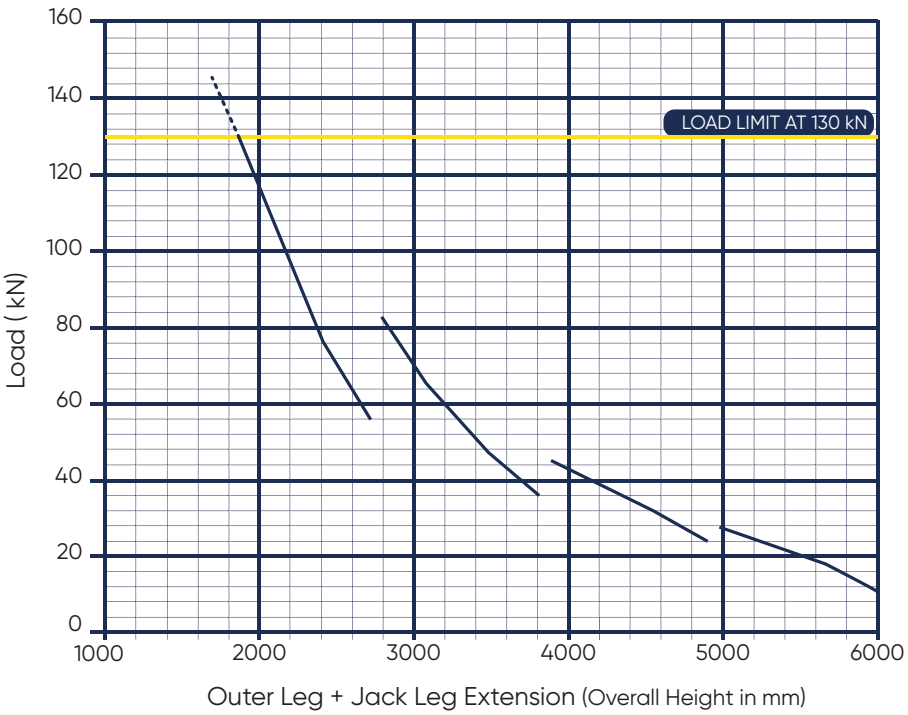
## Gass Prop WLL

### WLL - Propping Formwork - Stand-alone Prop

Based on one single leg + 1 No. Jack, top or bottom.

Top and bottom plates assumed pinned

**Top:** Restrained
**Bottom:** Un-restrained

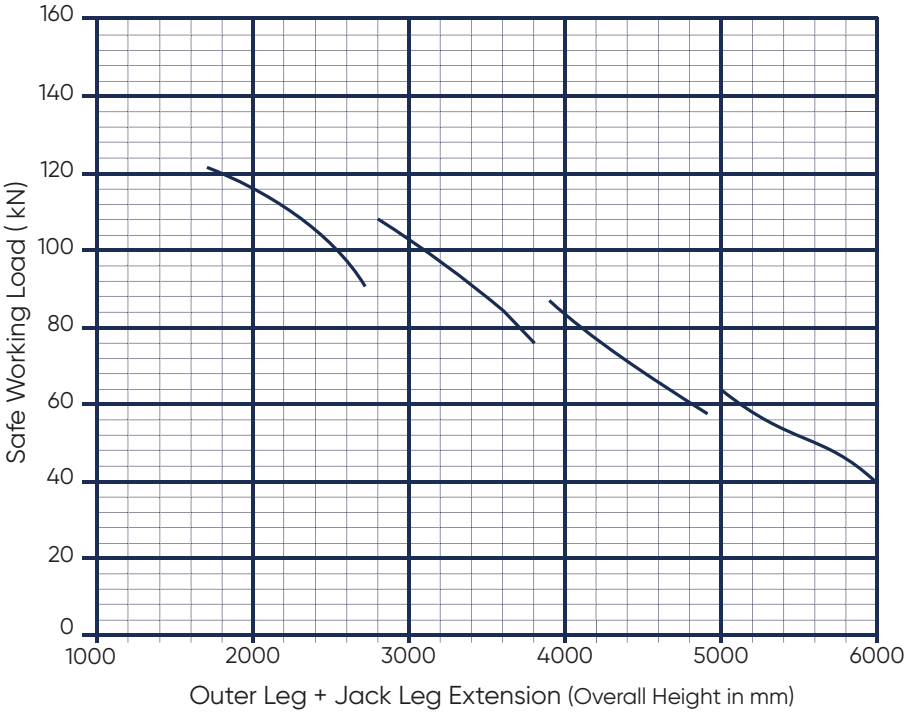



### WLL - Backpropping Application

Based on one single leg + 1 No. Jack, top or bottom.

Top and bottom plates assumed bearing flat on solid supports

**Top and Bottom:** Restrained

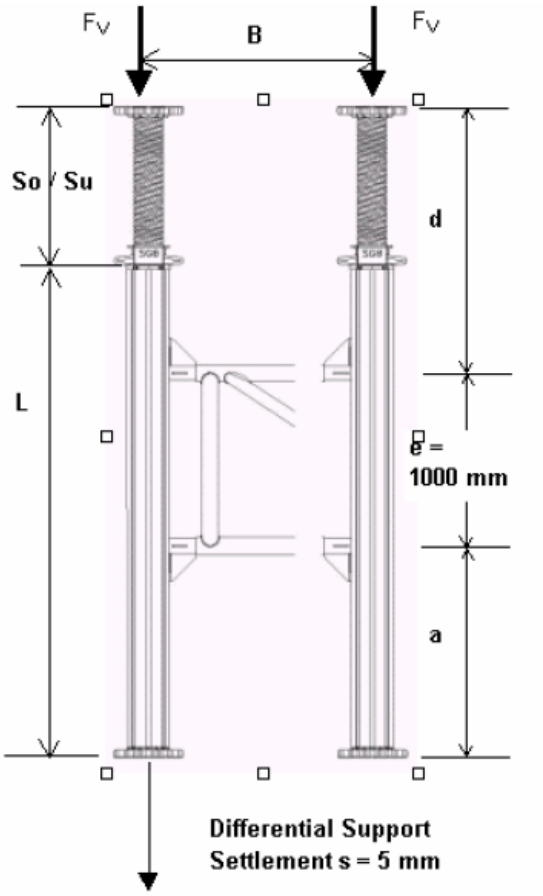


## 3. Working Load Limits (WLL)

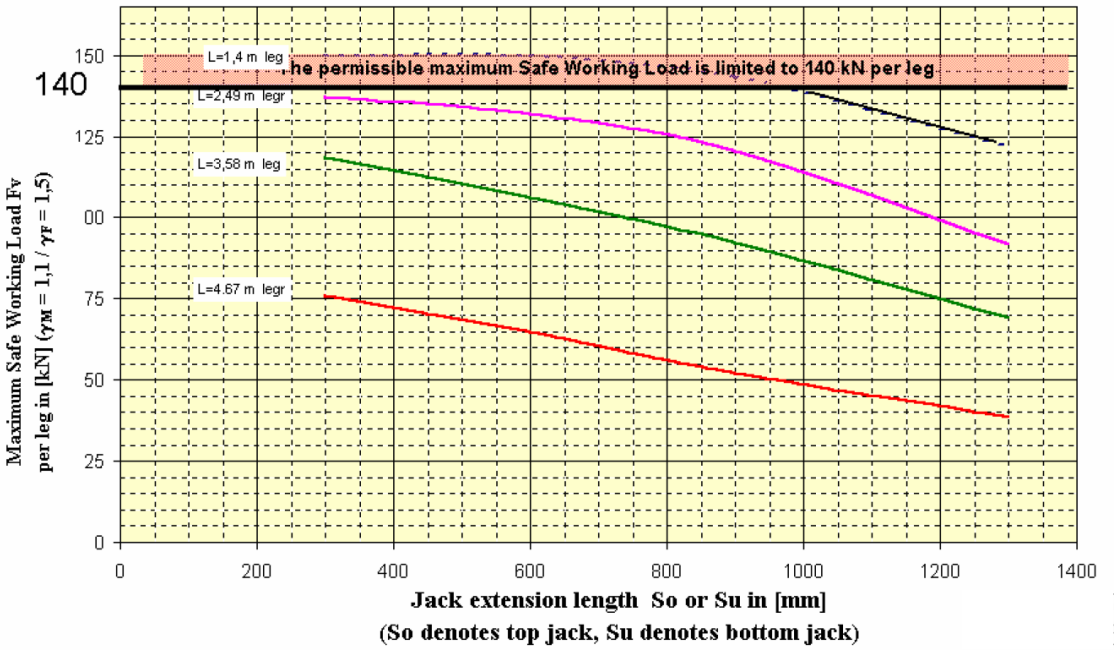
### Gass Tower - 1 Jack

**With top and bottom jack and one bracing frame.**
**Leg Heights (L): 1.40m - 4.67m**
**WLL adjusted to allow for differential settlement**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




| Jack Extension (mm) | Dimensions | Vertical Tube (leg) Length L (m) | | | |
|---|---|---|---|---|---|
| | | 1.4 | 2.49 | 3.58 | 4.67 |
| 300 | a | 0.25 | 0.30 | 0.30 | 0.30 |
| | d | 0.45 | 1.49 | 2.58 | 3.67 |
| 600 | a | 0.25 | 0.30 | 0.30 | 0.30 |
| | d | 0.75 | 1.79 | 2.88 | 3.97 |
| 900 | a | 0.25 | 0.30 | 0.30 | 0.30 |
| | d | 1.05 | 2.09 | 3.18 | 4.27 |
| 1300 | a | 0.25 | 0.30 | 0.30 | 0.30 |
| | d | 1.45 | 2.49 | 3.58 | 4.67 |

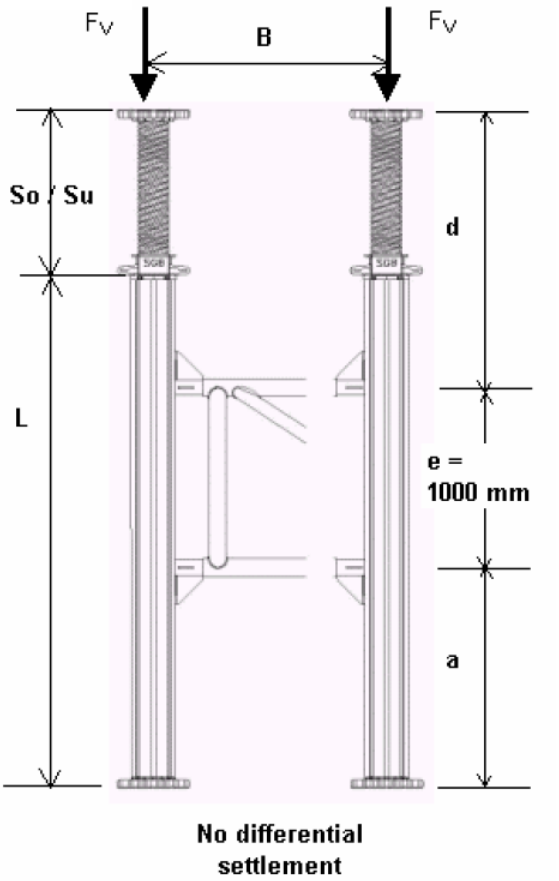


## 3. Working Load Limits (WLL)

### Gass Tower - 1 Jack

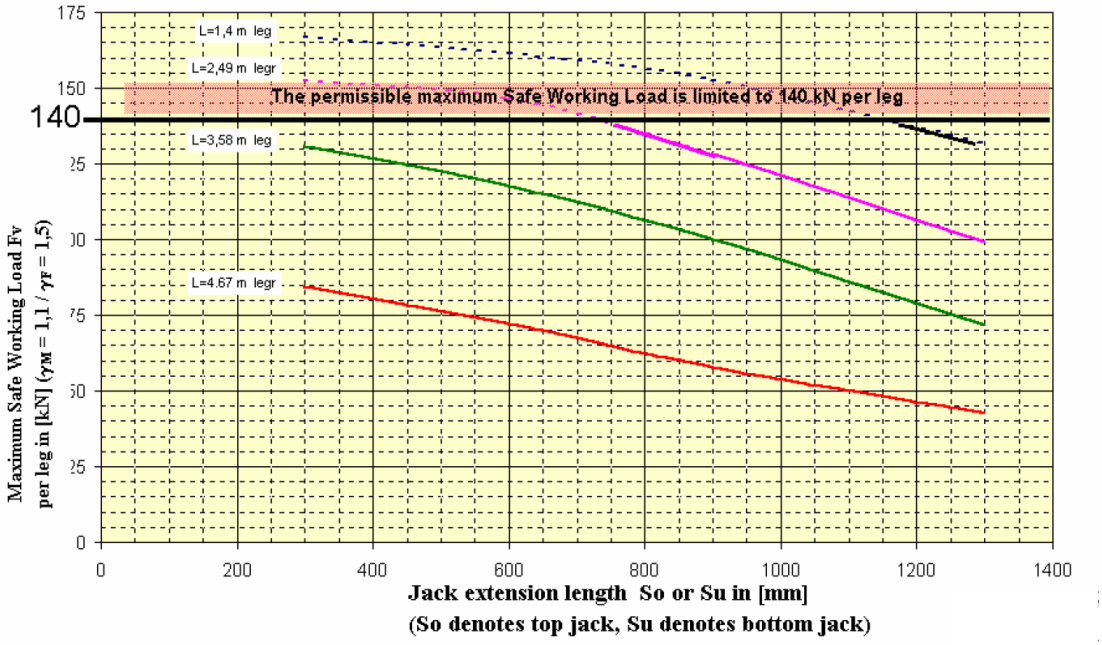
**With top and bottom jack and one bracing frame.**
**Leg Heights (L): 1.40m - 4.67m**
**Without differential support settlements**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




No differential settlement

| Jack Extension (mm) | Dimensions | Vertical Tube (leg) Length L (m) | | | |
|---|---|---|---|---|---|
| | | 1.4 | 2.49 | 3.58 | 4.67 |
| 300 | a | 0.25 | 0.30 | 0.30 | 0.30 |
| | d | 0.45 | 1.49 | 2.58 | 3.67 |
| 600 | a | 0.25 | 0.30 | 0.30 | 0.30 |
| | d | 0.75 | 1.79 | 2.88 | 3.97 |
| 900 | a | 0.25 | 0.30 | 0.30 | 0.30 |
| | d | 1.05 | 2.09 | 3.18 | 4.27 |
| 1300 | a | 0.25 | 0.30 | 0.30 | 0.30 |
| | d | 1.45 | 2.49 | 3.58 | 4.67 |

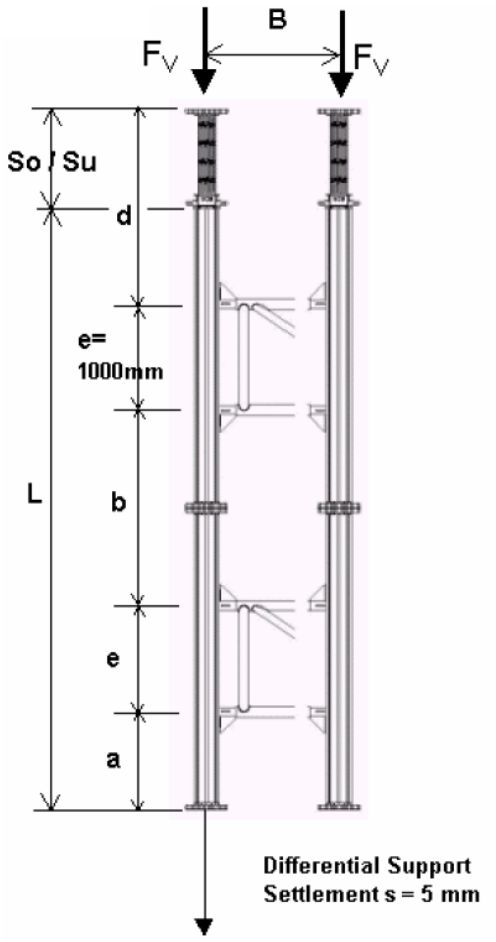


## 3. Working Load Limits (WLL)

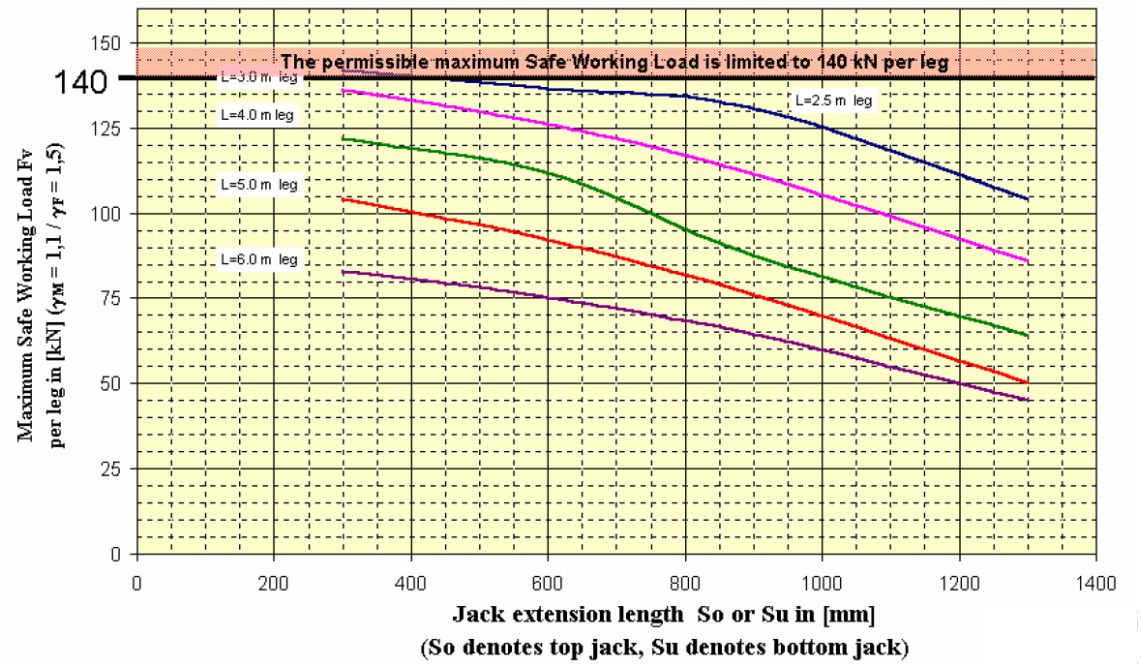
### Gass Tower - 1 Jack

**With top and bottom jack and two bracing frames.**
**Leg Heights (L): 2.50m - 6.00m**
**With differential support settlement S = 5mm.**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




| Jack Extension (mm) | Dim's | Vertical Tube (leg) Length L (m) | | | | |
|---|---|---|---|---|---|---|
| | | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 |
| 300 | a | 0.15 | 0.27 | 0.55 | 0.79 | 1.03 |
| | b | 0.20 | 0.58 | 1.20 | 1.72 | 2.24 |
| | d | 0.45 | 0.45 | 0.55 | 0.79 | 1.03 |
| 600 | a | 0.15 | 0.27 | 0.57 | 0.86 | 1.10 |
| | b | 0.20 | 0.58 | 1.28 | 1.86 | 2.40 |
| | d | 0.75 | 0.75 | 0.75 | 0.86 | 1.10 |
| 900 | a | 0.15 | 0.27 | 0.58 | 0.88 | 1.17 |
| | b | 0.20 | 0.58 | 1.27 | 1.97 | 2.55 |
| | d | 1.05 | 1.05 | 1.05 | 1.05 | 1.18 |
| 1300 | a | 0.15 | 0.27 | 0.58 | 0.90 | 1.21 |
| | b | 0.20 | 0.58 | 1.27 | 1.95 | 2.64 |
| | d | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |

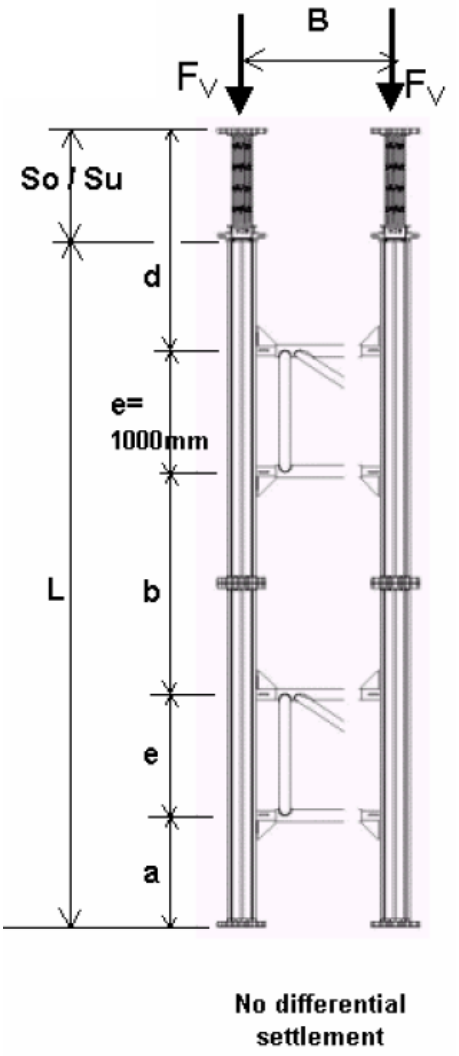


# 3. Working Load Limits (WLL)

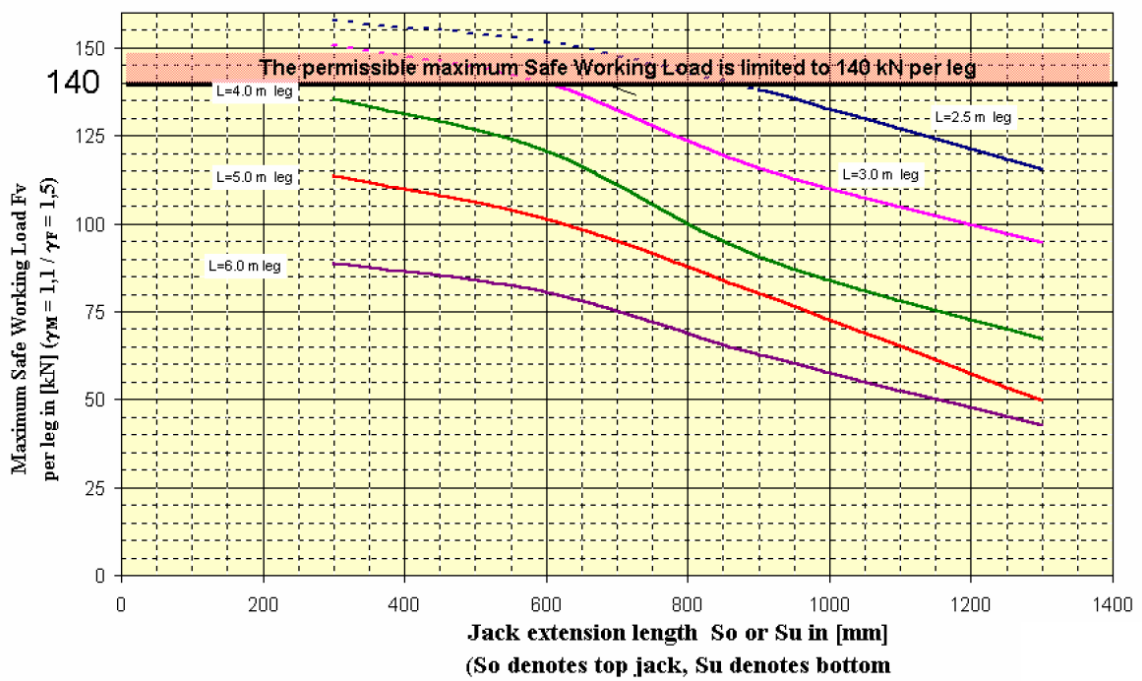
## Gass Tower - 1 Jack

**With top and bottom jack and two bracing frames.**
**Leg Heights (L): 2.50-6.00m**
**Without differential support settlements**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




| Jack Extension (mm) | Dim's | Vertical Tube (leg) Length L (m) | | | | |
|---|---|---|---|---|---|---|
| | | 2.5 | 3.0 | 4.0 | 5.0 | 6.0 |
| 300 | a | 0.15 | 0.27 | 0.55 | 0.79 | 1.03 |
| | b | 0.20 | 0.58 | 1.20 | 1.72 | 2.24 |
| | d | 0.45 | 0.45 | 0.55 | 0.79 | 1.03 |
| 600 | a | 0.15 | 0.27 | 0.57 | 0.86 | 1.10 |
| | b | 0.20 | 0.58 | 1.28 | 1.86 | 2.40 |
| | d | 0.75 | 0.75 | 0.75 | 0.86 | 1.10 |
| 900 | a | 0.15 | 0.27 | 0.58 | 0.88 | 1.17 |
| | b | 0.20 | 0.58 | 1.27 | 1.97 | 2.55 |
| | d | 1.05 | 1.05 | 1.05 | 1.05 | 1.18 |
| 1300 | a | 0.15 | 0.27 | 0.58 | 0.90 | 1.21 |
| | b | 0.20 | 0.58 | 1.27 | 1.95 | 2.64 |
| | d | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |

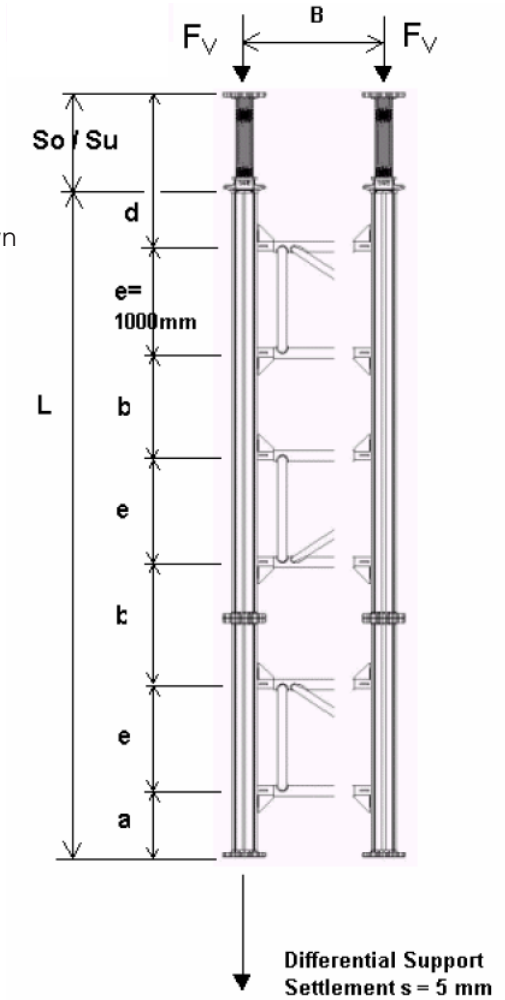


## 3. Working Load Limits (WLL)

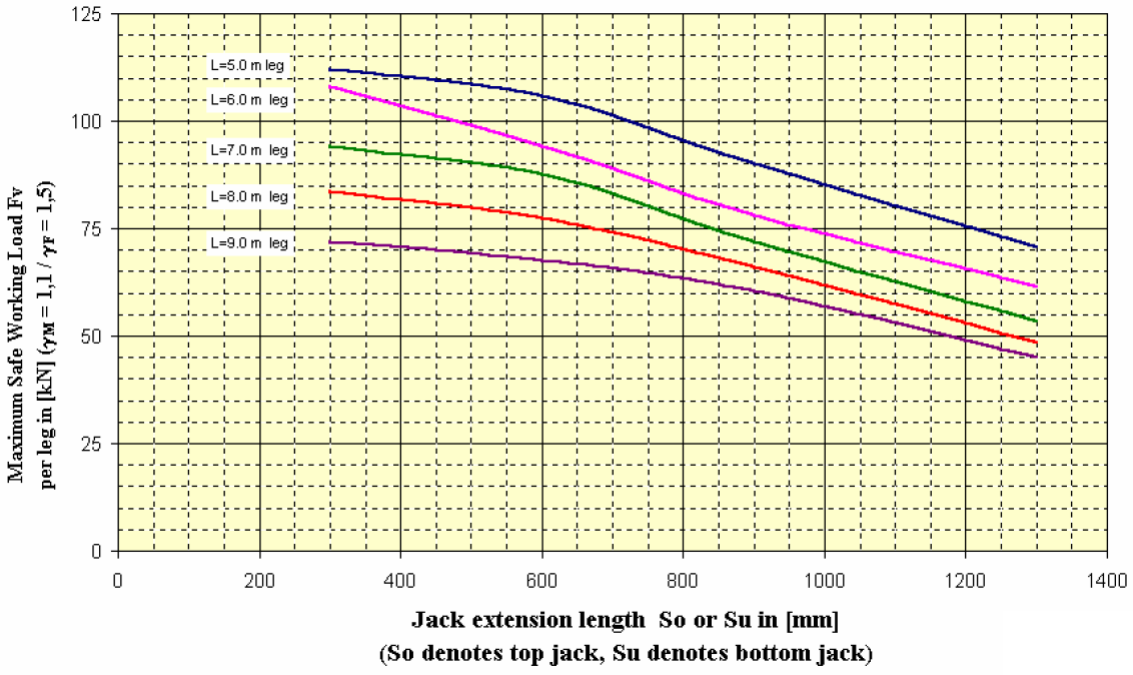
### Gass Tower - 1 Jack

**With top and bottom jack and three bracing frames.**
**Leg Heights (L): 5.00m - 9.00m.**
**With differential support settlement S = 5mm**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




| Jack Extension (mm) | Dim's | Vertical Tube (leg) Length L (m) | | | | |
|---|---|---|---|---|---|---|
| | | 5.0 | 6.0 | 7.0 | 8.0 | 9.0 |
| 300 | a | 0.35 | 0.52 | 0.68 | 0.84 | 0.99 |
| | b | 0.75 | 1.13 | 1.47 | 1.81 | 2.16 |
| | d | 0.45 | 0.52 | 0.68 | 0.84 | 0.99 |
| 600 | a | 0.35 | 0.53 | 0.73 | 0.88 | 1.04 |
| | b | 0.75 | 1.16 | 1.56 | 1.92 | 2.26 |
| | d | 0.75 | 0.75 | 0.75 | 0.88 | 1.04 |
| 900 | a | 0.35 | 0.53 | 0.73 | 0.91 | 1.09 |
| | b | 0.75 | 1.16 | 1.56 | 1.97 | 2.36 |
| | d | 1.05 | 1.05 | 1.05 | 1.05 | 1.09 |
| 1300 | a | 0.35 | 0.53 | 0.73 | 0.91 | 1.09 |
| | b | 0.75 | 1.16 | 1.56 | 1.97 | 2.38 |
| | d | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |

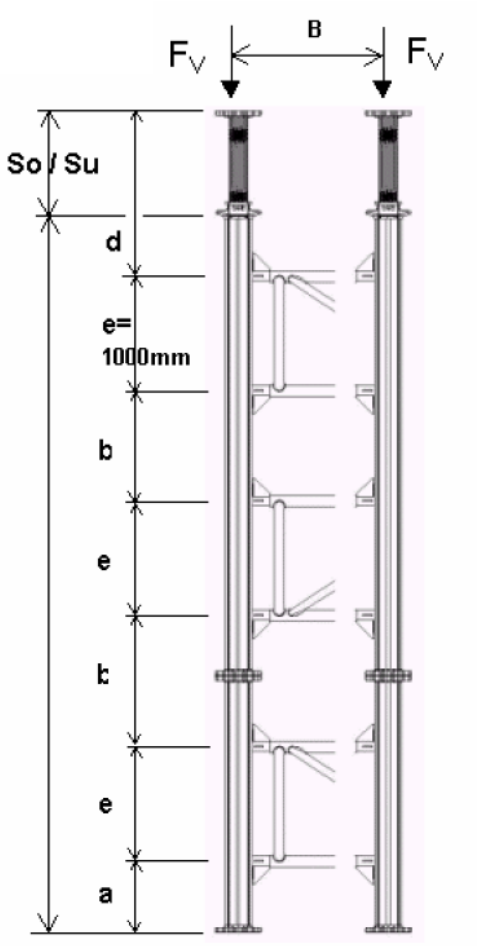


# 3. Working Load Limits (WLL)

## Gass Tower - 1 Jack

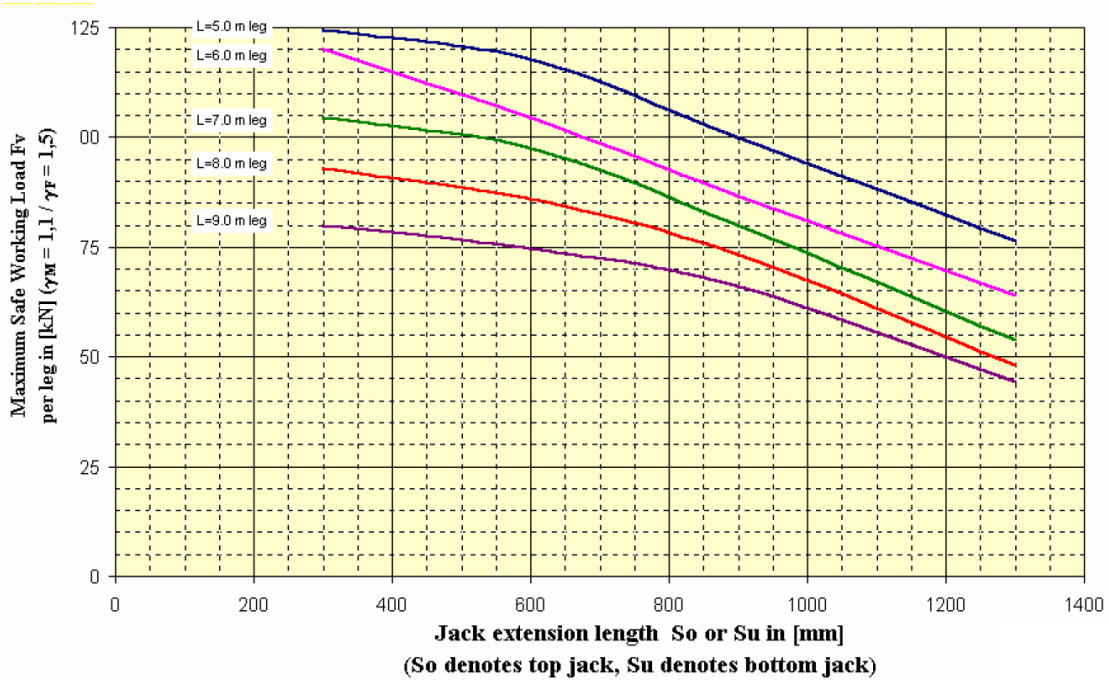
**With top and bottom jack and three bracing frames.**
**Leg Heights (L): 5.00-9.00m**
**Without differential support settlements**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




No differential settlement

| Jack Extension (mm) | Dim's | Vertical Tube (leg) Length L (m) | | | | |
|---|---|---|---|---|---|---|
| | | 5.0 | 6.0 | 7.0 | 8.0 | 9.0 |
| 300 | a | 0.35 | 0.52 | 0.68 | 0.84 | 0.99 |
| | b | 0.75 | 1.13 | 1.47 | 1.81 | 2.16 |
| | d | 0.45 | 0.52 | 0.68 | 0.84 | 0.99 |
| 600 | a | 0.35 | 0.53 | 0.73 | 0.88 | 1.04 |
| | b | 0.75 | 1.16 | 1.56 | 1.92 | 2.26 |
| | d | 0.75 | 0.75 | 0.75 | 0.88 | 1.04 |
| 900 | a | 0.35 | 0.53 | 0.73 | 0.91 | 1.09 |
| | b | 0.75 | 1.16 | 1.56 | 1.97 | 2.36 |
| | d | 1.05 | 1.05 | 1.05 | 1.05 | 1.09 |
| 1300 | a | 0.35 | 0.53 | 0.73 | 0.91 | 1.09 |
| | b | 0.75 | 1.16 | 1.56 | 1.97 | 2.38 |
| | d | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |



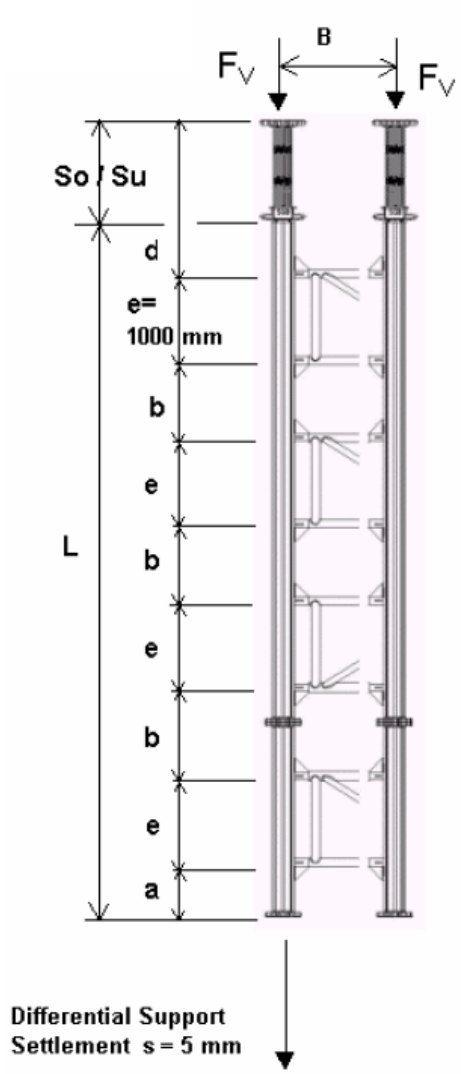
## 3. Working Load Limits (WLL)

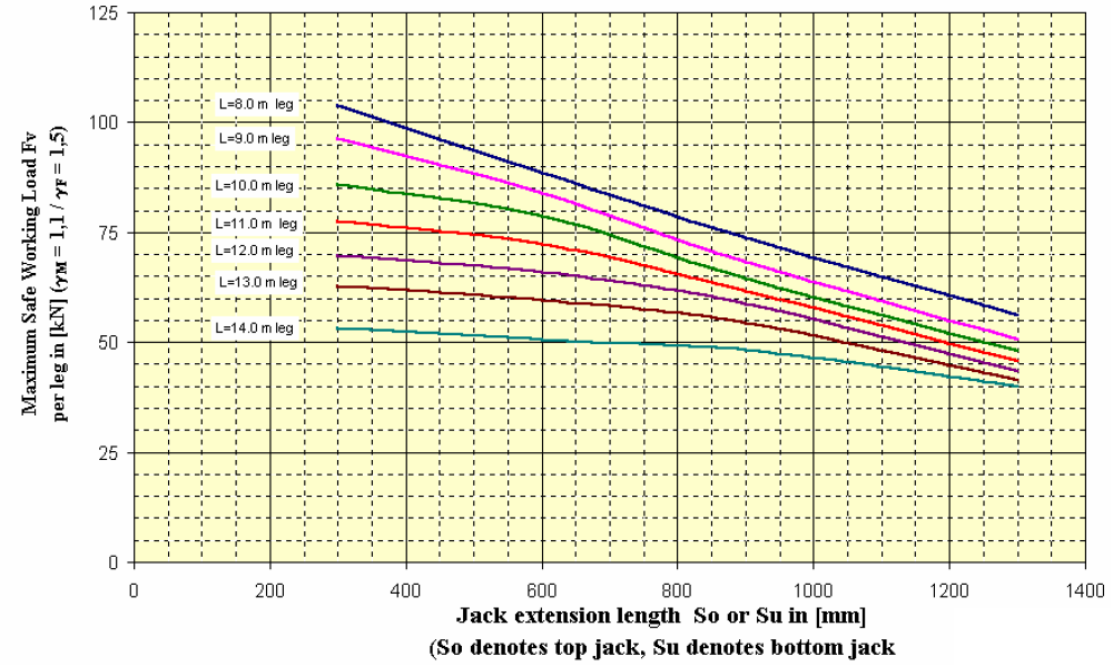
### Gass Tower - 1 Jack

**With top and bottom jack and four bracing frames.**
**Leg Heights (L): 8.00m - 14.00m**
**With differential support settlement S = 5mm**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.

| Jack Extension (mm) | Dim's | Vertical Tube (leg) Length L (m) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 8.0 | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 |
| 300 | a | 0.50 | 0.63 | 0.75 | 0.86 | 0.97 | 1.10 | 1.21 |
| | b | 1.10 | 1.35 | 1.60 | 1.86 | 2.12 | 2.37 | 2.63 |
| | d | 0.50 | 0.63 | 0.75 | 0.86 | 0.97 | 1.10 | 1.21 |
| 600 | a | 0.52 | 0.65 | 0.78 | 0.89 | 1.00 | 1.13 | 1.25 |
| | b | 1.11 | 1.40 | 1.68 | 1.94 | 2.20 | 2.45 | 2.70 |
| | d | 0.75 | 0.75 | 0.78 | 0.89 | 1.00 | 1.12 | 1.25 |
| 900 | a | 0.52 | 0.65 | 0.78 | 0.91 | 1.04 | 1.17 | 1.28 |
| | b | 1.11 | 1.40 | 1.69 | 1.98 | 2.27 | 2.52 | 2.78 |
| | d | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.17 | 1.28 |
| 1300 | a | 0.49 | 0.65 | 0.78 | 0.91 | 1.04 | 1.17 | 1.30 |
| | b | 1.12 | 1.40 | 1.69 | 1.98 | 2.27 | 2.56 | 2.85 |
| | d | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |



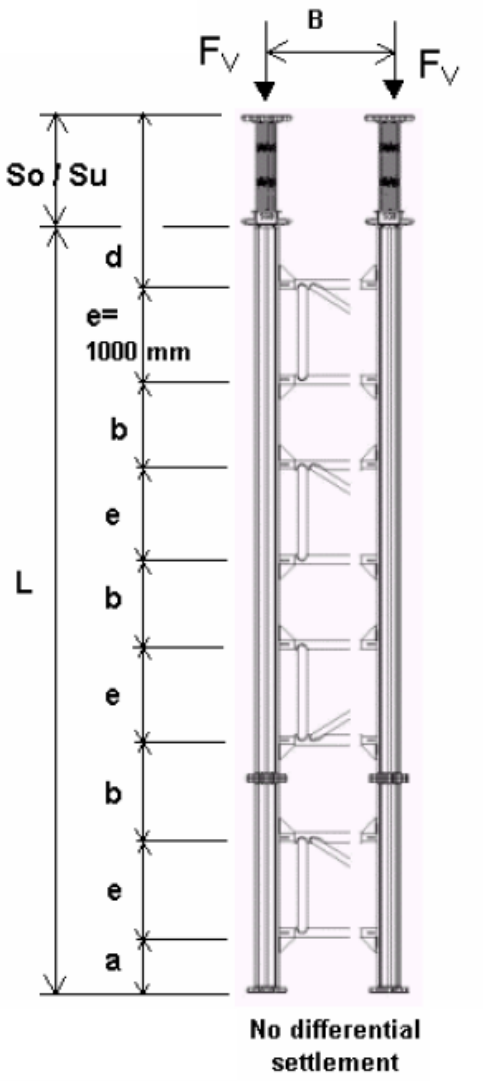



# 3. Working Load Limits (WLL)

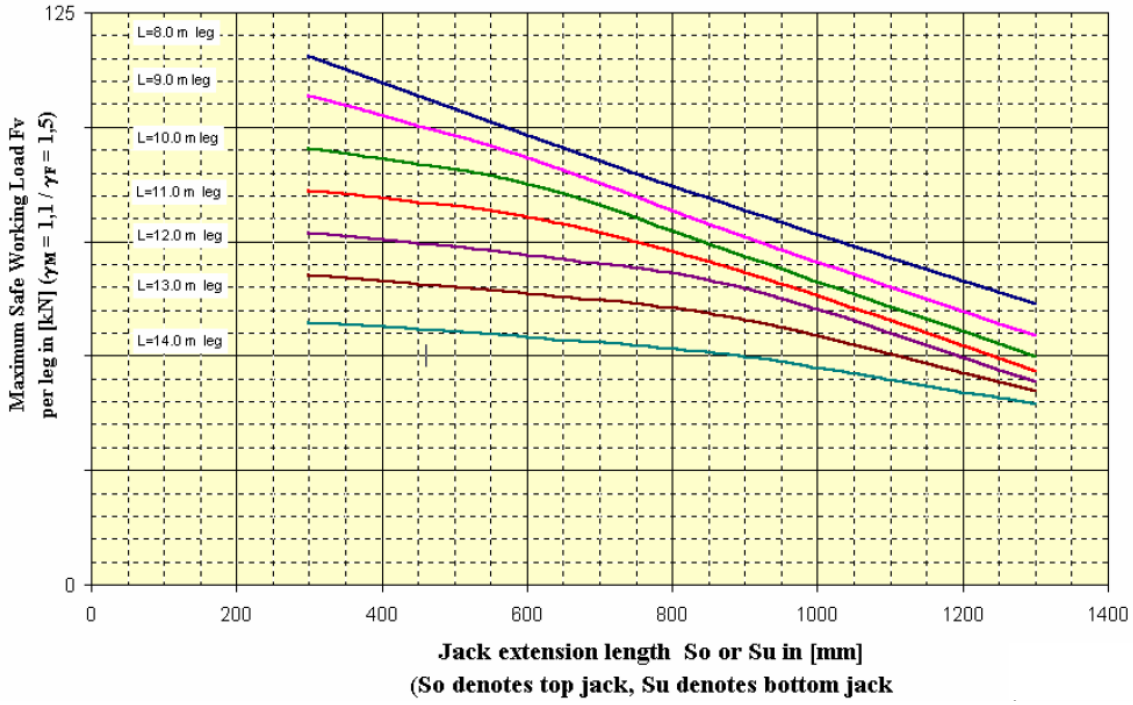
## Gass Tower - 1 Jack

**With top and bottom jack and four bracing frames.**
**Leg Heights (L): 8.00-14.00m**
**Without differential support settlements**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




| Jack Extension (mm) | Dim's | Vertical Tube (leg) Length L (m) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 8.0 | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 |
| 300 | a | 0.50 | 0.63 | 0.75 | 0.86 | 0.97 | 1.10 | 1.21 |
| | b | 1.10 | 1.35 | 1.60 | 1.86 | 2.12 | 2.37 | 2.63 |
| | d | 0.50 | 0.63 | 0.75 | 0.86 | 0.97 | 1.10 | 1.21 |
| 600 | a | 0.52 | 0.65 | 0.78 | 0.89 | 1.00 | 1.13 | 1.25 |
| | b | 1.11 | 1.40 | 1.68 | 1.94 | 2.20 | 2.45 | 2.70 |
| | d | 0.75 | 0.75 | 0.78 | 0.89 | 1.00 | 1.12 | 1.25 |
| 900 | a | 0.52 | 0.65 | 0.78 | 0.91 | 1.04 | 1.17 | 1.28 |
| | b | 1.11 | 1.40 | 1.69 | 1.98 | 2.27 | 2.52 | 2.78 |
| | d | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.17 | 1.28 |
| 1300 | a | 0.49 | 0.65 | 0.78 | 0.91 | 1.04 | 1.17 | 1.30 |
| | b | 1.12 | 1.40 | 1.69 | 1.98 | 2.27 | 2.56 | 2.85 |
| | d | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |

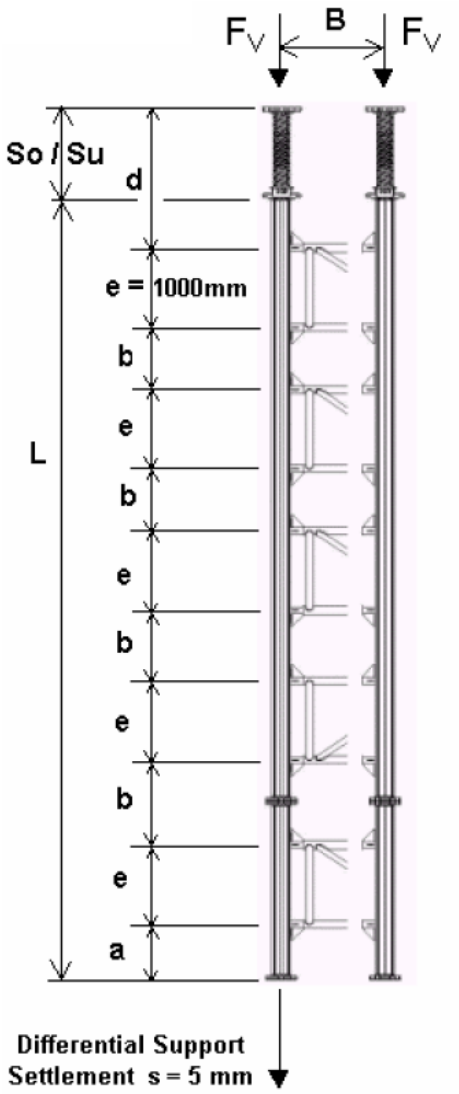


## 3. Working Load Limits (WLL)

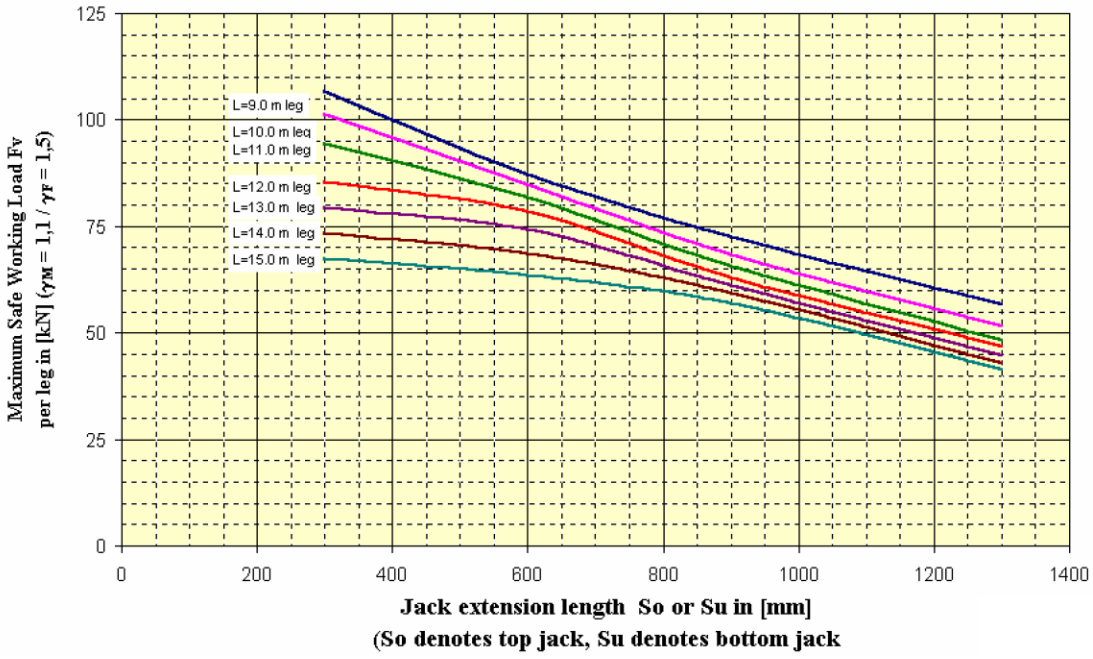
### Gass Tower - 1 Jack

**With top and bottom jack and five bracing frames.**
**Leg Heights (L): 9.00m - 15.00m**
**With differential support settlement S = 5mm**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




| Jack Extension (mm) | Dim's | Vertical Tube (leg) Length L (m) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 |
| 300 | a | 0.41 | 0.49 | 0.59 | 0.69 | 0.77 | 0.87 | 0.97 |
| | b | 0.86 | 1.08 | 1.28 | 1.48 | 1.69 | 1.89 | 2.09 |
| | d | 0.45 | 0.49 | 0.59 | 0.69 | 0.77 | 0.87 | 0.97 |
| 600 | a | 0.41 | 0.49 | 0.61 | 0.69 | 0.80 | 0.90 | 1.00 |
| | b | 0.86 | 1.09 | 1.31 | 1.54 | 1.75 | 1.95 | 2.15 |
| | d | 0.75 | 0.75 | 0.75 | 0.75 | 0.80 | 0.90 | 1.00 |
| 900 | a | 0.41 | 0.49 | 0.61 | 0.69 | 0.81 | 0.93 | 1.01 |
| | b | 0.86 | 1.09 | 1.31 | 1.54 | 1.76 | 1.98 | 2.21 |
| | d | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 1300 | a | 0.41 | 0.49 | 0.61 | 0.69 | 0.81 | 0.93 | 1.01 |
| | b | 0.86 | 1.09 | 1.31 | 1.54 | 1.76 | 1.98 | 2.21 |
| | d | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |

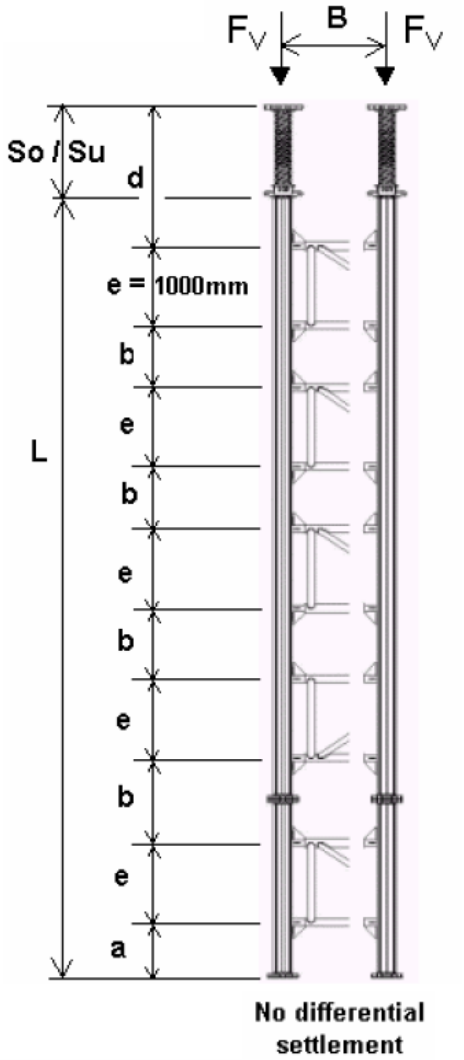


# 3. Working Load Limits (WLL)

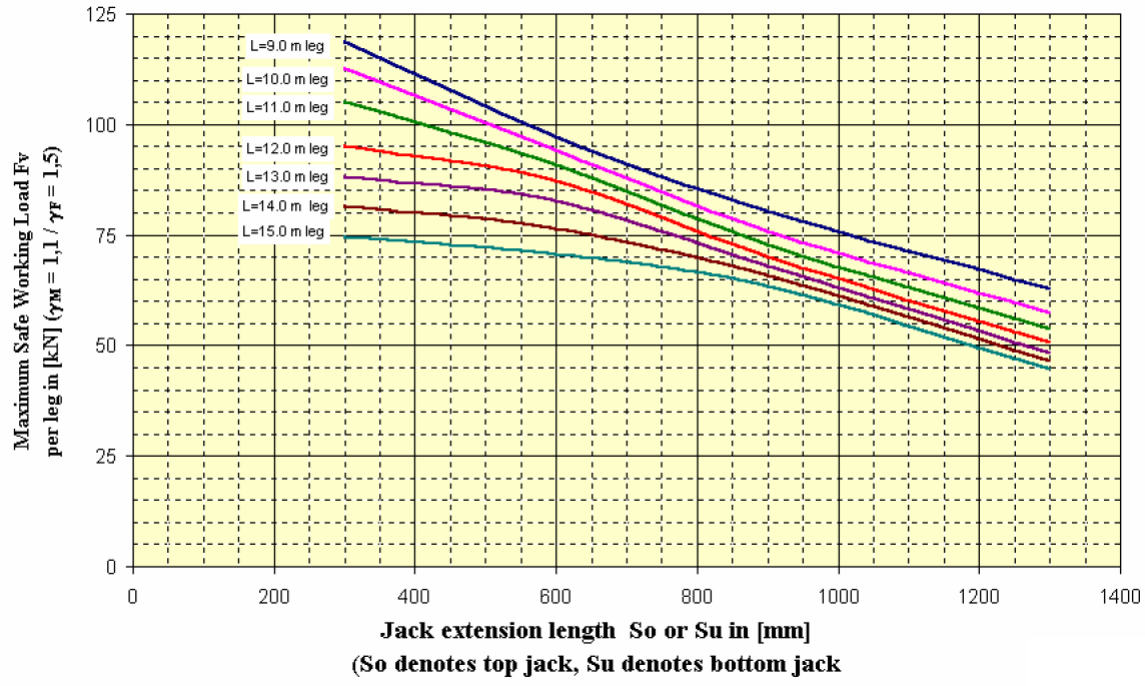
## Gass Tower - 1 Jack

**With top and bottom jack and five bracing frames.**
**Leg Heights (L): 9.00-15.00m**
**Without differential support settlements**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




| Jack Extension (mm) | Dim's | Vertical Tube (leg) Length L (m) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 9.0 | 10.0 | 11.0 | 12.0 | 13.0 | 14.0 | 15.0 |
| 300 | a | 0.41 | 0.49 | 0.59 | 0.69 | 0.77 | 0.87 | 0.97 |
| | b | 0.86 | 1.08 | 1.28 | 1.48 | 1.69 | 1.89 | 2.09 |
| | d | 0.45 | 0.49 | 0.59 | 0.69 | 0.77 | 0.87 | 0.97 |
| 600 | a | 0.41 | 0.49 | 0.61 | 0.69 | 0.80 | 0.90 | 1.00 |
| | b | 0.86 | 1.09 | 1.31 | 1.54 | 1.75 | 1.95 | 2.15 |
| | d | 0.75 | 0.75 | 0.75 | 0.75 | 0.80 | 0.90 | 1.00 |
| 900 | a | 0.41 | 0.49 | 0.61 | 0.69 | 0.81 | 0.93 | 1.01 |
| | b | 0.86 | 1.09 | 1.31 | 1.54 | 1.76 | 1.98 | 2.21 |
| | d | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 1300 | a | 0.41 | 0.49 | 0.61 | 0.69 | 0.81 | 0.93 | 1.01 |
| | b | 0.86 | 1.09 | 1.31 | 1.54 | 1.76 | 1.98 | 2.21 |
| | d | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |

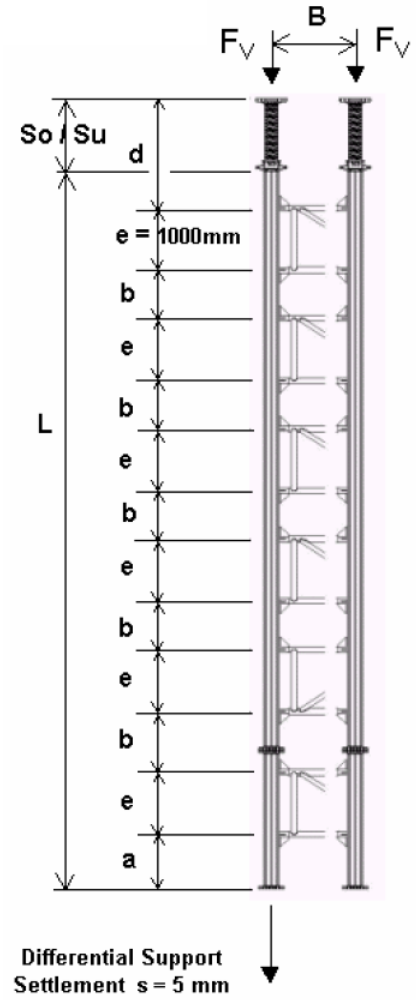


## 3. Working Load Limits (WLL)

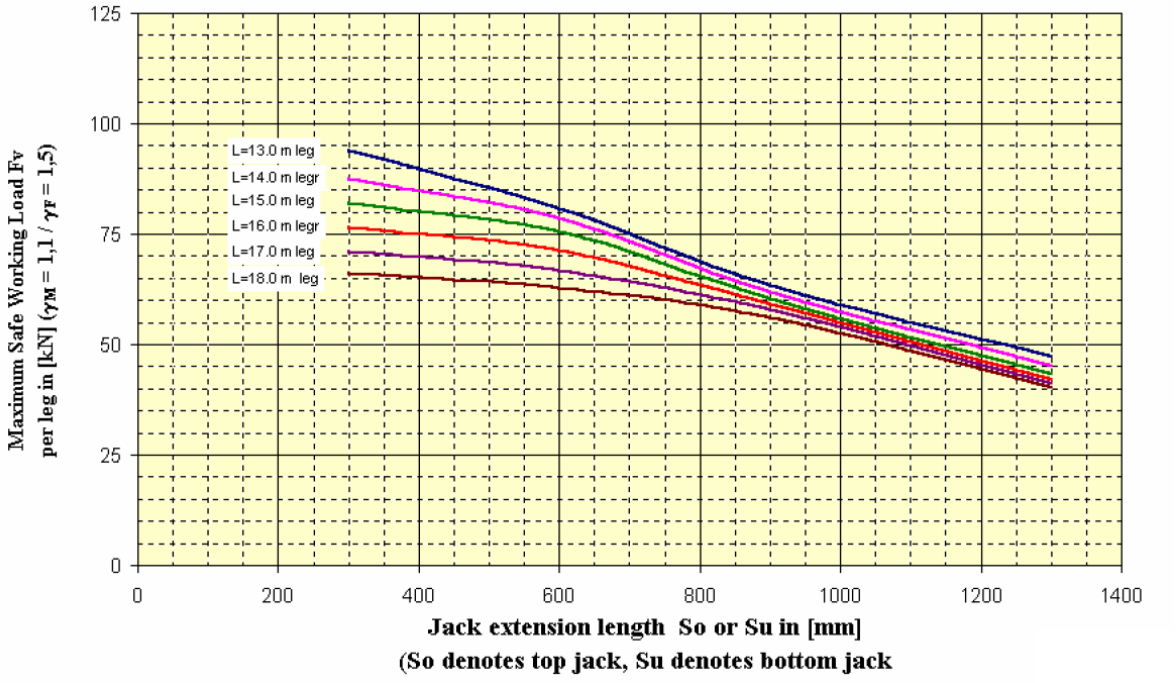
### Gass Tower - 1 Jack

**With top and bottom jack and six bracing frames.**
**Leg Heights (L): 12.00m - 18.00m**
**With differential support settlement S = 5mm**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




| Jack Extension (mm) | Dim's | Vertical Tube (leg) Length L (m) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 | 18.0 |
| 300 | a | 0.58 | 0.65 | 0.73 | 0.80 | 0.88 | 0.95 |
| | b | 1.23 | 1.40 | 1.57 | 1.74 | 1.91 | 2.08 |
| | d | 0.58 | 0.65 | 0.73 | 0.80 | 0.88 | 0.95 |
| 600 | a | 0.60 | 0.65 | 0.75 | 0.83 | 0.90 | 0.98 |
| | b | 1.25 | 1.44 | 1.62 | 1.79 | 1.96 | 2.13 |
| | d | 0.75 | 0.75 | 0.75 | 0.82 | 0.90 | 0.97 |
| 900 | a | 0.60 | 0.65 | 0.75 | 0.85 | 0.90 | 1.00 |
| | b | 1.25 | 1.44 | 1.62 | 1.80 | 1.99 | 2.17 |
| | d | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 1300 | a | 0.60 | 0.65 | 0.75 | 0.85 | 0.90 | 1.00 |
| | b | 1.25 | 1.44 | 1.62 | 1.80 | 1.99 | 2.17 |
| | d | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |

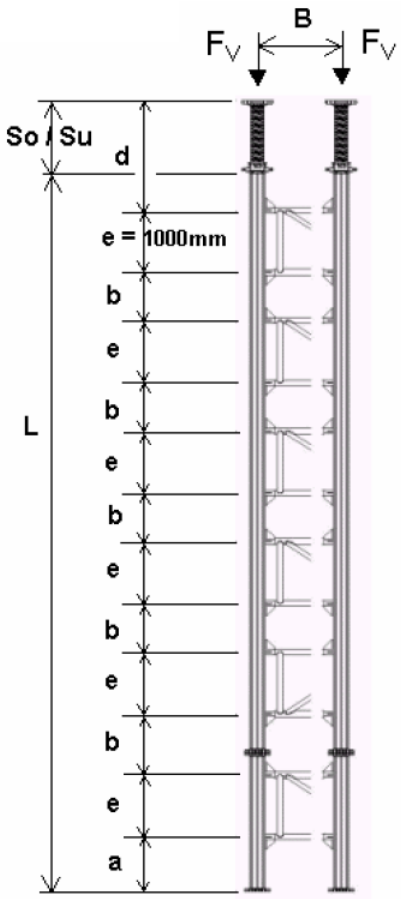


# 3. Working Load Limits (WLL)

## Gass Tower - 1 Jack

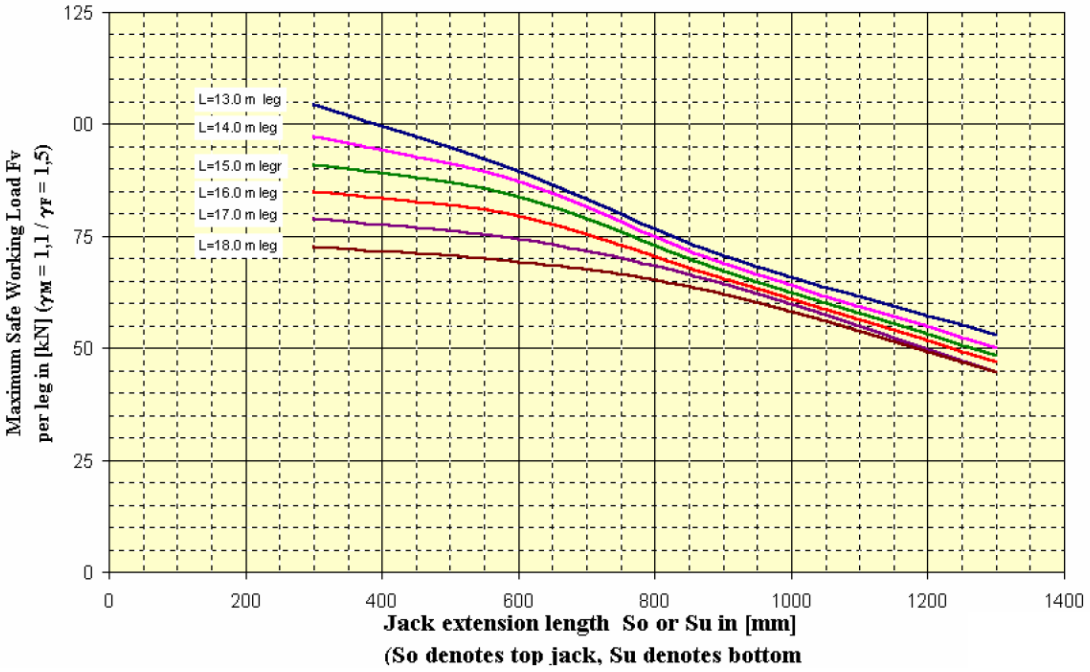
**With top and bottom jack and six bracing frames.**
**Leg Heights (L): 12.00-18.00m**
**Without differential support settlements**

- Jack may be at the top or at the bottom provided that the bracing frame(s) position relative to the jack is maintained.
- Spacing of ledger frame(s) dimensions a, b and d must be shown below.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.




No differential settlement

| Jack Extension (mm) | Dim's | Vertical Tube (leg) Length L (m) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 13.0 | 14.0 | 15.0 | 16.0 | 17.0 | 18.0 |
| 300 | a | 0.58 | 0.65 | 0.73 | 0.80 | 0.88 | 0.95 |
| | b | 1.23 | 1.40 | 1.57 | 1.74 | 1.91 | 2.08 |
| | d | 0.58 | 0.65 | 0.73 | 0.80 | 0.88 | 0.95 |
| 600 | a | 0.60 | 0.65 | 0.75 | 0.83 | 0.90 | 0.98 |
| | b | 1.25 | 1.44 | 1.62 | 1.79 | 1.96 | 2.13 |
| | d | 0.75 | 0.75 | 0.75 | 0.82 | 0.90 | 0.97 |
| 900 | a | 0.60 | 0.65 | 0.75 | 0.85 | 0.90 | 1.00 |
| | b | 1.25 | 1.44 | 1.62 | 1.80 | 1.99 | 2.17 |
| | d | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 | 1.05 |
| 1300 | a | 0.60 | 0.65 | 0.75 | 0.85 | 0.90 | 1.00 |
| | b | 1.25 | 1.44 | 1.62 | 1.80 | 1.99 | 2.17 |
| | d | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 | 1.45 |

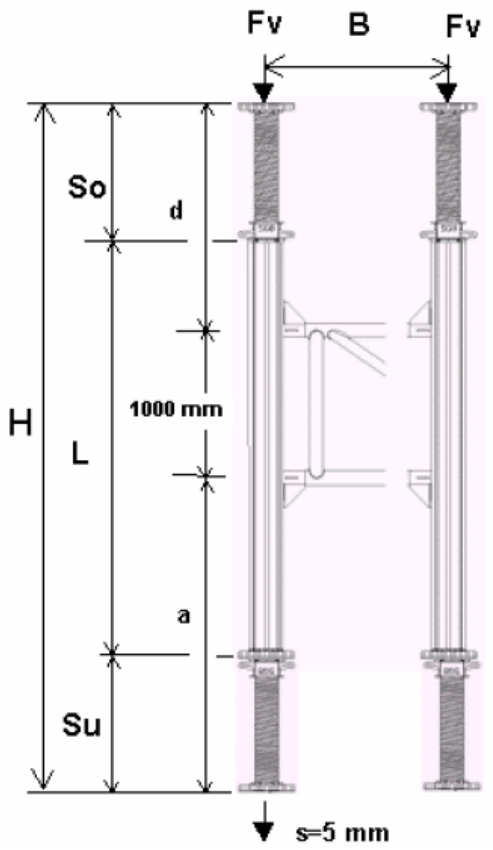


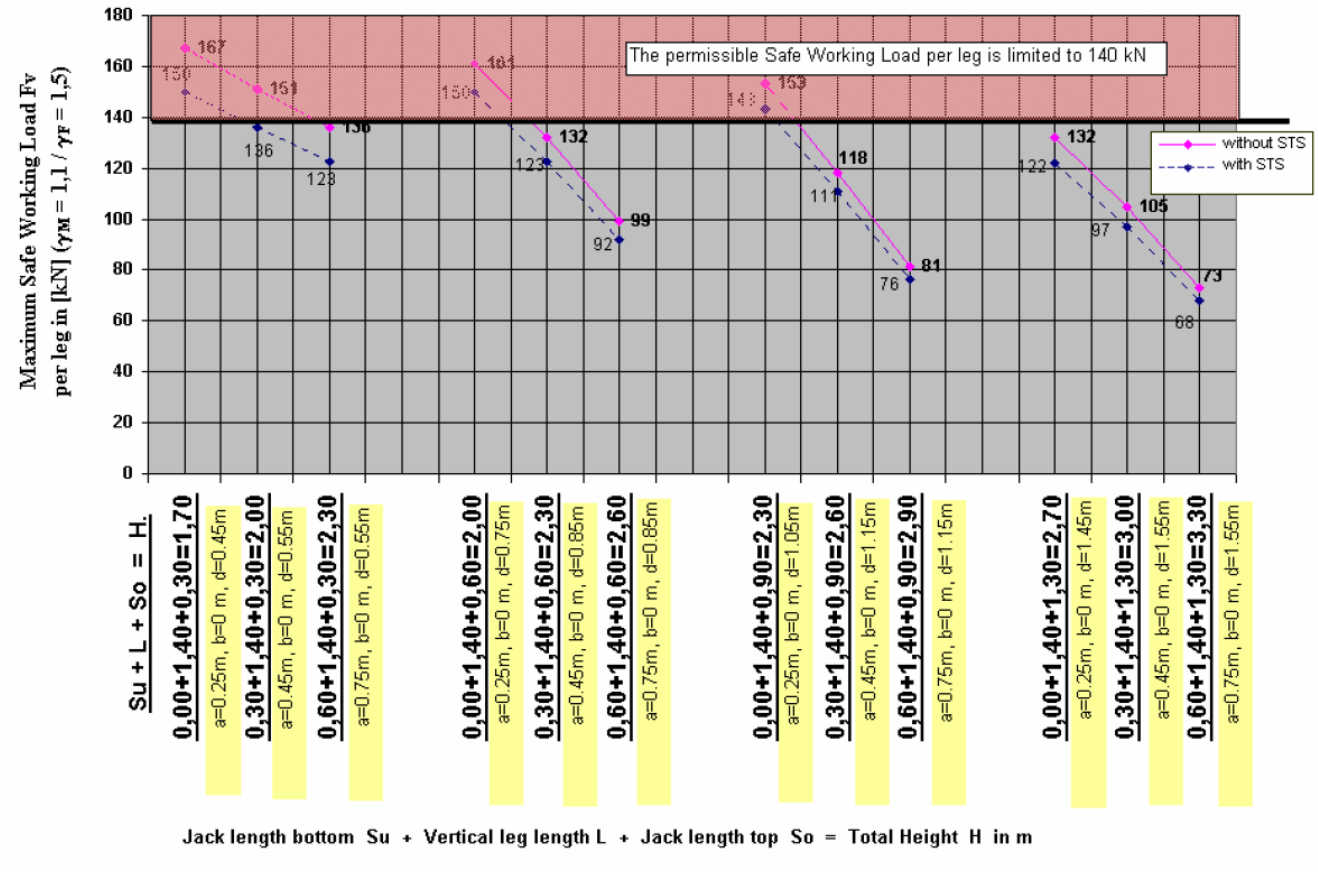
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and one bracing frame.**
**Leg Height (L): 1.4m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



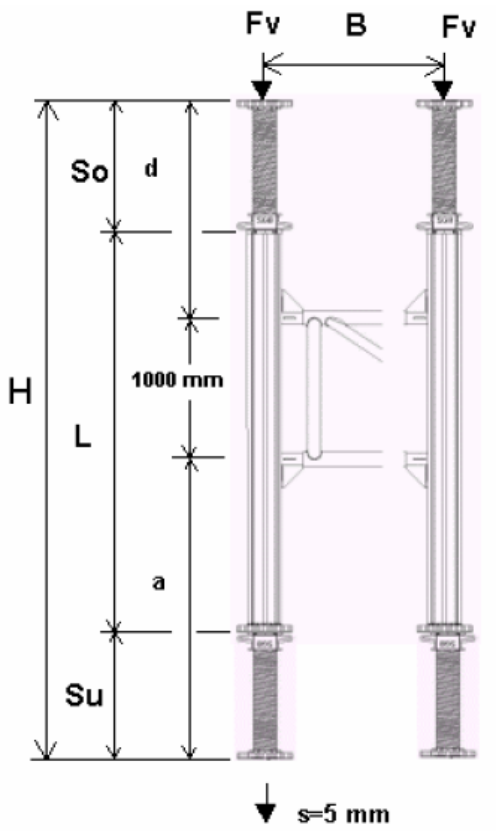



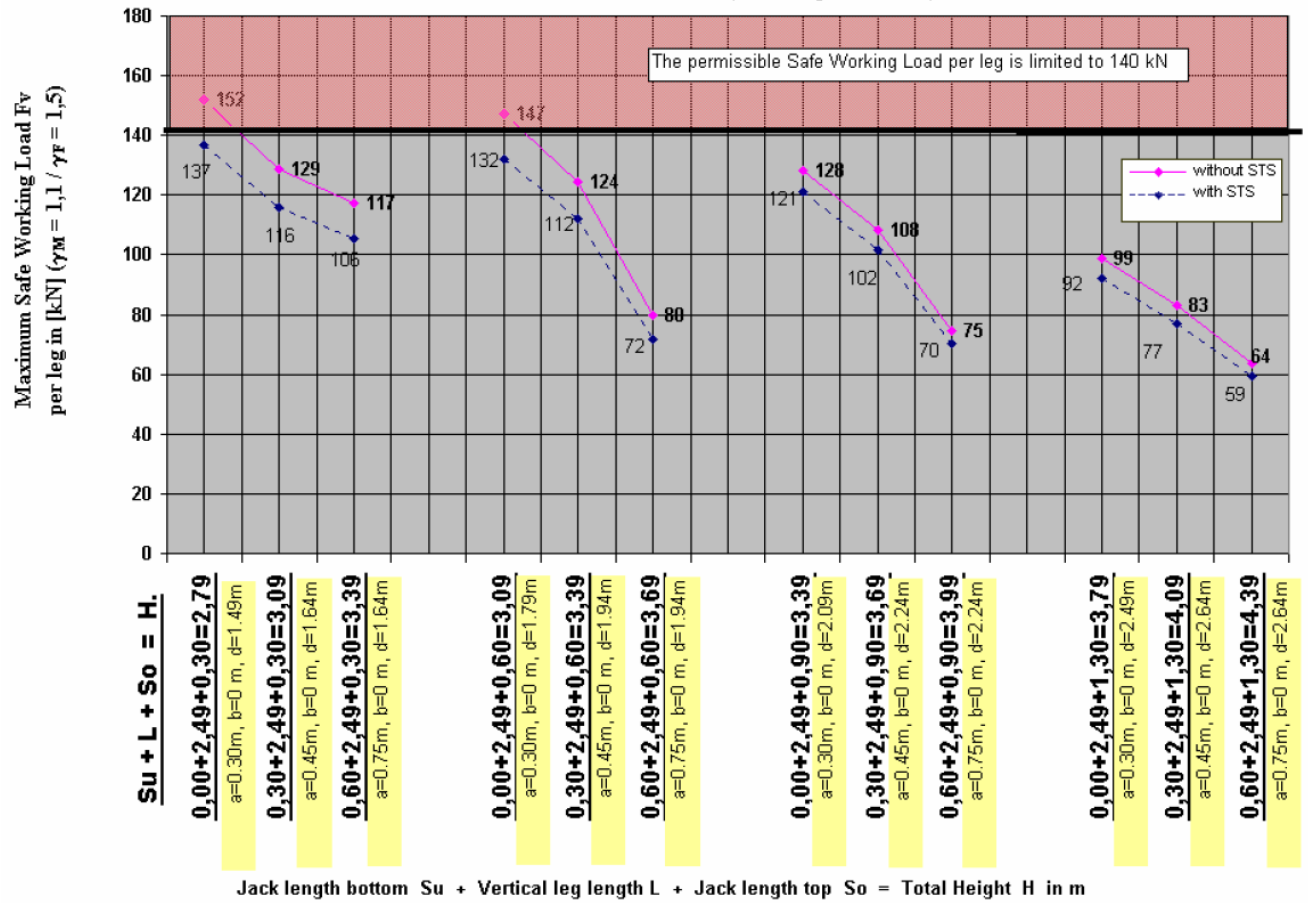
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and one bracing frame.**
**Leg Height (L): 2.49m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



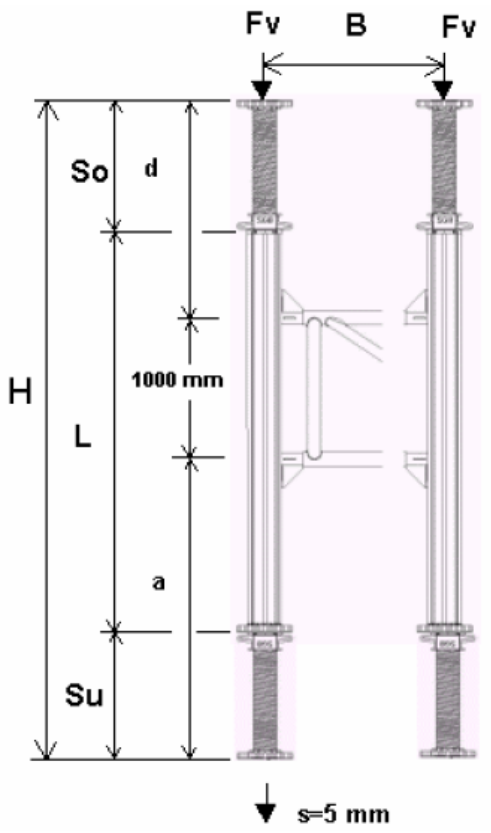



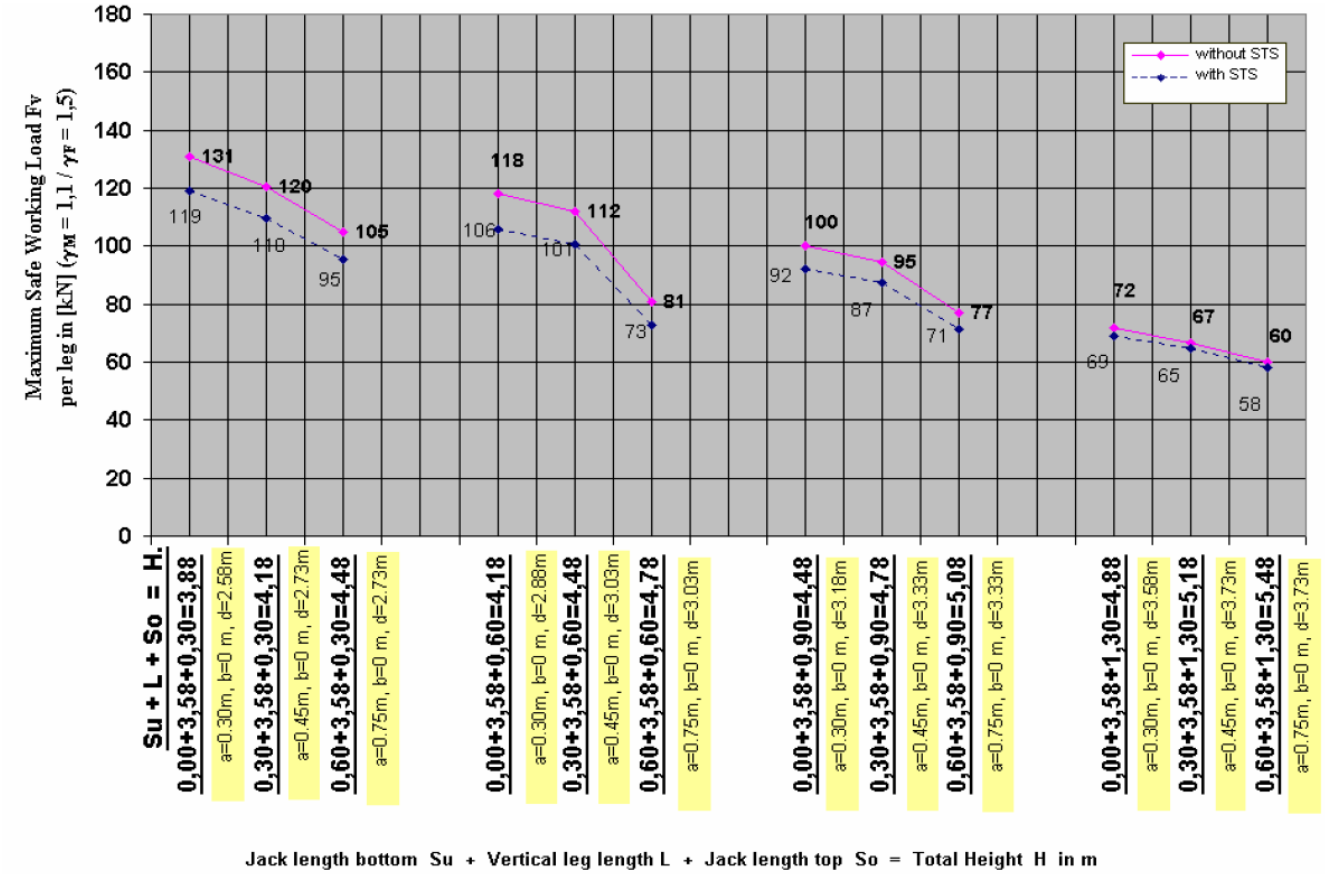
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and one bracing frame.**
**Leg Height (L): 3.58m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



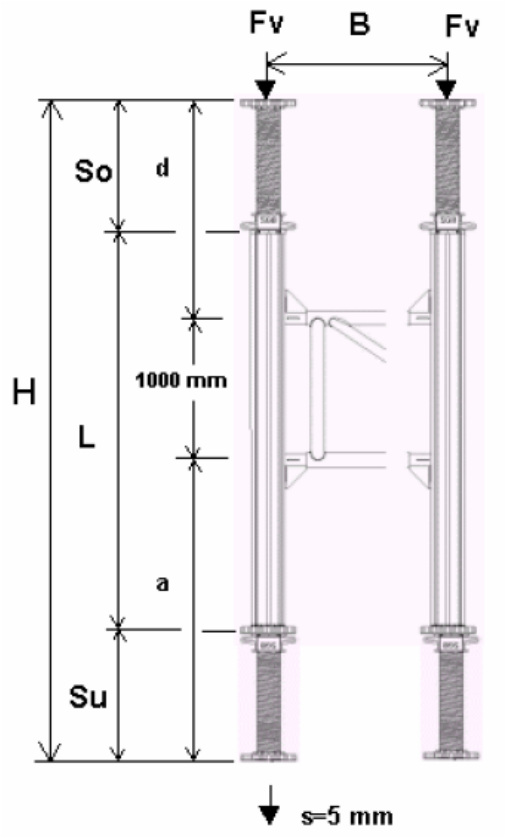



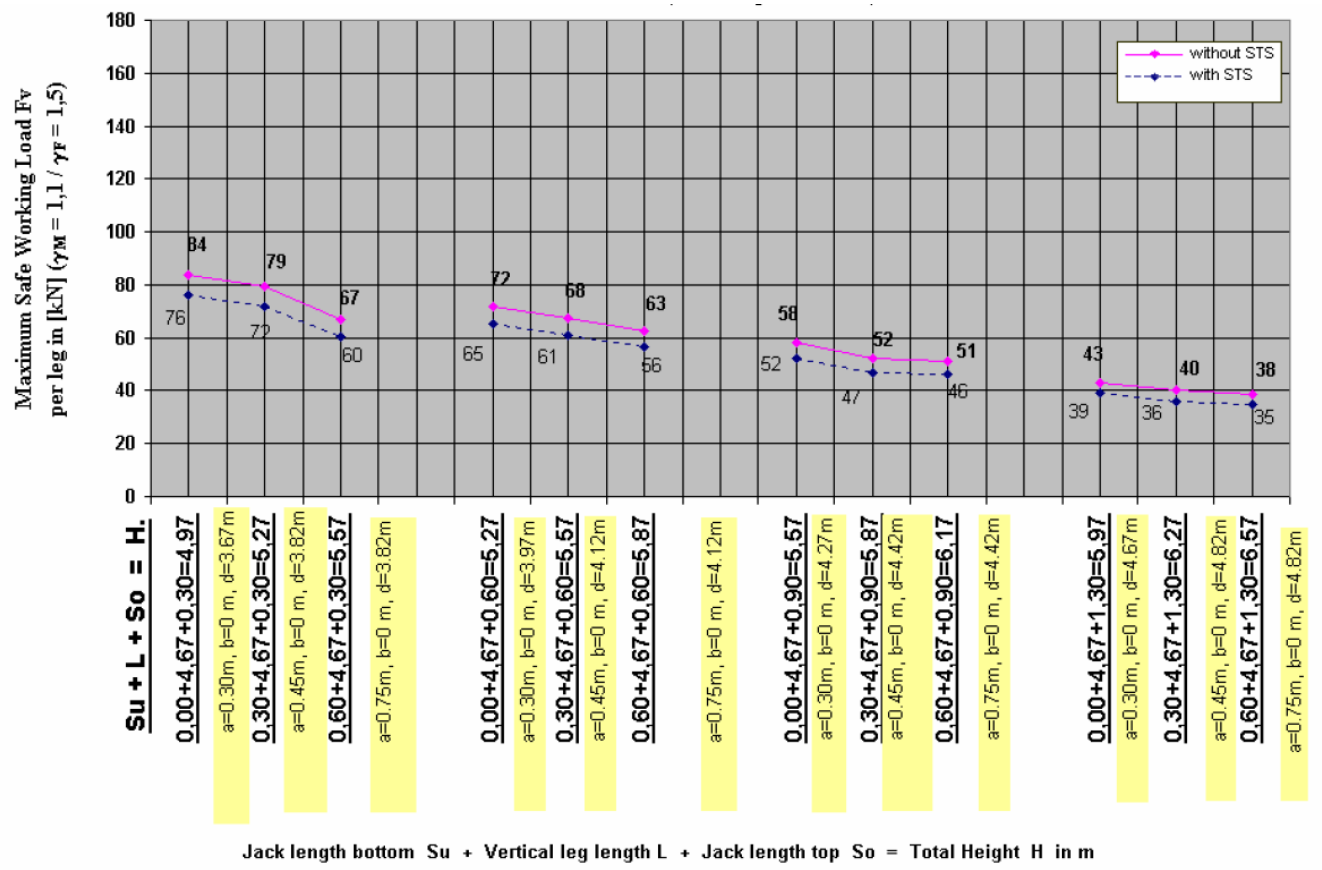
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and one bracing frame.**
**Leg Height (L): 4.67m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



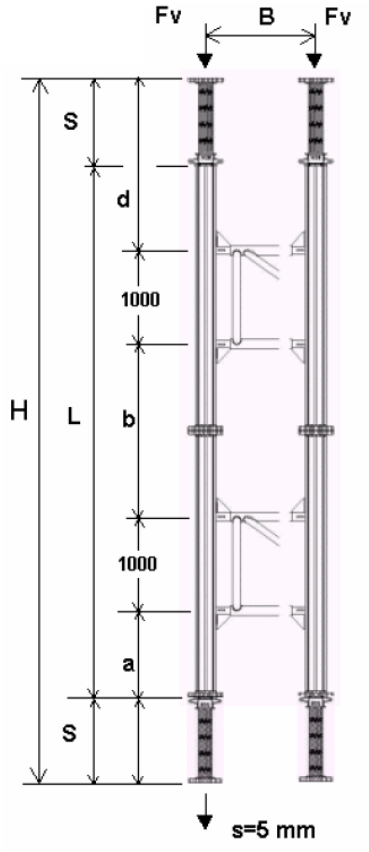



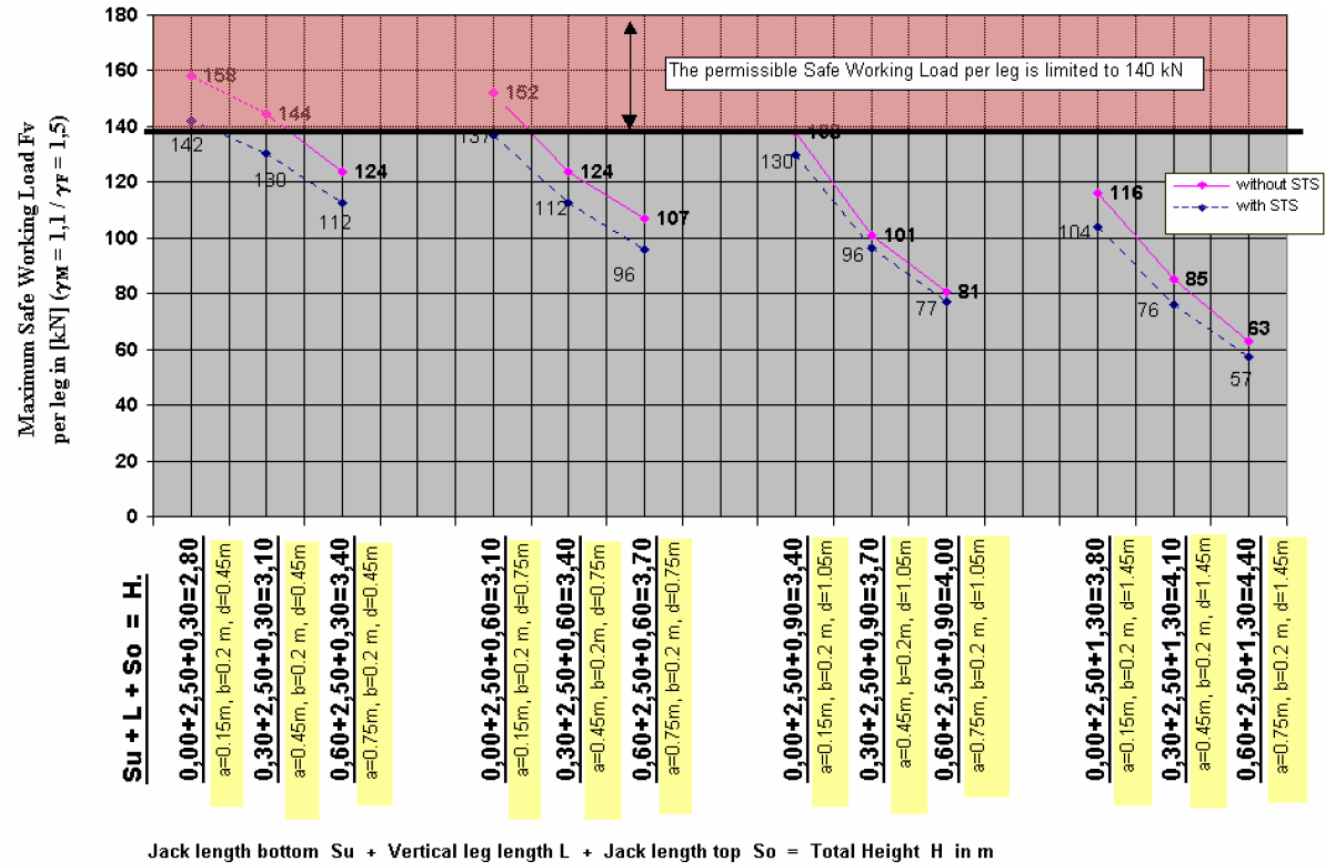
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and two bracing frames.**
**Leg Height (L): 2.5m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



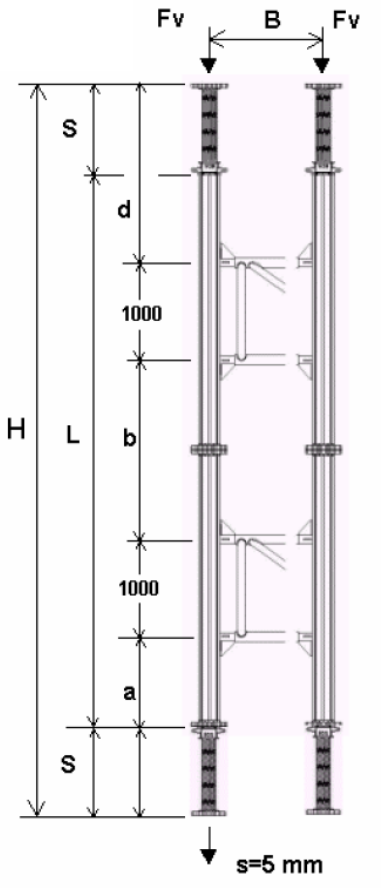



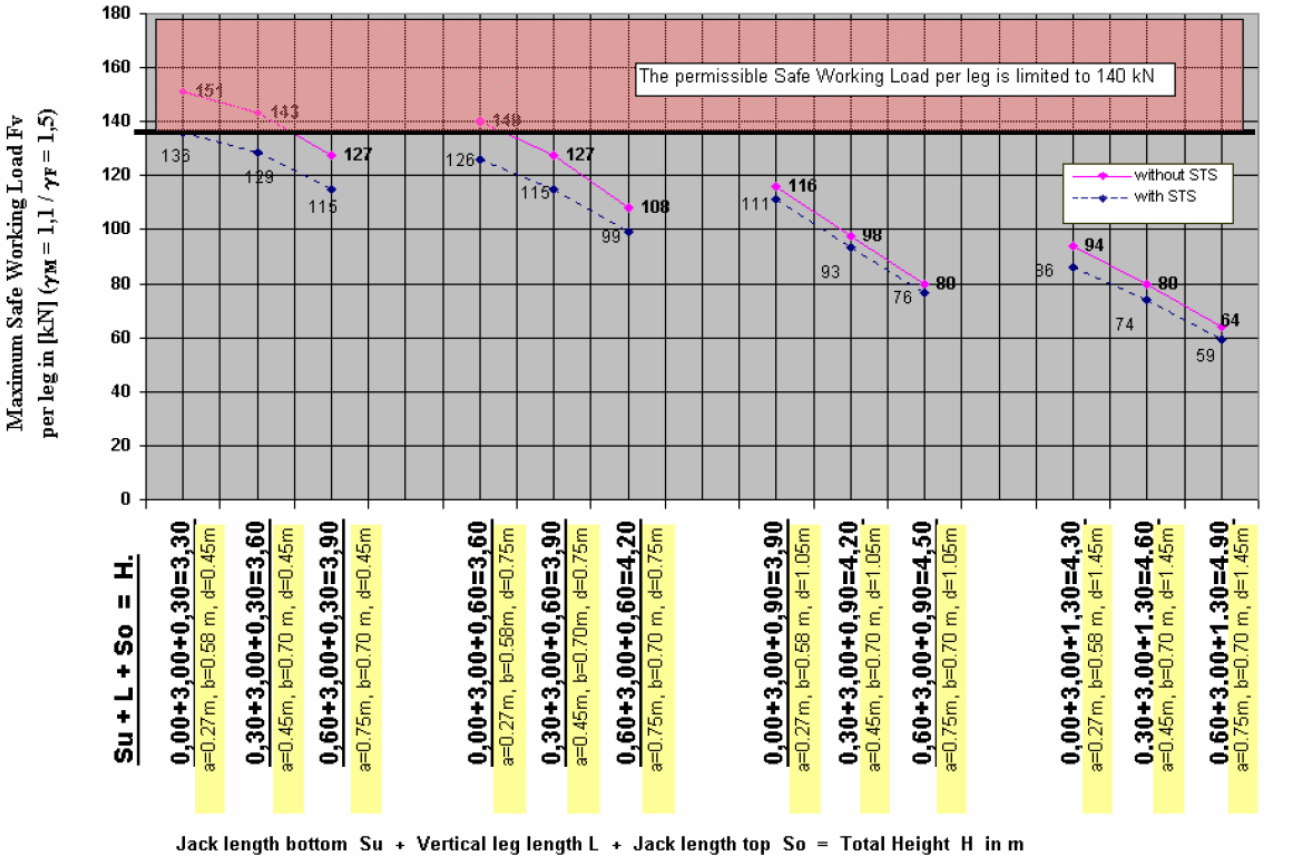
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and two bracing frames.**
**Leg Height (L): 3.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



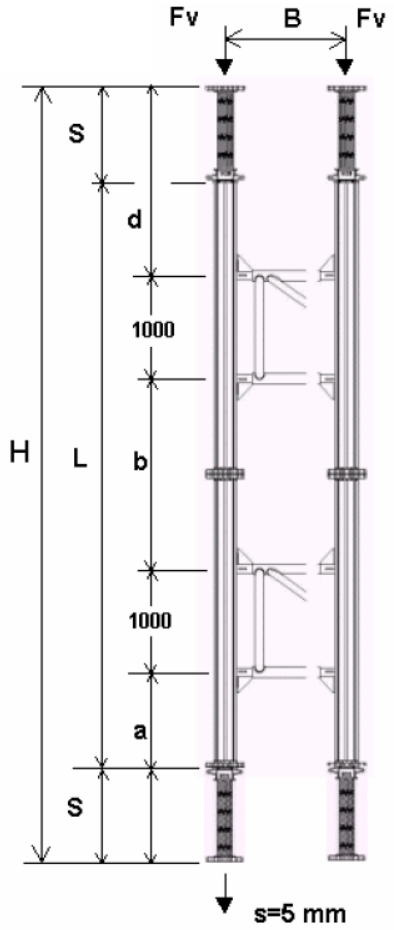



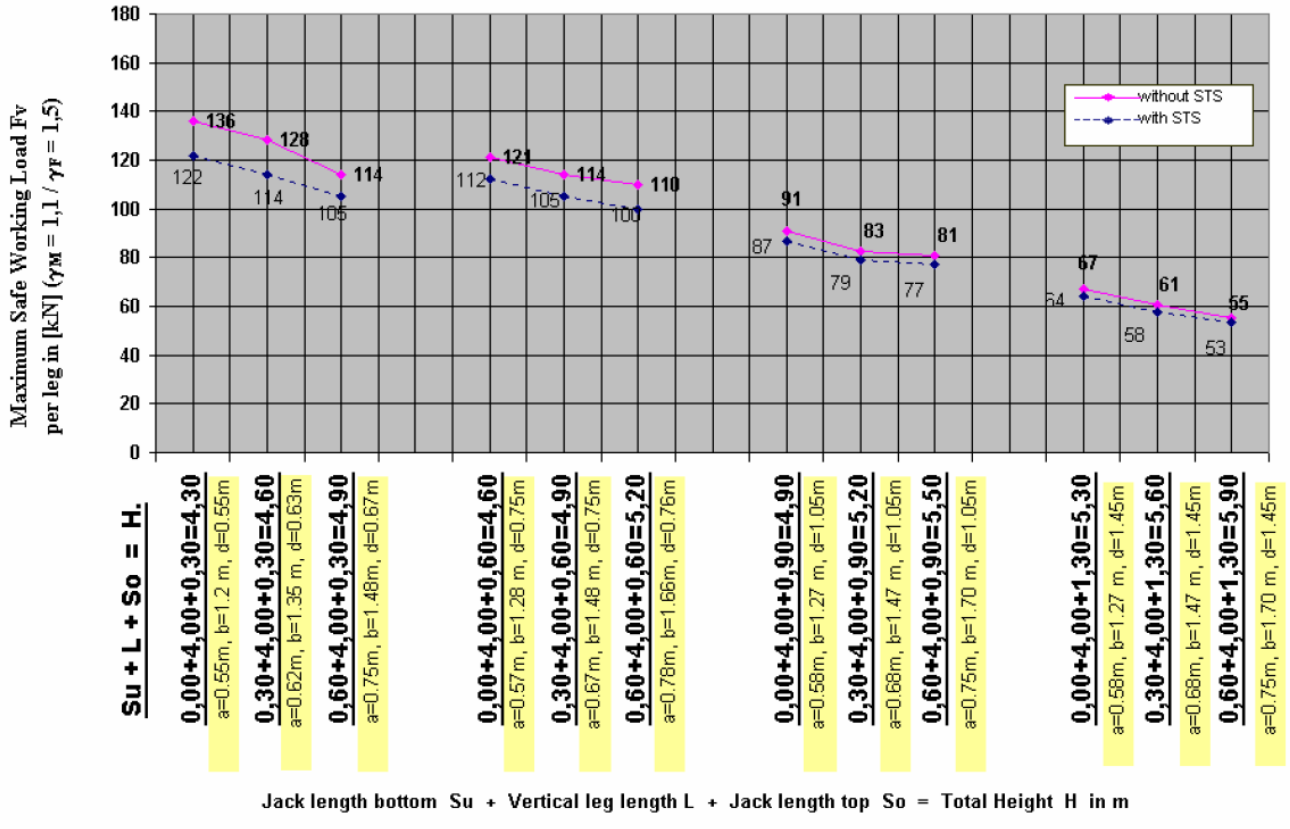
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and two bracing frames.**
**Leg Height (L): 4.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



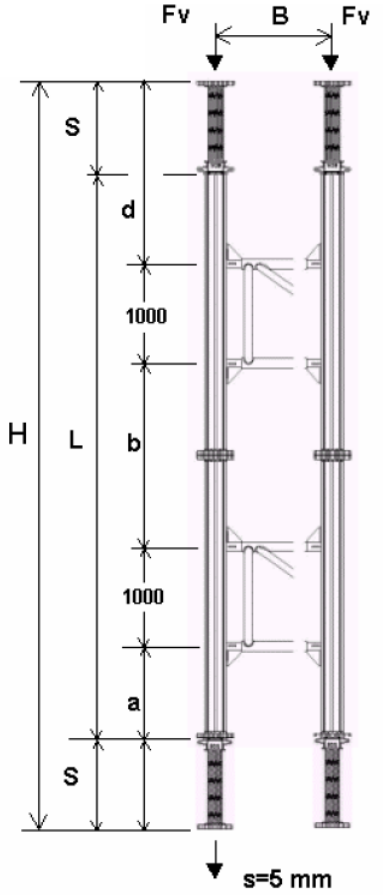



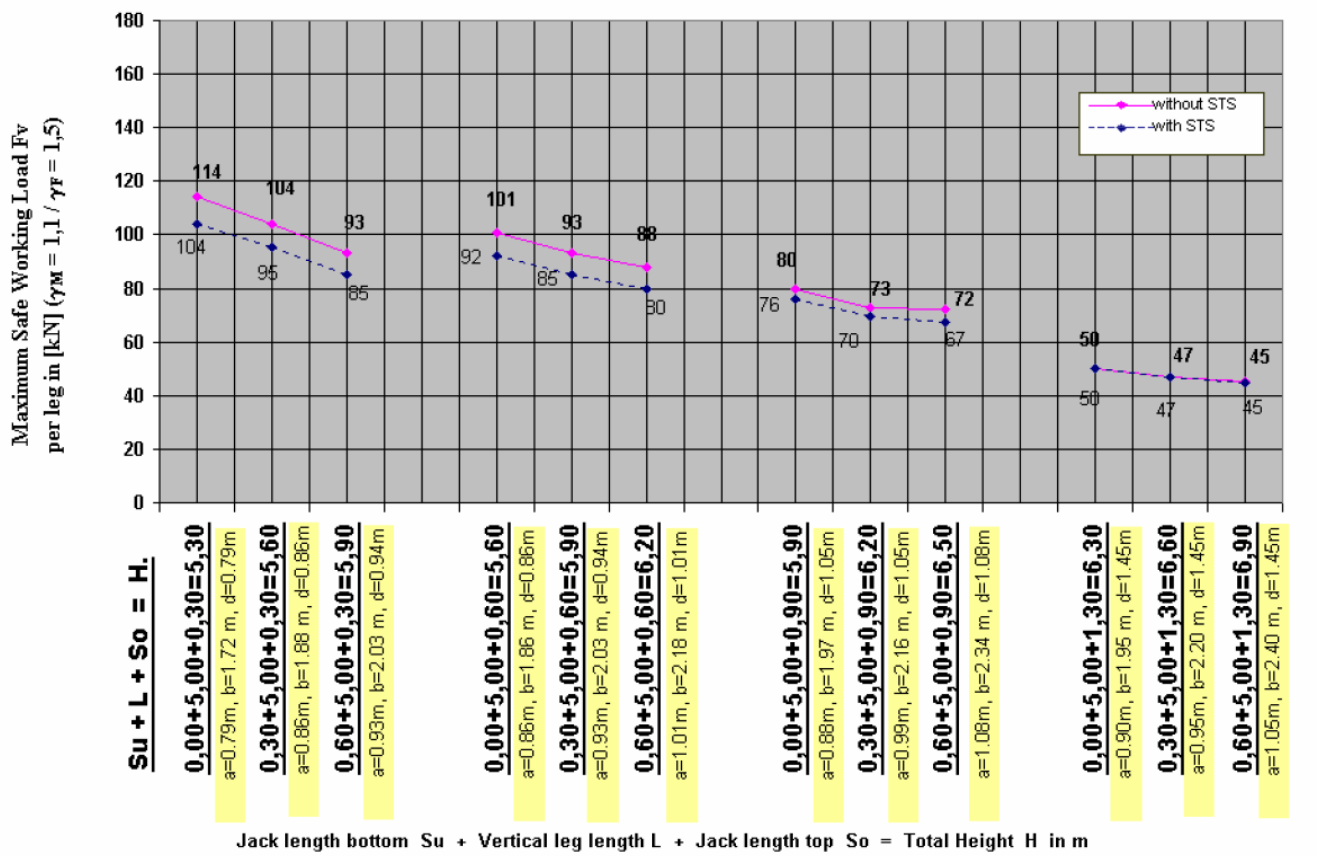
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and two bracing frames.**
**Leg Height (L): 5.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



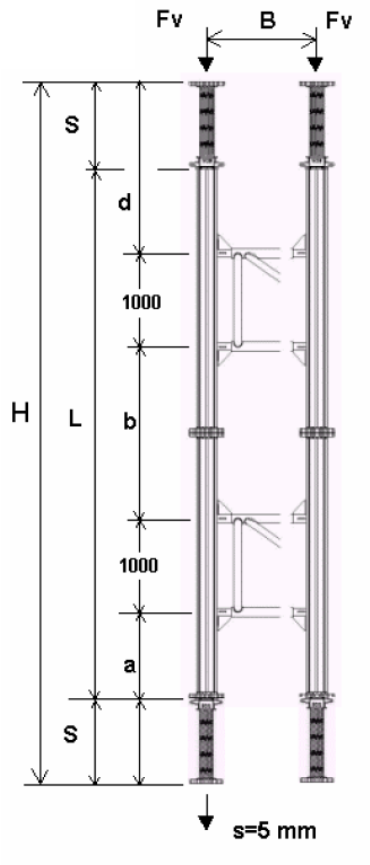



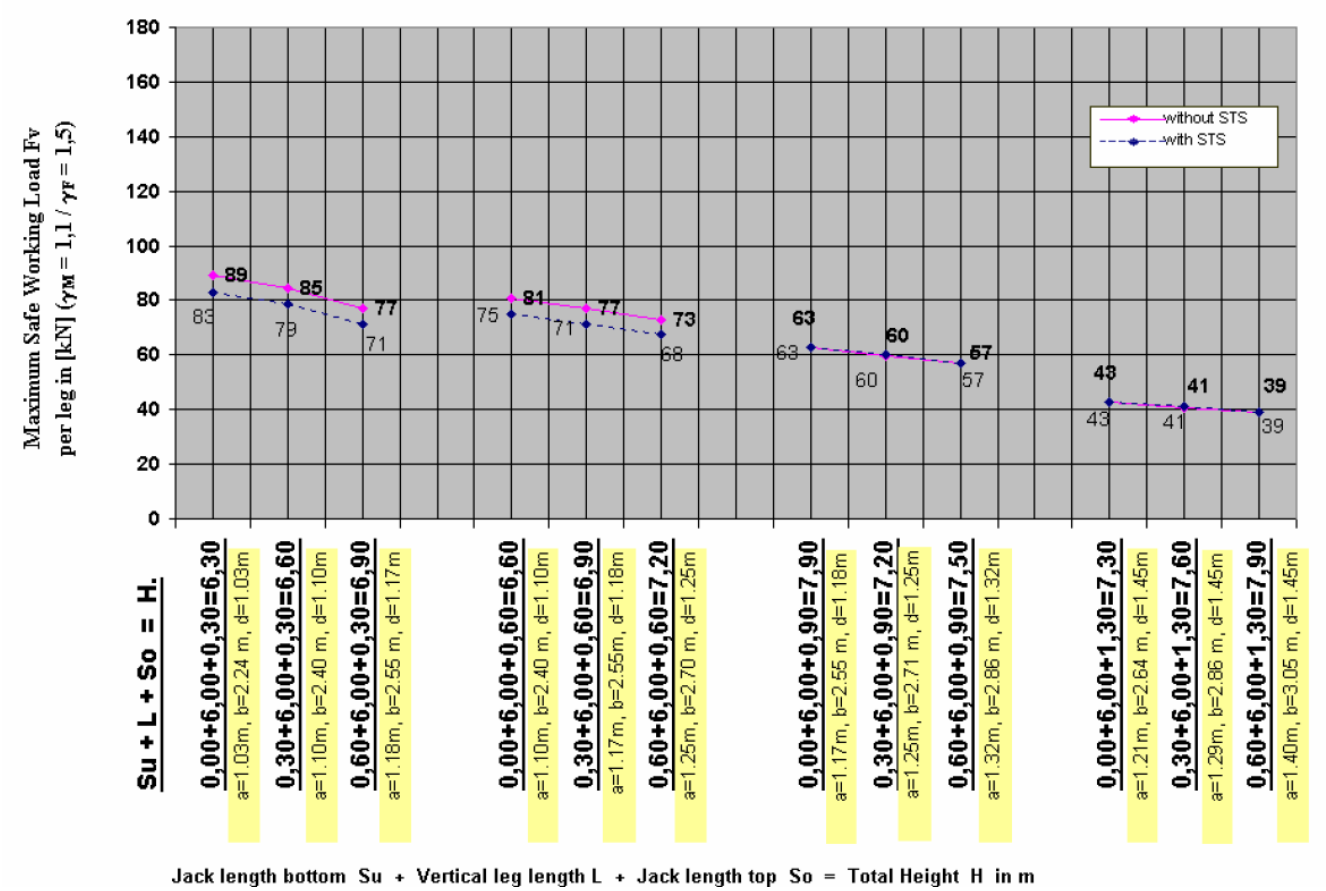
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and two bracing frames.**
**Leg Height (L): 6.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



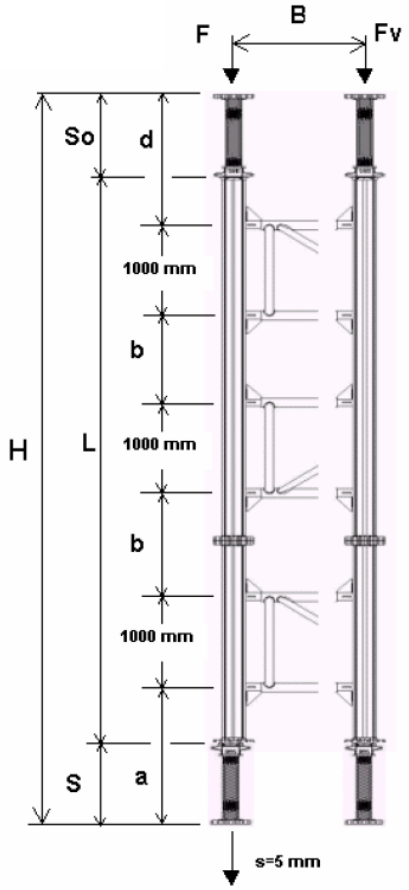



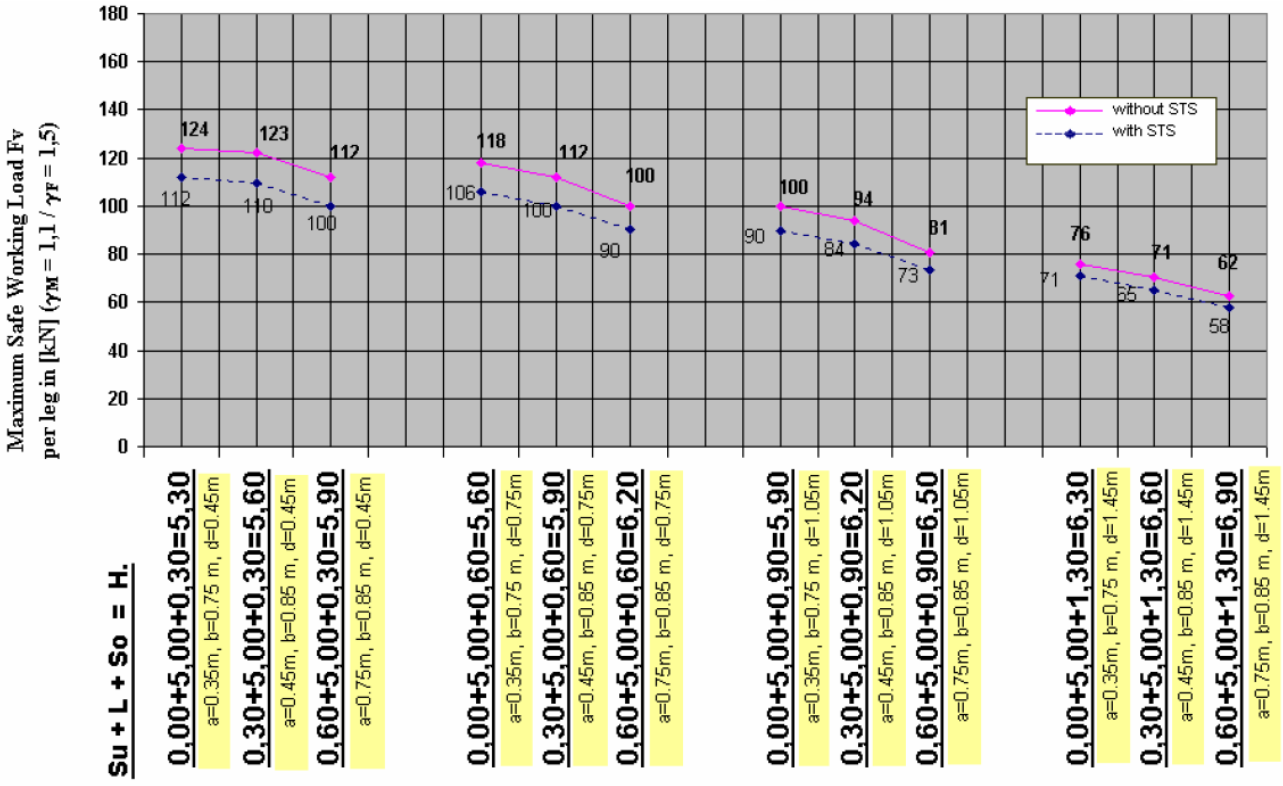
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and three bracing frames.**
**Leg Height (L): 5.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



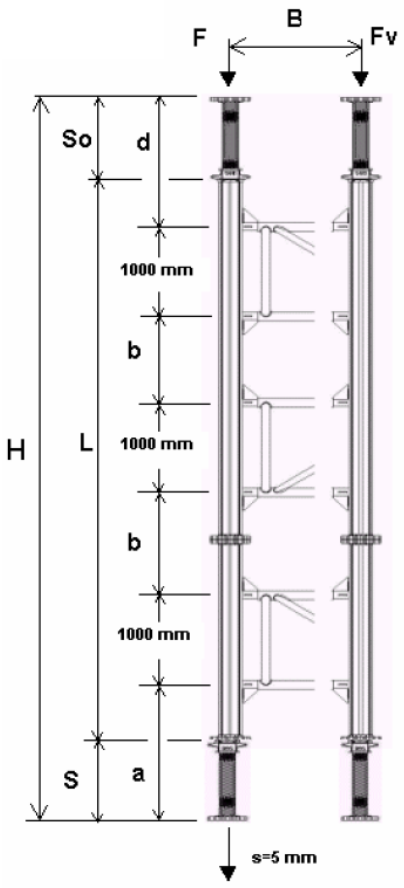



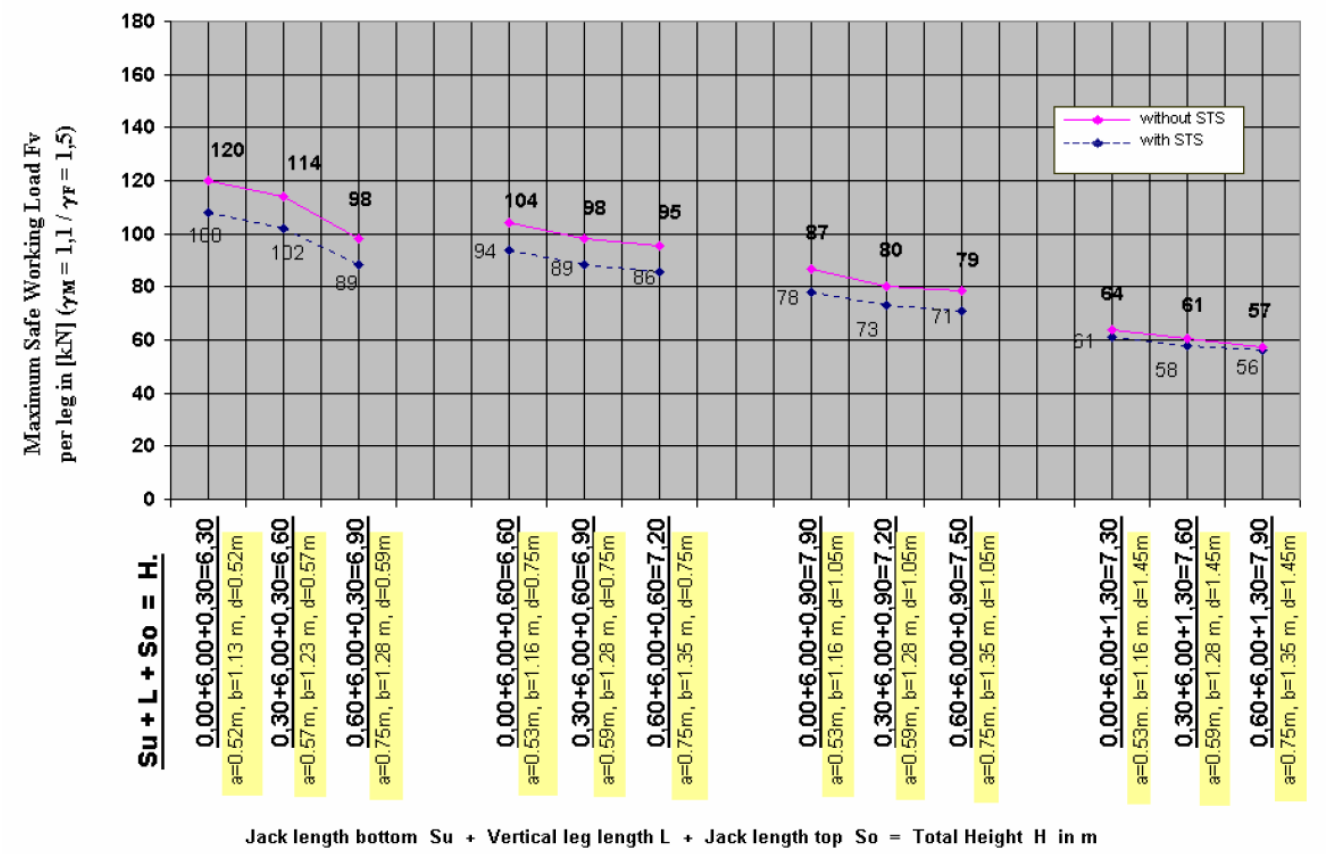
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and three bracing frames.**
**Leg Height (L): 6.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



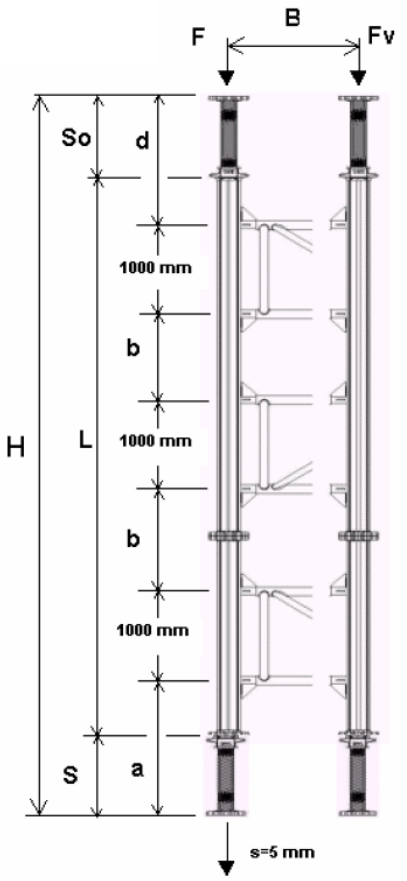



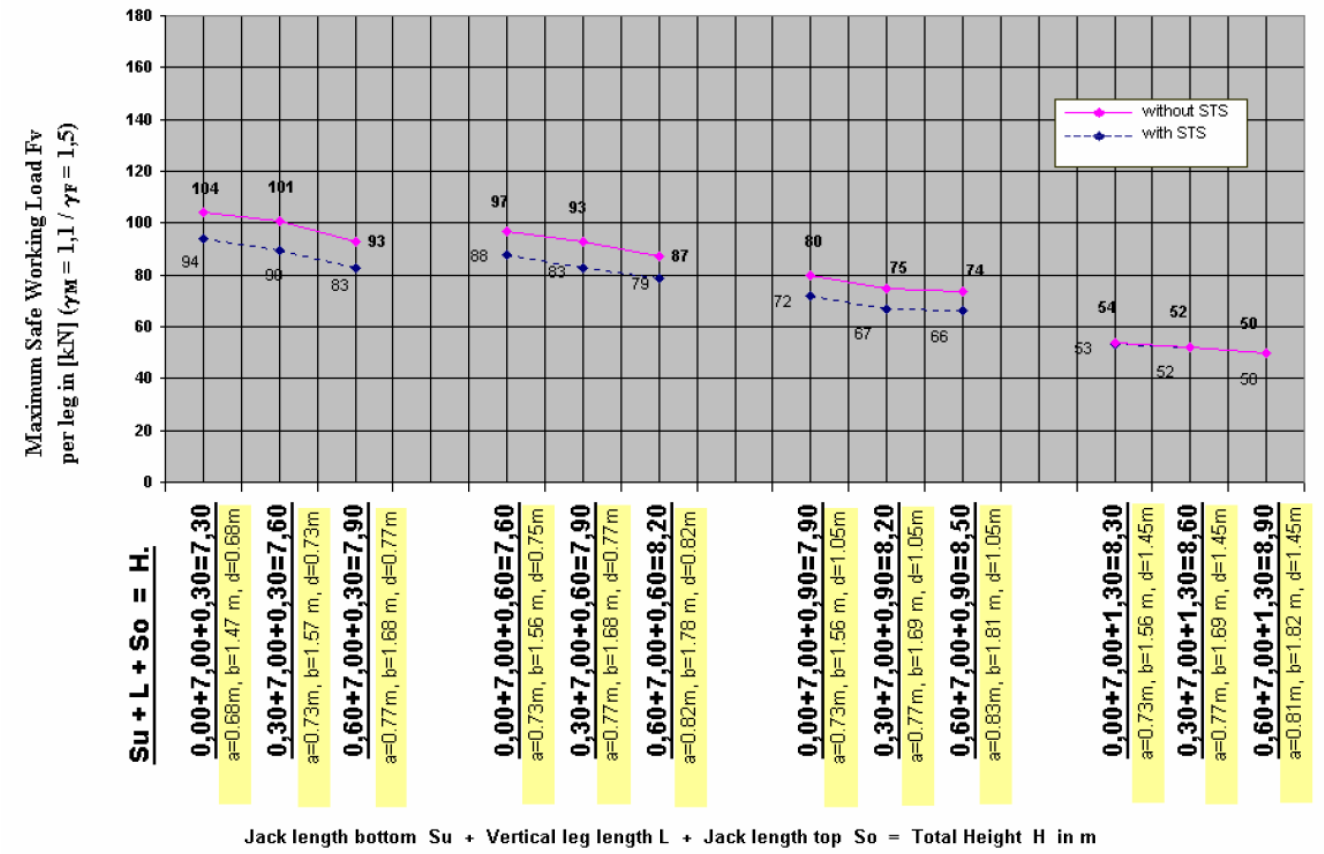
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and three bracing frames.**
**Leg Height (L): 7.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



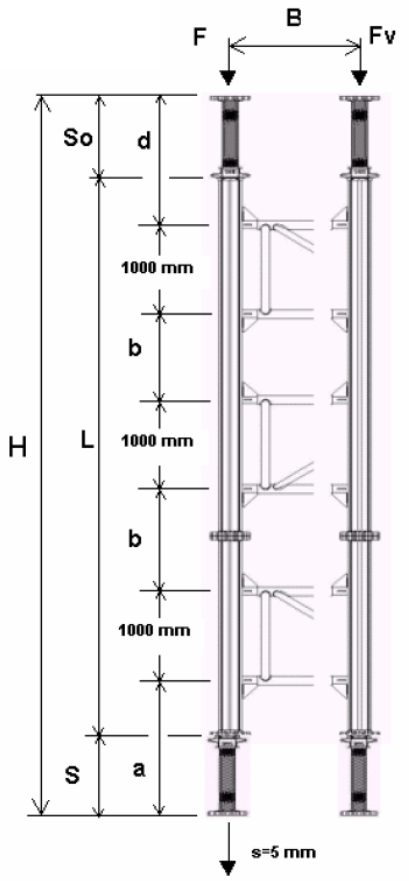



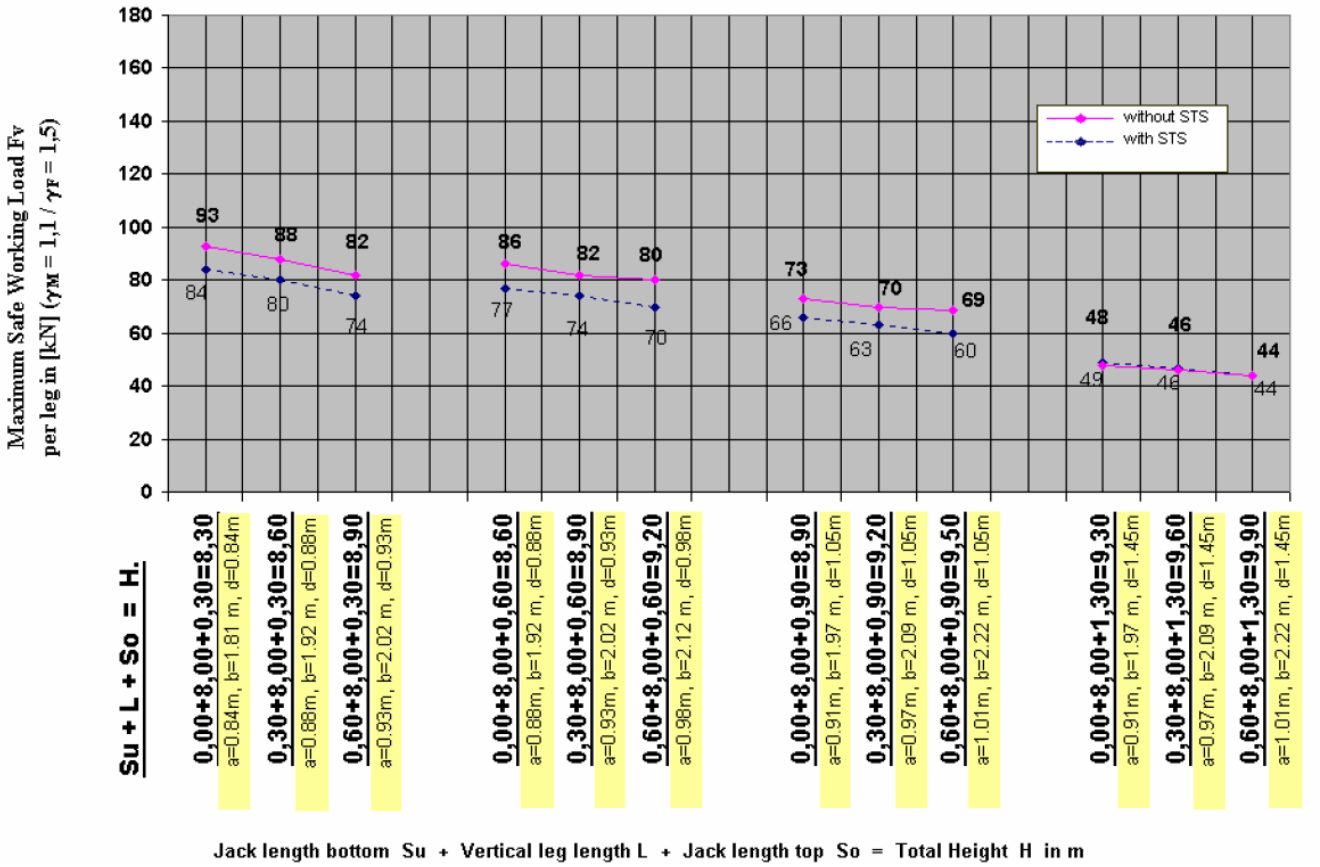
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and three bracing frames.**
**Leg Height (L): 8.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m , 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



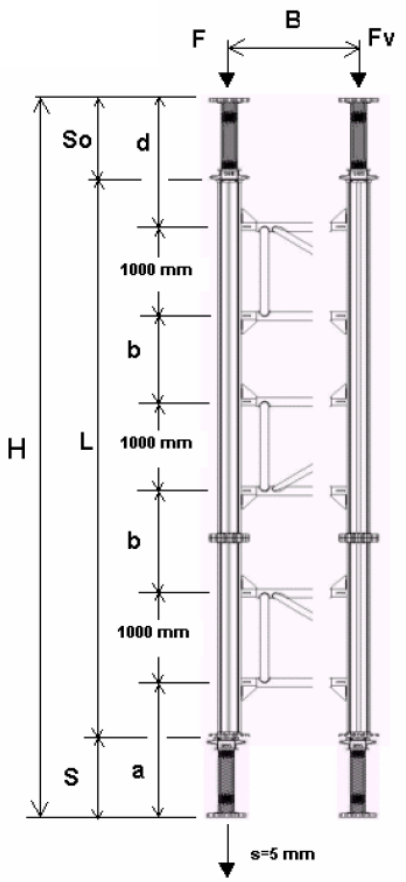



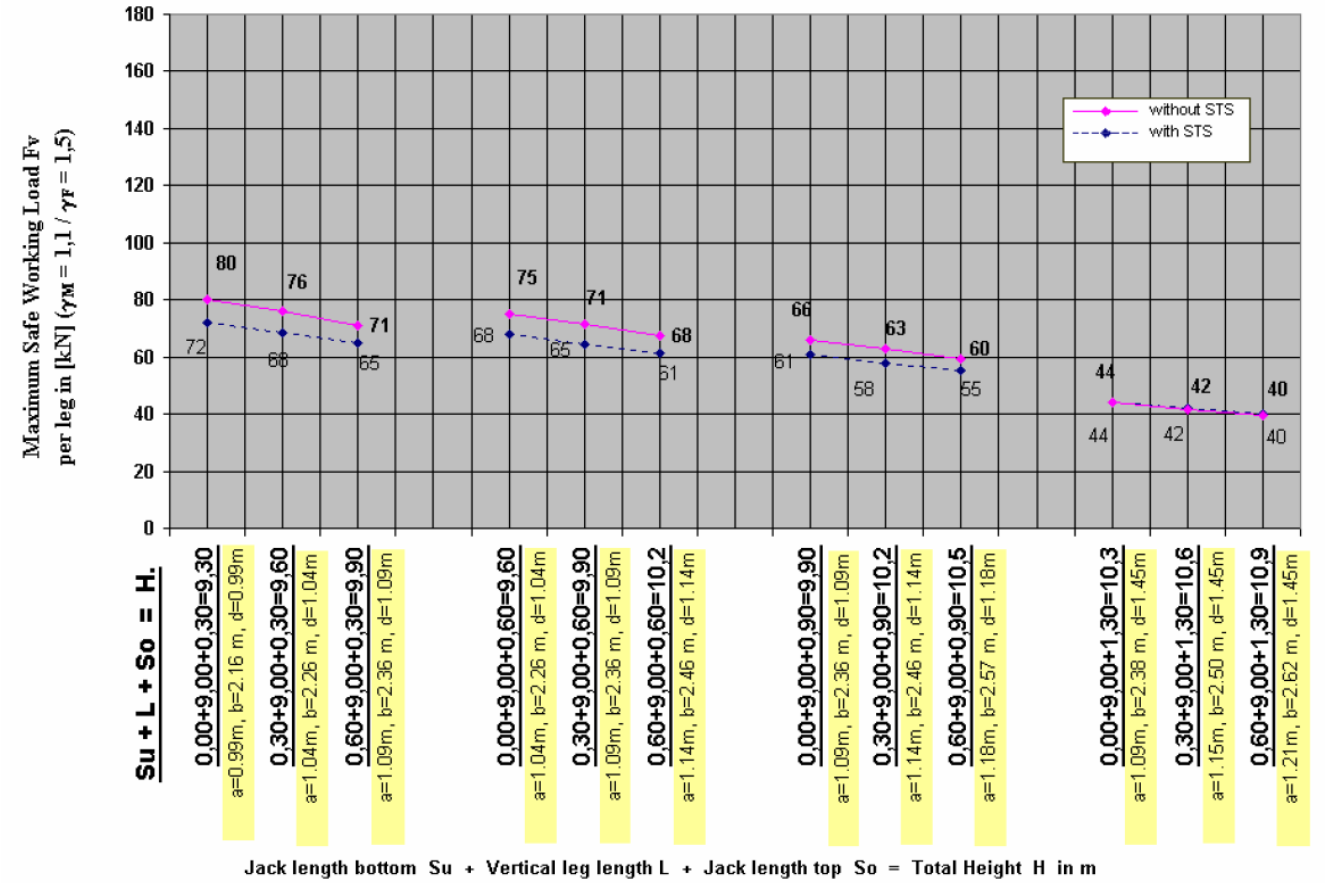
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and three bracing frames.**
**Leg Height (L): 9.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



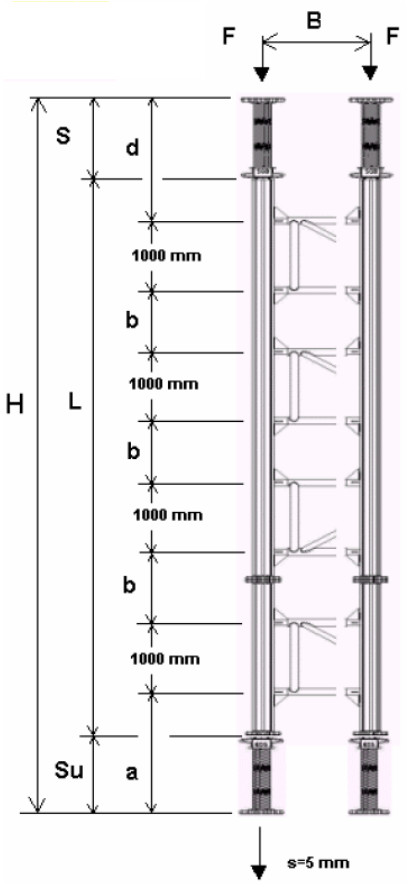



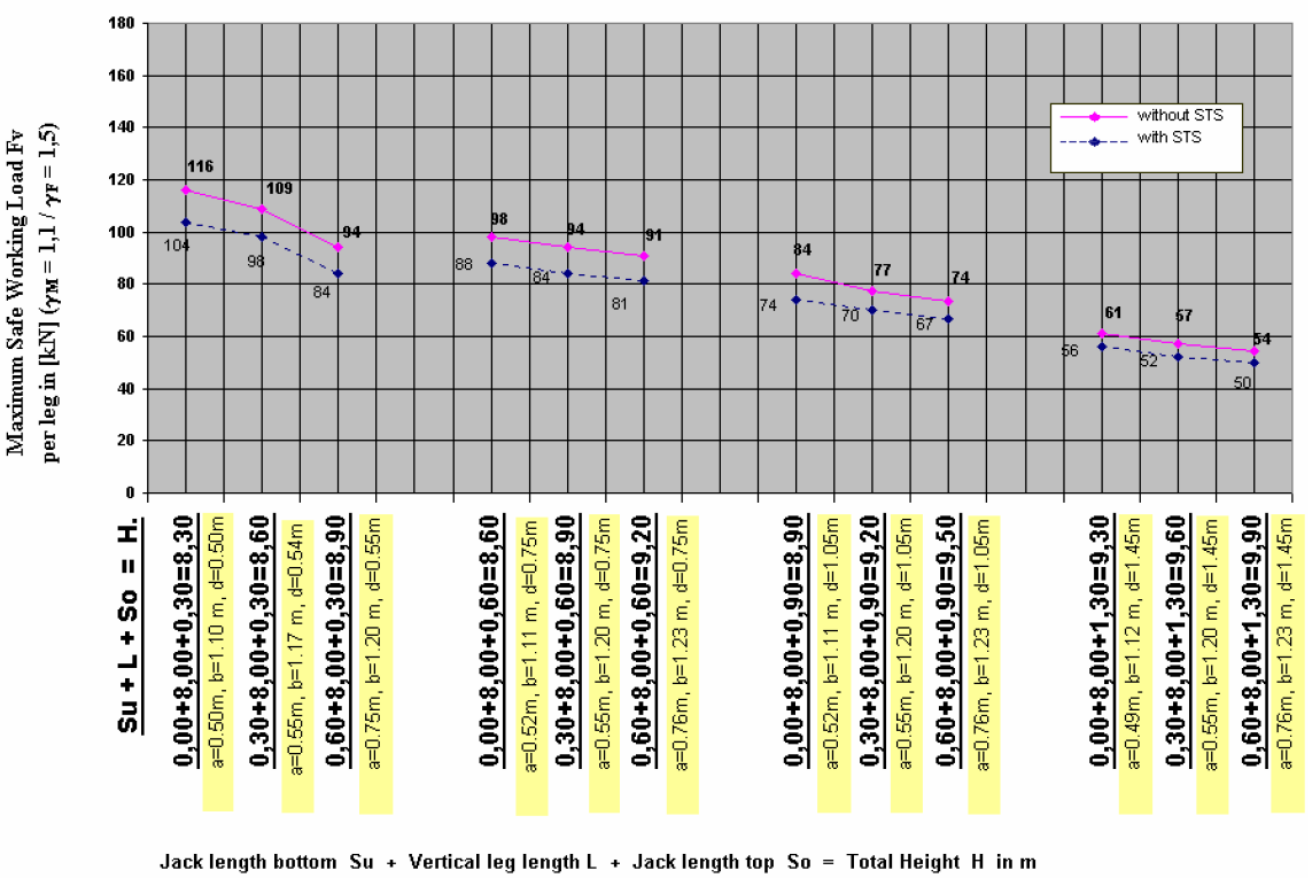
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and four bracing frames.**
**Leg Height (L): 8.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



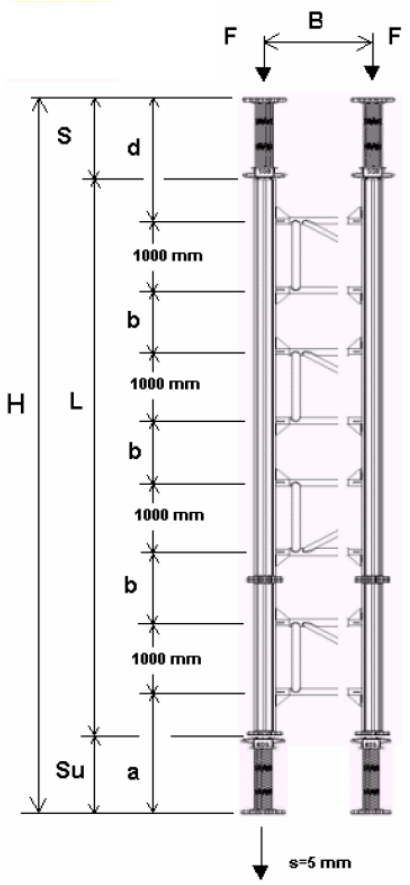



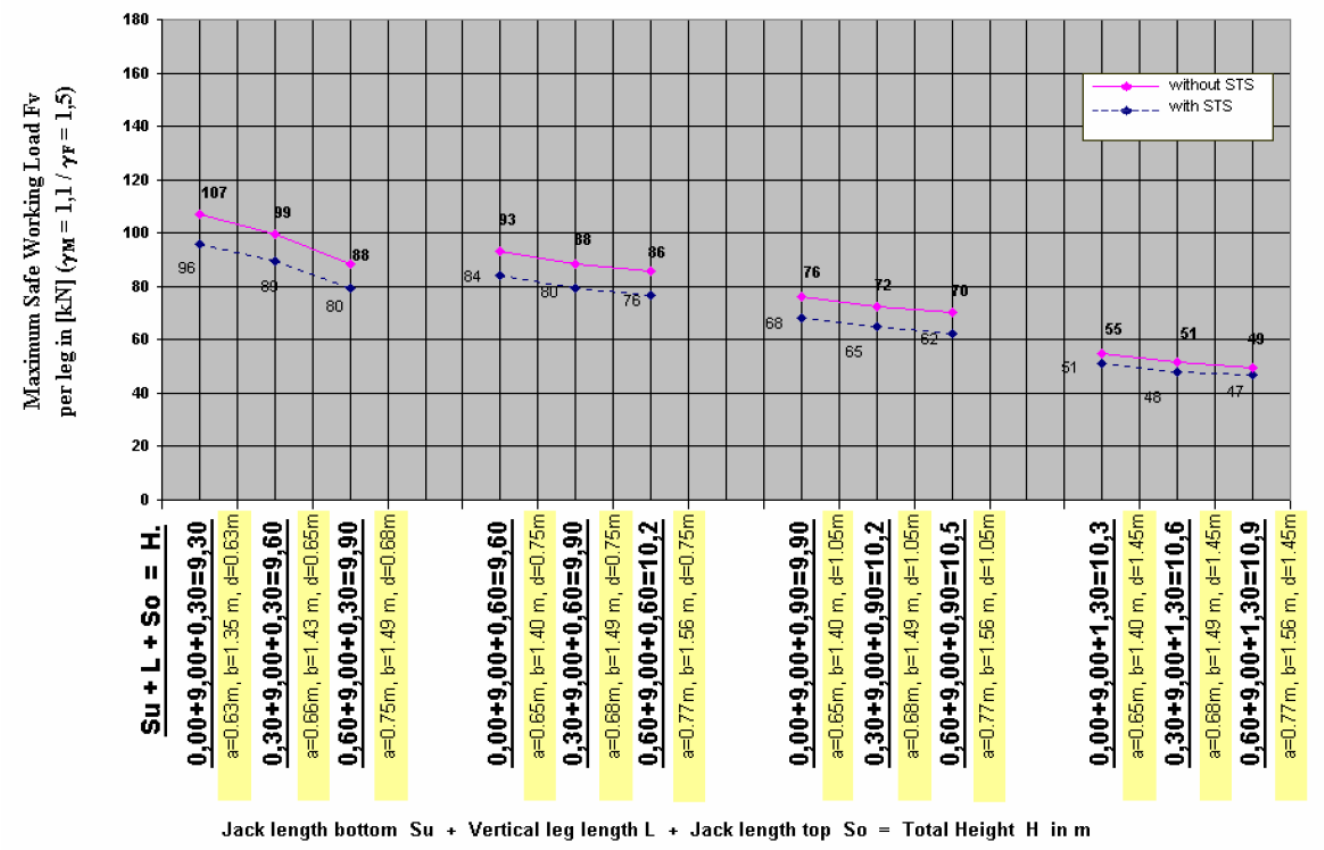
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and four bracing frames.**
**Leg Height (L): 9.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



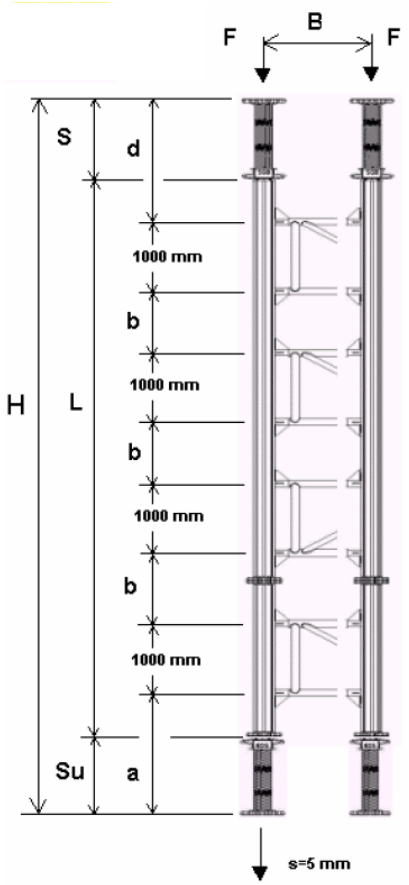



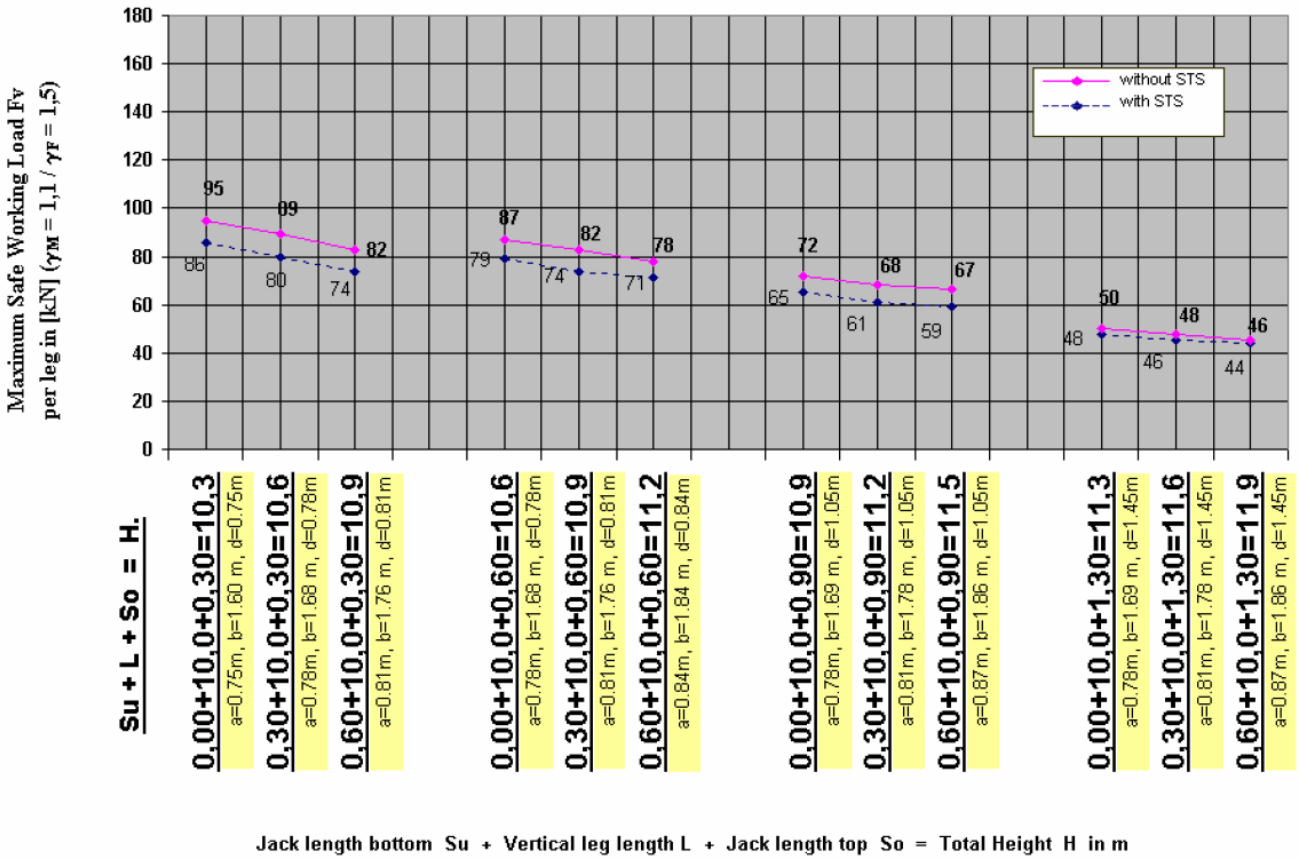
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and four bracing frames.**
**Leg Height (L): 10.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



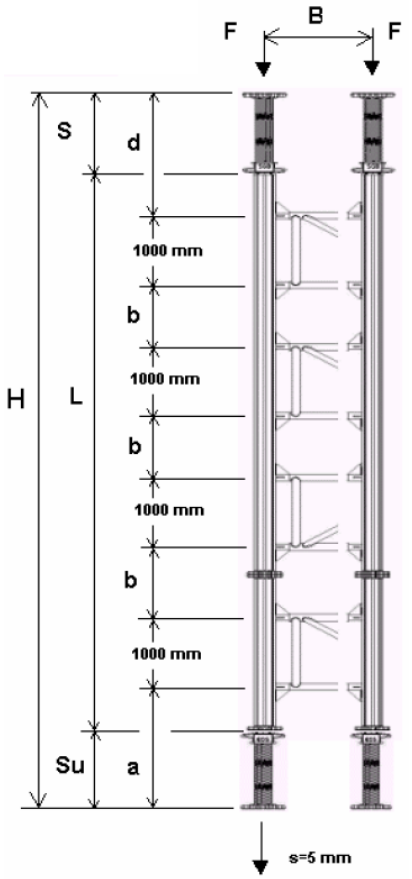



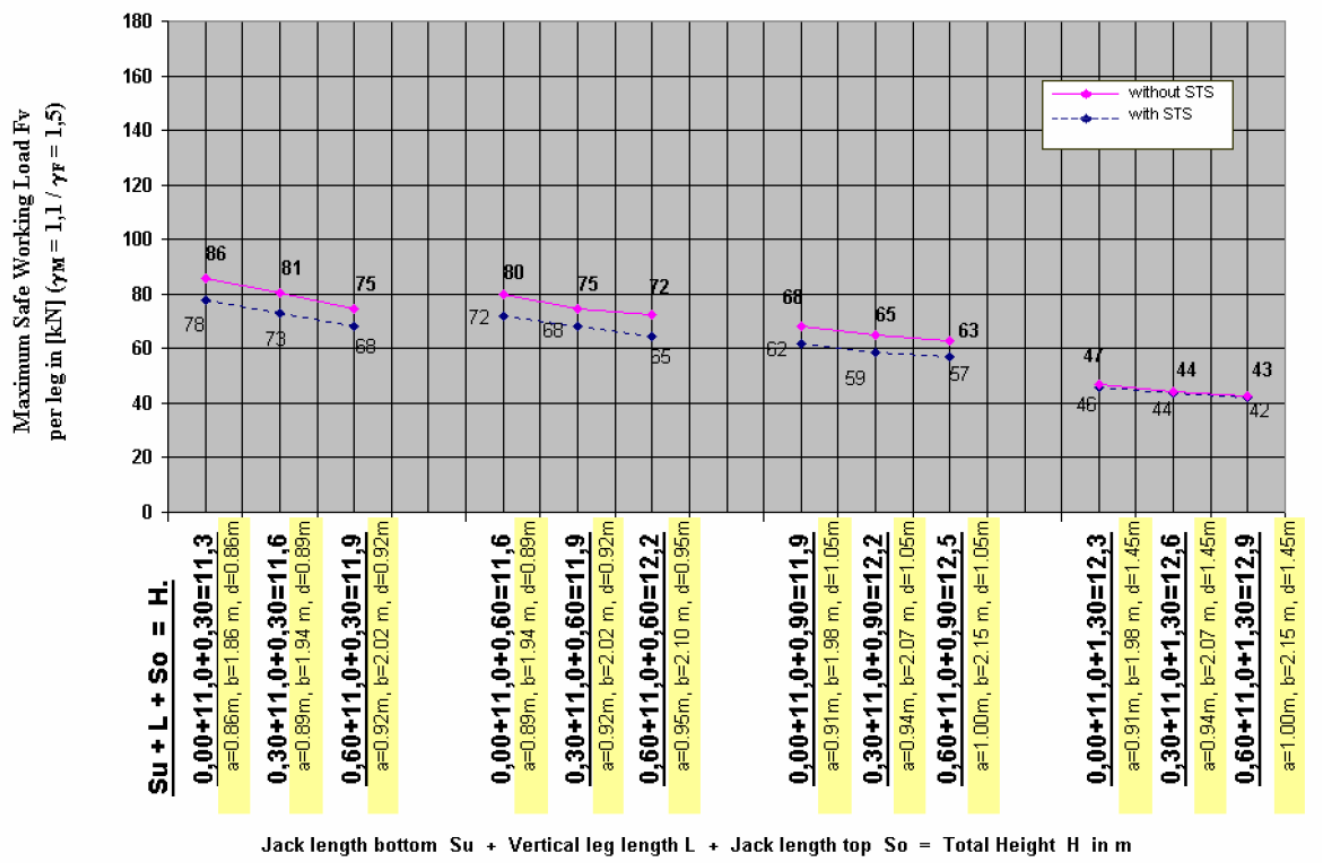
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and four bracing frames.**
**Leg Height (L): 11.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



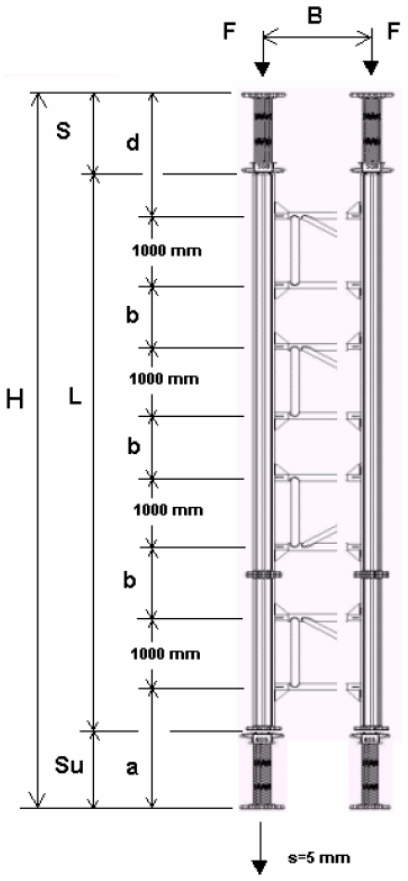



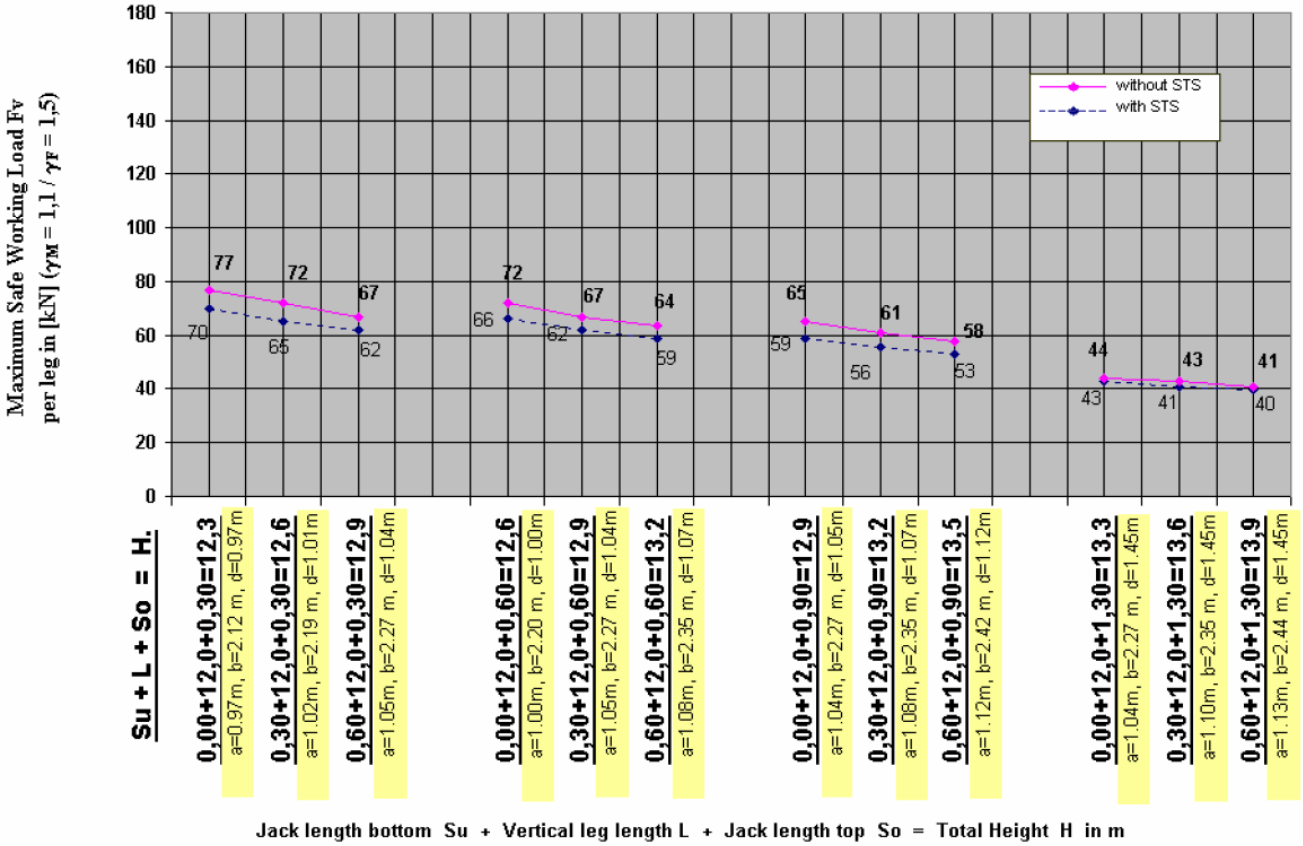
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and four bracing frames.**
**Leg Height (L): 12.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



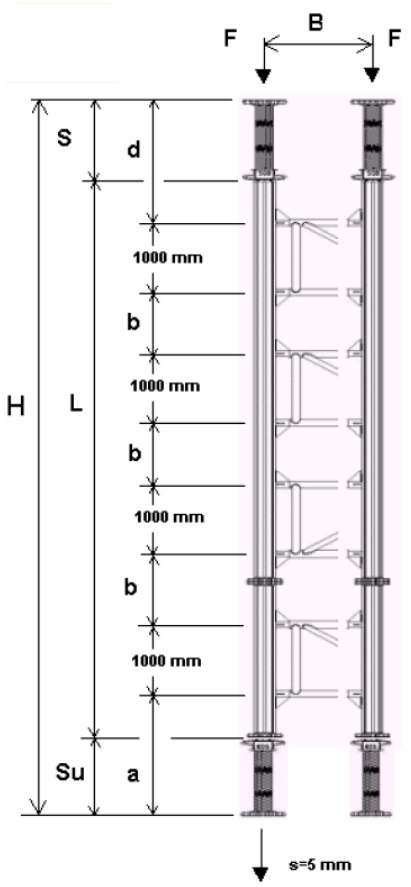



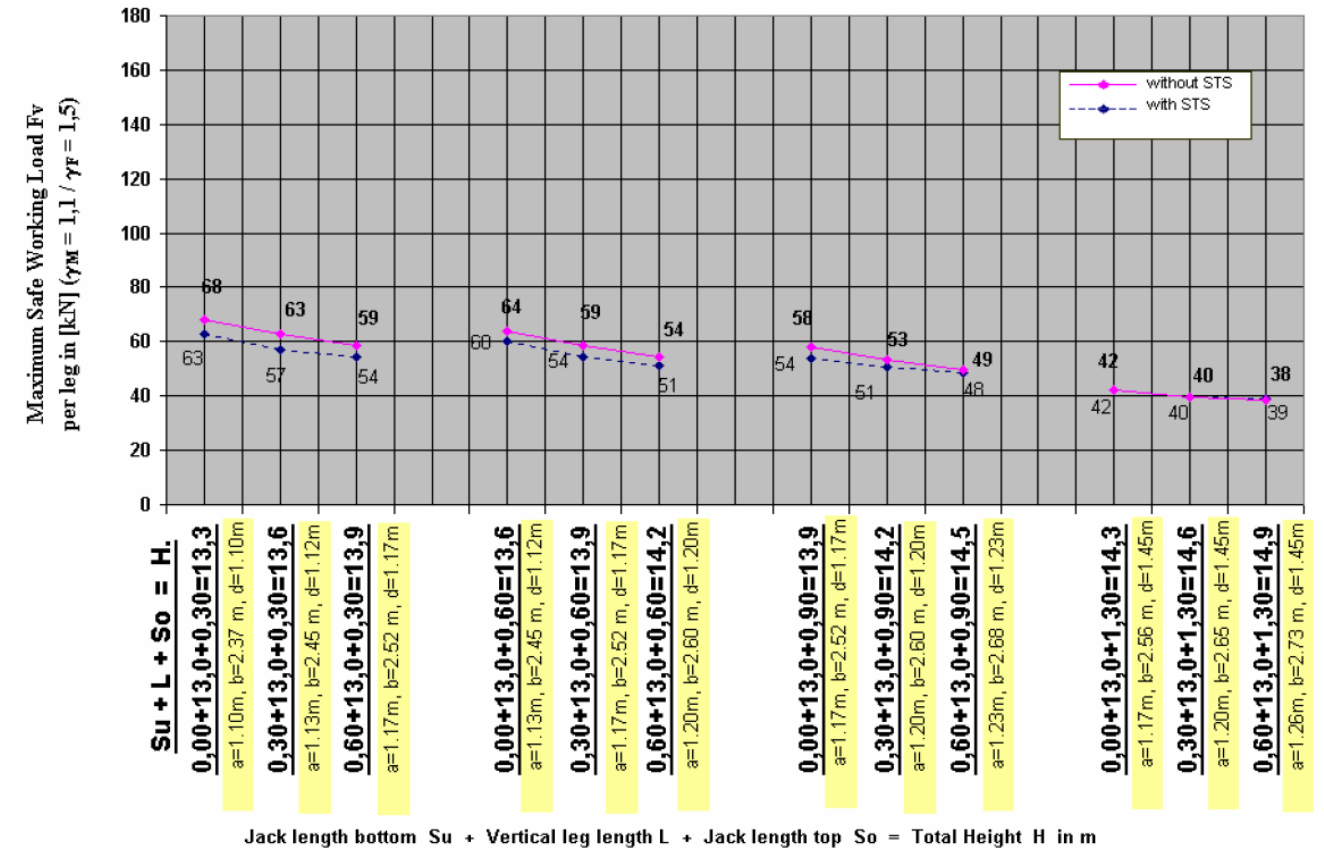
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and four bracing frames.**
**Leg Height (L): 13.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



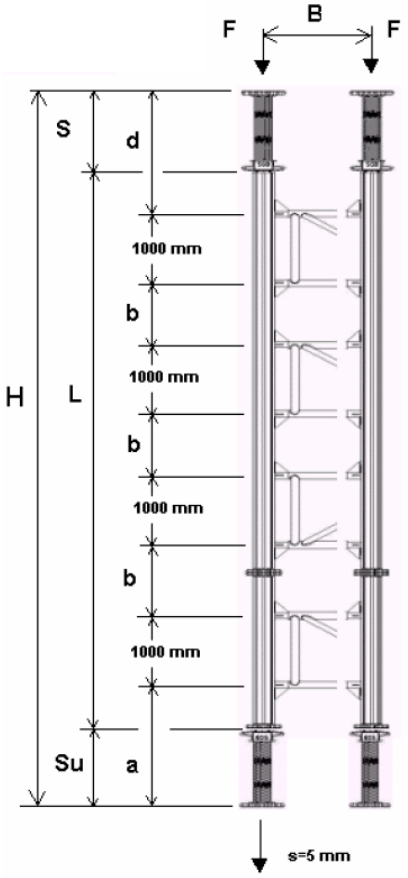



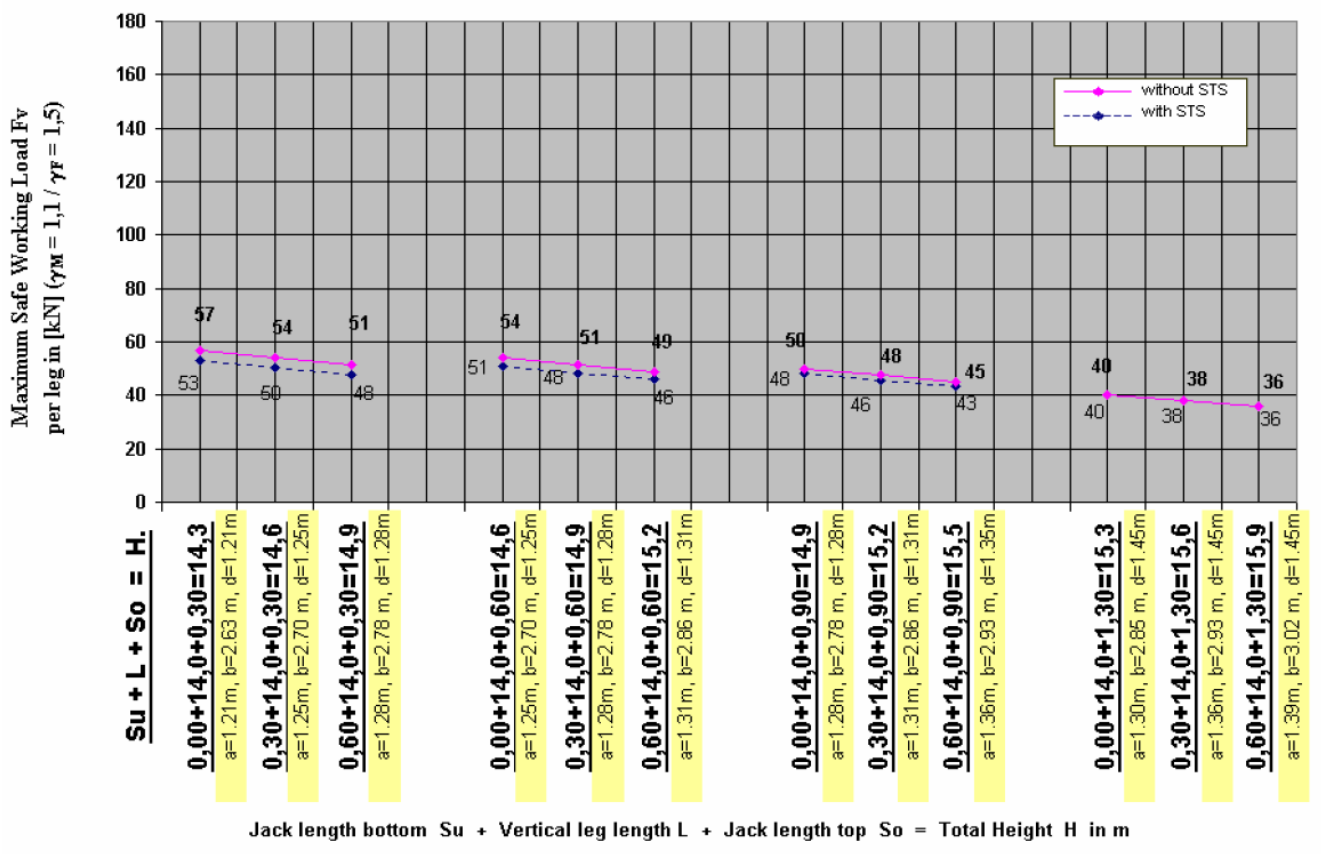
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and four bracing frames.**
**Leg Height (L): 14.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



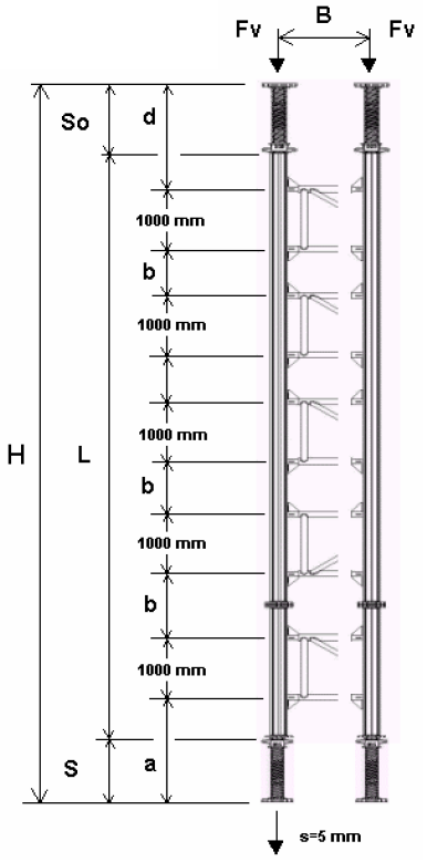



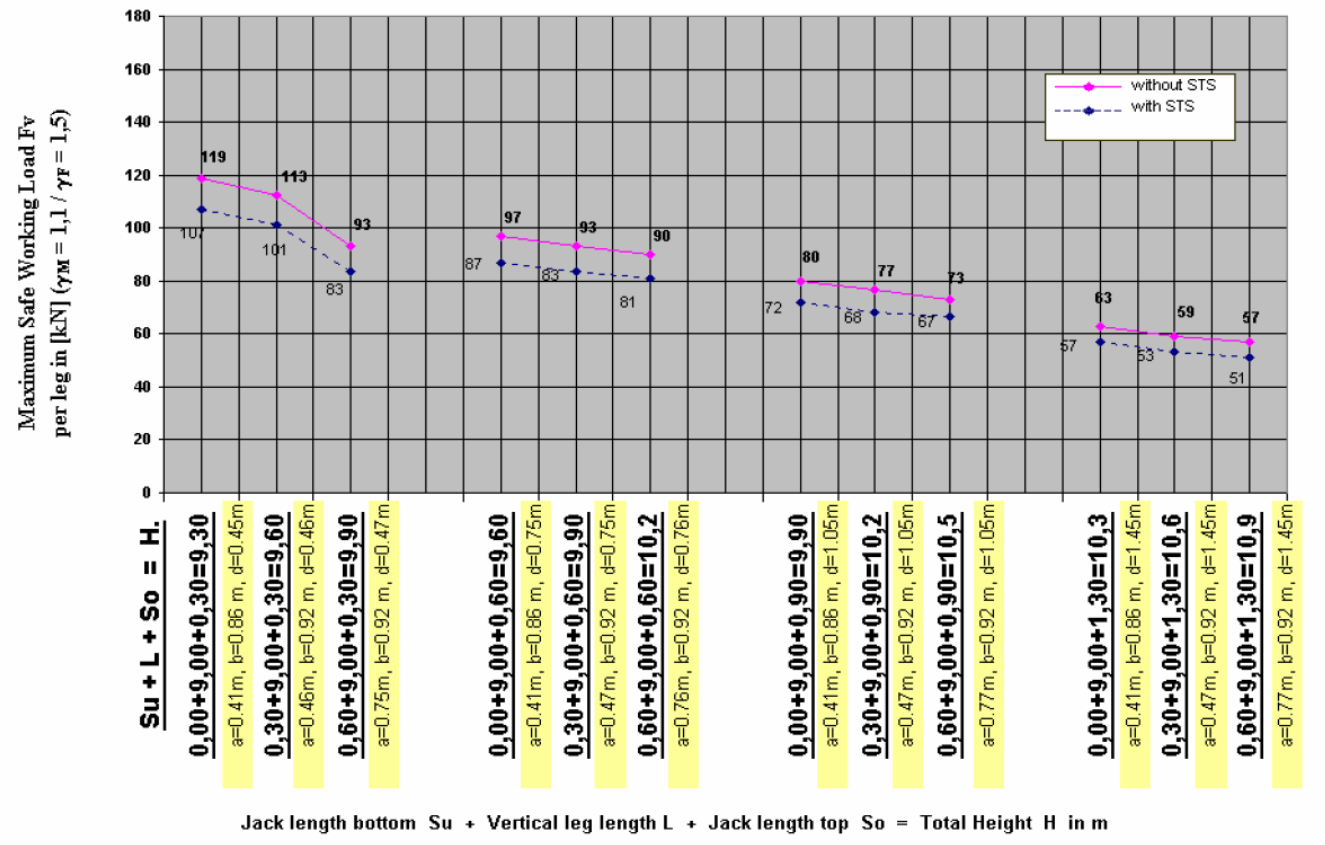
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and five bracing frames.**
**Leg Height (L): 9.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



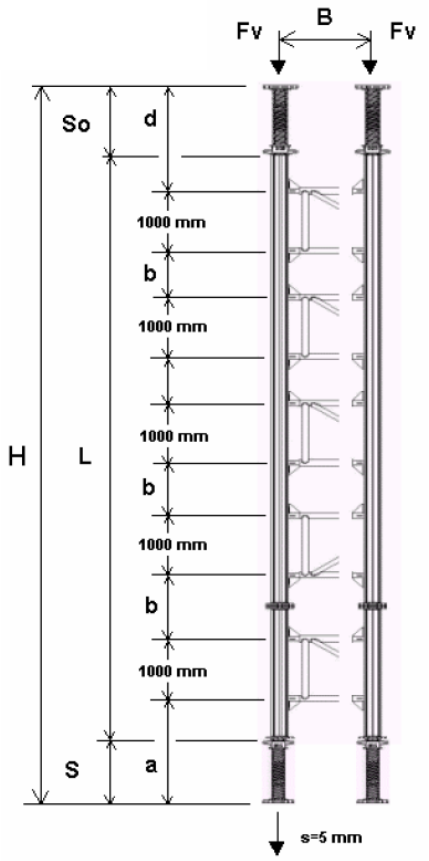



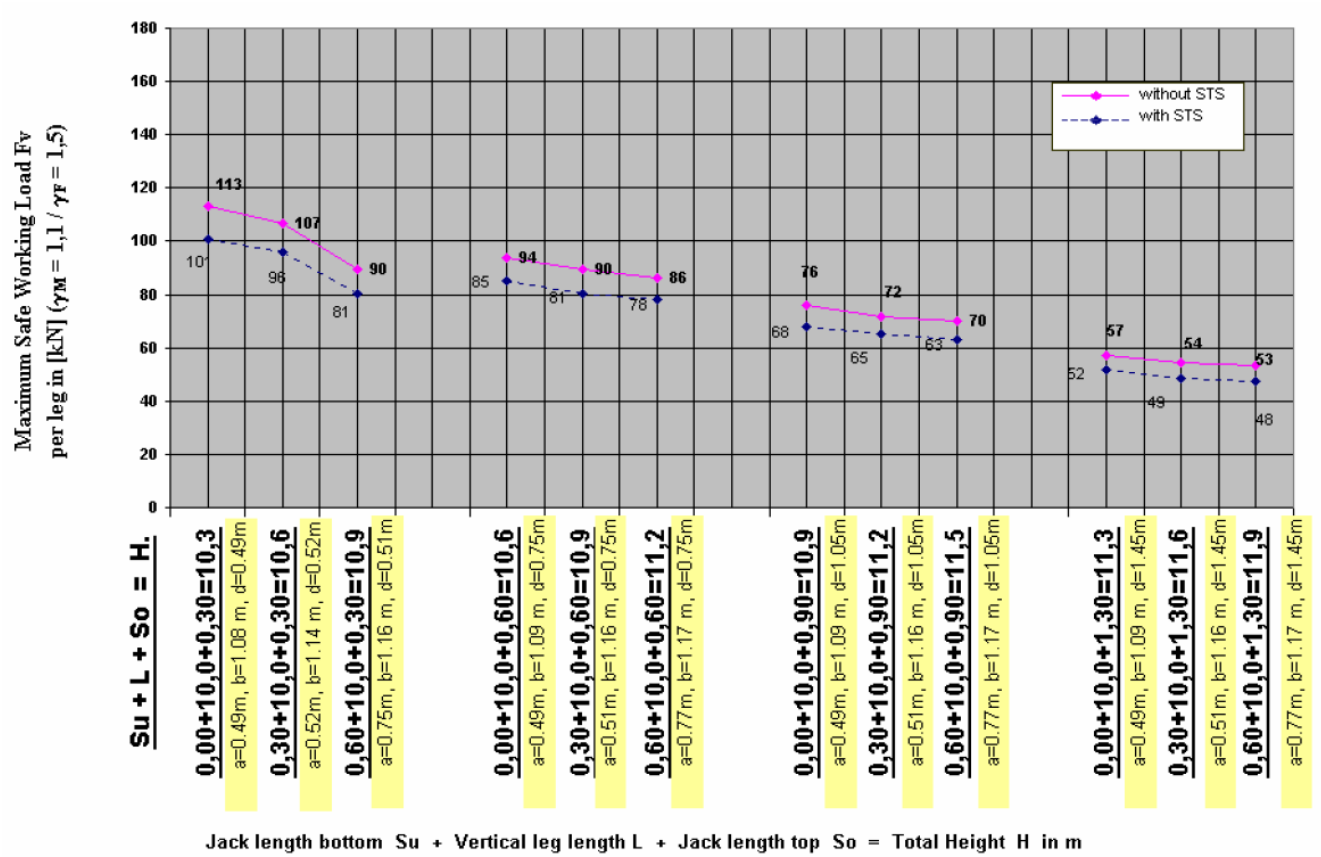
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and five bracing frames.**
**Leg Height (L): 10.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



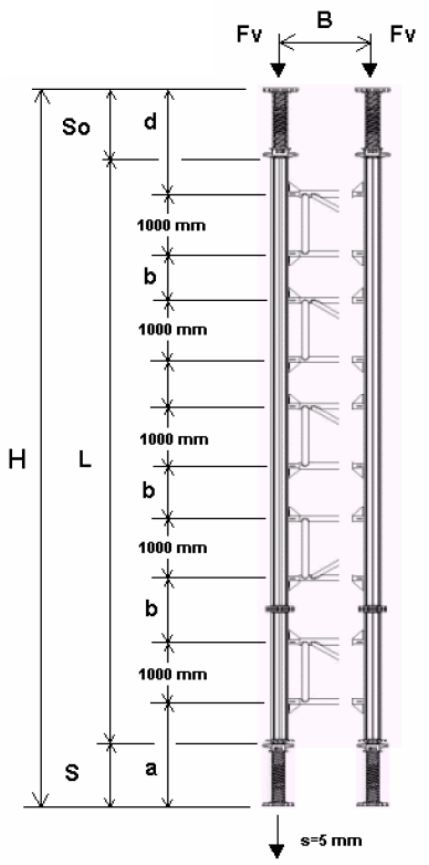



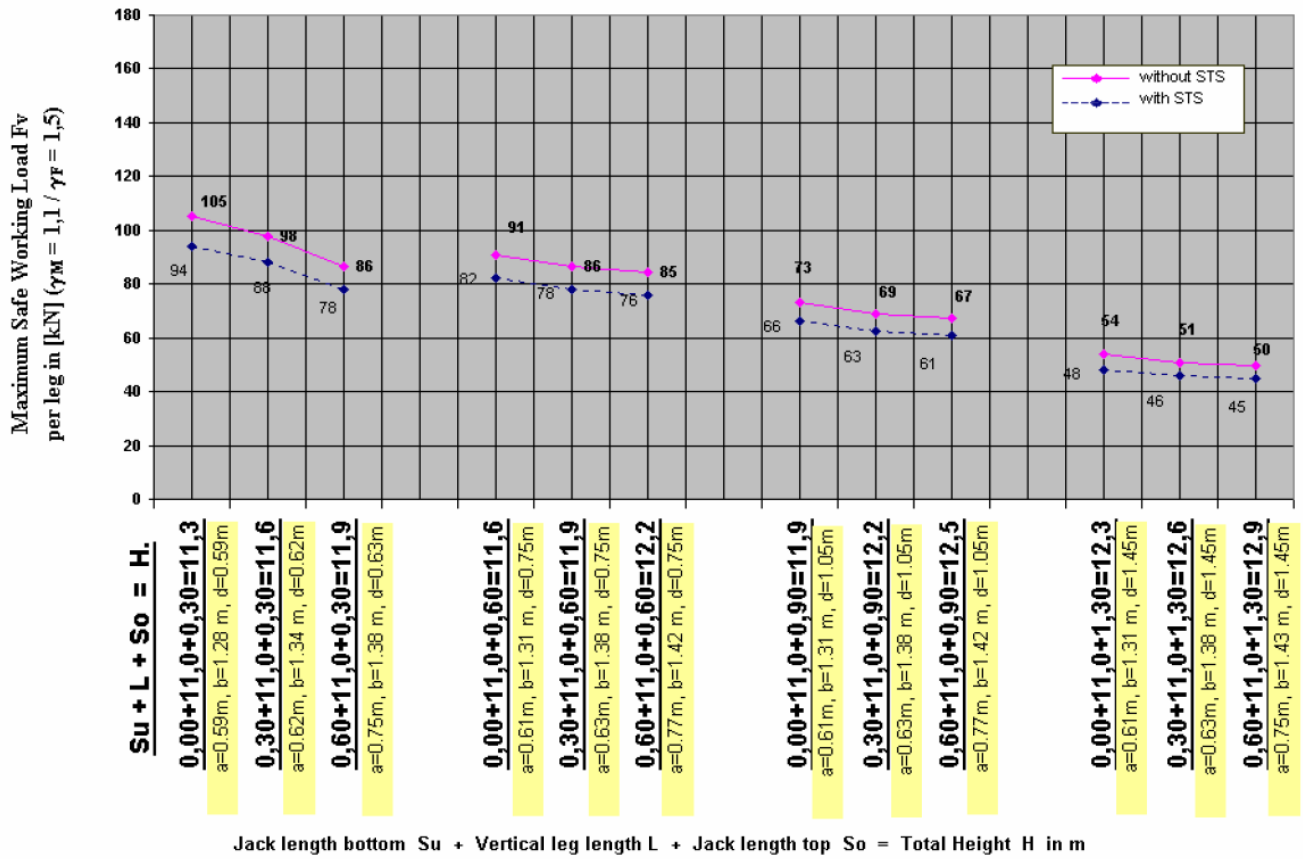
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and five bracing frames.**
**Leg Height (L): 11.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



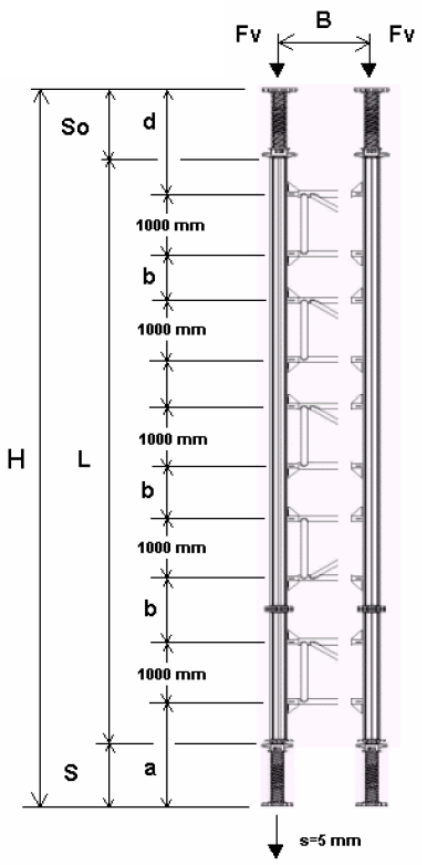



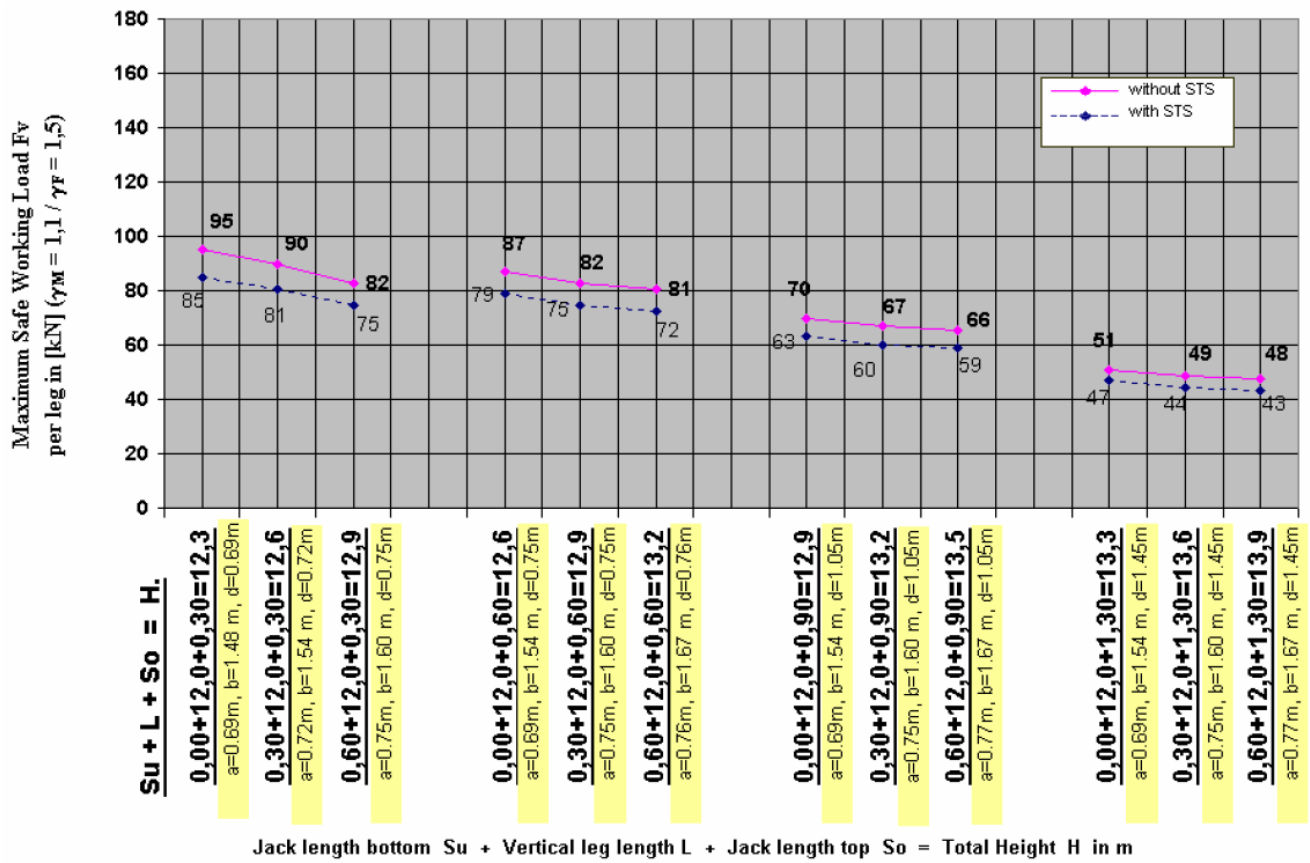
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and five bracing frames.**
**Leg Height (L): 12.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



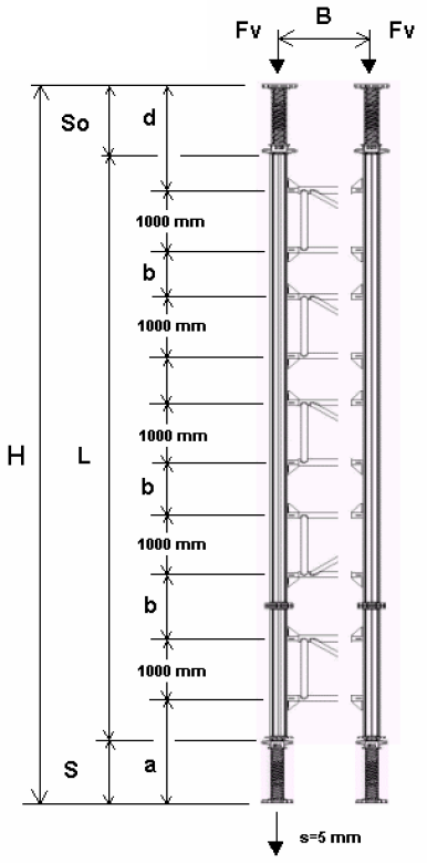



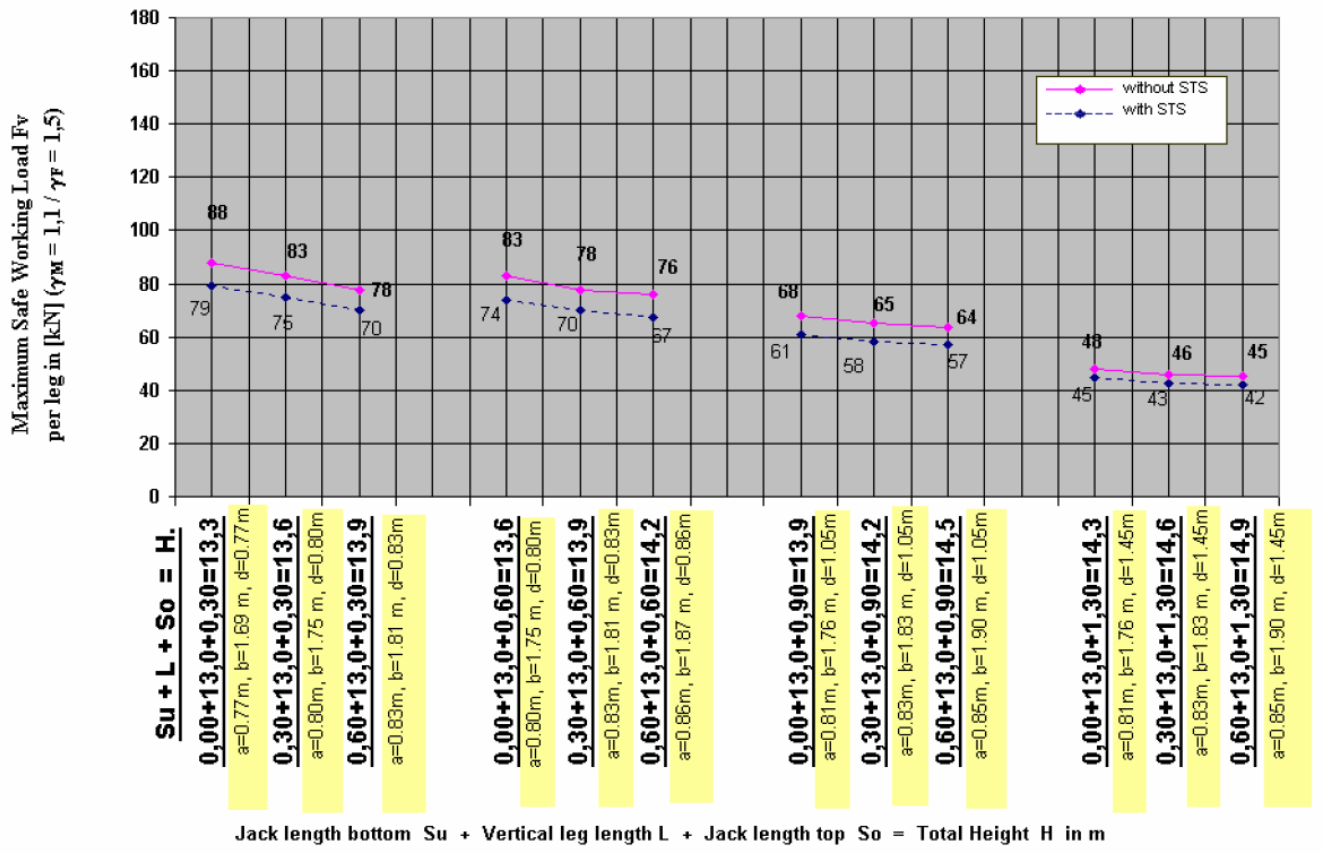
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and five bracing frames.**
**Leg Height (L): 13.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



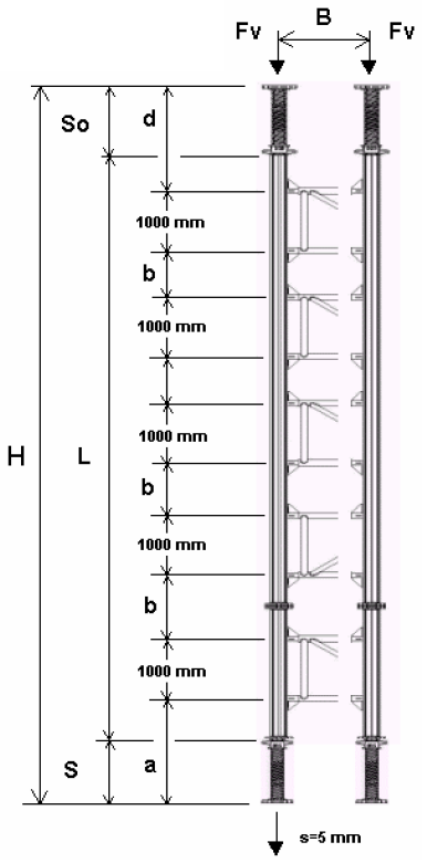



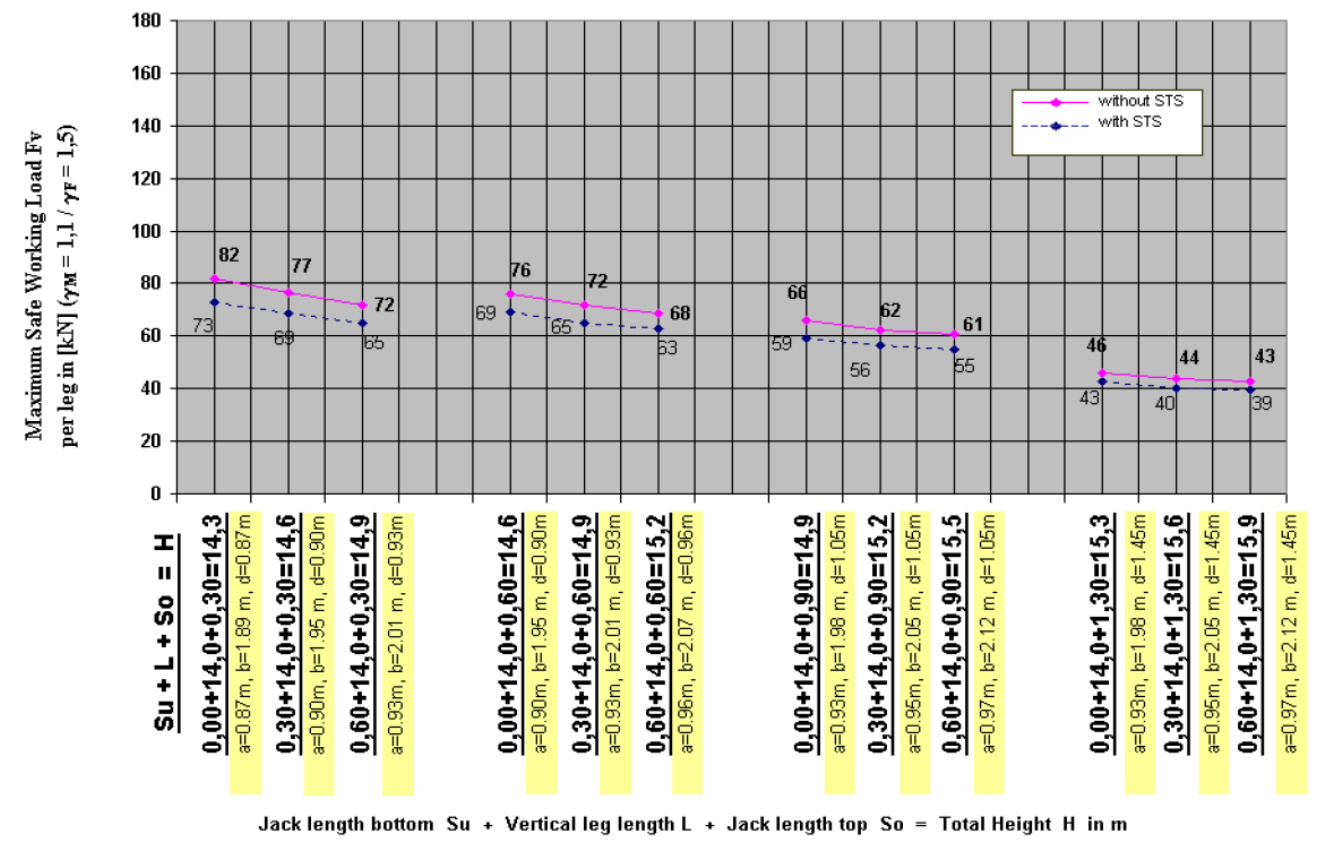
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and five bracing frames.**
**Leg Height (L): 14.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



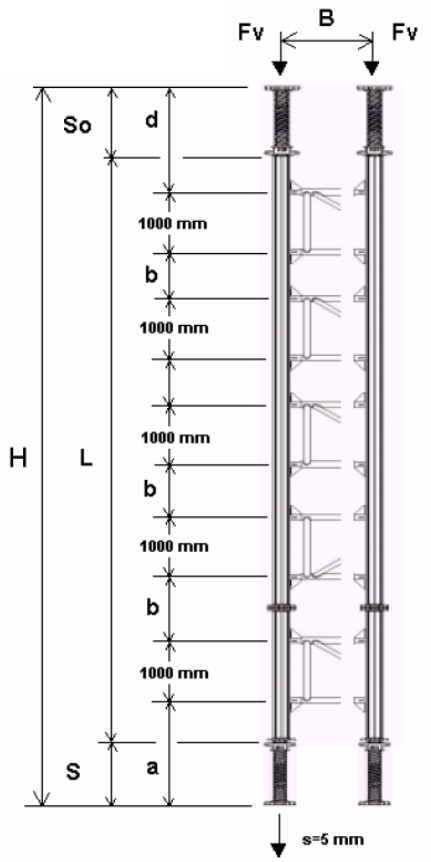



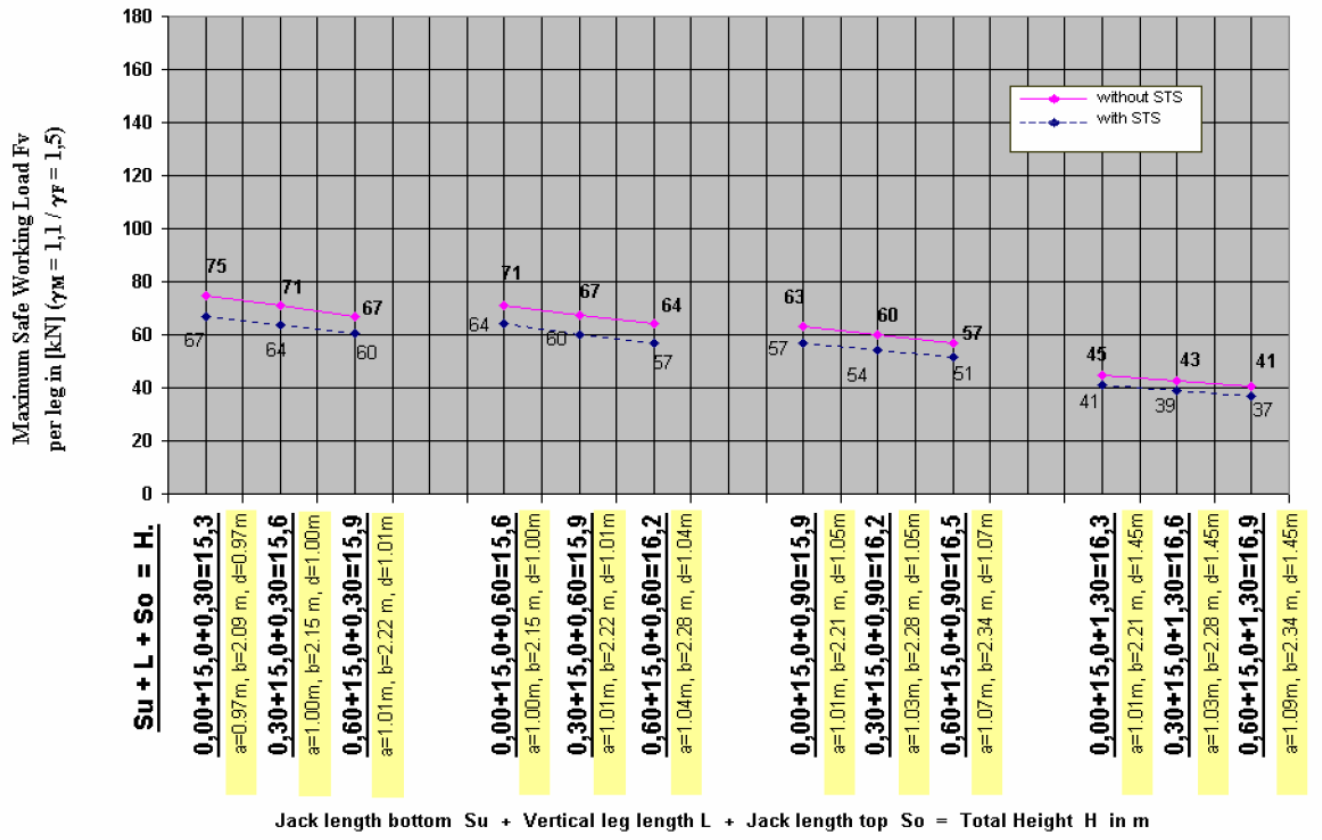
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and five bracing frames.**
**Leg Height (L): 15.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



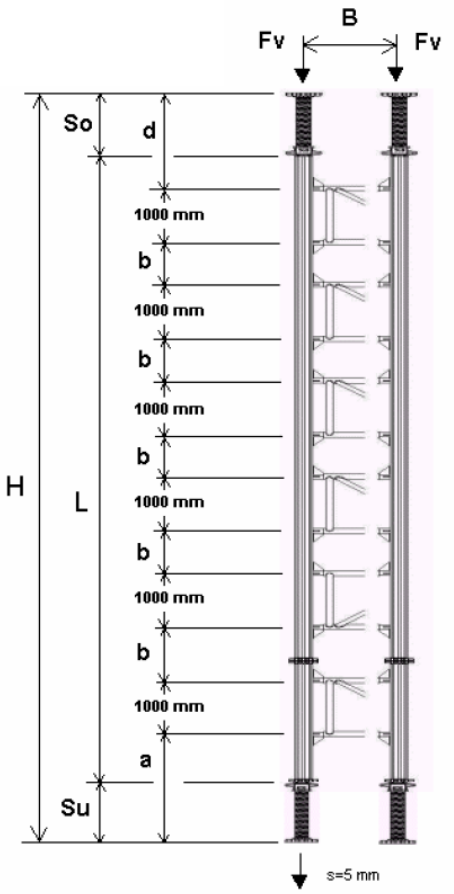



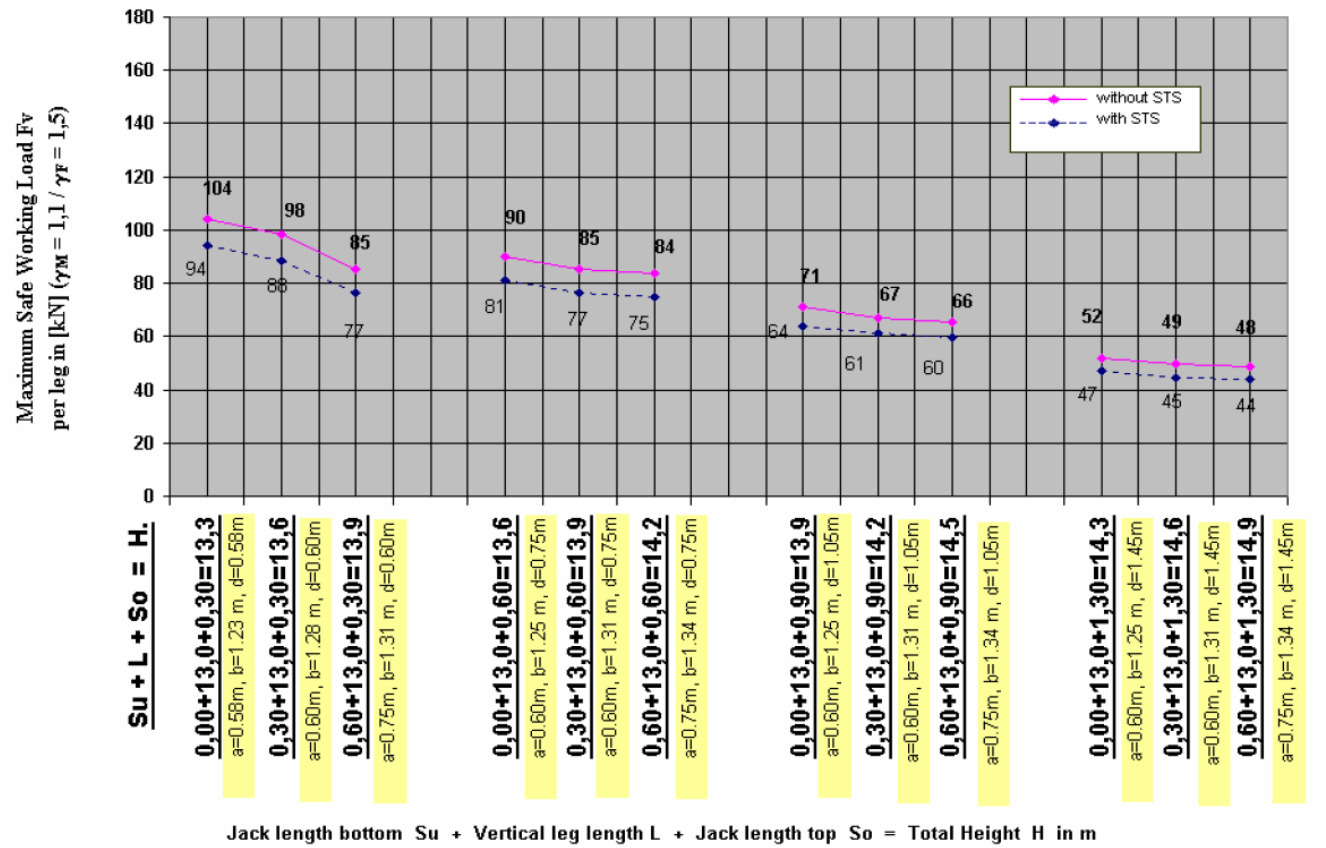
## 3. Working Load Limits (WLL)

### Gass Tower - 2 Jacks

**With top and bottom jack and six bracing frames.**
**Leg Height (L): 13.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



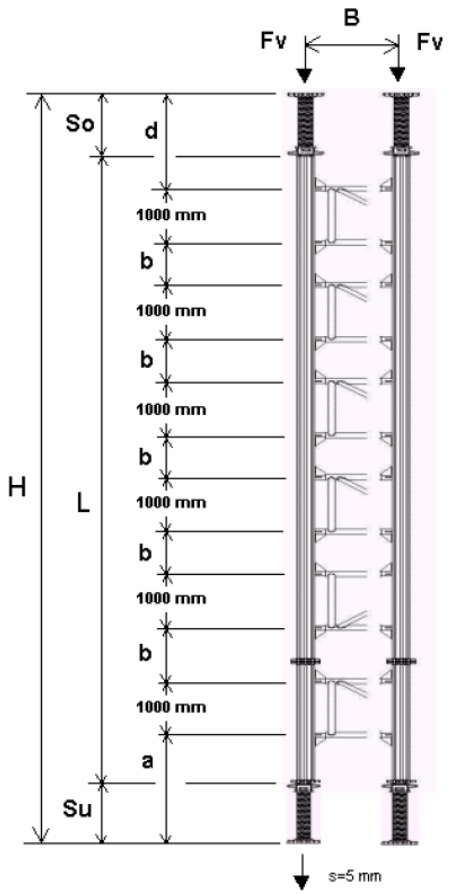



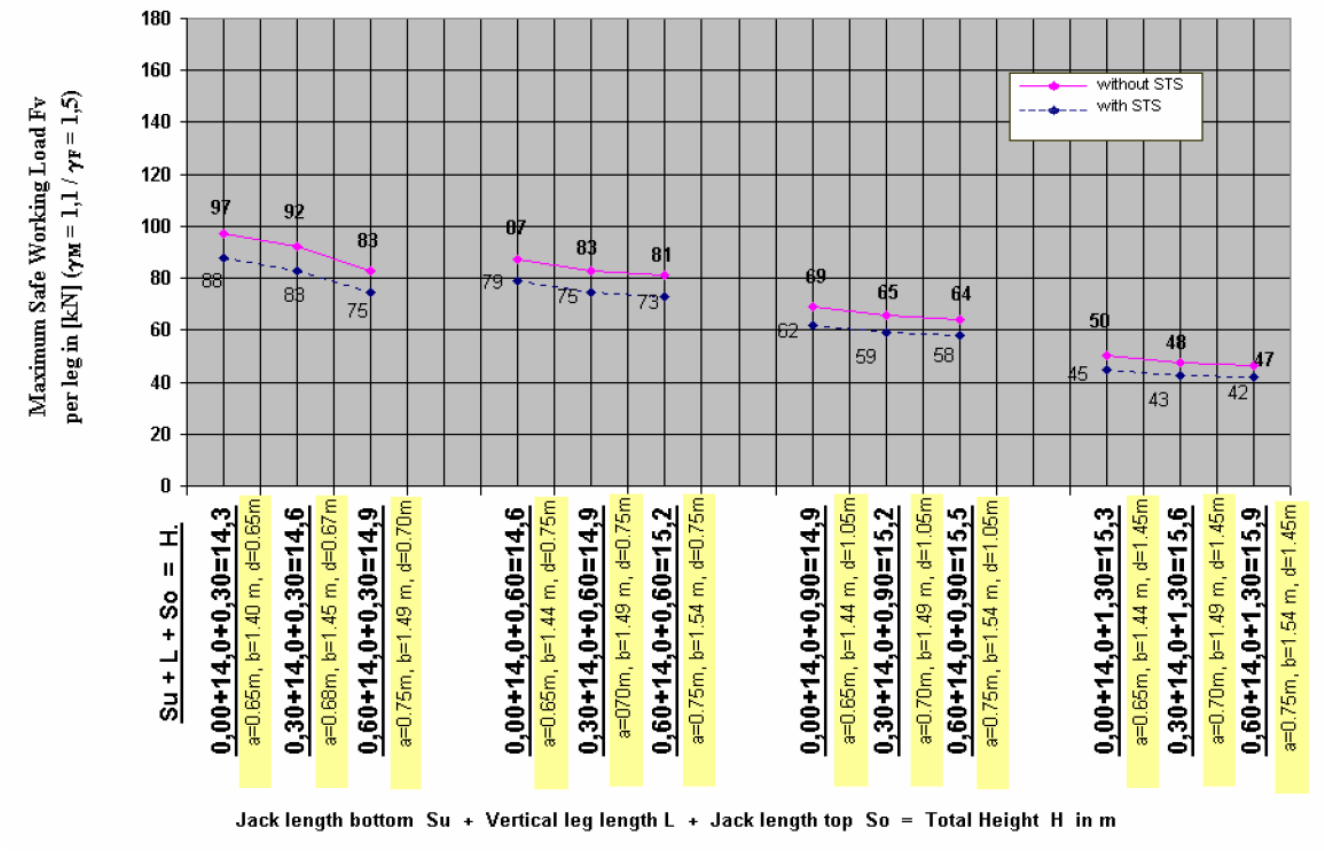
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and six bracing frames.**
**Leg Height (L): 14.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



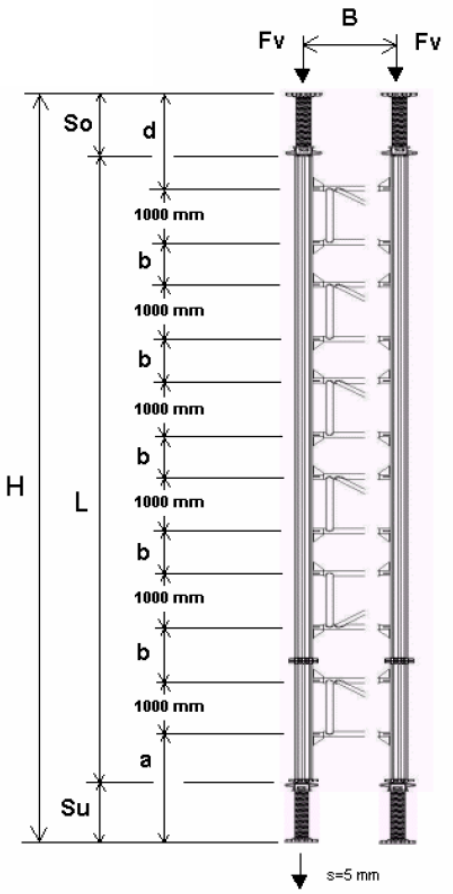



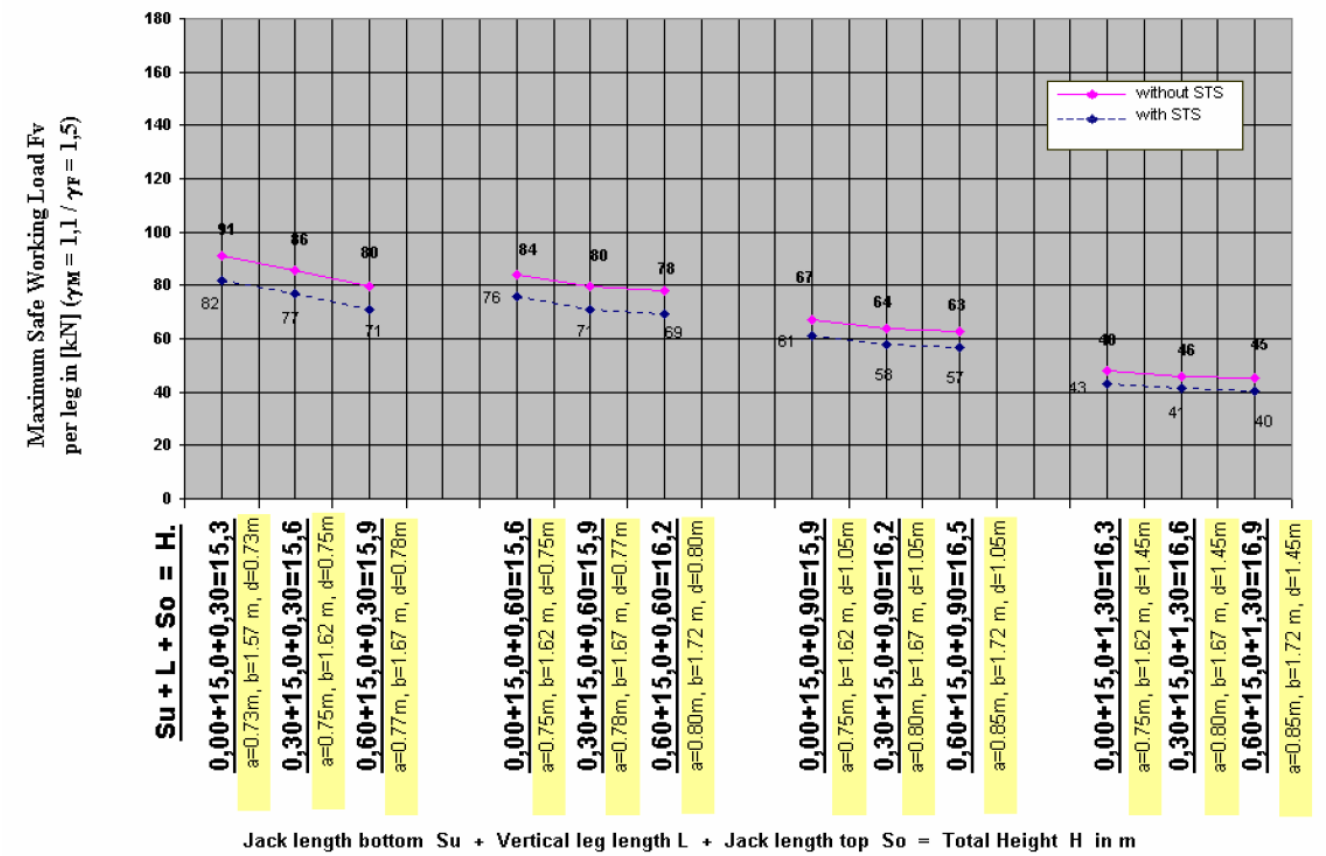
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and six bracing frames.**
**Leg Height (L): 15.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



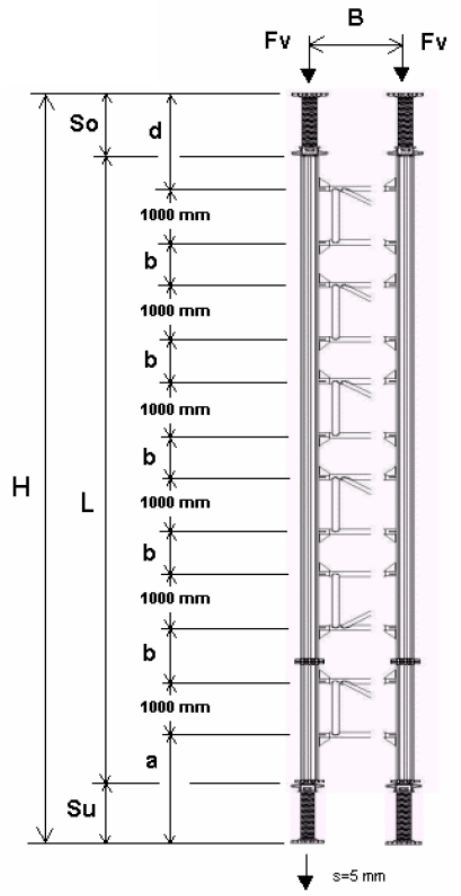



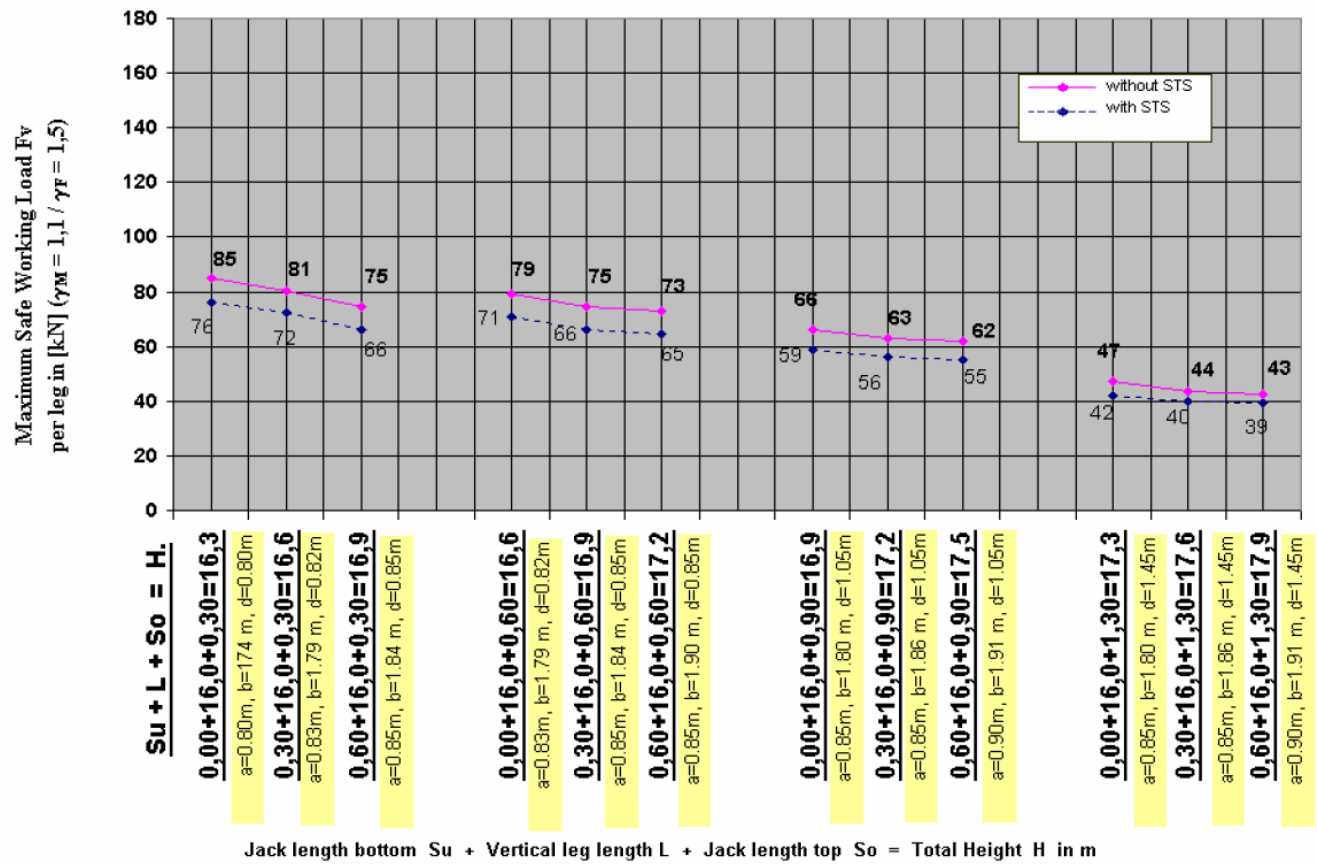
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and six bracing frames.**
**Leg Height (L): 16.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



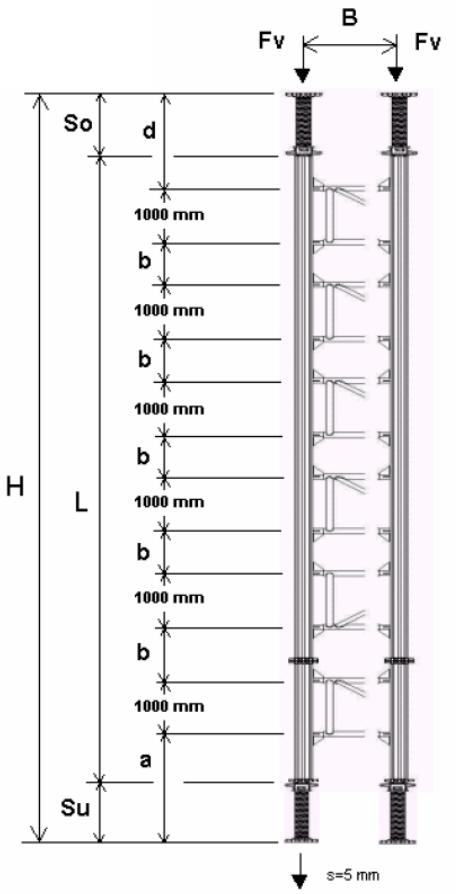



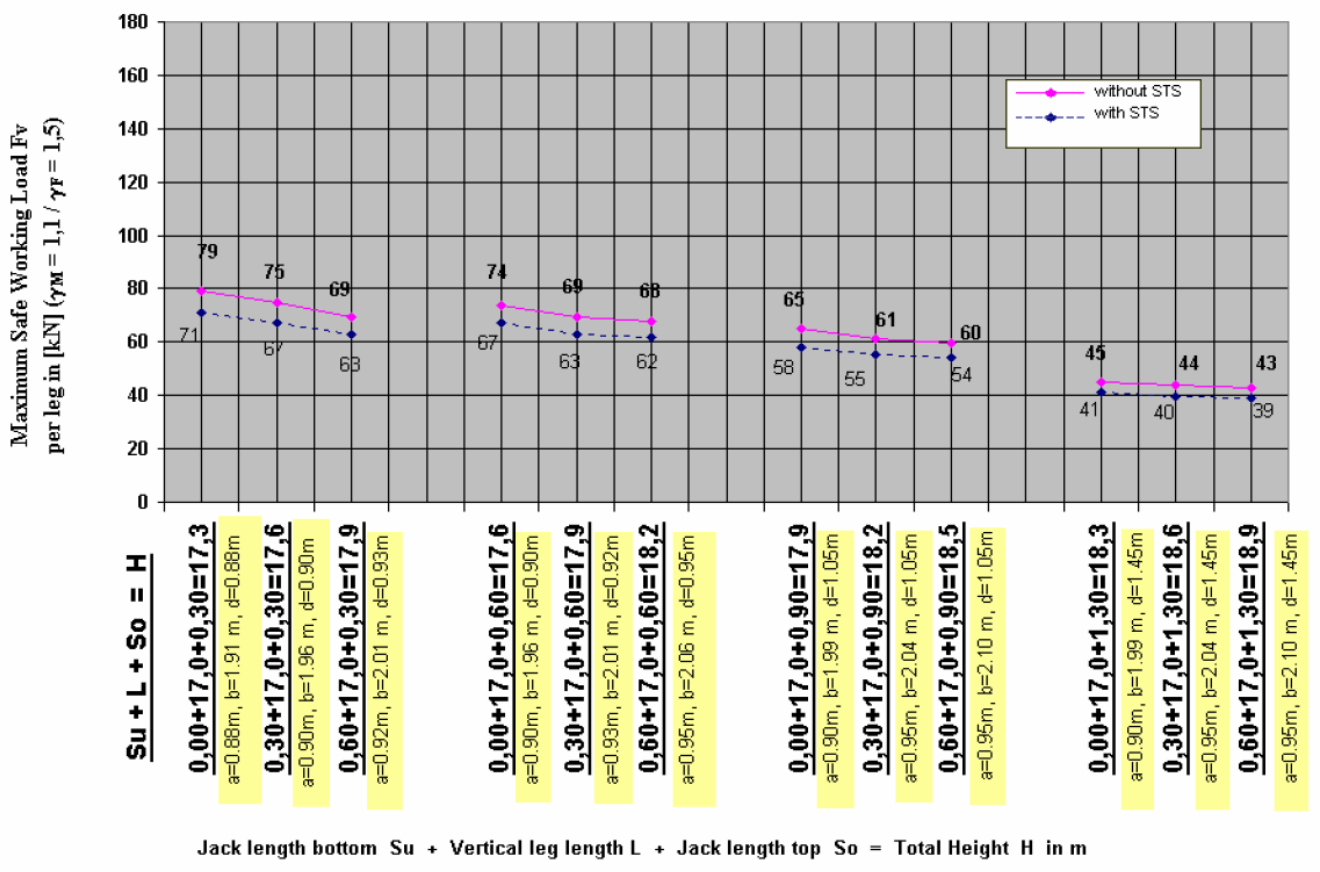
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and six bracing frames.**
**Leg Height (L): 17.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.



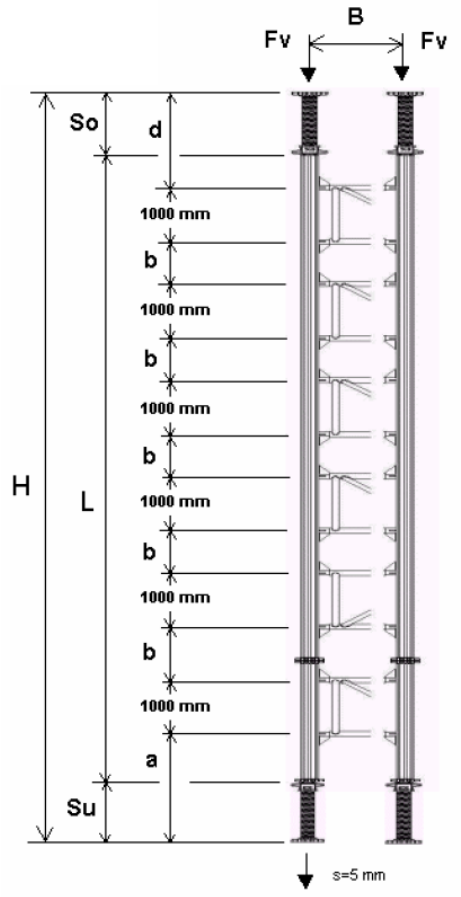



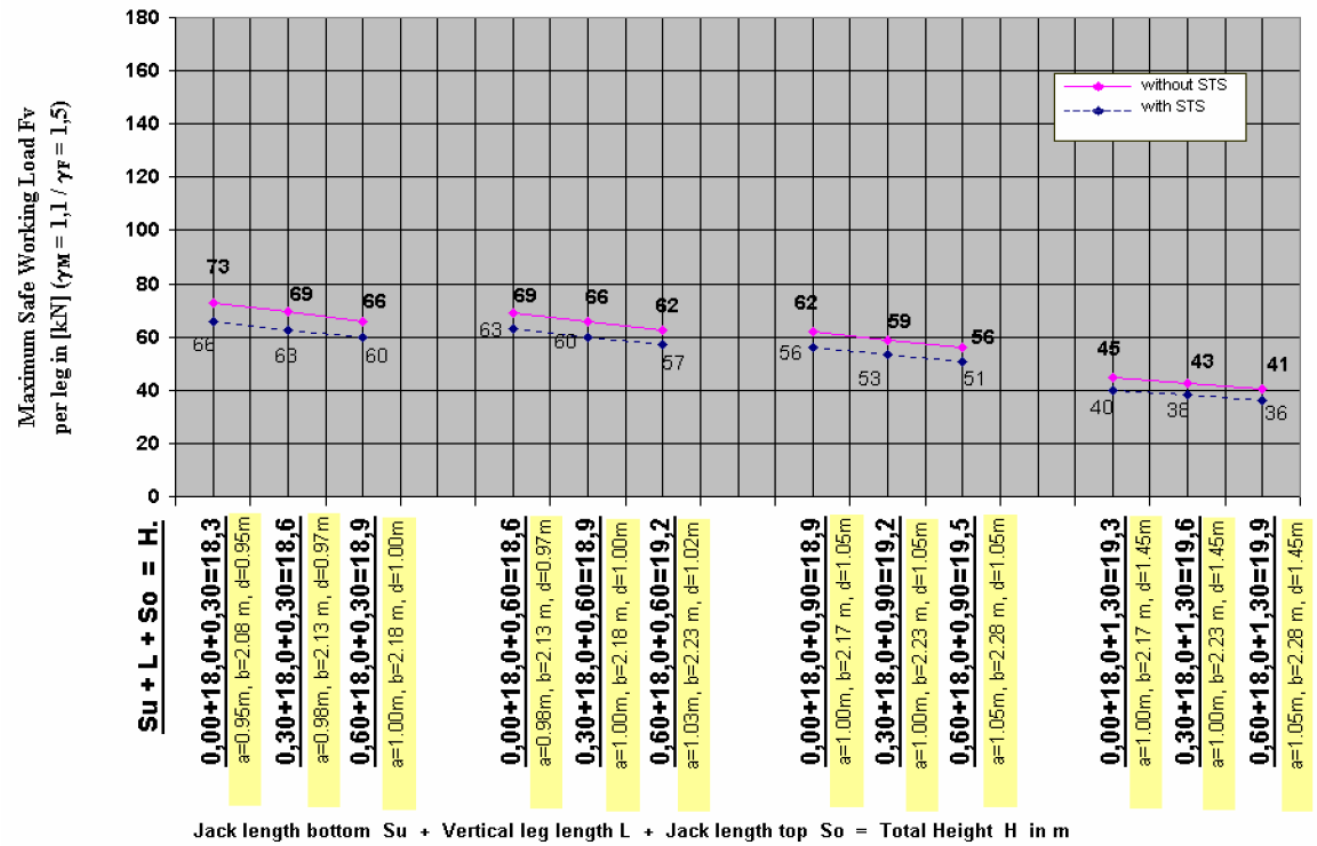
# 3. Working Load Limits (WLL)

## Gass Tower - 2 Jacks

**With top and bottom jack and six bracing frames.**
**Leg Height (L): 18.0m**
**WLL adjusted to allow for differential settlement.**

- One of the two jacks must not exceed 600mm.
- Either jack may be at the top or at the bottom.
- Dimensions shown 'Su' and 'a' must be associated with the shorter jack.
- Dimensions shown 'So' and 'd' must be associated with the longer jack.
- **The top of the tower is horizontally restrained in position.**
- No wind load have been allowed.
- Plate to plate leg bolted joints may be in any position.
- Maximum differential support settlements S = 5mm.
- Bracing frames widths may be B = 1.2m, 1.8m, 2.4m and 3.0m.
- WLL for leg heights other than those shown may be found by interpolation between the min./max leg heights shown.

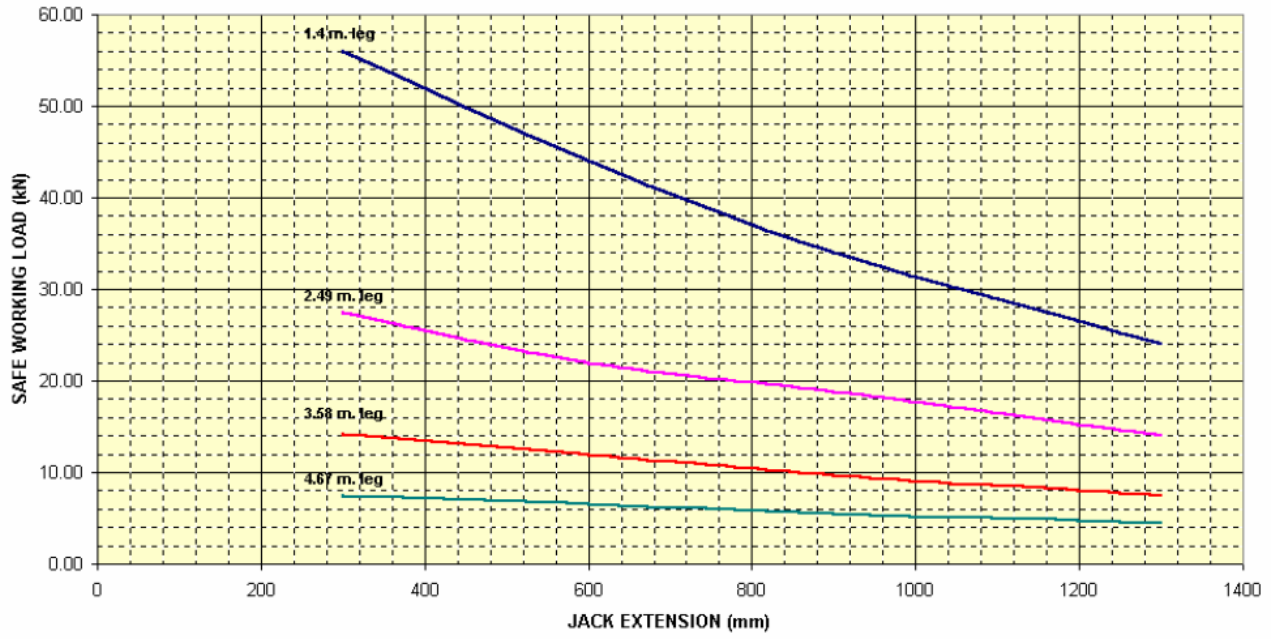


## 3. Working Load Limits (WLL)

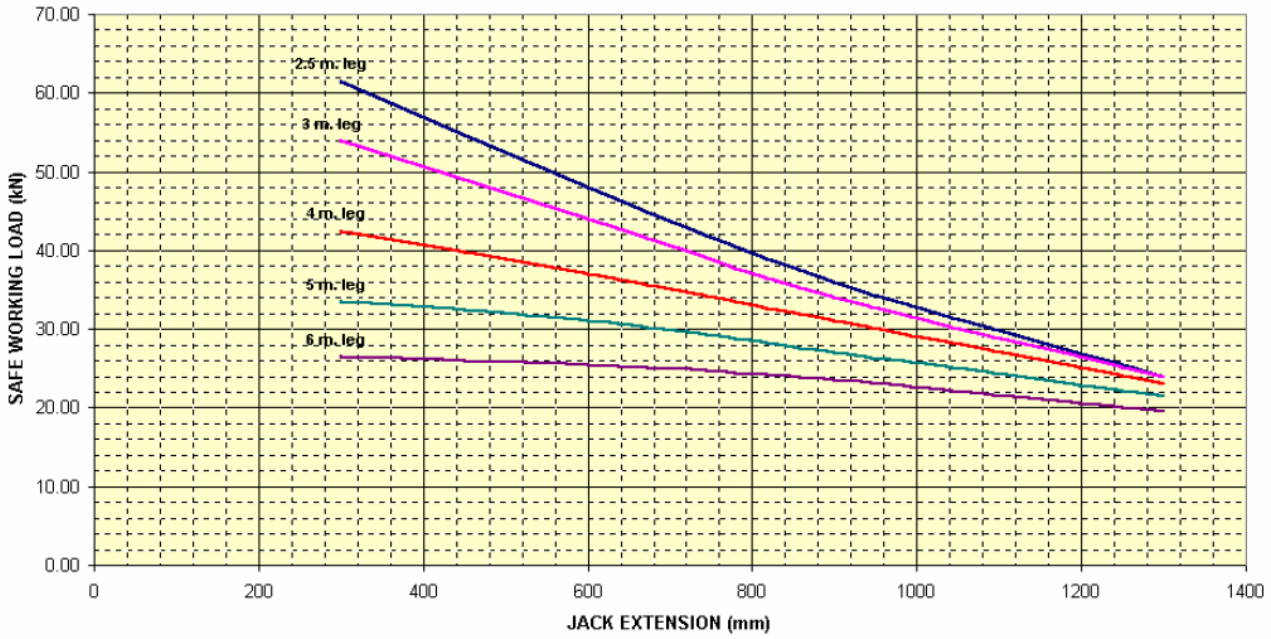
### Free Standing Unbraced Towers - 1 Ledger Frame

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)




### Free Standing Unbraced Towers - 2 Ledger Frame

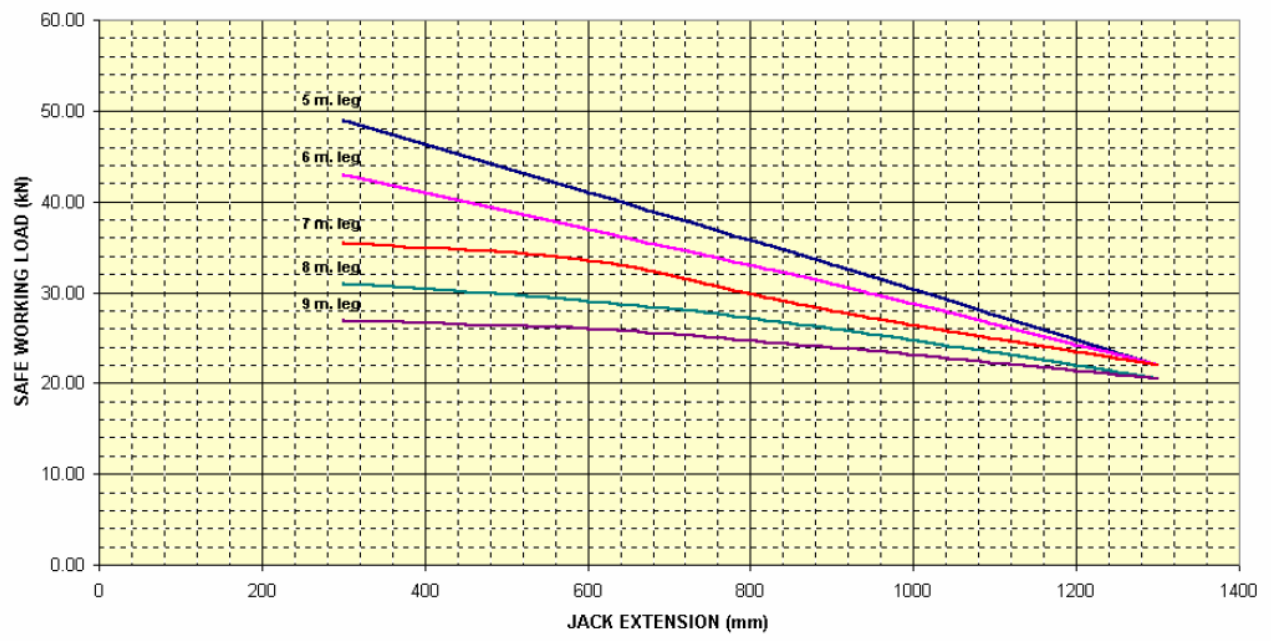
- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)



## 3. Working Load Limits (WLL)

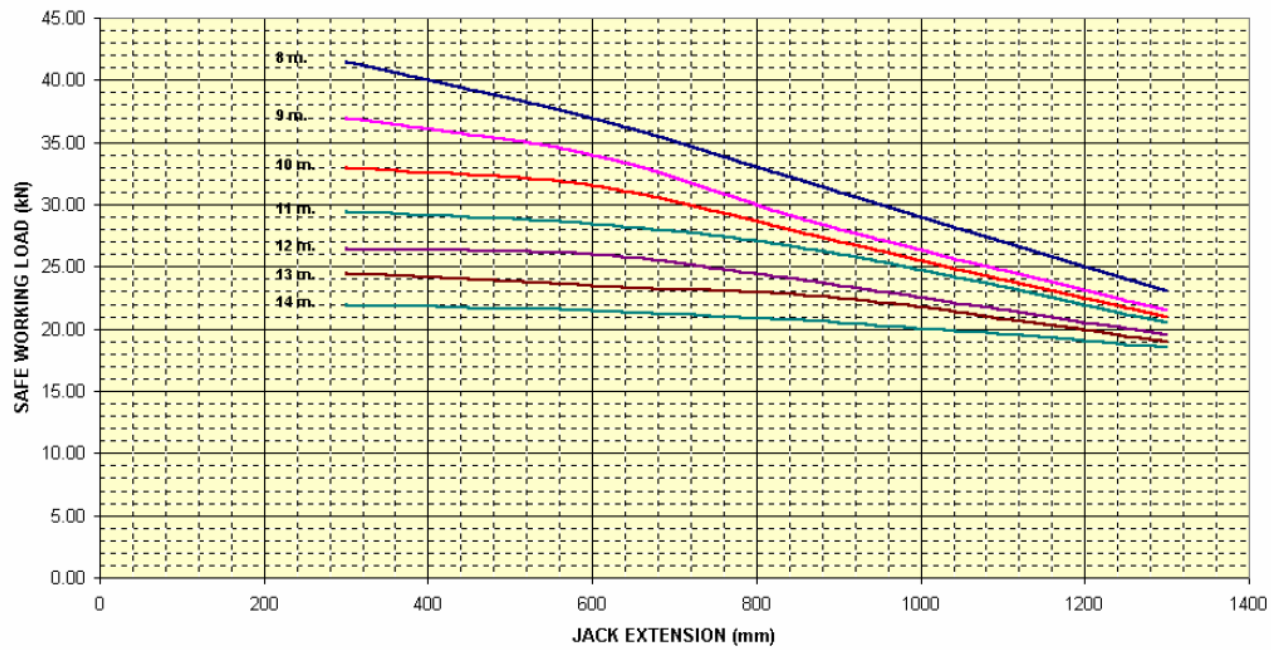
### Free Standing Unbraced Towers - 3 Ledger Frame

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)




### Free Standing Unbraced Towers - 4 Ledger Frame

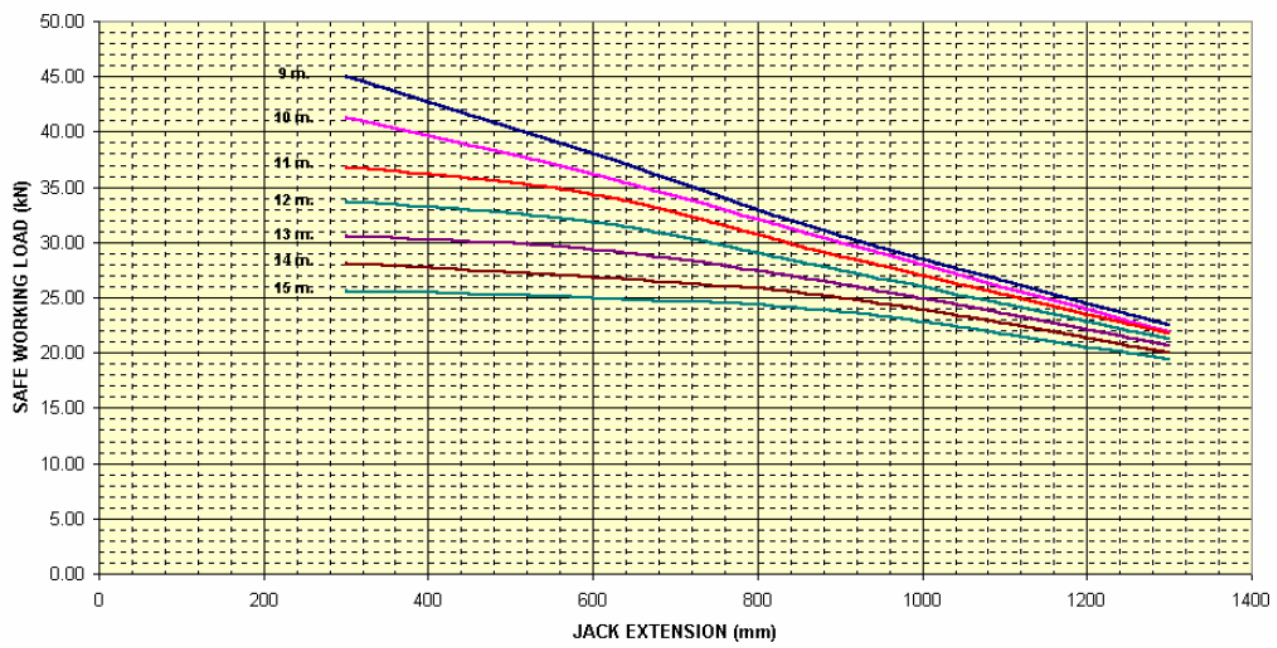
- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)



## 3. Working Load Limits (WLL)

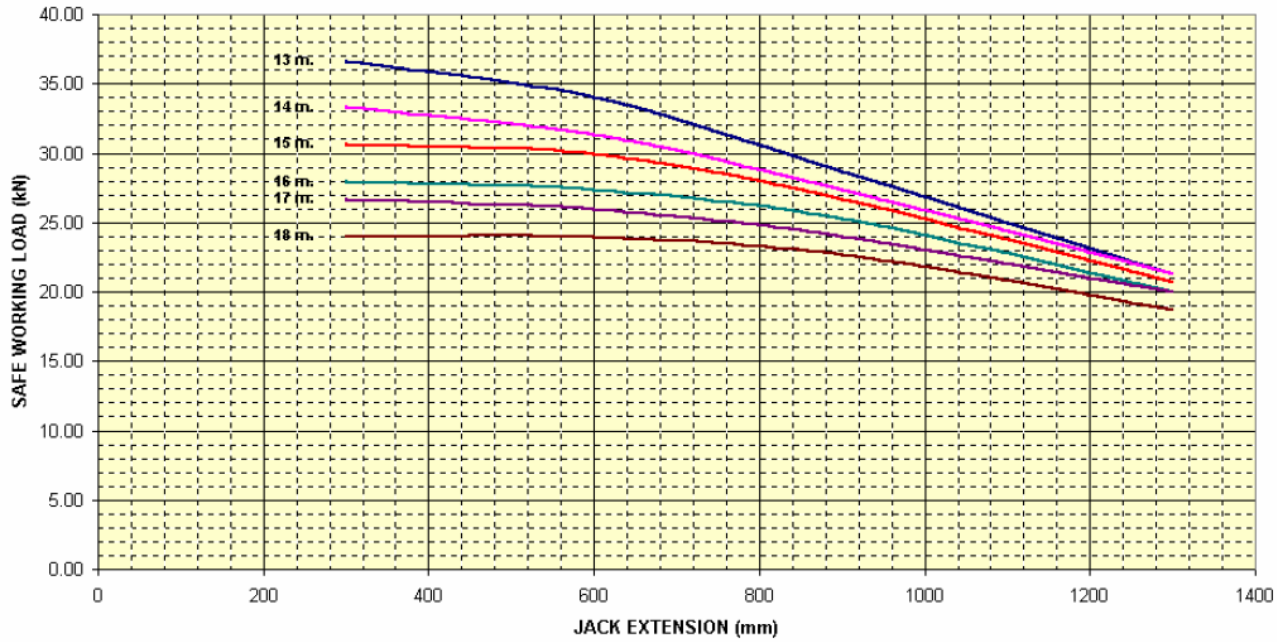
### Free Standing Unbraced Towers - 5 Ledger Frame

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)




### Free Standing Unbraced Towers - 6 Ledger Frame

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)



## 3. Working Load Limits (WLL)

### Free Standing Unbraced Towers

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)

| Jack Extension (mm) | | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. Of Ledgers | | 1 | | | | 2 | | | | 3 | | | |
| Leg Height (m) | 1.4 | 56.00 | 44.00 | 34.00 | 24.00 | | | | | | | | |
| | 2.49 | 27.50 | 22.00 | 18.75 | 14.00 | | | | | | | | |
| | 3.58 | 14.25 | 12.00 | 9.75 | 7.50 | | | | | | | | |
| | 4.67 | 7.50 | 6.50 | 5.50 | 4.50 | | | | | | | | |
| | 2.5 | | | | | 61.50 | 48.00 | 36.00 | 24.00 | | | | |
| | 3 | | | | | 54.00 | 44.00 | 34.00 | 24.00 | | | | |
| | 4 | | | | | 42.50 | 37.00 | 31.00 | 23.00 | | | | |
| | 5 | | | | | 33.50 | 31.00 | 27.00 | 21.50 | 49.00 | 41.00 | 33.00 | 22.00 |
| | 6 | | | | | 26.50 | 25.50 | 23.50 | 19.50 | 43.00 | 37.00 | 31.00 | 22.00 |
| | 7 | | | | | | | | | 35.50 | 33.50 | 28.00 | 22.00 |
| | 8 | | | | | | | | | 31.00 | 29.00 | 26.00 | 20.50 |
| | 9 | | | | | | | | | 27.00 | 26.00 | 24.00 | 20.50 |

| Jack Extension (mm) | | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. Of Ledger | | 4 | | | | 5 | | | | 6 | | | |
| Leg Height (m) | 8 | 41.50 | 37.00 | 31.00 | 23.00 | | | | | | | | |
| | 9 | 37.00 | 34.00 | 28.00 | 21.50 | 45.00 | 38.12 | 30.62 | 22.50 | | | | |
| | 10 | 33.00 | 31.50 | 27.00 | 21.00 | 41.25 | 36.25 | 30.00 | 21.87 | | | | |
| | 11 | 29.50 | 28.50 | 26.00 | 20.50 | 36.87 | 34.37 | 28.75 | 21.80 | | | | |
| | 12 | 26.50 | 26.00 | 23.50 | 19.50 | 33.75 | 31.87 | 27.50 | 21.25 | | | | |
| | 13 | 24.50 | 23.50 | 22.50 | 19.00 | 30.62 | 29.37 | 26.25 | 20.62 | 36.65 | 34.00 | 28.65 | 21.32 |
| | 14 | 22.00 | 21.50 | 20.50 | 18.50 | 27.12 | 26.87 | 25.00 | 20.00 | 33.32 | 31.32 | 27.32 | 21.32 |
| | 15 | | | | | 25.62 | 25.00 | 23.75 | 19.37 | 30.65 | 30.00 | 26.66 | 20.66 |
| | 16 | | | | | | | | | 28.00 | 27.32 | 25.32 | 20.00 |
| | 17 | | | | | | | | | 26.66 | 26.00 | 24.00 | 20.00 |
| | 18 | | | | | | | | | 24.00 | 24.00 | 22.66 | 18.66 |

## 3. Working Load Limits (WLL)

### Free Standing Unbraced Towers

- 2.5% Top Horizontal Load
- Top Horizontal Displacement (mm) at Safe Working Load

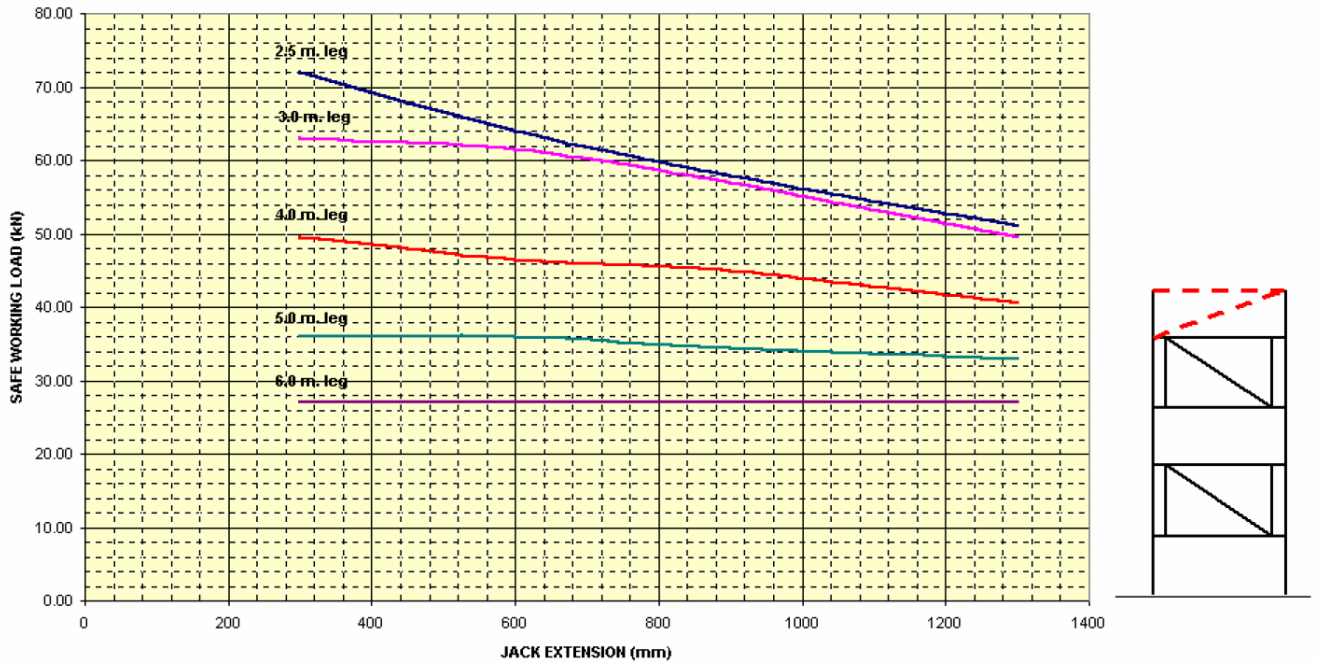
| Jack Extension (mm) | | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. Of Ledgers | | 1 | | | | 2 | | | | 3 | | | |
| Leg Height (m) | 1.4 | 7.4 | 11.4 | 16.3 | 26.5 | | | | | | | | |
| | 2.49 | 22.2 | 28.5 | 34.1 | 45.8 | | | | | | | | |
| | 3.58 | 46.2 | 52.3 | 54.2 | 56.1 | | | | | | | | |
| | 4.67 | 57.4 | 62.8 | 57.5 | 64.2 | | | | | | | | |
| | 2.5 | | | | | 9.2 | 14.2 | 19.5 | 30.7 | | | | |
| | 3 | | | | | 11.8 | 15.3 | 20.2 | 30.5 | | | | |
| | 4 | | | | | 18.2 | 20.3 | 25.1 | 33.0 | | | | |
| | 5 | | | | | 27.5 | 28.6 | 31.5 | 40.2 | 19.9 | 22.3 | 26.7 | 32.1 |
| | 6 | | | | | 43.0 | 38.7 | 40.5 | 49.2 | 31.0 | 29.1 | 30.3 | 39.3 |
| | 7 | | | | | | | | | 34.5 | 37.7 | 37.6 | 43.8 |
| | 8 | | | | | | | | | 43.3 | 45.8 | 47.5 | 51.7 |
| | 9 | | | | | | | | | 53.1 | 55.3 | 59.6 | 68.4 |

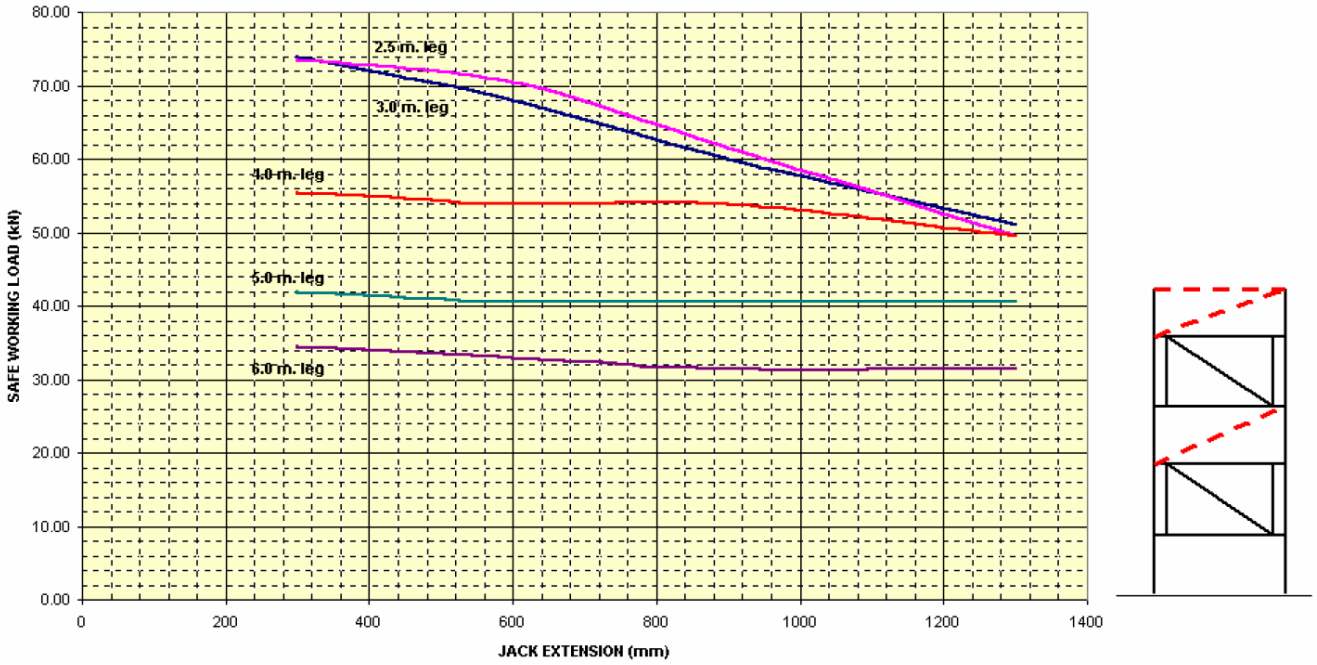
| Jack Extension (mm) | | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. Of Ledger | | 4 | | | | 5 | | | | 6 | | | |
| Leg Height (m) | 8 | 37.0 | 38.7 | 40.1 | 48.1 | | | | | | | | |
| | 9 | 44.9 | 46.1 | 44.3 | 50.2 | 39.1 | 40.0 | 40.3 | 45.0 | | | | |
| | 10 | 53.2 | 57.6 | 54.5 | 56.4 | 49.5 | 48.2 | 47.4 | 51.7 | | | | |
| | 11 | 59.7 | 64.8 | 67.2 | 68.1 | 58.0 | 59.7 | 55.8 | 59.9 | | | | |
| | 12 | 73.8 | 77.0 | 78.0 | 77.7 | 66.7 | 70.3 | 65.8 | 65.4 | | | | |
| | 13 | 85.2 | 89.4 | 88.6 | 88.9 | 74.1 | 80.7 | 76.9 | 77.0 | 74.4 | 71.1 | 70.7 | 66.0 |
| | 14 | 89.2 | 102.0 | 105.1 | 101.0 | 89.1 | 91.5 | 89.5 | 84.7 | 82.2 | 80.3 | 81.2 | 76.8 |
| | 15 | | | | | 99.6 | 100.6 | 103.3 | 100.1 | 93.3 | 93.1 | 92.5 | 89.1 |
| | 16 | | | | | | | | | 103.8 | 104.5 | 104.6 | 95.9 |
| | 17 | | | | | | | | | 115.8 | 115.8 | 117.4 | 111.8 |
| | 18 | | | | | | | | | 129.1 | 130.5 | 130.8 | 119.1 |

## 3. Working Load Limits (WLL)

### Free Standing Partly Braced Towers - 2 Ledger Frames

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)

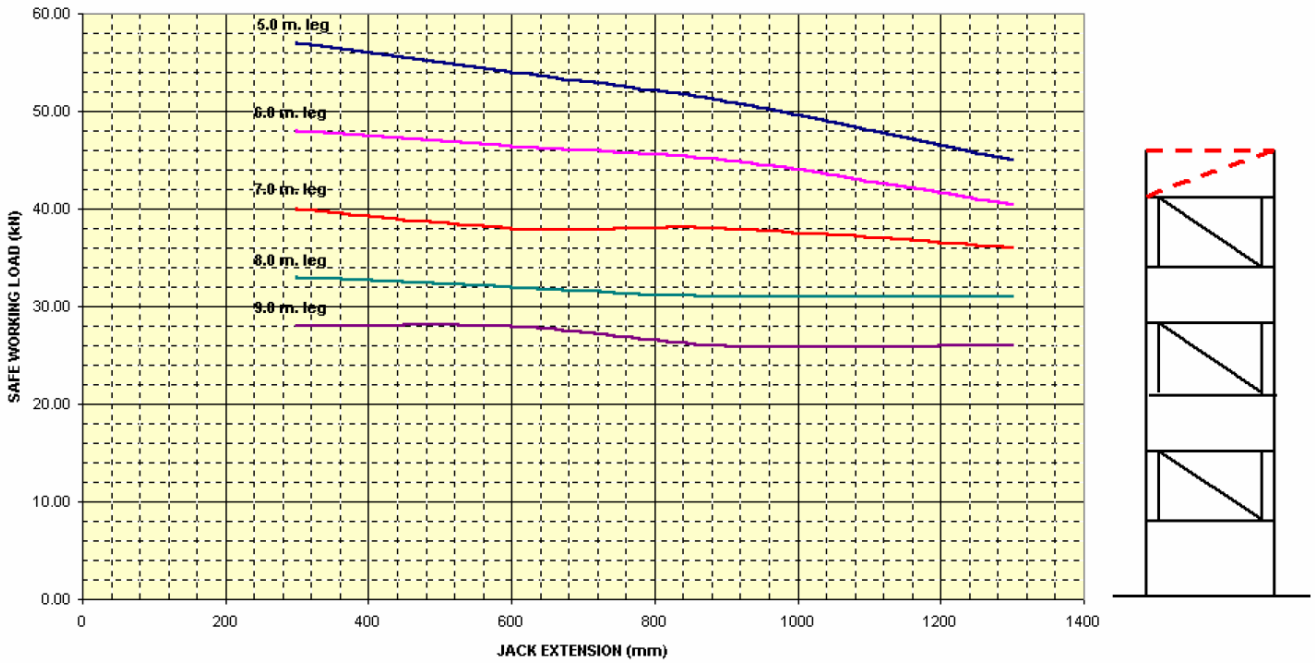


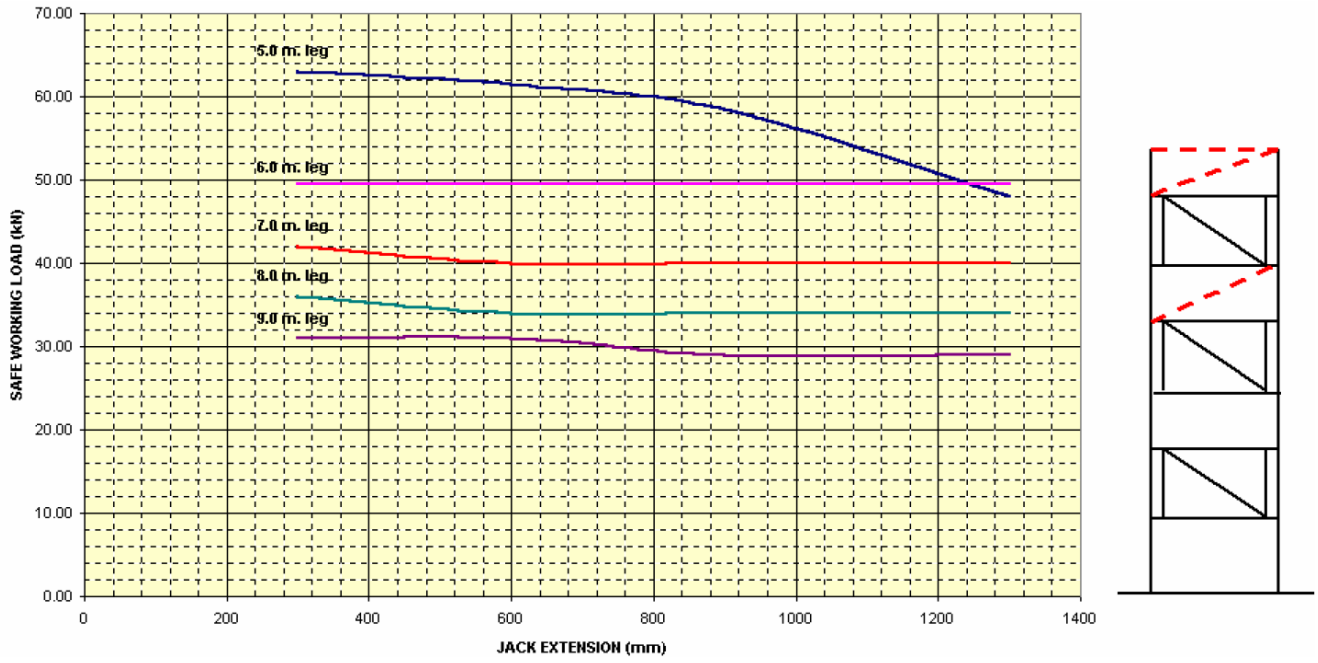



## 3. Working Load Limits (WLL)

### Free Standing Partly Braced Towers - 3 Ledger Frames

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)

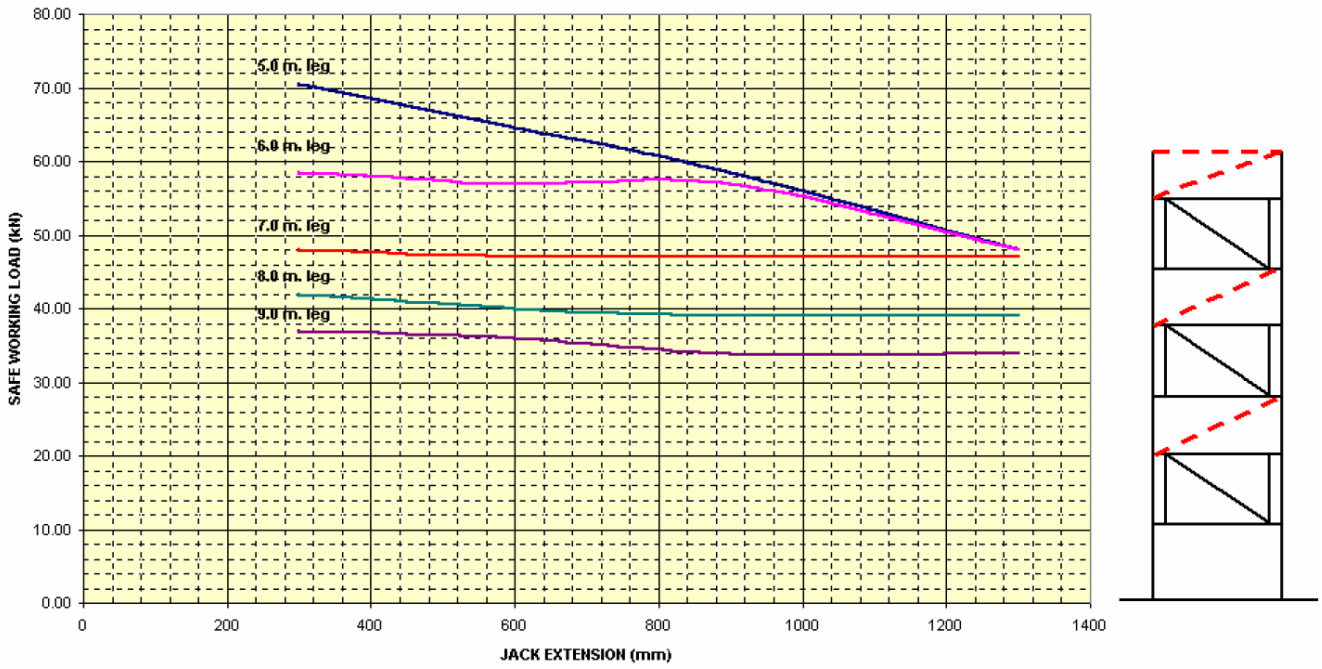


## 3. Working Load Limits (WLL)

### Free Standing Partly Braced Towers - 3 Ledger Frames

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)

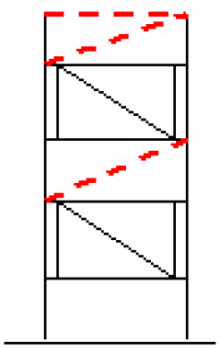


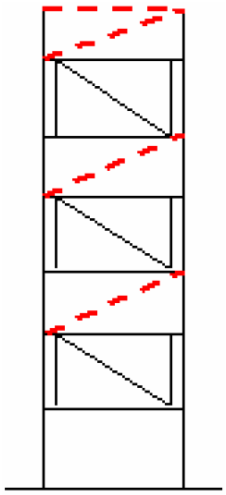
## 3. Working Load Limits (WLL)

### Free Standing Partly Braced Towers

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)

| Jack Extension (mm) | | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 |
|---|---|---|---|---|---|---|---|---|---|
| No. Of Ledgers | | 2 | | | | 3 | | | |
| Leg Height (m) | 2.5 | 74.00 | 68.00 | 60.00 | 51.00 | | | | |
| | 3 | 73.50 | 70.50 | 61.50 | 49.50 | | | | |
| | 4 | 55.50 | 54.00 | 54.00 | 49.50 | | | | |
| | 5 | 42.00 | 40.50 | 40.50 | 40.50 | 70.50 | 64.50 | 58.50 | 48.00 |
| | 6 | 34.50 | 33.00 | 31.50 | 31.50 | 58.50 | 57.00 | 57.00 | 48.00 |
| | 7 | | | | | 48.00 | 47.00 | 47.00 | 47.00 |
| | 8 | | | | | 42.00 | 40.00 | 39.00 | 39.00 |
| | 9 | | | | | 37.00 | 36.00 | 34.00 | 34.00 |



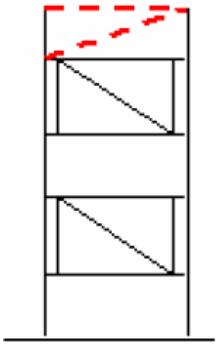


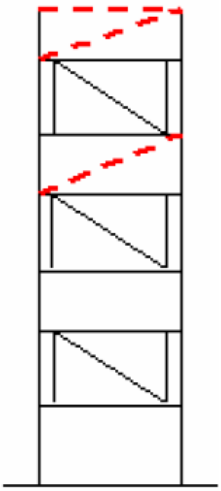
## 3. Working Load Limits (WLL)

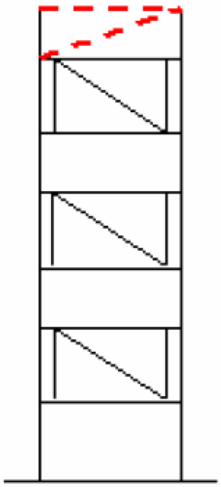
### Free Standing Partly Braced Towers

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)

| Jack Extension (mm) | | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. Of Ledgers | | 2 | | | | 3 | | | | 3 | | | |
| Leg Height (m) | 2.5 | 72.00 | 64.00 | 58.00 | 51.00 | | | | | | | | |
| | 3 | 63.00 | 61.50 | 57.00 | 49.50 | | | | | | | | |
| | 4 | 49.50 | 46.50 | 45.00 | 40.50 | | | | | | | | |
| | 5 | 36.00 | 36.00 | 34.50 | 33.00 | 63.00 | 61.50 | 58.50 | 48.00 | 57.00 | 54.00 | 51.00 | 45.00 |
| | 6 | 27.00 | 27.00 | 27.00 | 27.00 | 49.50 | 49.50 | 49.50 | 49.50 | 48.00 | 46.50 | 45.00 | 40.50 |
| | 7 | | | | | 42.00 | 40.00 | 40.00 | 40.00 | 40.00 | 38.00 | 38.00 | 36.00 |
| | 8 | | | | | 36.00 | 34.00 | 34.00 | 34.00 | 33.00 | 32.00 | 31.00 | 31.00 |
| | 9 | | | | | 31.00 | 31.00 | 29.00 | 29.00 | 28.00 | 28.00 | 26.00 | 26.00 |



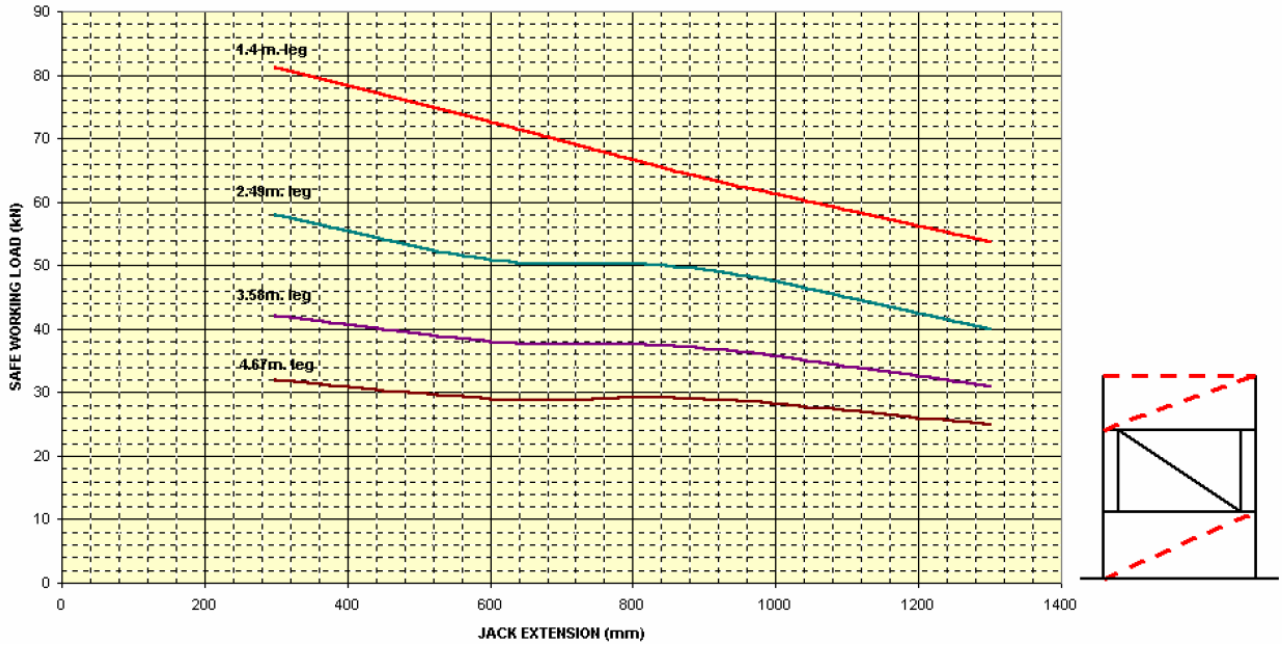




## 3. Working Load Limits (WLL)

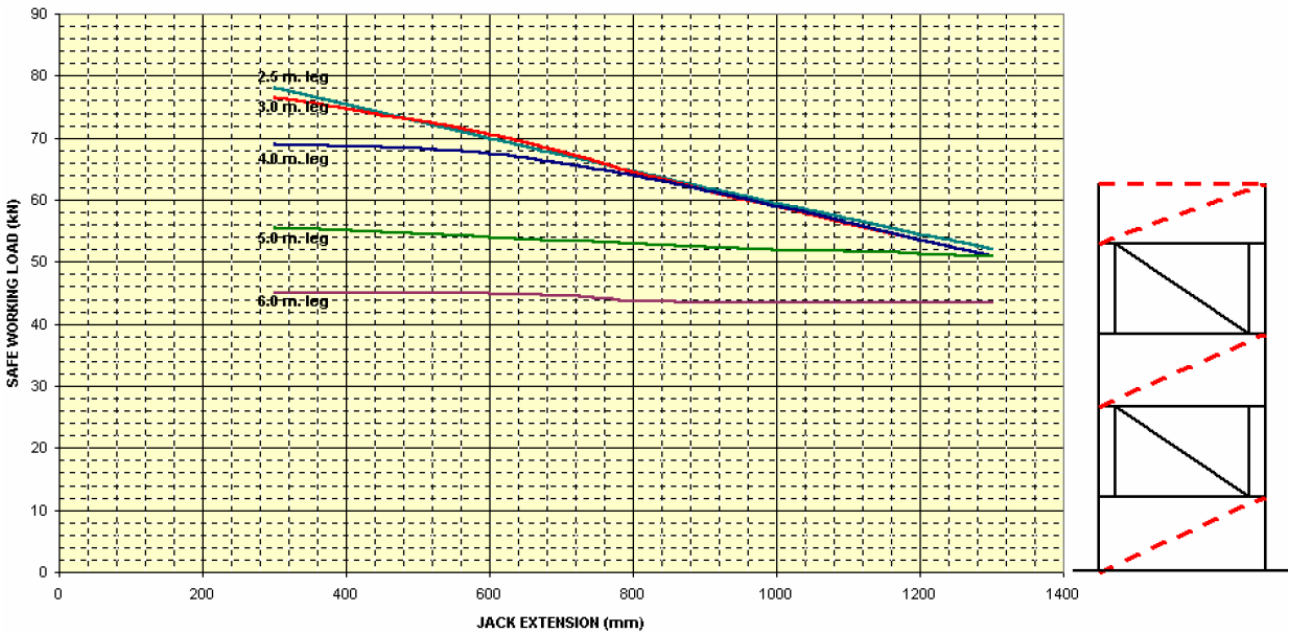
### Free Standing Fully Braced Towers - 1 Ledger Frame

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)




### Free Standing Fully Braced Towers - 2 Ledger Frame

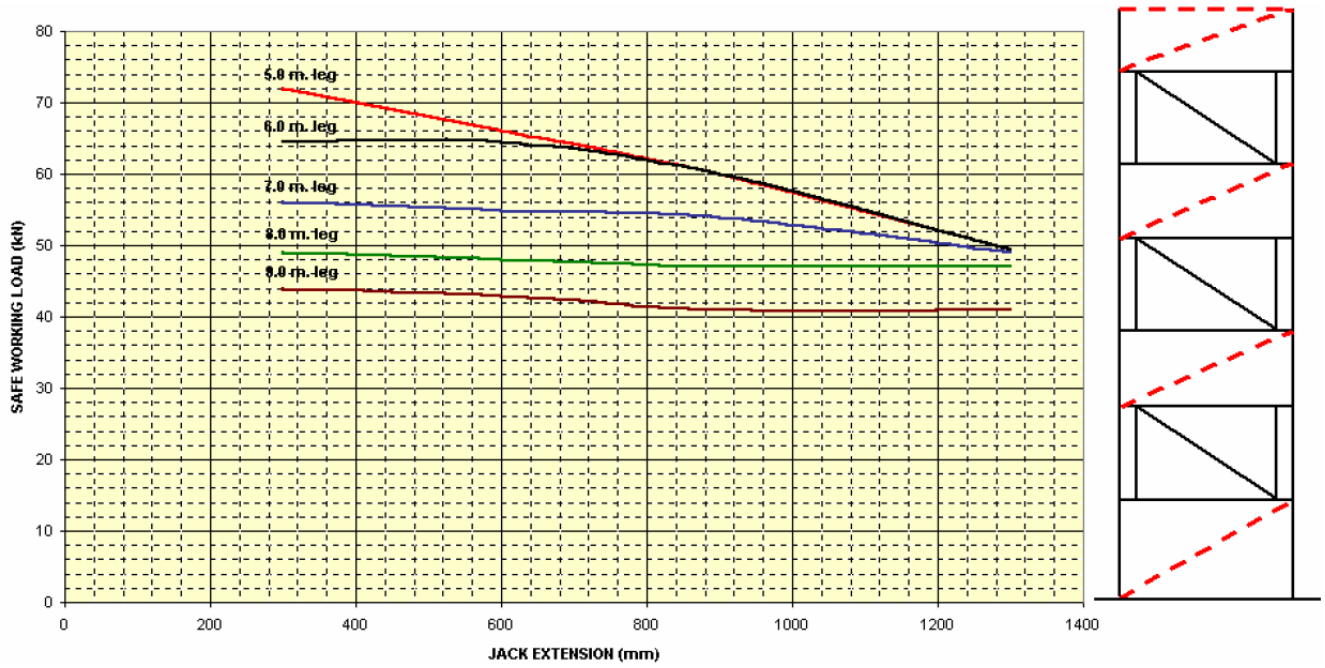
- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)



## 3. Working Load Limits (WLL)

### Free Standing Fully Braced Towers - 3 Ledger Frame

- 2.5% Top Horizontal Load
- Safe Working Load kN (SF=2)

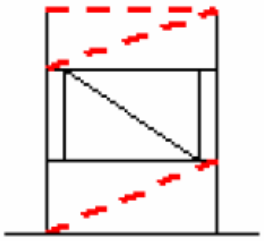


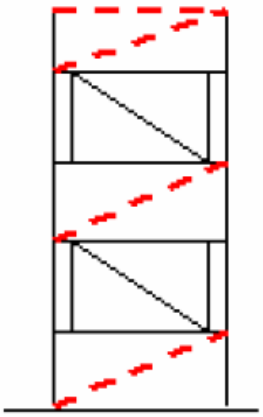
## 3. Working Load Limits (WLL)

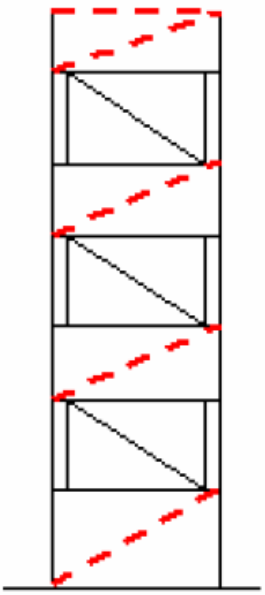
### Free Standing Fully Braced Towers

- 2.5% Top Horizontal Load
- Top Horizontal Displacement (mm) at Safe Working Load

| Jack Extension (mm) | | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 | 300 | 600 | 900 | 1300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. Of Ledgers | | 1 | | | | 2 | | | | 3 | | | |
| Leg Height (m) | 1.4 | 81.25 | 72.50 | 63.75 | 53.75 | | | | | | | | |
| | 2.49 | 58.00 | 51.00 | 49.50 | 40.00 | | | | | | | | |
| | 3.58 | 42.00 | 38.00 | 37.00 | 31.00 | | | | | | | | |
| | 4.67 | 32.00 | 29.00 | 29.00 | 25.00 | | | | | | | | |
| | 2.5 | | | | | 78.00 | 70.00 | 62.00 | 52.00 | | | | |
| | 3 | | | | | 76.50 | 70.50 | 61.50 | 51.00 | | | | |
| | 4 | | | | | 69.00 | 67.50 | 61.50 | 51.00 | | | | |
| | 5 | | | | | 55.50 | 54.00 | 52.50 | 51.00 | 72.00 | 66.00 | 60.00 | 49.50 |
| | 6 | | | | | 45.00 | 45.00 | 43.50 | 43.50 | 64.50 | 64.50 | 60.00 | 49.50 |
| | 7 | | | | | | | | | 56.00 | 55.00 | 54.00 | 49.00 |
| | 8 | | | | | | | | | 49.00 | 48.00 | 47.00 | 47.00 |
| | 9 | | | | | | | | | 44.00 | 43.00 | 41.00 | 41.00 |

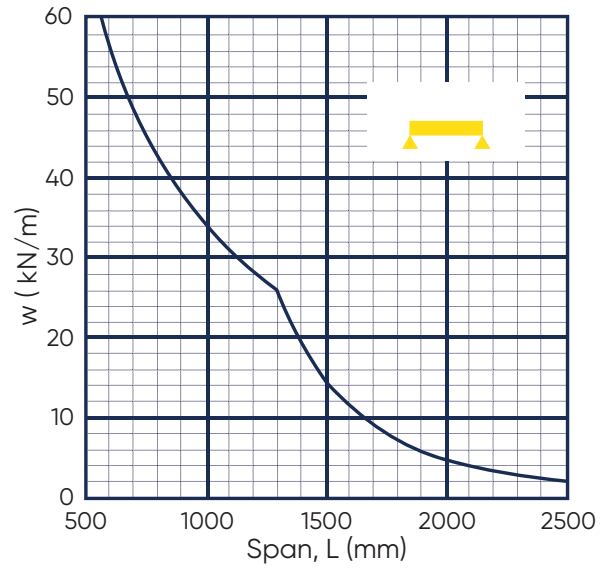


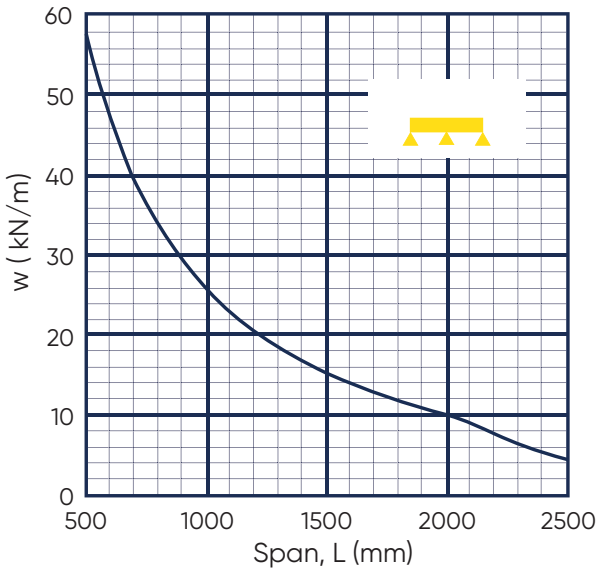


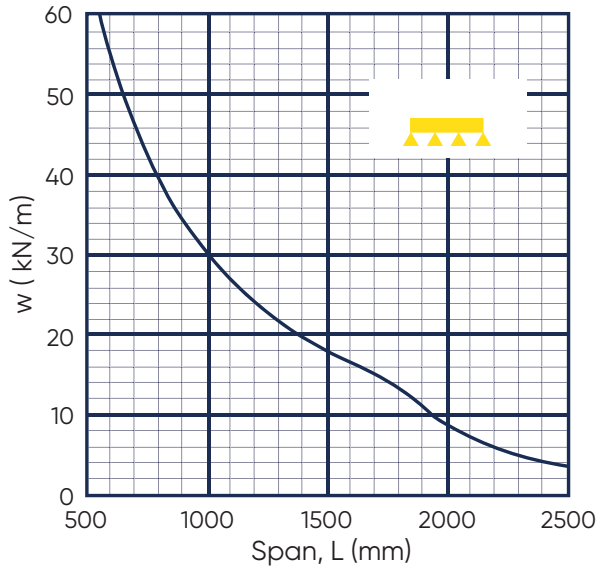


## 3. Working Load Limits (WLL)

### A-Beam Deflection Criteria: Lesser of 3mm or L/270



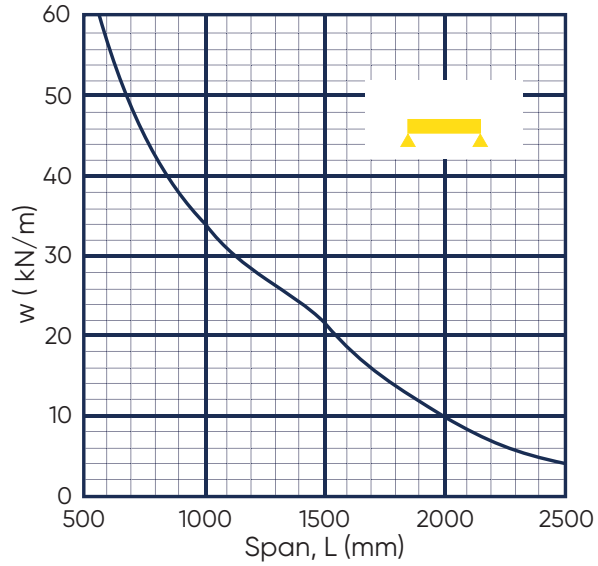



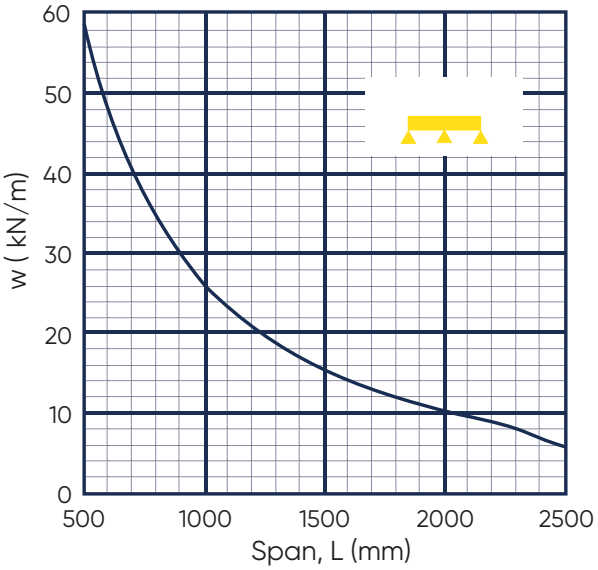

| Span (mm) | w kN/m | | |
|---|---|---|---|
| | 1 span | 2 spans | 3 spans |
| 400 | 85.00 | 73.50 | 84.05 |
| 500 | 68.00 | 57.74 | 66.17 |
| 600 | 56.67 | 47.18 | 54.20 |
| 700 | 48.57 | 39.61 | 45.61 |
| 800 | 42.50 | 33.91 | 39.15 |
| 900 | 37.78 | 29.48 | 34.12 |
| 1000 | 34.00 | 25.94 | 30.09 |
| 1100 | 30.91 | 23.04 | 26.80 |
| 1200 | 28.33 | 20.63 | 24.05 |
| 1300 | 25.96 | 18.60 | 21.74 |
| 1400 | 19.30 | 16.87 | 19.76 |
| 1500 | 14.65 | 15.38 | 18.05 |
| 1600 | 11.31 | 14.08 | 16.56 |
| 1700 | 8.88 | 12.95 | 15.26 |
| 1800 | 7.06 | 11.95 | 13.37 |
| 1900 | 5.69 | 11.06 | 10.77 |
| 2000 | 4.63 | 10.27 | 8.77 |
| 2100 | 3.81 | 9.18 | 7.22 |
| 2200 | 3.17 | 7.62 | 5.99 |
| 2300 | 2.65 | 6.38 | 5.01 |
| 2400 | 2.24 | 5.38 | 4.23 |
| 2500 | 1.90 | 4.57 | 3.59 |

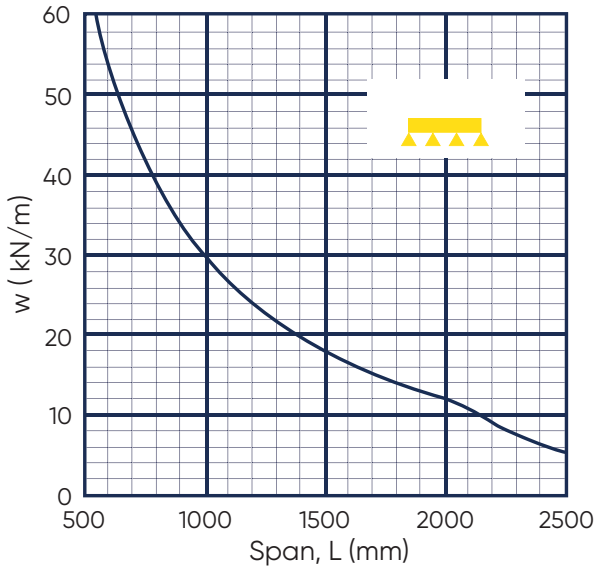
Note:
1. w = WLL for uniformly distributed load, kN/m
2. L = Span, mm.
3. Deflection criteria is for the member in question only.
4. Self weight of the member is not included in the graphs or tables.
5. It has been assumed that the load is distributed uniformly and for multiple spans, all spans are equal
6. WLL have been derived using minimum bearing lengths @ 152mm for A-Beam
7. Limit State Conversion Factor = 1.5
8. Maximum capacities may be limited by other components or assembly.

## 3. Working Load Limits (WLL)

### A-Beam Deflection Criteria: Greater of 3mm or L/270




| Span (mm) | w kN/m | | |
|---|---|---|---|
| | 1 span | 2 spans | 3 spans |
| 400 | 85.00 | 73.50 | 84.05 |
| 500 | 68.00 | 57.74 | 66.17 |
| 600 | 56.67 | 47.18 | 54.20 |
| 700 | 48.57 | 39.61 | 45.61 |
| 800 | 42.50 | 33.91 | 39.15 |
| 900 | 37.78 | 29.48 | 34.12 |
| 1000 | 34.00 | 25.94 | 30.09 |
| 1100 | 30.91 | 23.04 | 26.80 |
| 1200 | 28.33 | 20.63 | 24.05 |
| 1300 | 26.15 | 18.60 | 21.74 |
| 1400 | 24.29 | 16.87 | 19.76 |
| 1500 | 21.77 | 15.38 | 18.05 |
| 1600 | 18.54 | 14.08 | 16.56 |
| 1700 | 15.90 | 12.95 | 15.26 |
| 1800 | 13.72 | 11.95 | 14.11 |
| 1900 | 11.89 | 11.06 | 13.08 |
| 2000 | 9.96 | 10.27 | 12.17 |
| 2100 | 8.19 | 9.56 | 10.87 |
| 2200 | 6.80 | 8.92 | 9.03 |
| 2300 | 5.69 | 8.16 | 7.56 |
| 2400 | 4.80 | 6.89 | 6.37 |
| 2500 | 4.08 | 5.85 | 5.41 |

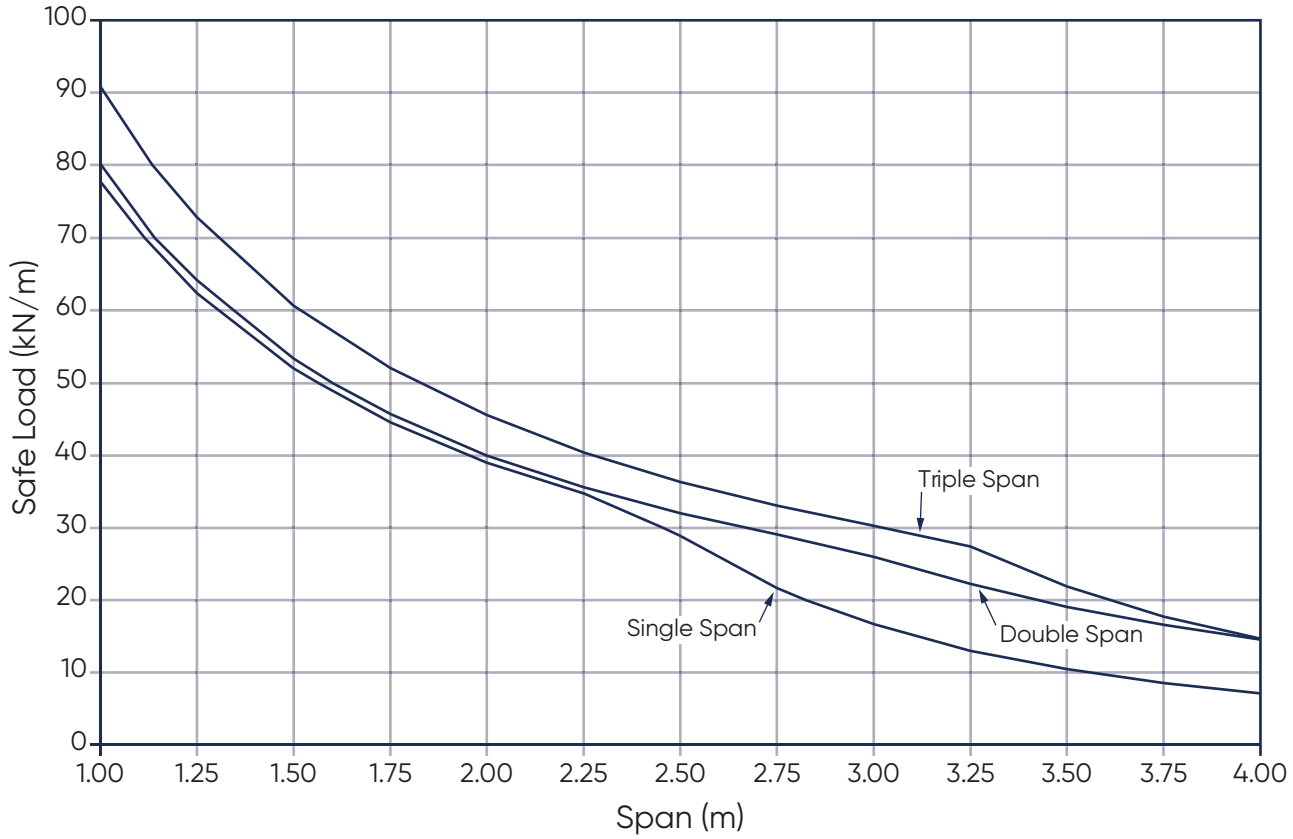
Note:
1. w = WLL for uniformly distributed load, kN/m
2. L = Span, mm.
3. Deflection criteria is for the member in question only.
4. Self weight of the member is not included in the graphs or tables.
5. It has been assumed that the load is distributed uniformly and for multiple spans, all spans are equal
6. WLL have been derived using minimum bearing lengths @ 152mm for A-Beam
7. Limit State Conversion Factor = 1.5
8. Maximum capacities may be limited by other components or assembly.

# 3. Working Load Limits (WLL)

## T225 Load Graph

The graph below is based on the following limits:

- Deflection: Span/270
- End Bearing Length: 120mm Min.
- Inner Bearing Length: 170mm Min.
- Maximum Bending Resistance: 29.25 kNm.
- Bend Stiffness - EI: 1585.4 kNm$^2$



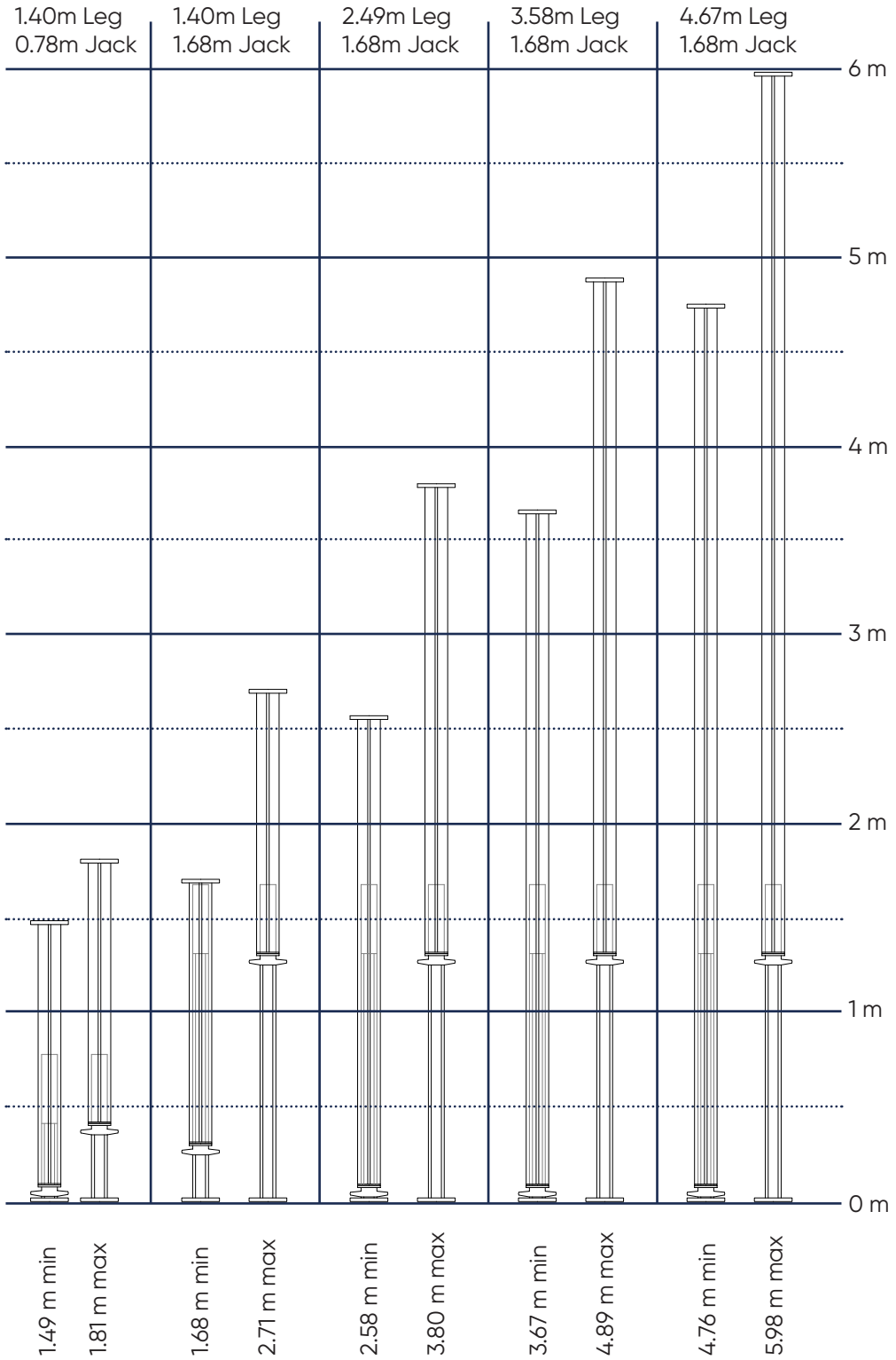

## S150 Loads

- Max Body Sagging: 6.84 kNm
- Max Body Hogging: 5.40 kNm
- End Bearing - 50mm: 12 kN (WLL)
- Inner Bearing - 100mm: 30 kN (WLL)
- Bend Stiffness - EI: 372.8 kNm$^2$

# 4. SYSTEM DETAILS

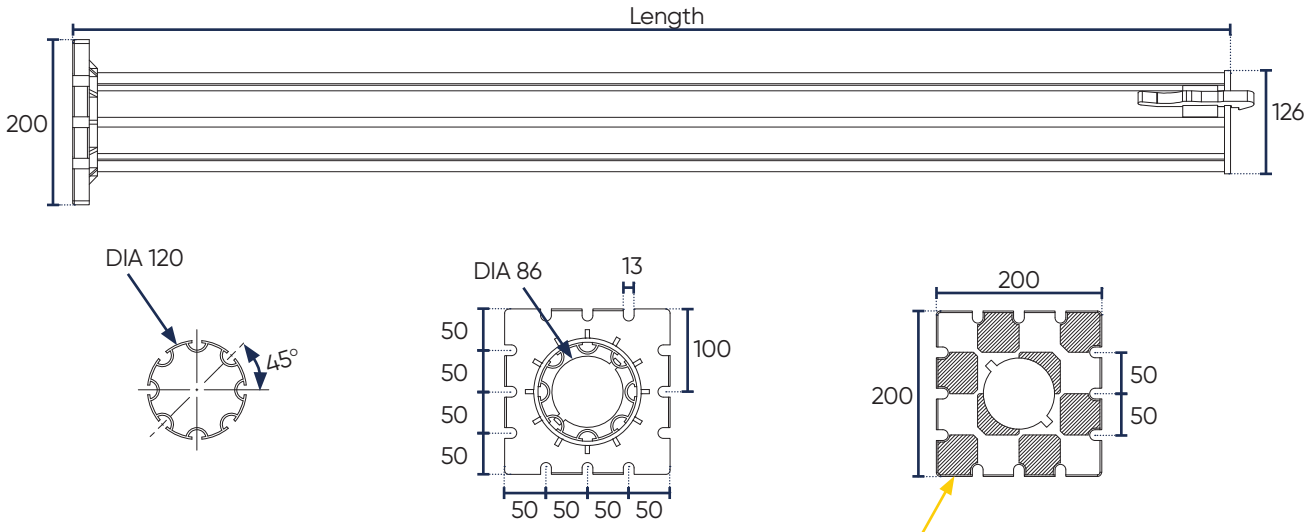
## 4. System Details

### Leg & Jack Make-Up



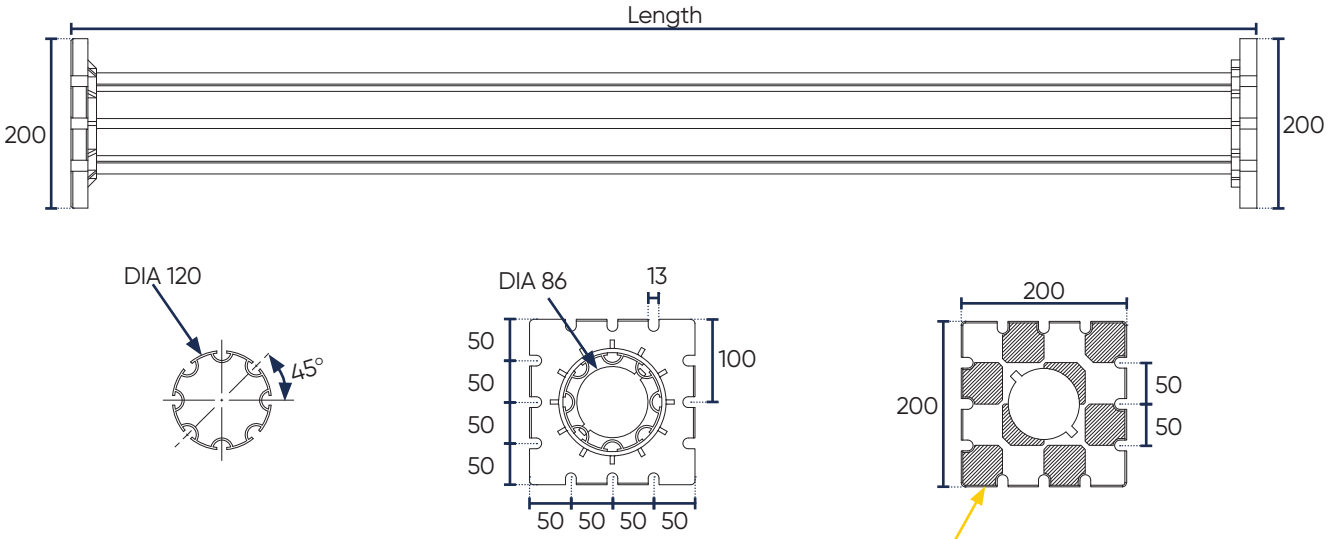
# 4. System Details

## Gass Leg Details




Note:
For the mating pattern on the underside of the square end plate on inner, outer legs and extension legs the serration's on the edges of the plates must match.

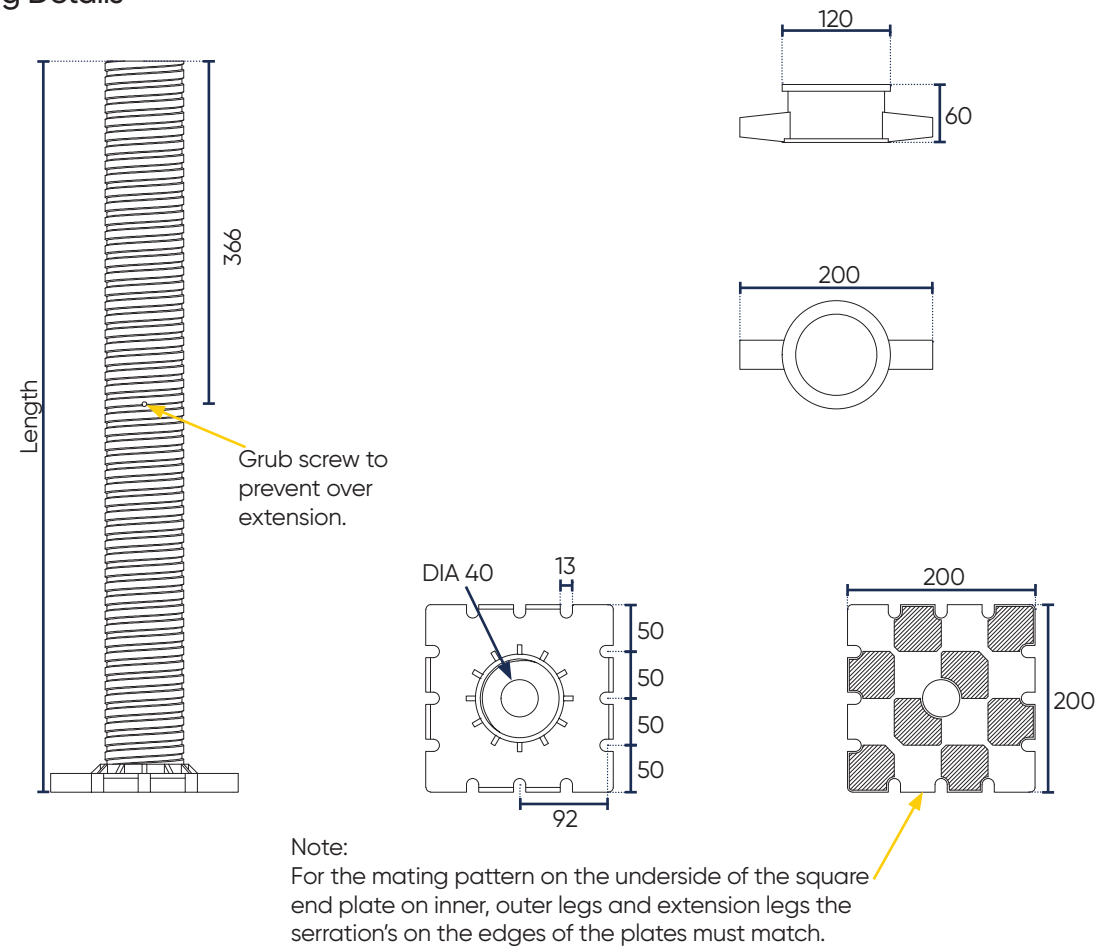
## Extension Leg



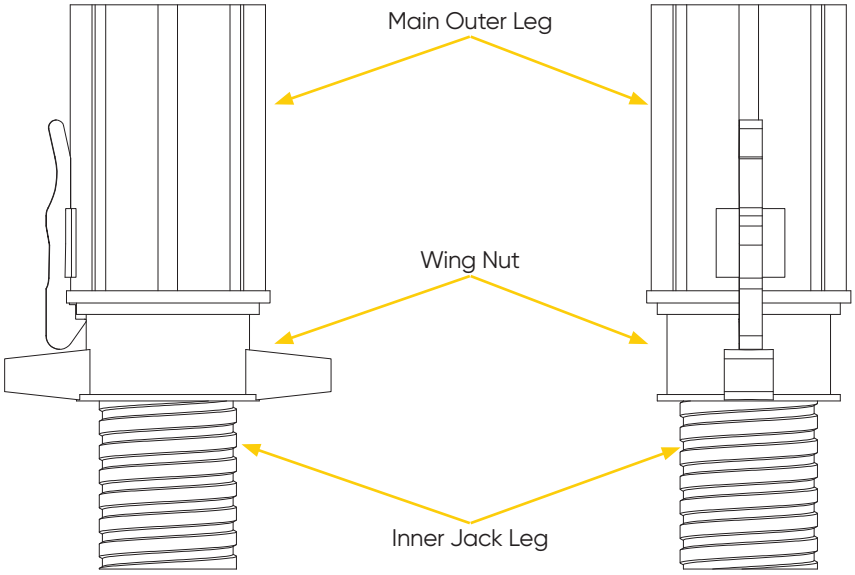

Note:
For the mating pattern on the underside of the square end plate on inner, outer legs and extension legs the serration's on the edges of the plates must match.

## 4. System Details

### Inner Leg Details



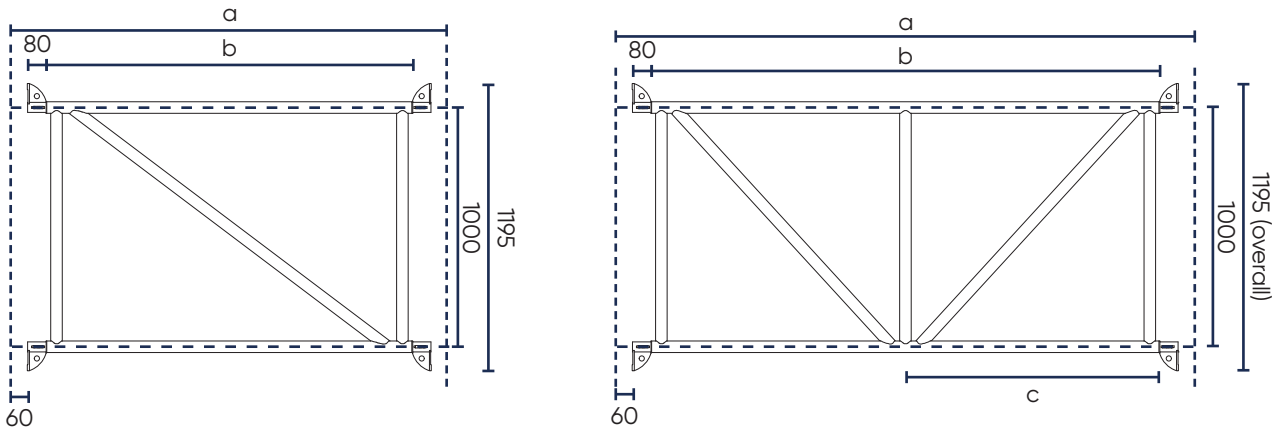

### Sprung Latch




- Sprung - Loaded latching device clips over flange on nut and led end plate allowing nut to be rotated to extend or retract jack into led but stop jack from disengaging when gass falsework is crane handled.
- Max load on latch (tension) = 625 kg

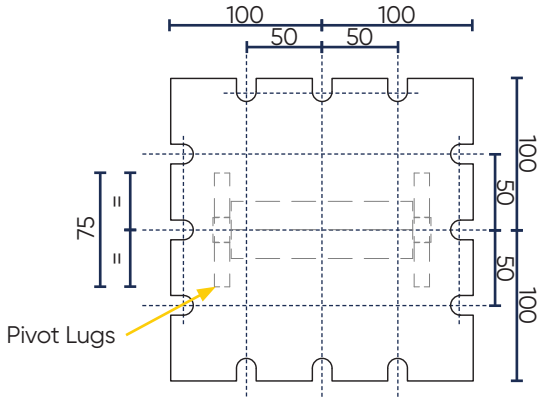
## 4. System Details

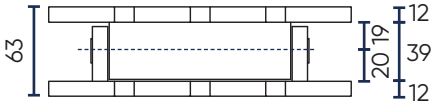
### Bracing Frame Details




| Bracing Frame Length | a | b | c |
|---|---|---|---|
| **1200 mm** | 1200 | 922 | - |
| **1800 mm** | 1800 | 1522 | - |
| **2400 mm** | 2400 | 2122 | 1061 |
| **3000 mm** | 3000 | 2722 | 2722 |

### Rocking Head / Base Plate Details



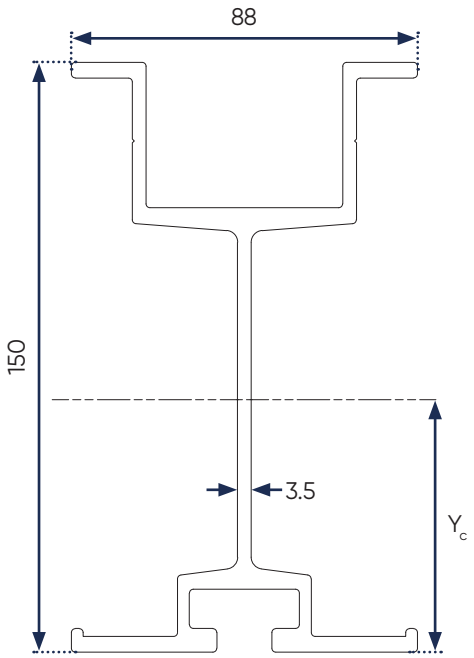



## 4. System Details

### A-Beam Section Properties

| | A-Beam |
|---|---|
| Alloy | 6061 - T6 |
| Mass (kg/m) | 4.15 |
| E (MPa) | 70000 |
| $E_{stiffness}$ (MPa) | 69300 |
| A ($mm^2$) | 1535 |
| $I_{xx}$ ($mm^4$) | 4644202 |
| $I_{yy}$ ($mm^4$) | 703048 |
| J ($mm^4$) | 9019.6 |
| $I_w$ ($mm^6$) | 1.05 e9 |
| $B_x$ | 12.06 |
| Q ($mm^3$) | 39446 |
| $Y_c$ (mm) | 70.3 |

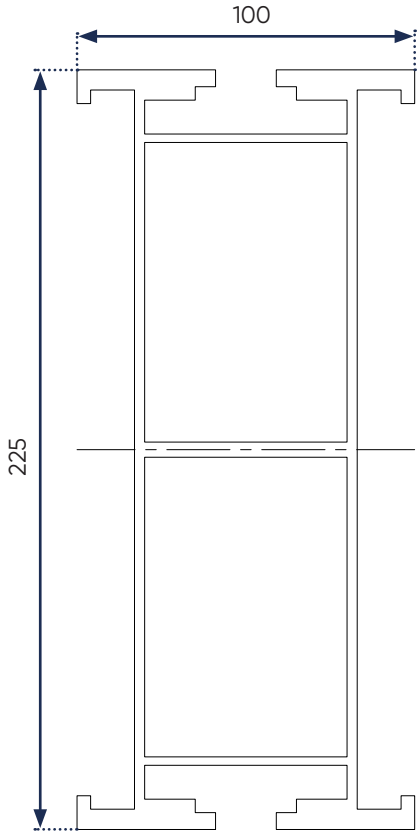
Note:
Section properties of timber insert not included.




**A-Beam**

### T225 Section Properties

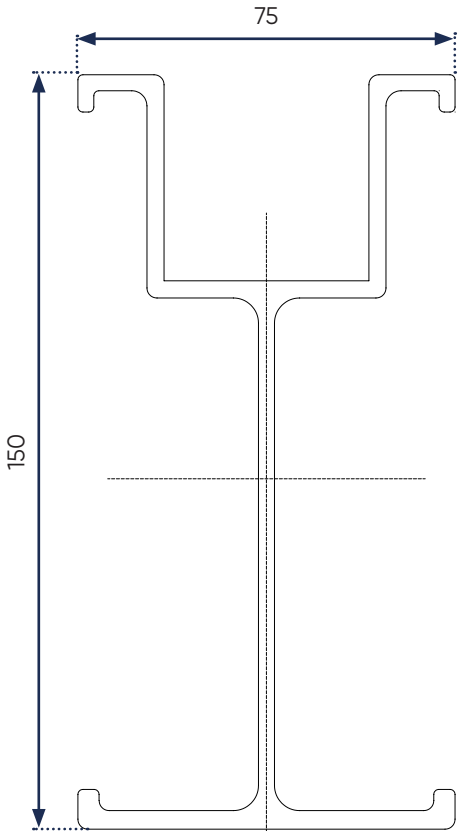
| | T225 Beam |
|---|---|
| Alloy | 6082 T6 |
| Mass (kg/m) | 8.92 |
| A ($mm^2$) | 8920000 |
| $I_{xx}$ ($mm^4$) | 23010000 |
| $I_{yy}$ ($mm^4$) | 2390000 |



## 4. System Details

### T225 Section Properties

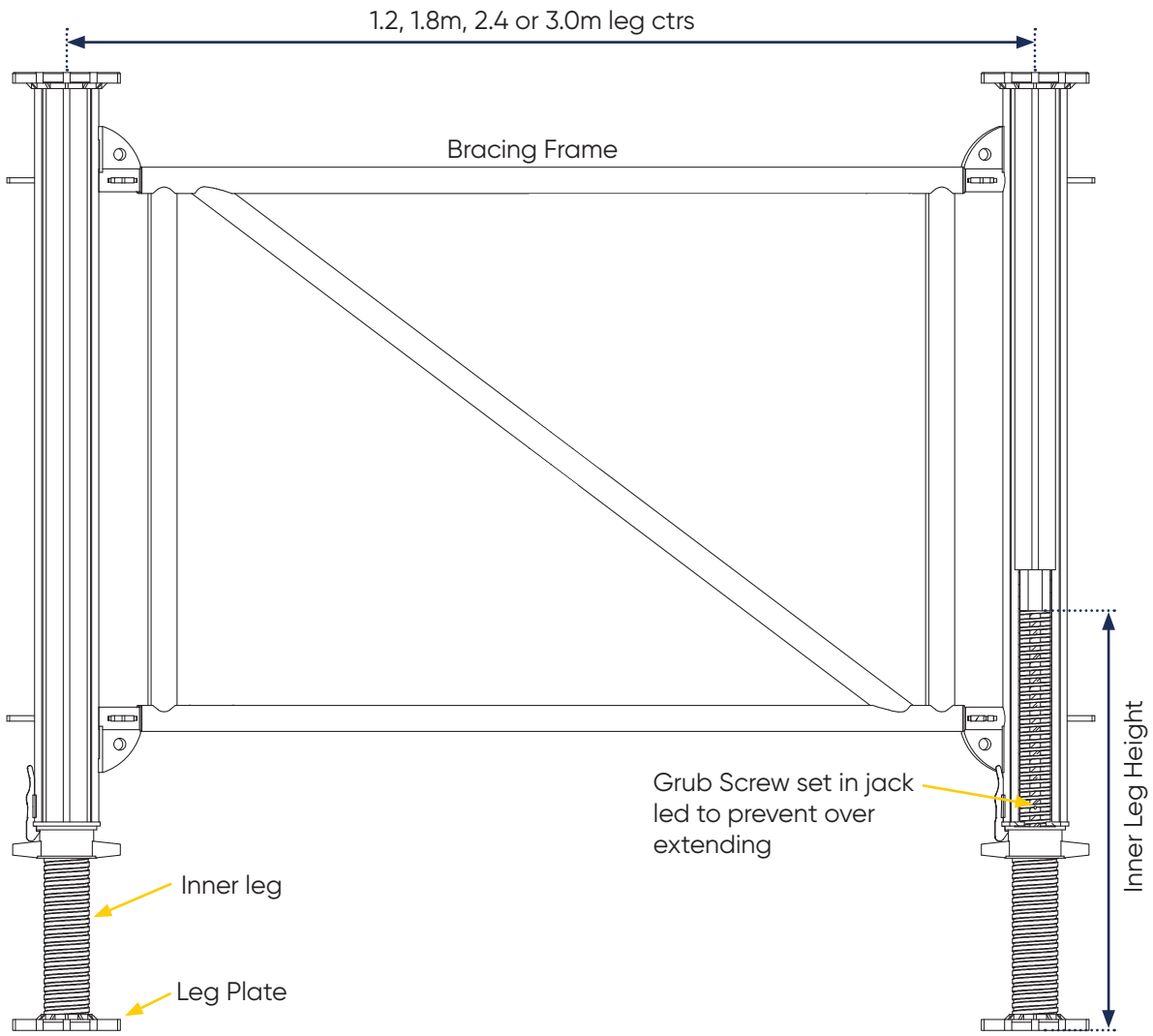
| | T150 Beam |
|---|---|
| **Alloy** | 6082 T6 |
| **Mass (kg/m)** | 3.24 |
| **A ($mm^2$)** | 1196 |
| **$I_{xx}$ ($mm^4$)** | 3560000 |
| **$I_{yy}$ ($mm^4$)** | 437600 |



# 5. ASSEMBLY DETAILS

## 5. Assembly Details

### Jack Leg Assembly

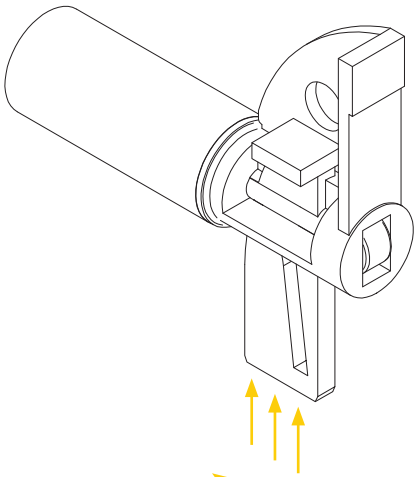


## 5. Assembly Details

### Ledger Frame End Fitting Operation

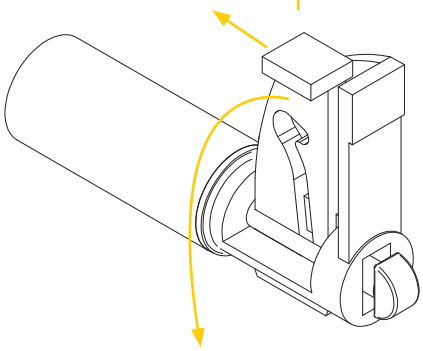
With bolt in parked position, bracing frame is positioned against main outer leg.

Raise wedge to advance bolt into slot on leg.

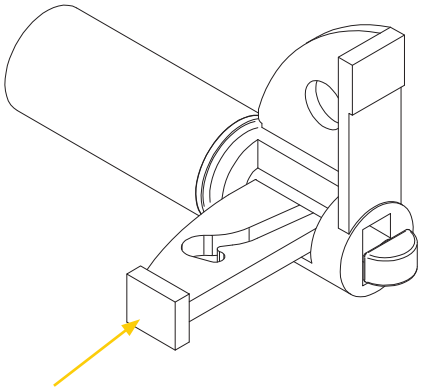


Additional movement of bolt into slot achieved by moving wedge towards centre of Bracing Frame.

Rotate wedge 90 degrees to lock bolt in leg slot.



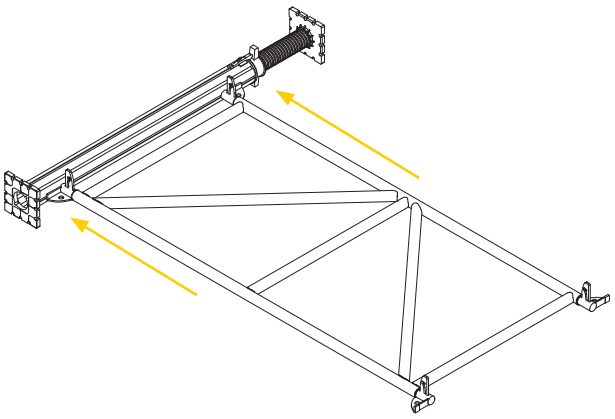
Hammer Wedge to secure bolt in slot



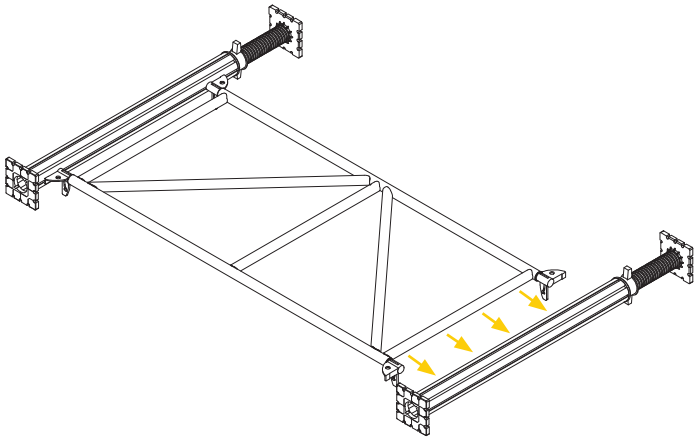
## 5. Assembly Details

### Assembling the system

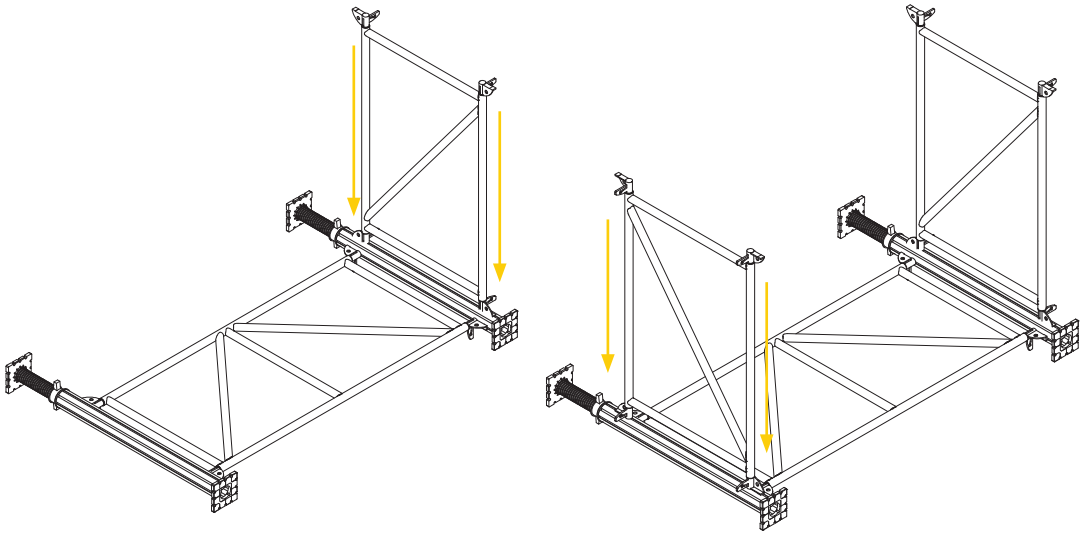
Place the Gass on the ground at the approximate extension. Attach the Brace frame onto one side of the prop outer leg. Follow page 5.3 attachment steps to successful secure the Bracing frame to Prop.



Repeat previous step with the other side of the bracing leg till frame is secure and locked.



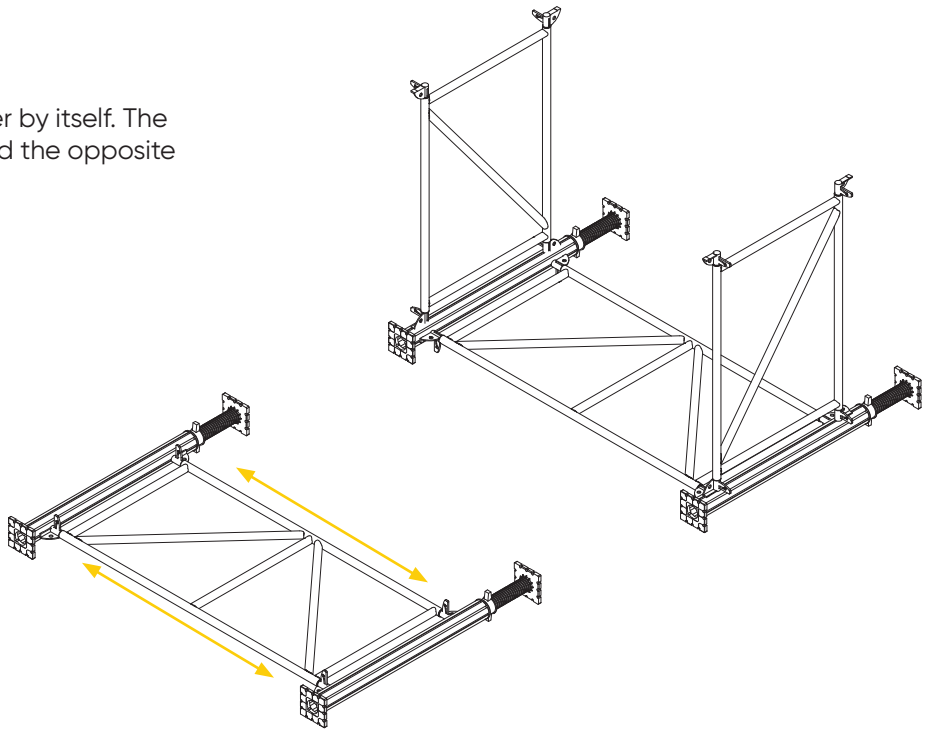
Attach the side bracing frames adjacent to the already braced frame. complete both sides till it forms an U shape.



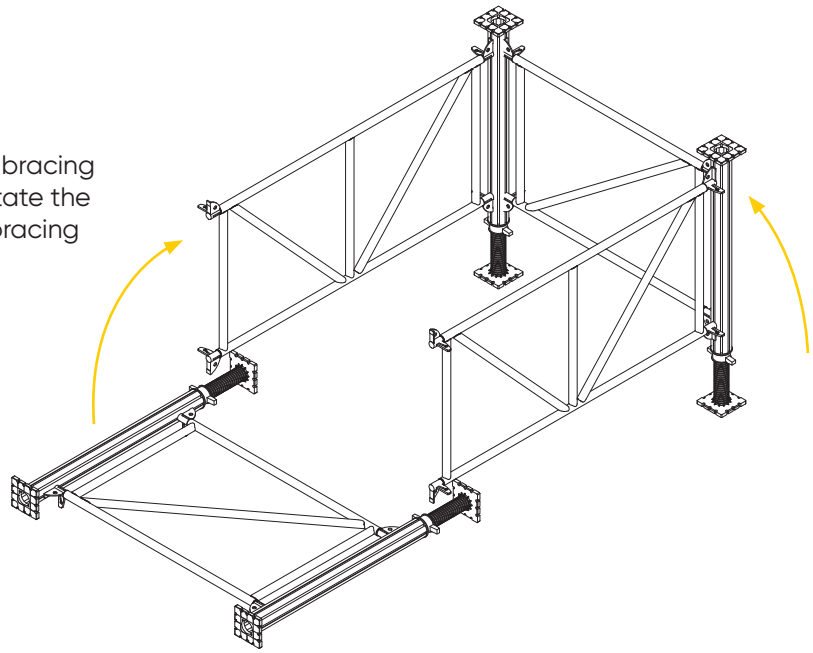
## 5. Assembly Details

### Assembling the system

Attach the opposite side together by itself. The Gass prop and Bracing frame and the opposite side Prop to form one side.



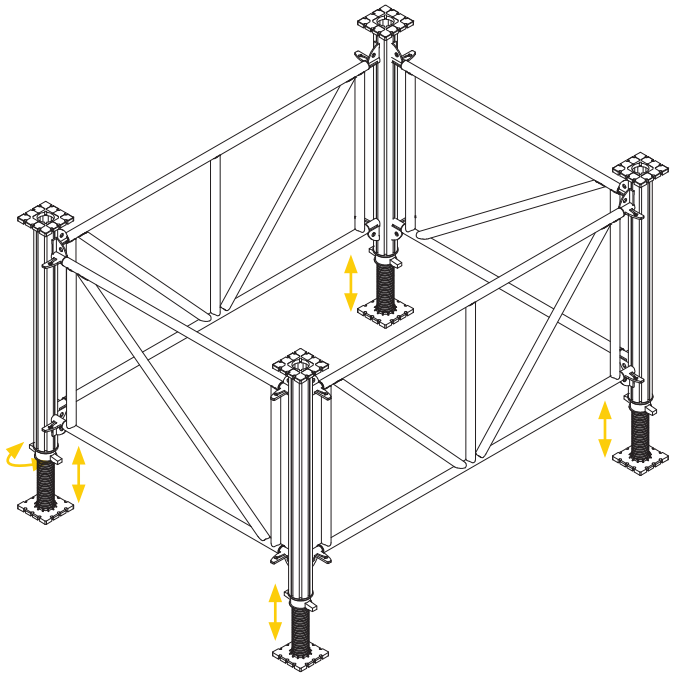
Rotate up the U shaped/three sided bracing frame till they are stating upright. Rotate the single frame side and attach to the bracing frames to form a rectangle.



## 5. Assembly Details

### Assembling the system

Adjust the props to ensure the tower is plumb.
The Gass system has been formed.



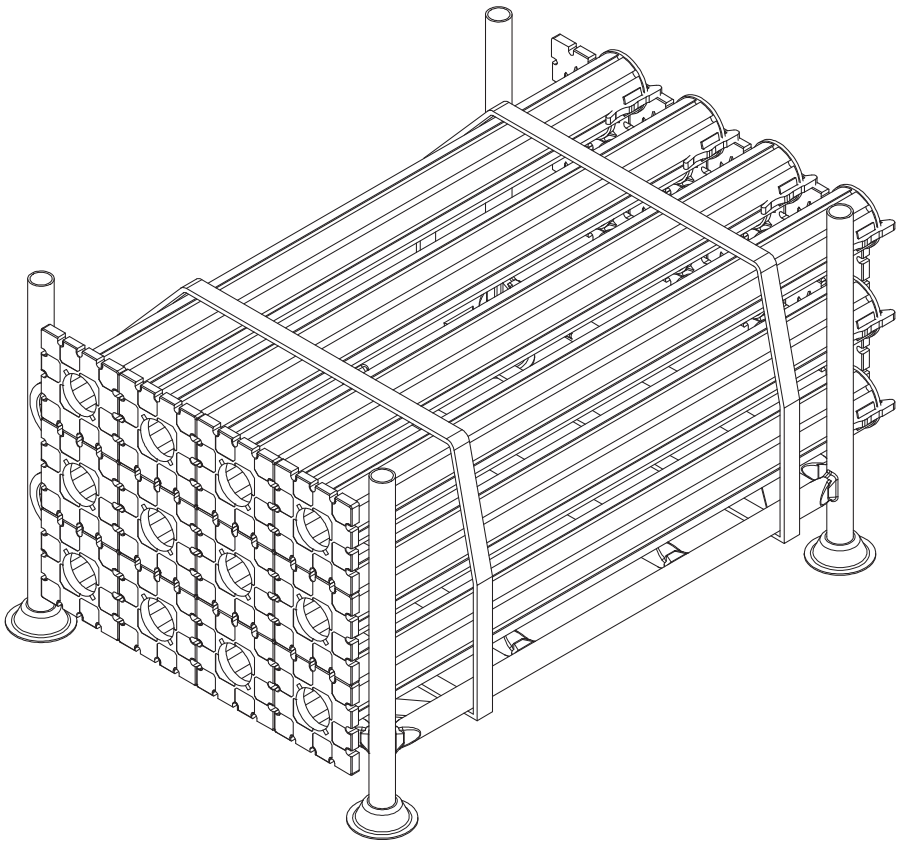
# 6. TRANSPORT & HANDLING

# 6. Transport & Handling

## Outer Leg

The Acrow stillage is used to store a set number of items per a stillage. Items should be stored in a particular way to prevent them from falling off the stillage.
The recommended method and process is:

- Stack items next to and on top to each other.
- Only pack and stack similar matching lengths per stillage. Do not mix different sizes or types in one stillage.
- Ensure every stillage load does not exceed the advised table below.
- Secure assembled items onto stillage by using at least two straps or plastic wrapped for enclosed stillages (two straps for enclosed stillage not applicable).
- Refer to Acrow Scaffold Stillage Transport and Manual Handling Document for further stacking and transport recommendations.



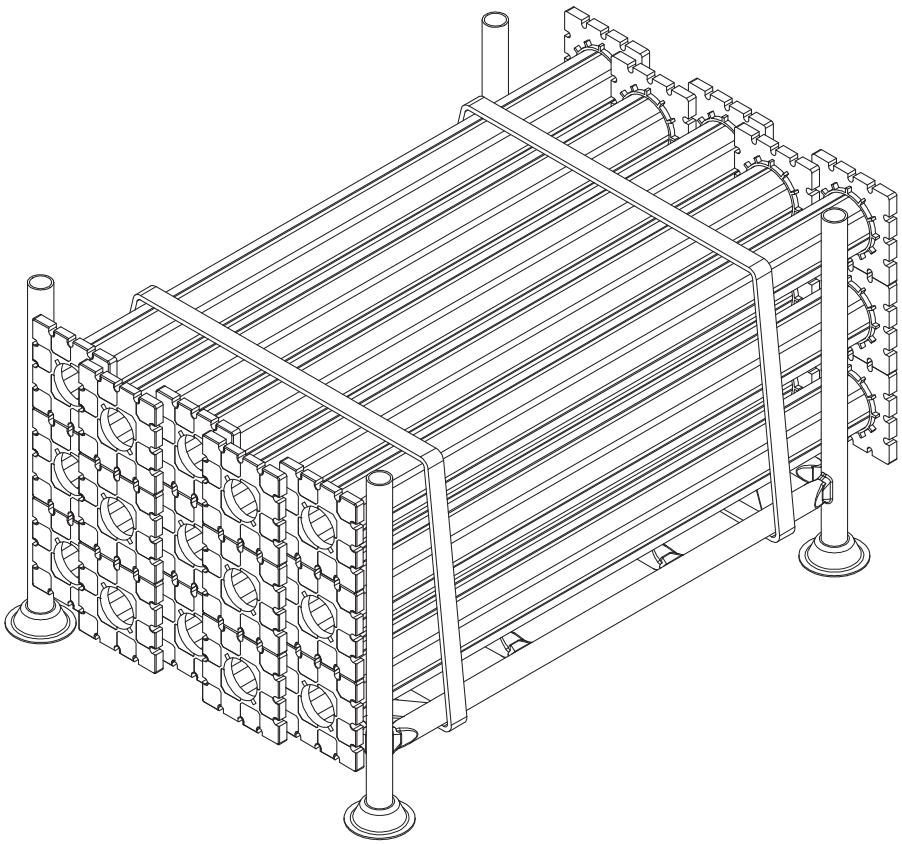
| DESCRIPTION | UNIT MASS (KG) | QTY PER STILLAGE | TOTAL MASS PER STILLAGE (KG) | ACROW STILLAGE TYPE |
|---|---|---|---|---|
| Outer Leg 4670mm | 22.1 | 20 | 482 | SP |
| Outer Leg 3580mm | 17.4 | 20 | 388 | SP |
| Outer Leg 2490mm | 12.7 | 20 | 294 | SP |
| Outer Leg 1400mm | 8.0 | 20 | 200 | SP |

# 6. Transport & Handling

## Extension Leg

The Acrow stillage is used to store a set number of items per a stillage. Items should be stored in a particular way to prevent them from falling off the stillage.
The recommended method and process is:

- Stack items next to and on top to each other.
- Only pack and stack similar matching lengths per stillage. Do not mix different sizes or types in one stillage.
- Ensure every stillage load does not exceed the advised table below.
- Secure assembled items onto stillage by using at least two straps or plastic wrapped for enclosed stillages (two straps for enclosed stillage not applicable).
- Refer to Acrow Scaffold Stillage Transport and Manual Handling Document for further stacking and transport recommendations.



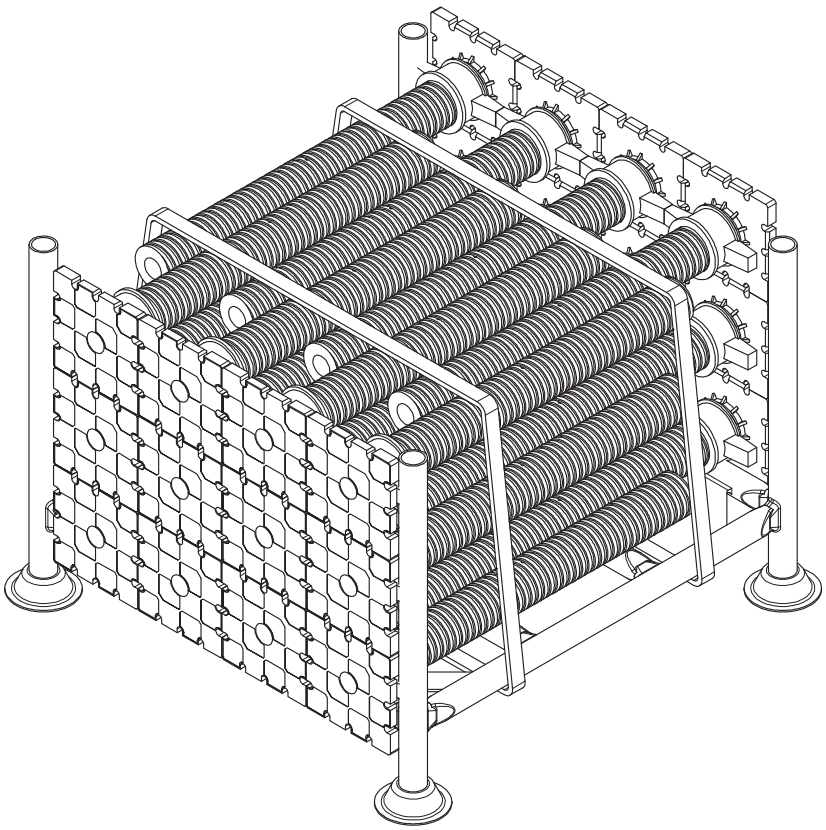
| DESCRIPTION | UNIT MASS (KG) | QTY PER STILLAGE | TOTAL MASS PER STILLAGE (KG) | ACROW STILLAGE TYPE |
|---|---|---|---|---|
| Extension Leg 4670mm | 23.6 | 20 | 500 | SP |
| Extension Leg 3580mm | 18.9 | 20 | 418 | SP |
| Extension Leg 2490mm | 142 | 20 | 324 | SP |
| Extension Leg 1400mm | 9.5 | 20 | 330 | SP |
| Extension Leg 500mm | 5.6 | 40 | 264 | SP |

# 6. Transport & Handling

## Inner Leg (Adjustable Legs)

The Acrow stillage is used to store a set number of items per a stillage. Items should be stored in a particular way to prevent them from falling off the stillage.
The recommended method and process is:

- Stack items next to and on top to each other.
- Only pack and stack similar matching lengths per stillage. Do not mix different sizes or types in one stillage.
- Ensure every stillage load does not exceed the advised table below.
- Secure assembled items onto stillage by using at least two straps or plastic wrapped for enclosed stillages (two straps for enclosed stillage not applicable).
- Refer to Acrow Scaffold Stillage Transport and Manual Handling Document for further stacking and transport recommendations.



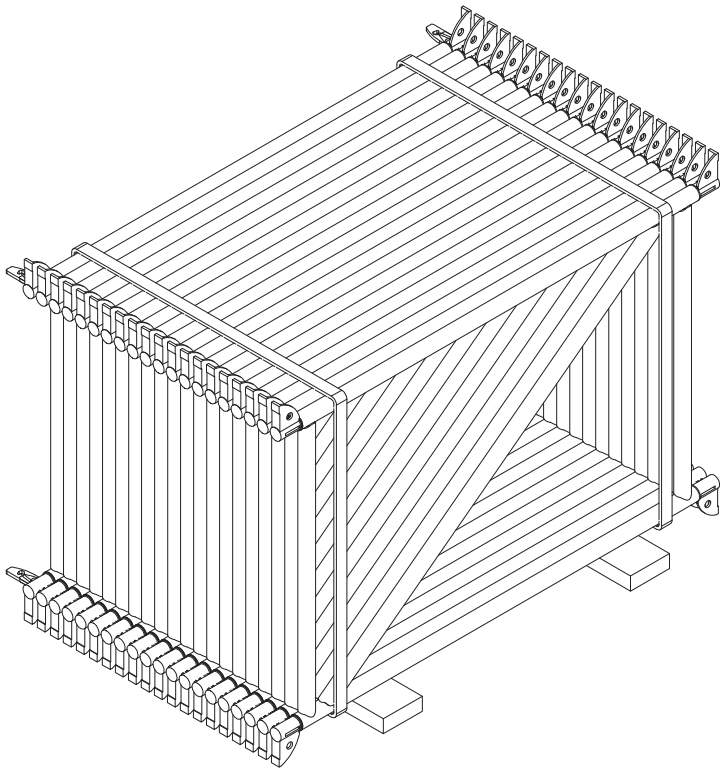
| DESCRIPTION | UNIT MASS (KG) | QTY PER STILLAGE | TOTAL MASS PER STILLAGE (KG) | ACROW STILLAGE TYPE |
|---|---|---|---|---|
| Inner Leg 1680mm | 10.2 | 20 | 240 | SP |
| Inner Leg 780mm | 5.5 | 40 | 260 | MP |

# 6. Transport & Handling

## Bracing Frames

The Acrow stillage is used to store a set number of items per a stillage. Items should be stored in a particular way to prevent them from falling off the stillage. When a stillage is not used ensure items are bundled and placed on suitable dunnage. The recommended method and process is:

- Stack items next to and on top to each other.
- Only pack and stack similar matching lengths per stillage/bundle. Do not mix different sizes or types in one stillage/bundle.
- Ensure every stillage/bundle load does not exceed the advised table below.
- Secure assembled items onto stillage/bundle by using at least two straps or plastic wrapped for enclosed stillages (two straps for enclosed stillage not applicable).
- Refer to Acrow Scaffold Stillage Transport and Manual Handling Document for further stacking and transport recommendations.



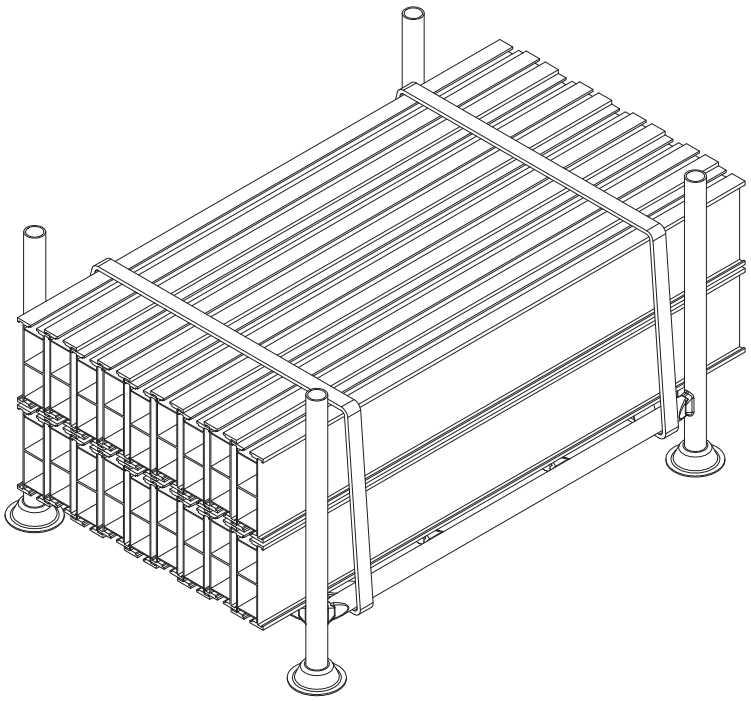
| DESCRIPTION | UNIT MASS (KG) | QTY PER STILLAGE | TOTAL MASS PER STILLAGE (KG) | ACROW STILLAGE TYPE |
|---|---|---|---|---|
| Bracing Frame 3000mm | 15.8 | 25 | 395 | Bundle |
| Bracing Frame 2400mm | 13.4 | 25 | 335 | Bundle |
| Bracing Frame 1800mm | 10.3 | 25 | 257.5 | Bundle |
| Bracing Frame 1200mm | 9.4 | 25 | 235 | Bundle |

## 6. Transport & Handling

### T225 Aluminium Beam

The Acrow stillage is used to store a set number of items per a stillage. Items should be stored in a particular way to prevent them from falling off the stillage. When a stillage is not used ensure items are bundled and placed on suitable dunnage. The recommended method and process is:

- Stack items next to and on top to each other.
- Only pack and stack similar matching lengths per stillage/bundle. Do not mix different sizes or types in one stillage/bundle.
- Ensure every stillage/bundle load does not exceed the advised table below.
- Secure assembled items onto stillage/bundle by using at least two straps or plastic wrapped for enclosed stillages (two straps for enclosed stillage not applicable).
- Refer to Acrow Scaffold Stillage Transport and Manual Handling Document for further stacking and transport recommendations.



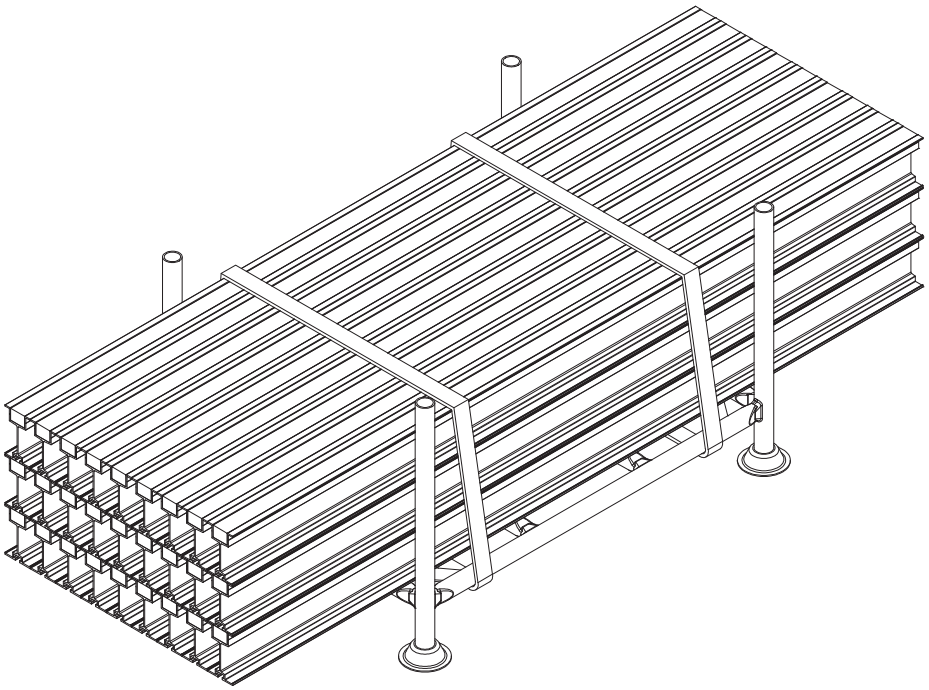
| DESCRIPTION | UNIT MASS (KG) | QTY PER STILLAGE | TOTAL MASS PER STILLAGE (KG) | ACROW STILLAGE TYPE |
|---|---|---|---|---|
| T225 Al Beam 1500 - 2000mm | 17.8 | 20 | 400 | SP |
| T225 Al Beam 2100 - 3000mm | 26.7 | 20 | 534 | SP |
| T225 Al Beam 3200 - 3700mm | 32.9 | 20 | 658 | SP |
| T225 Al Beam 4200 - 4800mm | 42.7 | 20 | 854 | SP |
| T225 Al Beam 5000 - 5400mm | 48.0 | 20 | 960 | SP |
| T225 Al Beam 6000 - 6300mm | 56.9 | 20 | 1138 | SP |

# 6. Transport & Handling

## Aluminium A-Beam

The Acrow stillage is used to store a set number of items per a stillage. Items should be stored in a particular way to prevent them from falling off the stillage. When a stillage is not used ensure items are bundled and placed on suitable dunnage. The recommended method and process is:

- Stack items next to and on top to each other.
- Only pack and stack similar matching lengths per stillage/bundle. Do not mix different sizes or types in one stillage/bundle.
- Ensure every stillage/bundle load does not exceed the advised table below.
- Secure assembled items onto stillage/bundle by using at least two straps or plastic wrapped for enclosed stillages (two straps for enclosed stillage not applicable).
- Refer to Acrow Scaffold Stillage Transport and Manual Handling Document for further stacking and transport recommendations.

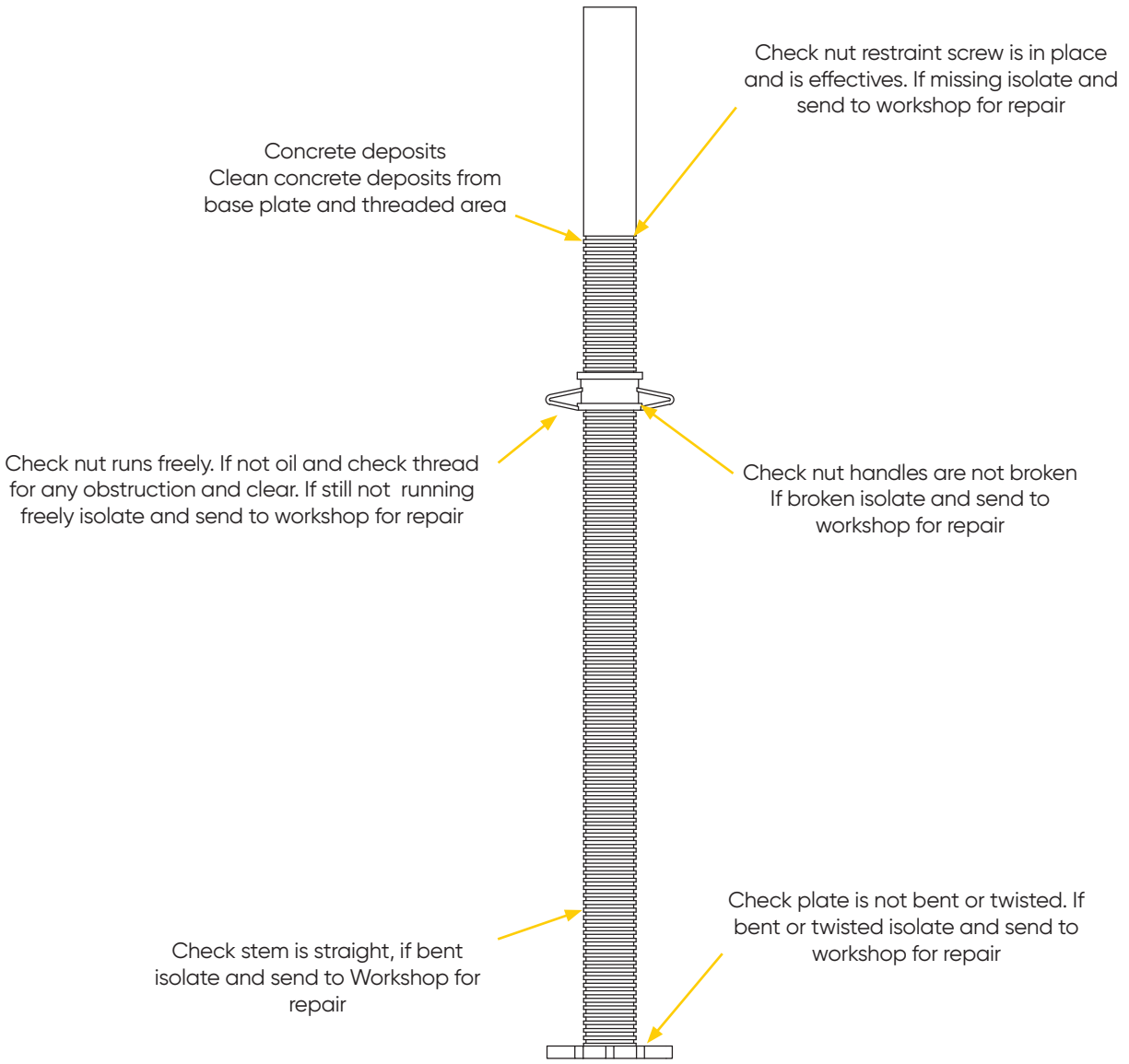


| DESCRIPTION | UNIT MASS (KG) | QTY PER STILLAGE | TOTAL MASS PER STILLAGE (KG) | ACROW STILLAGE TYPE |
|---|---|---|---|---|
| A-Beam 1200 - 1800mm | 9.7 | 20 | 194 | SP |
| A-Beam 2100 - 2700mm | 14.6 | 20 | 292 | SP |
| A-Beam 3000 - 3900mm | 21.0 | 20 | 420 | SP |
| A-Beam 4200 - 4800mm | 25.9 | 20 | 518 | SP |
| A-Beam 5100 - 5700mm | 30.8 | 20 | 616 | SP |
| A-Beam 6000 - 7000mm | 37.8 | 20 | 756 | SP |

# 7. MAINTENANCE & INSPECTION

## 7. Maintenance & Inspection

### GASS Prop Inner



# 7. Maintenance & Inspection

## GASS Prop Inner Inspection

NAME: _____ CHECKED DATE: _____

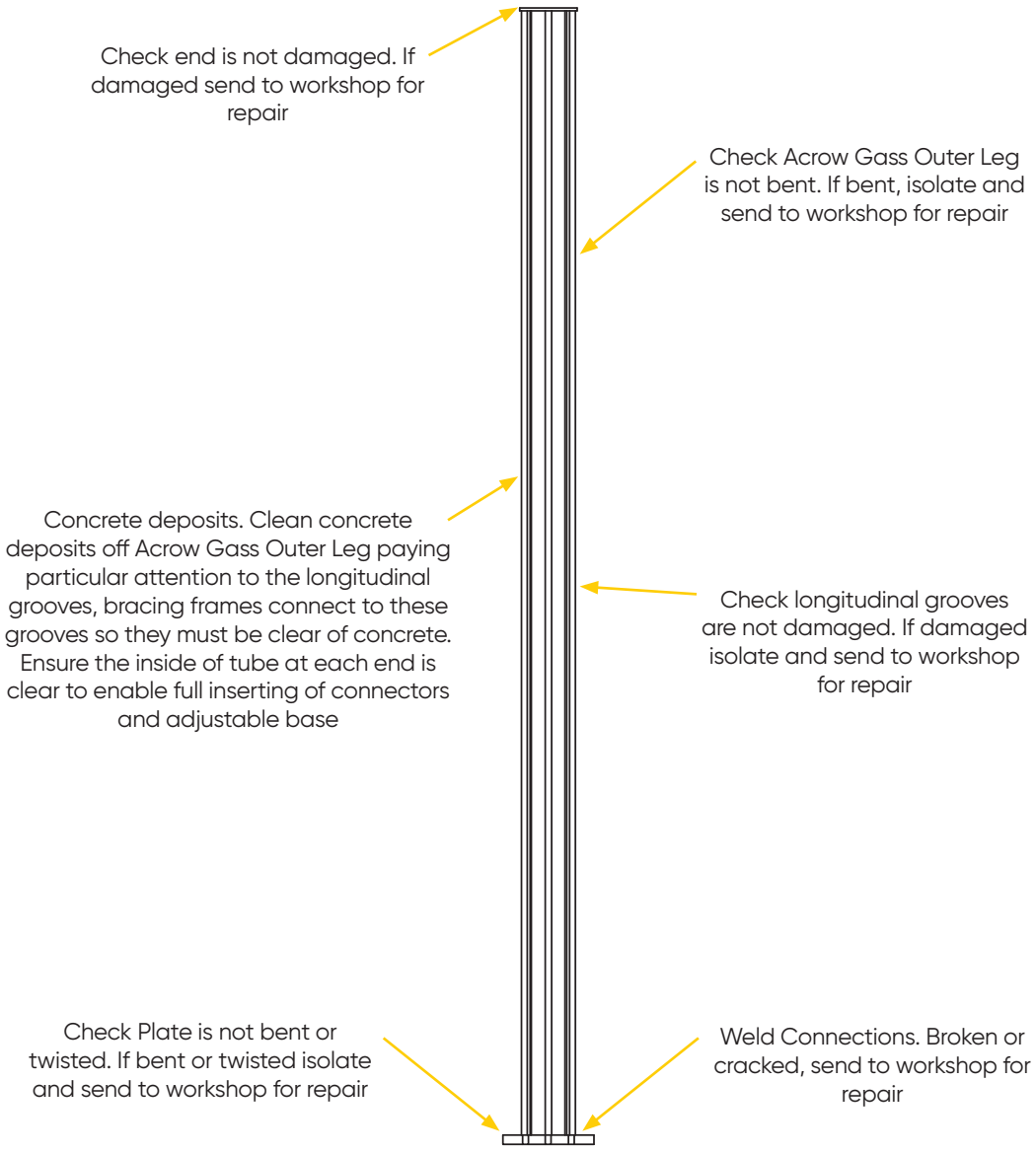
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | No build up permitted on base plate or stem particularly on thread | Remove build up with wire brush and scraper, clean threads and oil | |
| Cracked welds on base plate | Cracked welds are not permitted | Grind off welds and re-weld. Refer Work Instruction | |
| Nut not running freely | Nut must run freely along full length of the shaft thread | Remove any obstruction in thread, oil and free up, if not possible then replace nut | |
| Nut with broken or cracked handles | Handles must be intact | Replace nut | |
| Shaft is bent | Shaft must be straight | Straighten if possible ensure nut runs freely up and down full length of shaft after straightening. If not possible to straighten or nut does not run freely even after replacement then scrap. | |
| Base plate is bent | Base plate must be straight and at right angles to shaft | Repair, if not possible then remove and weld on a new base plate ensuring it is concentric and square to the stem in both plains | |
| Nut restraint screw missing or not effective | Nut restraint screw must be in place and work effectively to stop nut from winding past it | Replace screw and test to ensure it stops nut from going past it | |

Issues / Notes:

## 7. Maintenance & Inspection

### GASS Prop Outer



## 7. Maintenance & Inspection

### GASS Prop Outer Inspection

NAME: _____ CHECKED DATE: _____

Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

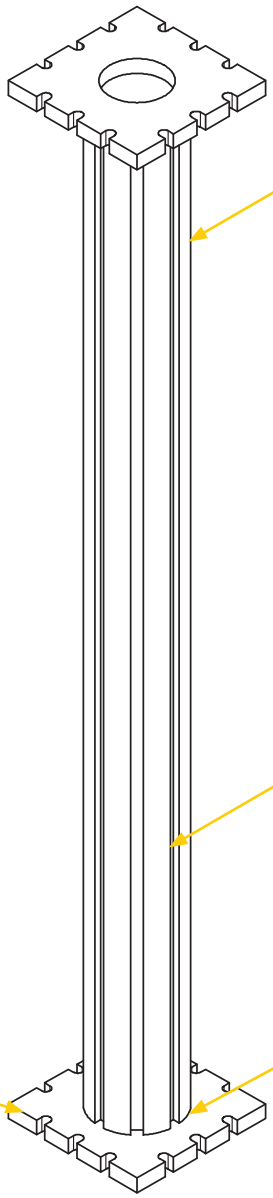
| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Gass Outer Leg bent or damaged | Gass Outer Leg must be straight and square to base plate | Straighten or cut back to smaller size using Acrow Manufacturing drawing as reference | |
| Cracked welds at end plate | Cracked welds not permitted | Grind and re-weld. Refer Work Instruction | |
| End plate is bent or twisted | End plate must be straight and at right angles to stem | Straighten if possible otherwise replace using Acrow Manufacturing drawing as reference | |
| Longitudinal grooves are damaged | Longitudinal grooves must be damaged and true to profile | Repair if possible, if not cut back to smaller size using Acrow Manufacturing drawing as reference | |
| Tube internal bore at ends clogged with concrete or dirt | No concrete build up is permitted internally at Outer Leg ends The bore at each end of the Outer Leg must be clear by 600mm to enable an adjustable base to fit inside | Clear bore with drift or similar tool otherwise cut back or scrap | |
| End of Acrow Gass Outer Leg damaged (flame cut or not cut square) | End of tube must be square. If frame cut or not cut square indicates it has been site cut and the length will be incorrect. | Cut back to next size down using manufacturing drawing as reference | |
| Build up of concrete or other matter | Outer surfaces and longitudinal grooves must be clear of concrete | Remove all concrete build up with scraper and wire brush | |

Issues / Notes:

# 7. Maintenance & Inspection

## Extension Legs

Concrete deposits on Acrow Gass Extension Leg. Clean concrete deposits off Acrow Gass Extension Leg paying particular attention to the longitudinal grooves, bracing frames connect to these grooves so they must be clear of concrete. Ensure the inside of tube at each end is clear to enable full inserting of connectors and adjustable base.



Check Acrow Gass Leg is not bent. If bent isolate and send to workshop for repair

Check longitudinal grooves are not damaged. If damaged isolate and send to workshop for repair

Check Plate is not bent or twisted. If bent or twisted isolate and send to workshop for repair

Check welds not cracked or broken. If cracked or broken, isolate and send to Workshop for reweld

# 7. Maintenance & Inspection

## Extension Legs Inspection

NAME: _____ CHECKED DATE: _____

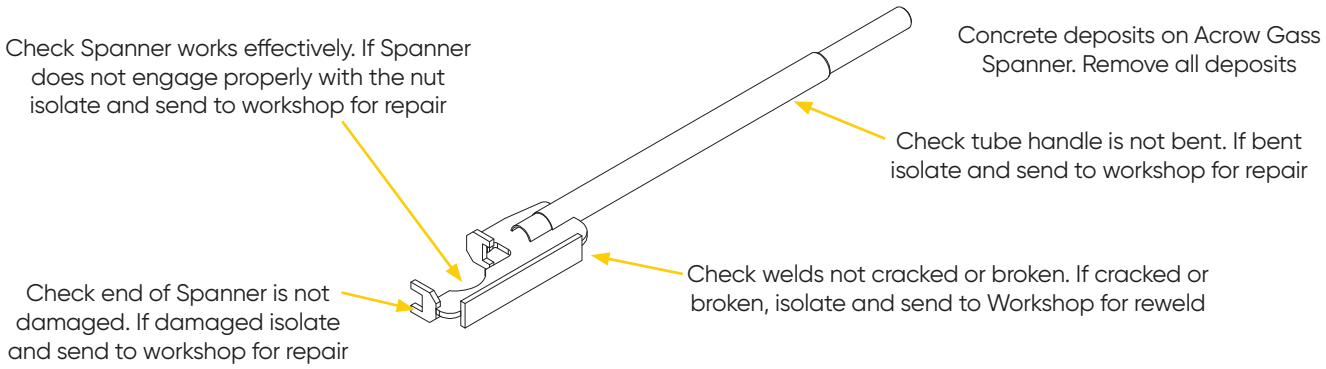
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Gass Extension Leg bent or damaged | Gass Extension Leg must be straight and square to base plate | Straighten or cut back to smaller size using Acrow Manufacturing drawing as reference | |
| Cracked welds at end plate | Cracked welds not permitted | Grind and re-weld. Refer Work Instruction WI-GE-100 | |
| End plate is bent or twisted | End plate must be straight and at right angles to stem | Straighten if possible otherwise replace using Acrow Manufacturing drawing as reference | |
| Longitudinal grooves are damaged | Longitudinal grooves must be undamaged and true to profile | Repair if possible, if not cut back to smaller size using Acrow Manufacturing drawing as reference | |
| Tube internal bore at ends clogged with concrete or dirt | No concrete build up permitted anternally at Extension Leg ends The bore at each end of the Leg must be clear by 600mm to enable an adjustable base to fit inside | Clear bore with drift or similar tool otherwise cut back or scrap | |
| Build up of concrete or other matter | Outer surface and longitudinal grooves must be clear of concrete | Remove all concrete build up with scraper and wire brush | |

Issues / Notes:

## 7. Maintenance & Inspection

### Spanner




NAME: _____ CHECKED DATE: _____

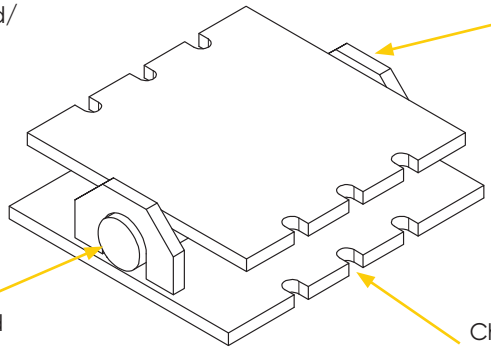
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Spanner must be clear of all concrete | Remove all concrete build up with wire brush a and scraper | |
| Cracked welds at end connection | Cracked welds not permitted | Grind and re-weld. Refer Work Instruction WI-GE-100 | |
| End of Spanner is bent or twisted | End of Spanner must be not be bent or twisted or damaged in any way | Straighten and repair if possible otherwise scrap | |
| Handle bent or twisted | Handle must be straight | Straighten | |
| Spanner does not work effectively | Spanner must work effectively | Find cause and rectify if not possible then scrap | |

Issues / Notes:

## 7. Maintenance & Inspection

### Rocking Head / Base Plate




NAME: _____ CHECKED DATE: _____

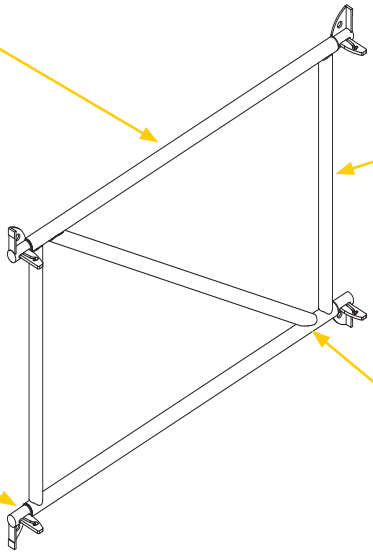
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Base plate must be clear of all concrete | Remove all concrete build up with wire brush or scraper | |
| Cracked welds | Cracked welds not permitted | Grind and re-weld. Refer Work Instruction WI-GE-100 | |
| Plates are bent or twisted | Plates must be straight | Straighten if possible otherwise scrap | |
| Plates not swiveling freely | Plates must swiveling freely | Find cause of problem and rectify it, grease shaft | |

Issues / Notes:

## 7. Maintenance & Inspection

### Bracing Frame




NAME: _____ CHECKED DATE: _____

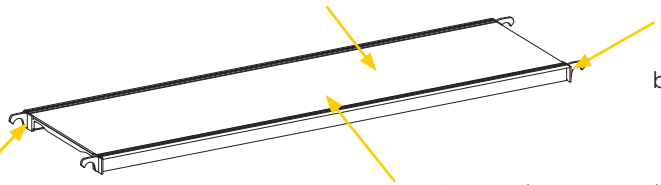
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | No build up permitted on truss members. All end connections must be clear of any concrete | Remove build up with wire brush and/or chipping hammer | |
| Bracing Frame bent or twisted | Bracing Frame must be straight and free of twist | Straighten if possible otherwise scrap. See WI-GE-103 for reference | |
| Damaged end connections or missing components | End connections must be intact with all components | Repair or replace any damaged ends and replace any missing components | |
| Cracked welds on Bracing Frame members | Cracked welds not permitted | Grind back cracked welds then re-weld | |
| Truss members damaged or bent | Truss members must be straight and undamaged | Straighten members or replace | |
| End connecting members cannot rotate 90 degrees | End connecting members must be able to rotate 90 degrees | Find cause and rectify If necessary replace end connecting components. | |

Issues / Notes:

# 7. Maintenance & Inspection

## Access Platform




NAME: _____ CHECKED DATE: _____

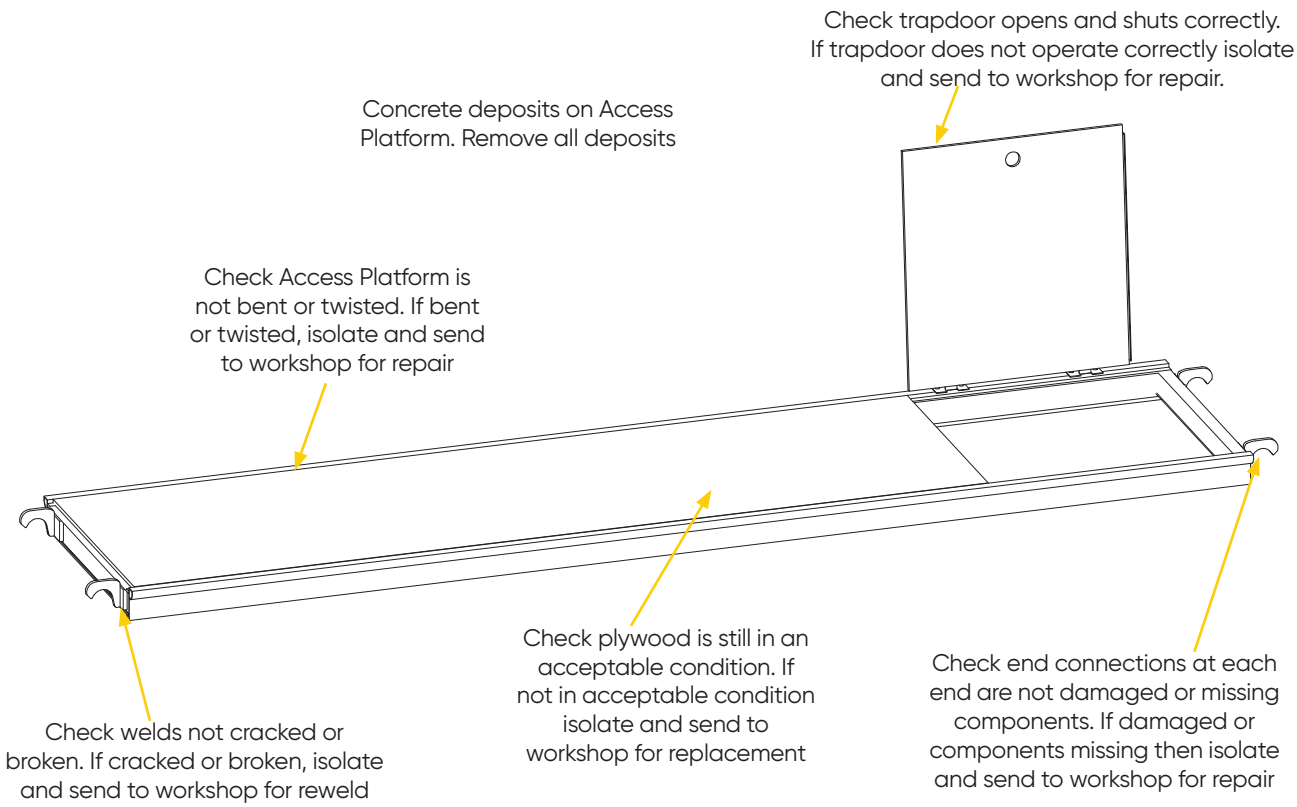
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Access Platform must be clear of all concrete | Remove all concrete build up with wire brush and scraper | |
| Cracked welds | Cracked welds not permitted | Grind and re-weld. Refer Work Instruction WI-GE-100 | |
| Access Platform bent or twisted | Access Platform must be straight and free of twist | Straighten if possible otherwise scrap.<br>See WI-GE-103 for reference | |
| Damaged end connections or missing components | End connections must be intact with all components | Repair or replace any damaged ends and replace any missing components | |
| Damaged or worn plywood | Plywood must be in acceptable condition to act as a working platform deck | Replace plywood | |

Issues / Notes:

# 7. Maintenance & Inspection

## Access Platform Trapdoors



# 7. Maintenance & Inspection

## Access Platform Trapdoors Inspection

NAME: _____ CHECKED DATE: _____

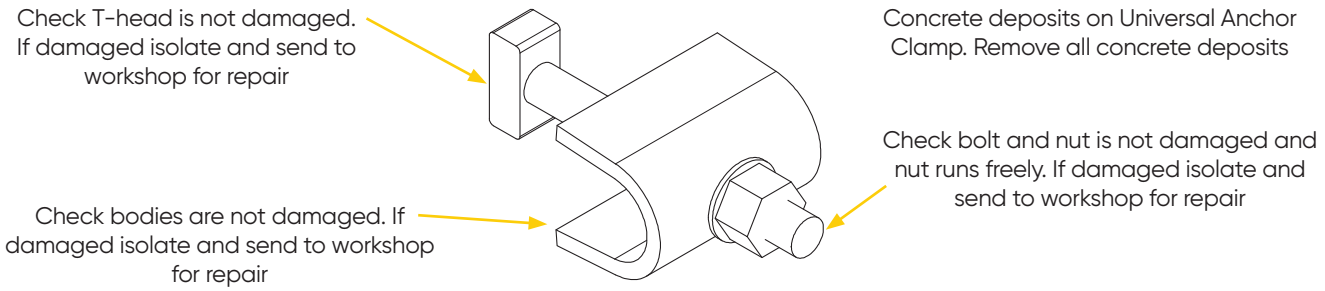
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Access Platform Trapdoor must be clear of all concrete | Remove all concrete build up with wire brush and scraper | |
| Cracked welds | Cracked welds not permitted | Grind and re-weld. Refer Work Instruction WI-GE-100 | |
| Access Platform bent or twisted | Access Platform must be straight and free of twist | Straighten if possible otherwise scrap.<br>See WI-GE-103 for reference | |
| Damaged end connections or missing components | End connections trapdoor must be intact with all components | Repair or replace any damaged ends and replace any missing components | |
| Damaged or worn plywood | Plywood must be in acceptable condition to act as a working platform deck | Replace plywood | |
| Trapdoor not opening and closing correctly | Trapdoors must open and shut easily and be perfectly flush when closed | Find cause, check frame is not twisted or hinge faulty. Rectify if possible otherwise replace with new trapdoor frame | |

Issues / Notes:

## 7. Maintenance & Inspection

### Universal Anchor Clamp




NAME: _____ CHECKED DATE: _____

Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Universal Anchor Clamp must be clear of all concrete | Remove all concrete build up with wire brush and clean thread | |
| Clamp body is bent or twisted | Universal Anchor Clamp must be undamaged and true to its profile | Straighten if possible otherwise replace damaged body | |
| Tee bolt and nut damaged | Tee bolt and nut must be straight and nut must run freely on bolt | Replace | |
| Damaged T-head | T-head must not be damaged | Repair if possible otherwise replace | |

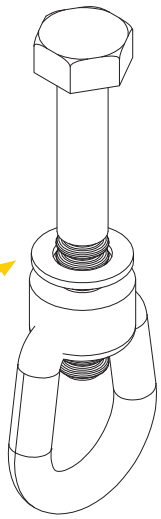
Issues / Notes:

## 7. Maintenance & Inspection

### Ring Bolt Clamp

Concrete deposits on Ring Bolt Clamp.
Remove all deposits

Check bolt runs freely on ring nut. If bolt does not run freely isolate and send to workshop for repair



NAME: _____ CHECKED DATE: _____

Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

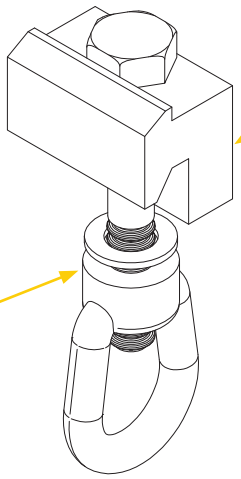
| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Ring Bolt Clamp must be clear of all concrete | Remove all concrete build up with wire brush and clean threads | |
| Bolt not running freely on ring nut | Bolt must run freely in ring nut | Find cause of problem and rectify if not possible then replace | |

Issues / Notes:

## 7. Maintenance & Inspection

### Ring Bolt Soldier Clamp

Concrete deposits on Ring Bolt Soldier Clamp. Remove all deposits



Check locating block is not damaged. If damaged isolate and send to workshop for repair

Check bolt runs freely on ring nut. If bolt does not run freely isolate and send to workshop for repair

NAME: _____ CHECKED DATE: _____

Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

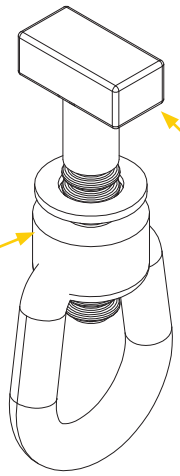
| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Ring Bolt Soldier Clamp must be clear of all concrete | Remove all concrete build up with wire brush and clean threads | |
| Damaged locating block | Locating block must not be damaged | Repair if possible otherwise replace | |
| Bolt not running freely on ring nut | Bolt must run freely in ring nut | Find cause of problem and rectify if not possible then replace offending component | |

Issues / Notes:

# 7. Maintenance & Inspection

## T-Bolt Clamp

Concrete deposits on T-Bolt Clamp. Remove all deposits



Check locating block is not damaged. If damaged isolate and send to workshop for repair

Check bolt runs freely on T-Bolt nut. If bolt does not run freely isolate and send to workshop for repair

NAME: _____ CHECKED DATE: _____

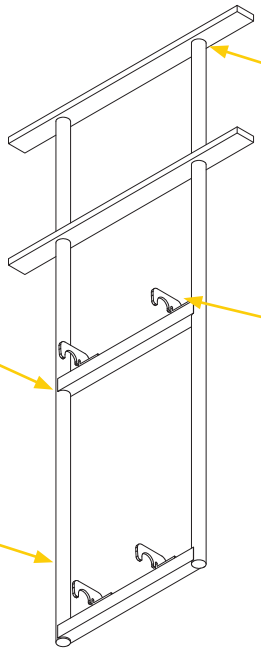
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | T-Bolt Clamp must be clear of all concrete | Remove all concrete build up with wire brush and clean threads | |
| Damaged T-head | T-head must not be damaged | Repair if possible otherwise replace | |
| T-head Bolt not running freely in ring nut | Bolt must run freely in ring nut | Find cause of problem and rectify if not possible then replace | |

Issues / Notes:

# 7. Maintenance & Inspection

## Advanced Handrail




NAME: _____ CHECKED DATE: _____

Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Advanced Handrail must be clear of all concrete | Remove all concrete build up with wire brush and scraper | |
| Vertical side members bent | Vertical side members must be straight | Straighten with flypress | |
| Cracked welds | Cracked welds not permitted | Grind back weld and re-weld. Refer Work Instruction WI-GE-100 | |
| Advanced Handrail bent or twisted | Advanced Handrail must be straight and free of twist | Straighten if possible otherwise scrap See WI-GE-103 for reference | |
| Damaged connecting brackets | Connecting brackets must be intact and undamaged | Repair or replace any damaged connecting brackets | |

Issues / Notes:

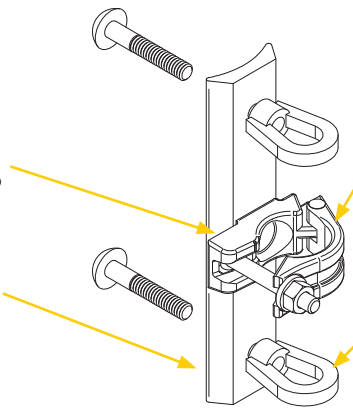
# 7. Maintenance & Inspection

## Leg Bracing Coupler

Concrete deposits on Leg Bracing Coupler. Remove all deposits

Check welds not cracked or broken. If cracked or broken, isolate and send to workshop for reweld

Check plate is not bent or twisted. If bent or twisted isolate and send to workshop for repair



Check half coupler is intact and not damaged and will effectively clamp onto a scaffold tube. If not intact, damaged or not capable of effectively clamping on to a scaffold tube isolate and send to workshop for repair

Check Leg Bracing Coupler has two bolts and ring nuts. If any missing isolate and send to workshop for repair

NAME: _____ CHECKED DATE: _____

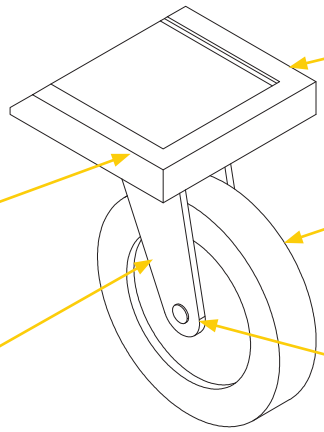
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Leg Bracing Coupler must be clear of all concrete | Remove all concrete build up with wire brush and clean threads | |
| Plate is bent, twisted or damaged | Plate must be straight and free of twist | Straighten or replace | |
| Cracked welds | Cracked welds not permitted | Grind back welds and re-weld. Refer Work Instruction WI-GE-100 | |
| Coupler not intact or damaged or not able to clamp onto scaffold tube | Half coupler must be intact and able to attach to a scaffold tube correctly | Repair if possible otherwise replace damaged components or replace entire half coupler | |
| Bolts and/or ring nuts damaged or missing | Bolts and ring nuts must be undamaged and working correctly | Repair or replace any damaged or missing bolts or ring nuts | |

Issues / Notes:

# 7. Maintenance & Inspection

## Castor Shoe




NAME: _____ CHECKED DATE: _____

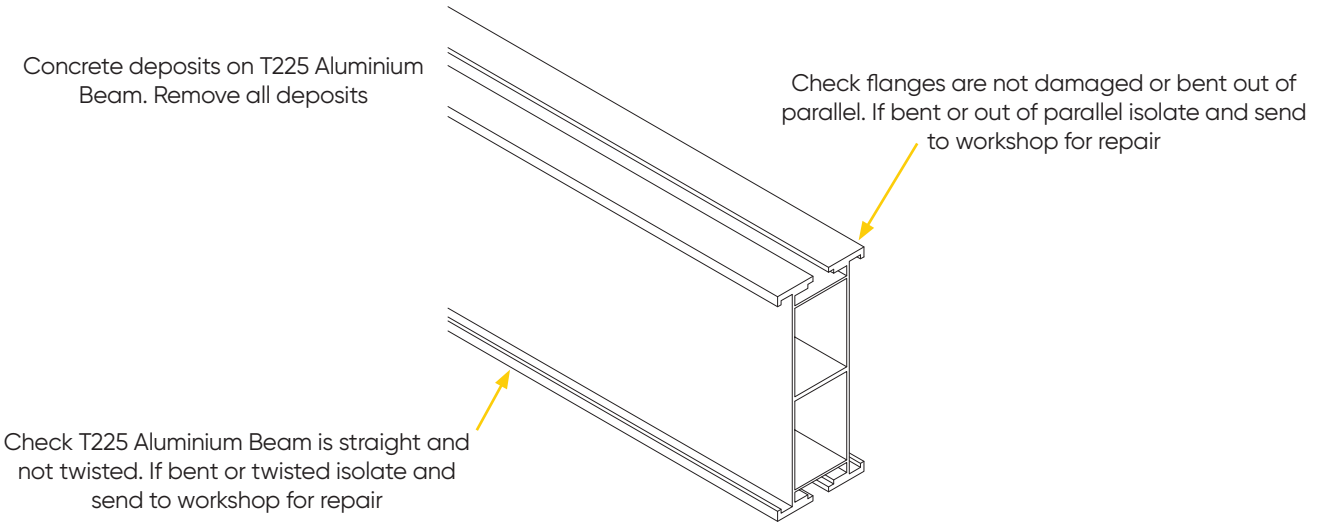
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Castor Shoe must be clear of all concrete | Remove all concrete build up with wire brush and scraper | |
| Castor wheel damaged | Castor wheel must be undamaged and true circular shape | Repair or replace | |
| Cracked welds | Cracked welds not permitted | Grind back welds and re-weld. Refer Work Instruction WI-GE-100 | |
| Connector plate is bent or twisted | Connector plate must be straight and undamaged | Straighten if possible otherwise scrap | |
| Wheel cheek plates bent or twisted | Wheel cheek plates must be straight and free of twist | Straighten if possible otherwise replace | |
| Wheel axle bent or wheel not spinning freely | Wheel axle must be straight and wheel must spin freely | Straighten if possible otherwise replace | |

Issues / Notes:

## 7. Maintenance & Inspection

### T225 Aluminium Beam




NAME: _____ CHECKED DATE: _____

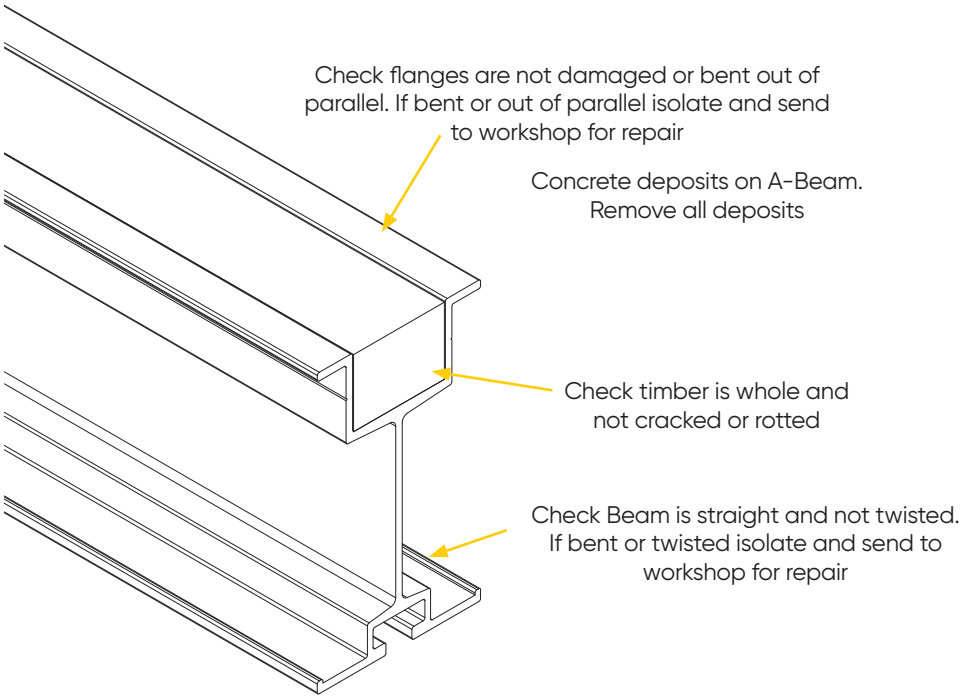
Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | T225 Aluminium Beam must be clear of all concrete | Remove all concrete build up with wire brush and scraper | |
| T225 Aluminium Beam bent or twisted | BT225 Aluminium Beam must be straight and free of twist | Straighten if possible otherwise cut back to smaller size | |
| Flanges damaged or bent out of parallel | All flanges must at right angle plane to the web and not out of parallel | Straighten if possible otherwise cut back to smaller size | |

Issues / Notes:

## 7. Maintenance & Inspection

### A-Beam




NAME: _____ CHECKED DATE: _____

Generally, visual inspection checking for the possible faults listed below. Please tick or cross the checked box.

| POSSIBLE FAULTS | DAMAGE LIMITS FOR REPAIR | RECOMMENDED ACTION | CHECKED |
|---|---|---|---|
| Build up of concrete or other matter | Beam must be clear of all concrete | Remove all concrete build up with wire brush and scraper | |
| Beam bent or twisted | Beam must be straight and free of twist | Straighten if possible otherwise cutback to smaller size | |
| Timber rotted or splinted | Timber must be whole and in good condition | Replace timber insert | |
| Flanges damaged or bent out of parallel | All flanges must at right angle plane to the web and not out of parallel | Straighten if possible otherwise cut back to smaller size | |

Issues / Notes:

# LOCATIONS

## NEW SOUTH WALES

National Head Office
Formwork & Scaffold
2a Mavis Street
Revesby NSW 2212
P: 02 9780 6500
F: 02 9780 6499
E: info@acrow.com.au

Sydney
Screens Head Office
13-15 Vallance Street
St Marys NSW 2760
P: 02 9219 1566

## VICTORIA

Melbourne
Formwork, Scaffold & Screens
1651-1657 Centre Road
Springvale VIC 3171
P: 03 9582 2777
F: 03 9582 2790

## QUEENSLAND

Brisbane
Formwork & Scaffold
280 Bilsen Road
Geebung QLD 4034
P: 07 3265 2266
F: 07 3865 0277

Beenleigh
Screens & Formwork
2 Morrison Lane
Beenleigh QLD 4207
P: 07 3807 9800

Beenleigh
Industrial Scaffold
22a Spanns Road
Beenleigh QLD 4207
P: 07 3442 4000

Gladstone
Industrial Scaffold
48 Chapple Street
Gladstone QLD 4680
P: 07 4972 3200

Mackay
Industrial Scaffold
247 Boundary Road E
Paget Mackay QLD 4740
P: 07 4952 1966

Townsville
Industrial Scaffold
8-12 Webb Drive
Mount St John QLD 4818
P: 1300 11 22 47

## SOUTH AUSTRALIA

Adelaide
Formwork & Scaffold
26 Circuit Drive
Hendon SA 5014
P: 08 8359 9700
F: 08 8359 1366

## WESTERN AUSTRALIA

Perth
Formwork & Scaffold
11 Jackson Street
Bassendean WA 6054
P: 08 9373 7200
F: 08 9379 3488

## TASMANIA

Hobart
Formwork & Scaffold
93 Lampton Avenue
Moonah TAS 7009
P: 03 6277 1212
F: 03 6277 1290

Launceston
Formwork & Scaffold
65 Boland Street
Launceston TAS 7250
P: 03 6324 8282
F: 03 6324 8250

acrow.

ENGINEERING & CONSTRUCTION

## Contact

Phone: 1300 138 362

www.acrow.com.au