

Sling Design program

Van Beest is sponsoring the Sling Design program developed by EngineeringSpreadsheets.

This program can be used for the design of 4 leg lifting slings in accordance with either:

- DNV Rules for Marine Operations,
- DNV Certification note 2.7-1 (offshore containers),
- EN 13414 Steel Wire Rope Slings

No longer is sling design time consuming, code dependant and costly!

EngineeringSpreadsheets has released a new version: 2-1:2009, for Excel 2007.

The main updates include:

- compatible with Microsoft Excel 2007
- better flow diagram and notes, for instructing the user which code to use.

A free demo of this software can be downloaded at:

http://www.engineeringsspreadsheets.co.uk/sling_pro.htm



(Click on logo)

For more information please contact us at sales@vanbeest.com

	SlingPro ver2-1:2009	1-5-2009	Client	Name of Client	Made by	Checked	Approved
	Full Version	Single User			ABC	DEF	GHI
	Licensed to	Company Name	Project	Name of Project	Date	Date	Date
	Address	Street Address Town, Postcode	Descript.	Description of the Design Item	Job no.	Revision	Page no.

SLING DESIGN

DNV : Offshore Containers

Design of a 4 leg sling, in accordance with DNV certification Note 2.7-1 : Offshore containers, April 2006. (& EN 12079-2 : 2006)
This code is recognised as complying with the EEC Machinery Directive, and the sling can be CE marked.

Units
 Metric - m, Te
 American - ft, ton

INPUT

Input factors

Weight of item = W (Te) =	4,00
Top leg length (m) =	1,00
Sling apex angle = α° =	90

The sling apex angle, should normally be $\alpha^\circ = 90^\circ$

Plan of the centre of gravity, and the 4 padeyes

Print

OUTPUT

Sling geometry	
Height of 4 legs = H (m) =	10,61
Diagonal plan length = d (m) =	21,21

Leg geometry		
Leg	Plan length (m)	True length (m)
1f	10,61	15,00

Sling, required WLL	
Weight of item = W (Te) =	4,00
Enhancement Factor =	2,207
WLLmin = f (Te) =	8,83

Sling leg, and shackle, required WLL	
Leg angle to the vertical = $\alpha^2 + \beta^2 =$	45,0
WLLs = f (Te) =	4,16

SLING COMPONENT SELECTION

Top Master Link	
WLLmin.req = (Te) =	8,83
Green Pin	
P-8835(srf-4)	WLL (Te)
Φ_{int} (mm) :-	20,00
Φ_{ext} (mm) :-	36 min

Top Leg	
WLLmin.req = (Te) =	8,83
Usha Martin, Hyflex	
6x19, type :-	WLL (Te)
SC1770	MBL (MBL/55)
Φ_{int} (mm) :-	12,00
Φ_{ext} (mm) :-	2,16
Φ_{ext} (mm) :-	13 min

Master Link Assembly	
WLLmin.req = (Te) =	8,83
Green Pin	
P-8835(srf-4)	WLL (Te)
Φ_{int} (mm) :-	17,00
Φ_{ext} (mm) :-	36 min
FofSreq	4,00
FofSprov	7,70

Sling Leg	
WLLs.req = (Te) =	4,16
Usha Martin, Hyflex	
MBL (MBL/55)	WLL (Te)
Φ_{int} (mm) :-	12,00
Φ_{ext} (mm) :-	2,16
Φ_{ext} (mm) :-	13 min
FofSreq	5,55
FofSprov	2,88

Shackle	
WLLs.req = (Te) =	4,16
Green Pin	
G-4183(srf-6)	WLL (Te)
Φ_{int} (mm) :-	4,75
Φ_{ext} (mm) :-	22 min
FofSreq	6,00
FofSprov	6,85

Dynamic Factors	
FofSreq	4,00
FofSprov	7,70

Static Factors	
FofSreq	3,84
FofSprov	9,13

The above are 'dynamic factors', assuming that only 3, of the 4 sling legs are working (and equally loaded)

The above are 'static factors', assuming that all 4 sling legs are working (and equally loaded)

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VAN BEEST BV, Manufacturer and Supplier of wire rope and chain fittings. Reg. trade marks 'Green Pin' and 'Excel'



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