

1. Introduction

The purpose of this material is for the calculation of the maximum allowable tiers of steel coil loading according to the ship's tanktop strength & for the mutual understanding.

2. Maximum allowable steel coil loading

The below table is showing the typical size of coil, but the uniform load calculation method will be applied for the exceptional size of coil in accordance with the ship's tanktop strength.

EX) Uniform load calculation method :

Tanktop width X Coil length including the space between rows X Tanktop strength
 = 23.5m X (1.25 + 0.15) X 18mt = 592mt (Max. permissible weight of each coil row)

1) CR Coil loading

Average weight (K/T)	Length (Meter)	Out-dia. (Meter)	No. of tier (Min.)	No. of tier (Normal)	No. of tier (Max.)
4~6	1.25	1.00	3	4	5
7	1.25	1.15	3	4	5
8	1.25	1.20	3	3	4
9	1.25	1.30	3	3	4
10	1.25	1.35	3	3	4
12	1.25	1.40	3	3	3.5
15	1.25	1.55	2	2.5	3
Over 20	1.25	1.80	2	2.5	2.5

2) HR Coil Loading

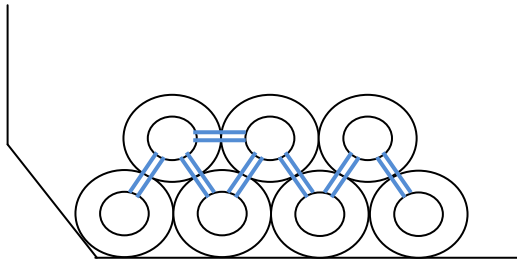
Average weight (K/T)	Length (Meter)	Out-dia. (Meter)	No. of tier (Min.)	No. of tier (Normal)	No. of tier (Max.)
10	1.25	1.35	3	3	4
15	1.25	1.55	2	2.5	3
20	1.25	1.80	2	2.5	2.5
25	1.25	1.95	2	2.5	2.5
30	1.25	2.00	2	2	2.3
32	1.25	2.05	2	2	2.3

3. Lashing & Securing

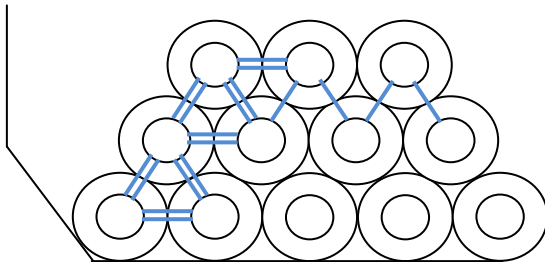
1) Lashing

- Steel coil lashing will be used the steel band with the below spec.
- Unit Strap Lifting Method(USLM)-Steel Bands 31.75mm(W) x 1.12mm(T) & two clips
- Pneumatic power tensioner and power sealer will be used.
- Dunnage chocking will not be applied between the coil rows, bulkheads & side hoppers.
- Only top tier coil will be secured.
- Side two coils will be secured by double lashing. (Others will be single lashing.)

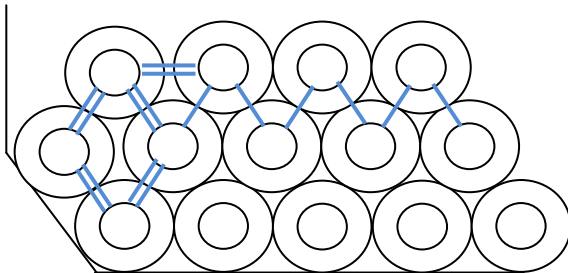
2) 2 Tiers case with over 20mt of coil weight : All double lashing



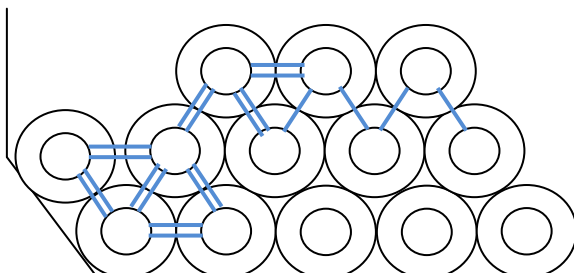
3) 3 Tiers case - 1



4) 3 Tiers case - 2



5) 3 Tiers case - 3



4. Dunnaging

1) Specification

Loading port	Thickness (cm)	Width (cm)	Length (cm)	Quality
Kwangyang	4	11	90	Wooden dunnage
Pohang	5	10	90	Wooden dunnage
Others	4	6~10	100~200	Wooden dunnage

☞ Under the "Free-In" term, the respective shipper will supply the qualified dunnages.

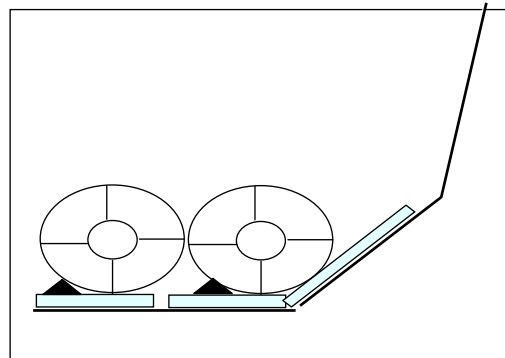
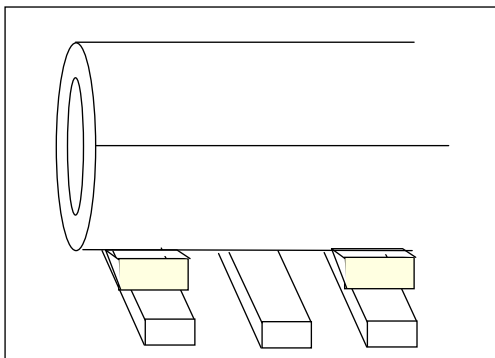
Kwangyang & Pohang coil loading is controlled by POSCO which is private steel mill.

Dunnage size & the number of dunnage points should be followed in accordance with the shipper's regulation.

2) Dunnaging point (Laying of dunnage)

Port	Coil weight	Coil Length	Dunnaging points
Kwangyang	Less than 20mt	Upto 1.5m	2
		Over 1.5m	3
	Over 20mt	Upto 1.2m	2
		Over 1.2m	3
Pohang	Less than 20mt	Upto 1.5m	3
		Over 1.5m	4
	Over 20mt	Upto 1.2m	4
		Over 1.2m	4
Others	Less than 20mt	N/A	3
	Over 20mt	N/A	4

3) Relevant drawing



☞ 2 Wedges will be inserted for each coil.

5. Relevant photos

1) Stowage



2) Lashing / Securing / Dunnaging



/// The End ///