Höganäs, Sweden, 2022-10-03

Cordstrap AnchorLash® 105.2 double lashing solution Certification of the compliance with the CTU Code MariTerm AB Certificate CS202202

MariTerm AB, Höganäs, Sweden, has on behalf of Cordstrap BV, Oostrum, the Netherlands, evaluated the strength and efficiency of the Cordstrap AnchorLash® 105.2 double bottom & top lashing solution according to the principles of the IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units (CTU Code).

Securing values are based on practical calculations excluding the MSL values of the anchor points and container roof lashing points. The evaluation has been based on the following properties and strengths in the equipment:

- Lashing length and elongation
- Lashing angles
- Principles from practical tests

A Cordstrap AnchorLash® 105.2 double lashing solution has the following component strengths:

- SnapHooks in horizontal parts: BS 3.000 daN (6,744 lbf); MSL 1.500 daN (3,372 lbf)
- Lashings: BS: 2.402 daN (5,400 lbf), in a system: BS 3.000 daN (6,744 lbf); MSL 2.250 daN (5,058 lbf)
- Buckles: BS 8.000 daN (17,985 lbf); MSL 4.000 daN (8,992 lbf)

Disclaimer (for excluding strength of lashing points)
The determination of the maximum cargo weight, as included in this document, does not consider the strength of the lashing points of the container. The CTU Code (Code of Practice for Packing of Cargo Transport Units, 2014), states in paragraph 6.2.5 that most general-purpose freight containers have (a limited number of) lashing rings or bars, which have a maximum securing load (MSL) of *at least* 10 kN in any direction for anchor points in the bottom area. Lashing points at the top rail have an MSL of *at least* 5 kN. The same paragraph also states that 'recently built freight containers have, in many cases, anchor points with a MSL of 20 kN'. If the minimum strengths of the lashing points are taken into account, this will affect the cargo weight that can be secured.

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Disclaimer (for calculations)

Calculations are based on a standardized loading configuration and container construction. The max cargo weight that can be secured may differ as a result of differences in height of lashings at cargo front, position of cargo front, position of lashing points, variances in lashing angles and variances in or changing of friction coefficients. A deviation of ±10% is assumed to be reasonable.

It is hereby certified that the Cordstrap AnchorLash® 105.2 double lashing solution is an acceptable securing arrangement and fully complies with the CTU Code for the securing of the cargo weights given in the tables below. The calculations underlying these tables can be found in CS202202-A AnchorLash 105.2 double lashing – Appendix to certificate CS202202.

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Lashing tables

The lashing tables below are based on the following modes of transport and accelerations:

Mode of transport	Horizontal acceleration	Vertical acceleration
Road (doors to the rear) and rail transport (doors in any direction)	0,5 g	1,0 g
Road transport (doors to the front)	0,8 g	1,0 g
Sea transport (sea area C – unrestricted)	0,4 g	1 ± 0,8 g

AnchorLash® 105.2 double bottom & top lashing – 20ft CTU

Metric units

Friction factor, µ	Secured cargo weight in ton		
	Road (Doors to rear) & Rail	Road (Doors to front)	Sea area C
0,0	16,3	10,2	20,4
0,1	19,2	11,2	21,2
0,2	23,3	12,5	22,0
0,3	29,6	14,2	23,0
0,4	40,8	16,3	24,0
0,45	50,2	17,6	24,5
0,5	no slide	19,2	25,1
0,6	no slide	23,3	26,3
0,7	no slide	29,6	27,6

Imperial units

Friction factor, µ	Secured cargo weight in lbs		
	Road (Doors to rear) & Rail	Road (Doors to front)	Sea area C
0.0	35,945	22,466	44,931
0.1	42,288	24,790	46,682
0.2	51,350	27,650	48,574
0.3	65,354	31,256	50,627
0.4	89,862	35,945	52,860
0.45	110,599	38,859	54,052
0.5	no slide	42,288	55,300
0.6	no slide	51,350	57,976
0.7	no slide	65,354	60,923

AnchorLash® 105.2 double bottom & top lashing – 40ft CTU

Metric units

Friction factor, μ	Secured cargo weight in ton		
	Road (Doors to rear) & Rail	Road (Doors to front)	Sea area C
0,0	16,3	10,2	20,4
0,1	19,2	11,2	21,2
0,2	23,3	12,5	22,0
0,3	29,6	14,2	23,0
0,4	40,8	16,3	24,0
0,45	50,2	17,6	24,5
0,5	no slide	19,2	25,1
0,6	no slide	23,3	26,3
0,7	no slide	29,6	27,6

Imperial units

Friction factor, μ	Secured cargo weight in lbs		
	Road (Doors to rear) & Rail	Road (Doors to front)	Sea area C
0.0	35,945	22,466	44,931
0.1	42,288	24,790	46,682
0.2	51,350	27,650	48,574
0.3	65,354	31,256	50,627
0.4	89,862	35,945	52,860
0.45	110,599	38,859	54,052
0.5	no slide	42,288	55,300
0.6	no slide	51,350	57,976
0.7	no slide	65,354	60,923

AnchorLash® 105.2 double bottom split lashing – 40ft CTU

Metric units

Friction factor, µ	Secured cargo weight in ton		
	Road (Doors to rear) & Rail	Road (Doors to front)	Sea area C
0,0	16,3	10,2	20,4
0,1	19,2	11,2	21,2
0,2	23,3	12,5	22,0
0,3	29,6	14,2	23,0
0,4	40,8	16,3	24,0
0,45	50,2	17,6	24,5
0,5	no slide	19,2	25,1
0,6	no slide	23,3	26,3
0,7	no slide	29,6	27,6

Imperial units

Friction factor, µ	Secured cargo weight in lbs		
	Road (Doors to rear) & Rail	Road (Doors to front)	Sea area C
0.0	35,945	22,466	44,931
0.1	42,288	24,790	46,682
0.2	51,350	27,650	48,574
0.3	65,354	31,256	50,627
0.4	89,862	35,945	52,860
0.45	110,599	38,859	54,052
0.5	no slide	42,288	55,300
0.6	no slide	51,350	57,976
0.7	no slide	65,354	60,923

Notes regarding the application of the Cordstrap AnchorLash® 105.2 solution

Soft or deformable cargo should be adequately protected against breakage, damage or significant deformation, e.g. by applying edge protection and/or blocking boards. Appropriate measures should be applied to keep the lashing in the right position.

Please note that the values of secured cargo weight might differ slightly for specific solutions with different dimensions.