

**ATTESTATO DI VERIFICA VOLONTARIA**  
**CONFORMITA' AI RESS DELLA DIRETTIVA 2006/42/CE (ALL. I)**  
**VOLUNTARY CERTIFICATE OF COMPLIANCE WITH SAFETY REQUIREMENTS OF**  
**DIRECTIVE 2006/42/EC (ANNEX I)**

Attestato di Verifica volontaria n° 15.500.0131dd 4/3/2015    Commessa /Job number 90.14.9839  
*Voluntary Certificate n°*

**Fabbricante/Manufacturer: Neade Ind. De Prod. Para Elevação e Movimentoçao**

**Indirizzo/Address: rua dos Pescadores, 170 – Cambuci Sao Paulo**

La macchina con le caratteristiche di cui sotto è stata sottoposta a verifica di tipo volontario di adeguatezza dei requisiti di sicurezza di cui all'Allegato I della Direttiva 2006/42/CE

*The machine with the characteristics listed below has been subject to peer review of a voluntary adequacy of the safety requirements of Annex I of Directive 2006/42/EC*

Tipologia di macchina: <i>Machinery typology:</i>	Lifting accessories	Macchine e Modello: <i>Machinery and Model:</i>	<ul style="list-style-type: none"> <li>▪ Steel wire rope for general lifting use</li> <li>▪ Components for slings</li> <li>▪ Termination for steel rope (thimble and ferrule)</li> </ul>
Documento di riferimento: <i>Reference document:</i>	Technical Drawings nn: 400019.1; 510139C; 510141B;	Anno di costruzione: <i>Year of manufacture:</i>	2014
Potenza termica uscita: <i>Power out:</i>	N.A.	Potenza elettrica in ingresso: <i>Electric power in:</i>	N.A.
Pressione di progetto (bar): <i>Design pressure (bar):</i>	N.A.	Temperatura in /out acqua: <i>Water temperature in/out:</i>	N.A.
Tensione Alimentazione <i>Voltage supply:</i>	N.A.	Peso massimo: <i>Max weight:</i>	N.A.
Portata acqua: <i>Water supply:</i>	N.A.	Vita tecnologia prevista: <i>Estimated service life:</i>	N.A.



# SGS

SGS Italia S.p.A., in quanto Ente esperto per la Direttiva 2006/42/CE, attesta che la macchina/attrezzatura/dispositivo, sottoposta dal produttore (vedi sopra) alla verifica volontaria, è stata progettata e costruita in conformità ai requisiti di sicurezza e tutela della salute della Direttiva 2006/42/CE.

*SGS Italy SpA, as an expert body for the Directive 2006/42/EC certifies that the machine / equipment / device, submitted by the manufacturer (see above) to voluntary testing, was designed and constructed in compliance with requirements of safety and health protection of Directive 2006/42/EC.*

La verifica volontaria è avvenuta per mezzo di:  
*The voluntary verification has occurred by means of:*

visita ispettiva eseguita presso il produttore con esito finale soddisfacente  
*inspection visit carried out from the manufacturer with a satisfactory outcome*

I risultati delle verifiche sono contenuti nel rapporto di visita RVV.DM.MI.14.008.  
*The results of the visits are on Technical Reports RVV.DM.MI.14.008*

Resp.Tecnico Direttiva machine

*Technical Responsible Machinery Directive*

*Stefano Meero Carlini*

On behalf of

Business Manager Industrial Services

*[Signature]*

Date 04/03/2015



*[Signature]*

"Il presente attestato si riferisce unicamente al prototipo sopra indicato e ai macchinari che esso rappresenta limitatamente alla richiesta di verifica volontaria dei RESS (requisiti essenziali di sicurezza e salute sul lavoro) di cui all'allegato I della Direttiva 2006/42/CE. L'attestato non costituisce certificazione di prodotto e non potrà in alcun modo essere utilizzato per fini commerciali e/o pubblicitari da parte dell'azienda in favore del quale l'attestato è stato rilasciato. La macchina dovrà essere utilizzata secondo il proprio manuale d'istruzioni e, comunque, nel rispetto della legislazione e delle procedure in vigore nel paese di utilizzo."

*"This certificate relates solely to identified above and the prototype machine that it is limited to the request for voluntary testing of ESSR (essential safety and health) of Annex I of Directive 2006/42/EC. The certificate does not constitute certification of the product and can not in any way be used for commercial purposes and / or advertising by the company on whose behalf the certificate was issued. The machine must be used according to its instruction manual and in any case, according to the laws and procedures in force in the country of use."*



<b>INSPECTION REPORT VOLUNTARY</b>  <i>RAPPORTO DI VISITA/ VERIFICA VOLONTARIA</i>	No. RVV.DM.MI.14.008	DATED 12/11/2014	JOB/COMMESSA.: 14.9839	
	<b>Inspection at / Attività presso:</b> <input checked="" type="checkbox"/> manufacturer/fabbricante <input type="checkbox"/> user/utilizzatore <input type="checkbox"/> other/ altro	<b>Report / Rapporto:</b> <input type="checkbox"/> Intermediate / Intermedio <input type="checkbox"/> Surveillance / Sorveglianza ..... <input checked="" type="checkbox"/> Final / Finale - Review Check list after SGS Brazil inspection		
<b>General Data / Informazioni Generali</b>				
COMPANY / SOCIETA': NEADE Ind. de Prod. para Elevação e Movimentação de Cargas		Reference Standard and Directive / Normativa, Legislazione e Documenti di riferimento:		
Address/ INDIRIZZO: Rua dos Pescadores, 170, Cambuci, São Paulo		Machinery Directive 2006/42/EC <input checked="" type="checkbox"/> DLgs 81/2008 <input type="checkbox"/> Directive EC : ..... Other: .....		
INSPECTION PLACE/ LUOGO DELLA VISITA (se diverso dall'indirizzo)				
PEOPLE ATTENDING DURING THE VISIT / PRESENTI DURANTE LA VISITA – DATE / DATA				
Name		Company		Date/Data
Marcio Pragana		SGS do Brasil - Barueri		30/09/2014
Bruno Lira		SGS do Brasil - Barueri		30/09/2014
<b>Material Description / Descrizione oggetto della verifica</b>				
<input type="checkbox"/> Macchina / Machinery				
<input type="checkbox"/> Partly completed machinery /Quasi macchina				
<input type="checkbox"/> Assembly/ Insieme – Linea completa				
<input checked="" type="checkbox"/> Lifting accessories/Accessorio di sollevamento				
<input type="checkbox"/> Safety accessories/Dispositivo di sicurezza				
<input type="checkbox"/> Other/Altro				
Main Technical data / Dati tecnici e caratteristiche principali				
Load/Peso _____ Kg		N° cycles /N° cicli _____		
Speed /velocità _____		_____		

Visit or inspection description/ Descrizione della visita di verifica in campo			
Test	Description/Descrizione	Result/Esito	
<input checked="" type="checkbox"/> Review documentaton	By SGS Italy (check list for inspection preparation and review – By SGS do Brasil on site	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> KO
<input checked="" type="checkbox"/> Visual Inspection	By SGS do Brasil	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> KO
<input checked="" type="checkbox"/> Measurements/Misurazioni	Test report – By SGS do Brasil	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> KO
<input checked="" type="checkbox"/> Mech. Test/Prove mecc.	Test report - By SGS do Brasil	<input checked="" type="checkbox"/> OK	<input type="checkbox"/> KO
<input type="checkbox"/> Electr. Test/Prove elettr.	N.A	<input type="checkbox"/> OK	<input type="checkbox"/> KO
<input type="checkbox"/> Other/Altro		<input type="checkbox"/> OK	<input type="checkbox"/> KO



Auditor/ispettore: <u>L.Zerella-SGS Italy - documentation preparation and review</u> Signature/Firma: _____ Data : 07/11/2014	Deputy Society/ Rappresentante dell'Azienda visitata: _____ Signature/Firma : _____
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<b>Enclosed to carry SGS / Allegati da riportare in SGS</b>
<input type="checkbox"/> DRAWINGS/ DISEGNI
<input type="checkbox"/> OPERATING MANUAL /ESTRATTO MANUALE USO
<input type="checkbox"/> RISK ANALYSIS DOC./DOCUMENTO ANALISI DEI RISCHI
<input type="checkbox"/> TEST REPORT
<input type="checkbox"/> PHOTOS / FOTO
<input checked="" type="checkbox"/> OTHER/ ALTRO – check list prepared by SGS Italy – completed by SGS Brazil Inspector

**Notes and details of the inspection/ Note – Dettagli della visita**

**Abstract and scope of work**

Neade, Brazilian industry manufacturer of lifting accessories, asked SGS as an expert body, to verify the compliance with the safety requirements of Annex I of the Machinery Directive 2006/42/EC.  
 SGS has prepared a checklist for the inspectors of SGS do Brasil on site, on the basis of harmonized standards for the Machinery Directive and the type of products. The checklist was used as a guide during the inspection technicians SGS Brazil viewing respectively, drawings, technical documentation, test reports and products.

**Preliminary note**

The checklist is divided into a general part (general requirements of the Machinery Directive) and a part where there are requirements related to the specific rules for products.  
 The products of which Neade has been asked to verify:

- Steel wire rope for general lifting use;
- Components for slings;
- Termination for steel rope (thimble and ferrule)

Neade produce the above products according to current Brazilian standards and European standards, and which assembles products (e.g. components for slings) uses products (typically hooks) already CE marked.  
 Neade is ISO 9001 certified.

European Reference standards:

Directive 2006/42/CE : Annex I, II, III, VII, VIII
EN 12100:2010 - Safety machinery, general design principles, risk assessment and reduction;
EN 14121-1:2013 - Safety machinery, Risk assessment guide;
EN 12385-1:2009; EN 12385-2/2/3/4:2002 - Steel wire rope- Safety
EN 13411-1/2/3 - Terminations for steel wire ropes
EN 1677-1/2/3/4 - Components for slings

**Visual inspection /Review documentation /check list results**

1. Results of visual and inspection and **general requirements for all products:**

Subject of assessment	Result of assessment
Design documents	positive
Test report or Certificates	positive
Hazard analysis and risk asses.	positive



Description requirement	Result of assessment
Technical file: drawings, design notes with code used, hazard analysis, materials and certificates, report and certificates for tests, user manual	OK
Quality System of manufacture	OK
Mark with main data (if already made, the CE marking and declaration of conformity)	OK

**2. Results for the products Steel wire rope for general lifting use:**

Description requirement	Ref. Std	Result of assessment
Rope grade, wire tensile strength, steel core or polymer core, classes	EN 12385-1 EN 12385-2 EN 12385-4	OK
Diameter tolerances (tables or report); breaking forces vs. diameter and classes	EN 12385-1 EN 12385-2 EN 12385-4	OK
Material certificates ; user recommendations (with use example)	EN 12385-1 EN 12385-2 EN 12385-4	OK

**3. Results for the products Slings:**

Description requirement	Result of assessment
Diameter and measures vs WLL (max charge); grade,	All components have CE mark
Material chemical compositions and certificates, heat treatment and report	All components have CE mark
Welding	All components have CE mark
Manufacture proof force (MPF); Breaking force (BF); fatigue resistance; bend deflection; verifications and report - qualification personnel, type test and examination, test for deformation and for elongation, bend test, fatigue test.	All components have CE mark
User instructions, Manufacturer Certificate or declaration with compliance to the standards	All components have CE mark

**4. Results for the product Termination for steel rope (thimble and ferrule):**

Description requirement	Ref. Std	Result of assessment
Steel conforming to EN 10025; if zinc coated in accordance with ISO1461	EN 13411-1:2009 EN 13411-2:2009 EN 13411-3:2009 EN 12385-2:2002 EN 12385-4:2002	OK
Class rope, test verification /breaking test results	EN 13411-1:2009 EN 13411-2:2009 EN 13411-3:2009 EN 12385-2:2002 EN 12385-4:2002	OK
Record of material certificates, user instruction and measure indications	EN 13411-1:2009 EN 13411-2:2009 EN 13411-3:2009 EN 12385-2:2002 EN 12385-4:2002	OK

Manufacturer certificate with compliance to the standard (minimum) indicated	EN 13411-1:2009 EN 13411-2:2009 EN 13411-3:2009 EN 12385-2:2002 EN 12385-4:2002	OK
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**Final results**

Following the positive assessment made by the inspectors of SGS do Brasil on site, the assessment on the satisfaction of the safety requirements of Annex I to Directive 2006/42 / EC is positive.

In the final analysis it is useful to remind the manufacturer of always providing products of the declaration of conformity and the use and maintenance, as well as SGS do Brasil must retain a copy of the documentation just mentioned.

Conclusions of the inspection or visit / Conclusioni della visita di verifica volontaria	
<input checked="" type="checkbox"/> SATISFACTORY / SODDISFACENTE  <input type="checkbox"/> RECOMMENDED CE MARKING (only in case check of internal manufacture) / SI PUO' RACCOMANDARE LA MARCATURA CE (solo se si tratta di verifica interna della fabbricazione)	<input type="checkbox"/> NOT SASFACTORY/ NON SODDISFACENTE  <input type="checkbox"/> REMARKS OR RECOMMENDED ACTIONS/ OSSERVAZIONI, SI CONSIGLIANO AZIONI CORRETTIVE  <hr/> <hr/>

Date/Data 12/11/2014

Signature /Firma



Stamp and Signature/ Timbro e Firma	
<div style="border: 1px solid black; padding: 5px;"> <p><b>SGS</b> SGS ITALIA S.p.A.</p> <p>Witnessed <input type="checkbox"/></p> <p>Review <input checked="" type="checkbox"/></p> <p>Noted for information only <input type="checkbox"/></p> <p>7/11/14 </p> <p>Date Signature</p> <p>45</p> </div>	

Reserved SGS Italy / Riservato a SGS Italia	
Confirmation visit result / Conferma esito visita <input type="checkbox"/> SI <input type="checkbox"/> NO	
REPORT VERIFICATION/SIGLA VERIFICA RAPPORTO (RT) _____	





**Laço de Cabo de aço AA (1 Perna)**

CABO		ANEL DE CARGA				MANILHA (CURVA)				MANILHA (RETA)				SAPATILHO		PRESILHA	
Poligada	Cimat	Gunnebo		KWB		Crosby	Van Beest	Juli	Crosby	Van Beest	Juli	Crosby	Van Beest	Juli	Crosby	Fischer	Neade / Esco
		Sem Sub-Elo (M)	Com Sub-Elo (MT)	Sem Sub-Elo (A)	Com Sub-Elo (TG)												
1/4"	6,4	0,5	M-6-10	A 13	-	1256932	0,75 TON.	0,75 T. - 5/16	5/16"	1,0 TON.	1 T. - 3/8	5/16"	1,0 TON.	1 T. - 3/8	3/8"	SPF 516	17,46
5/16"	8,0	0,8	M-6-10	A 13	-	1256932	1,0 TON.	1 T. - 3/8	3/8"	1,0 TON.	1 T. - 3/8	3/8"	1,0 TON.	1 T. - 3/8	3/8"	SPF 516	19,1
3/8"	9,5	1,1	M-86-10	A 13	-	1256932	1,5 TON.	1,5 T. - 7/16	7/16"	2,0 TON.	2 T. - 1/2	7/16"	2,0 TON.	2 T. - 1/2	1/2"	SPF 38	23,81
7/16"	11,0	1,5	M-86-10	A 13	-	1256932	2,0 TON.	2 T. - 1/2	1/2"	2,0 TON.	2 T. - 1/2	1/2"	2,0 TON.	3,25 T. - 5/8	5/8"	SPF 12	31,75
1/2"	13,0	2,0	M-86-10	A 16	-	1256932	2,0 TON.	2 T. - 1/2	1/2"	3,25 TON.	3,25 T. - 5/8	5/8"	3,25 TON.	3,25 T. - 5/8	5/8"	SPF 12	31,75
9/16"	14,0	2,5	M-108-10	A 16	-	1256932	3,25 TON.	3,25 T. - 5/8	5/8"	4,75 TON.	4,75 T. - 3/4	3/4"	4,75 TON.	4,75 T. - 3/4	3/4"	SPF 58	38,1
5/8"	16,0	3,2	M-108-10	A 18	-	1257072	3,25 TON.	3,25 T. - 5/8	5/8"	4,75 TON.	4,75 T. - 3/4	3/4"	4,75 TON.	4,75 T. - 3/4	3/4"	SPF 58	38,1
3/4"	19,0	4,5	M-1310-10	A 22	-	1257072	4,75 TON.	4,75 T. - 3/4	3/4"	6,5 TON.	6,5 T. - 7/8	7/8"	6,5 TON.	6,5 T. - 7/8	7/8"	SPF 34	44,95
7/8"	22,0	6,1	M-1613-10	A 26	-	1257072	6,5 TON.	6,5 T. - 7/8	7/8"	8,5 TON.	8,5 T. - 1	1"	8,5 TON.	8,5 T. - 1	1"	SPF 78	50,8
1"	26,0	8,1	M-19-10	A 32	-	1257212	8,5 TON.	8,5 T. - 1	1"	9,5 TON.	9,5 T. - 1 1/8	1 1/8"	9,5 TON.	9,5 T. - 1 1/8	1 1/8"	SPF 1	58,74
1 1/8"	29,0	9,8	M-2016-10	A 36	-	1257282	12,0 TON.	12 T. - 1 1/8	1 1/8"	12,0 TON.	12 T. - 1 1/4	1 1/4"	12,0 TON.	12 T. - 1 1/4	1 1/4"	SPF 118	63,5
1 1/4"	32,0	12,7	M-2016-10	A 36	-	1257382	13,5 TON.	13,5 T. - 1 1/4	1 1/4"	13,5 TON.	13,5 T. - 1 3/8	1 3/8"	13,5 TON.	13,5 T. - 1 3/8	1 3/8"	SPF 114	71,43
1 3/8"	35,0	15,3	M-2220-10	A 36	-	1257422	17,0 TON.	17 T. - 1 3/8	1 3/8"	17,0 TON.	17 T. - 1 1/2	1 1/2"	17,0 TON.	17 T. - 1 1/2	1 1/2"	SPF 112	76,2
1 1/2"	38,0	18,1	M-2220-10	A 36	-	1257492	17,0 TON.	17 T. - 1 1/2	1 1/2"	25,0 TON.	25 T. - 1 3/4	1 3/4"	25,0 TON.	25 T. - 1 3/4	1 3/4"	SPF 112	82,55
1 3/4"	45,0	24,3	M-3226-10	A/T 45	-	1257562	25,0 TON.	25 T. - 1 3/4	1 3/4"	35,0 TON.	35 T. - 2	2"	35,0 TON.	35 T. - 2	2"	SPF 134	97,6
2"	51,0	32,4	M-3226-10	A/T 56	-	1257562	35,0 TON.	35 T. - 2	2"	42,5 TON.	55 T. - 2 1/2	2 1/2"	42,5 TON.	55 T. - 2 1/2	2 1/2"	SPF 2	111,1

**Laço de Cabo de aço AA (2 Pernas de 0-45°)**

CABO		ANEL DE CARGA				MANILHA (CURVA)				MANILHA (RETA)				SAPATILHO		PRESILHA	
Poligada	Cimat	Gunnebo		KWB		Crosby	Van Beest	Juli	Crosby	Van Beest	Juli	Crosby	Van Beest	Juli	Crosby	Fischer	Neade / Esco
		Sem Sub-Elo (M)	Com Sub-Elo (MT)	Sem Sub-Elo (A)	Com Sub-Elo (TG)												
1/4"	6,4	0,6	M-6-10	A 13	-	1256932	0,75 TON.	0,75 T. - 5/16	5/16"	1,0 TON.	1 T. - 3/8	5/16"	1,0 TON.	1 T. - 3/8	3/8"	SPF 516	17,46
5/16"	8,0	1,1	M-86-10	A 13	-	1256932	1,0 TON.	1 T. - 3/8	3/8"	1,0 TON.	1 T. - 3/8	3/8"	1,0 TON.	1 T. - 3/8	3/8"	SPF 516	19,1
3/8"	9,5	1,6	M-86-10	A 13	-	1256932	1,5 TON.	1,5 T. - 7/16	7/16"	2,0 TON.	2 T. - 1/2	7/16"	2,0 TON.	2 T. - 1/2	1/2"	SPF 38	23,81
7/16"	11,0	2,1	M-108-10	A 16	-	1256932	2,0 TON.	2 T. - 1/2	1/2"	3,25 TON.	3,25 T. - 5/8	5/8"	3,25 TON.	3,25 T. - 5/8	5/8"	SPF 12	31,75
1/2"	13,0	2,8	M-108-10	A 16	-	1257002	2,0 TON.	2 T. - 1/2	1/2"	3,25 TON.	3,25 T. - 5/8	5/8"	3,25 TON.	3,25 T. - 5/8	5/8"	SPF 12	31,75
9/16"	14,0	3,4	M-13-10	A 18	-	1257002	3,25 TON.	3,25 T. - 5/8	5/8"	4,75 TON.	4,75 T. - 3/4	3/4"	4,75 TON.	4,75 T. - 3/4	3/4"	SPF 58	38,1
5/8"	16,0	4,4	M-1310-10	A 22	-	1257072	4,75 TON.	4,75 T. - 3/4	3/4"	6,5 TON.	6,5 T. - 7/8	7/8"	6,5 TON.	6,5 T. - 7/8	7/8"	SPF 58	38,1
3/4"	19,0	6,3	M-1613-10	A 26	-	1257072	6,5 TON.	6,5 T. - 7/8	7/8"	8,5 TON.	8,5 T. - 1	1"	8,5 TON.	8,5 T. - 1	1"	SPF 34	44,95
7/8"	22,0	8,5	M-19-10	A 32	-	1257212	8,5 TON.	8,5 T. - 1	1"	9,5 TON.	9,5 T. - 1 1/8	1 1/8"	9,5 TON.	9,5 T. - 1 1/8	1 1/8"	SPF 78	50,8
1"	26,0	11,3	M-2016-10	A 36	-	1257282	12,0 TON.	12 T. - 1 1/8	1 1/8"	12,0 TON.	12 T. - 1 1/4	1 1/4"	12,0 TON.	12 T. - 1 1/4	1 1/4"	SPF 1	58,74
1 1/8"	29,0	13,8	M-2220-10	A 36	-	1257422	13,5 TON.	13,5 T. - 1 1/4	1 1/4"	13,5 TON.	13,5 T. - 1 3/8	1 3/8"	13,5 TON.	13,5 T. - 1 3/8	1 3/8"	SPF 118	63,5
1 1/4"	32,0	17,8	M-2220-10	A 36	-	1257492	17,0 TON.	17 T. - 1 1/4	1 1/4"	17,0 TON.	17 T. - 1 1/2	1 1/2"	17,0 TON.	17 T. - 1 1/2	1 1/2"	SPF 114	71,43
1 3/8"	35,0	21,4	M-2622-10	A/T 45	-	1257562	17,0 TON.	17 T. - 1 3/8	1 3/8"	25,0 TON.	25 T. - 1 3/4	1 3/4"	25,0 TON.	25 T. - 1 3/4	1 3/4"	SPF 112	76,2
1 1/2"	38,0	25,4	M-32-10	A/T 50	-	1257562	17,0 TON.	17 T. - 1 1/2	1 1/2"	25,0 TON.	25 T. - 1 3/4	1 3/4"	25,0 TON.	25 T. - 1 3/4	1 3/4"	SPF 112	82,55
1 3/4"	45,0	34,0	M-3226-10	A/T 56	-	1257562	25,0 TON.	25 T. - 1 3/4	1 3/4"	35,0 TON.	35 T. - 2	2"	35,0 TON.	35 T. - 2	2"	SPF 134	97,6
2"	51,0	45,4	M-4536-10	A/T 56	-	1257652	35,0 TON.	35 T. - 2	2"	42,5 TON.	55 T. - 2 1/2	2 1/2"	42,5 TON.	55 T. - 2 1/2	2 1/2"	SPF 2	111,1



**Laço de Cabo de aço AA (3 Pernas de 0-45°)**

CABO DE AÇO		ANEL DE CARGA				MANILHA (CURVA)			MANILHA (RETA)			SAPATILHO		PRESILHA				
Polegada	Cimat	CMT (0-45°) (Ton.)	mm	Gannebo		KWB		Crosby	Van Beest	Julí	BX / BW (Grau S)	G-209 / G-2130 (Ø)	Van Beest	Julí	DX / DW (Grau S)	Crosby	Fischer	Neade / Esco
				Sem Sub-Elo (M)	Com Sub-Elo (MT)	Sem Sub-Elo (A)	Com Sub-Elo (TG)											
1/4"		0,9	6,4	M-6-10	MT-6-10	A 13	TG 07.8	1256932	1257692	0,75 T. - 5/16	5/16"	1,0 TON.	1 T. - 3/8	1 T. - 3/8	3/8"	SPF 516	17,46	
5/16"		1,9	8,0	M-8-10	MT-6-10	A 16	TG 07.8	1256932	1257692	1 T. - 3/8	3/8"	1,0 TON.	1 T. - 3/8	1 T. - 3/8	3/8"	SPF 516	19,1	
3/8"		2,4	9,5	M-10-10	MT-6-10	A 16	TG 07.8	1256932	1257692	1,5 T. - 7/16	7/16"	2,0 TON.	2 T. - 1/2	2 T. - 1/2	1/2"	SPF 38	23,81	
7/16"		3,2	11,0	M-13-10	MT-8-10	A 22	TG 08.8	1257002	1257762	2 T. - 1/2	1/2"	2,0 TON.	3,25 T. - 5/8	3,25 T. - 5/8	5/8"	SPF 12	31,75	
1/2"		4,3	13,0	M-13-10	MT-10-10	A 22	TG 10.8	1257072	1257972	2 T. - 1/2	1/2"	2,0 TON.	3,25 T. - 5/8	3,25 T. - 5/8	5/8"	SPF 12	31,75	
9/16"		5,2	14,0	M-1310-10	MT-10-10	A 26	TG 10.8	1257212	1257972	3,25 T. - 5/8	5/8"	3,25 TON.	4,75 T. - 3/4	4,75 T. - 3/4	3/4"	SPF 58	38,1	
5/8"		6,7	16,0	M-1613-10	MT-10-10	A 26	TG 13.8	1257212	1257972	3,25 T. - 5/8	5/8"	3,25 TON.	4,75 T. - 3/4	4,75 T. - 3/4	3/4"	SPF 58	38,1	
3/4"		9,5	19,0	M-19-10	MT-13-10	A 36	TG 13.8	1257282	1258142	4,75 T. - 3/4	3/4"	4,75 TON.	6,5 T. - 7/8	6,5 T. - 7/8	7/8"	SPF 34	44,95	
7/8"		12,8	22,0	M-2016-10	MT-13-10	A 36	TG 16.8	1257382	1258142	6,5 T. - 7/8	7/8"	6,5 TON.	8,5 T. - 1	8,5 T. - 1	1"	SPF 78	50,8	
1"		17,0	26,0	M-32-10	MT-16-10	A/T 45	TG 20.8	1257492	1258182	8,5 T. - 1	1"	9,5 TON.	9,5 T. - 1	9,5 T. - 1	1 1/8"	SPF 1	58,74	
1 1/8"		20,7	29,0	M-32-10	MT-20-10	A/T 45	TG 20.8	1257562	1258332	9,5 T. - 1 1/8	1 1/8"	12,0 TON.	12 T. - 1 1/4	12 T. - 1 1/4	1 1/4"	SPF 118	63,5	
1 1/4"		26,7	32,0	M-3226-10	MT-20-10	A/T 56	TG 22.8	1257632	1258332	12 T. - 1 1/4	1 1/4"	13,5 TON.	13,5 T. - 1 3/8	13,5 T. - 1 3/8	1 3/8"	SPF 114	71,43	
1 3/8"		32,1	35,0	M-90T-10	MT-26-10	-	TG 26.8	-	1258402	13,5 T. - 1 3/8	1 3/8"	17,0 TON.	17 T. - 1 1/2	17 T. - 1 1/2	1 1/2"	SPF 112	76,2	
1 1/2"		38,1	38,0	M-90T-10	MT-26-10	-	TG 26.8	-	1258402	17 T. - 1 1/2	1 1/2"	25,0 TON.	25 T. - 1 3/4	25 T. - 1 3/4	1 3/4"	SPF 112	82,55	
1 3/4"		51,1	45,0	-	-	-	-	-	1258482	25 T. - 1 3/4	1 3/4"	35,0 TON.	35 T. - 2	35 T. - 2	2"	SPF 134	97,6	
2"		68,1	51,0	-	-	-	-	-	-	35 T. - 2	2"	42,5 TON.	55 T. - 2 1/2	55 T. - 2 1/2	2 1/2"	SPF 2	111,1	

**Laço de Cabo de aço AA (4 Pernas de 0-45°)**

CABO DE AÇO		ANEL DE CARGA				MANILHA (CURVA)			MANILHA (RETA)			SAPATILHO		PRESILHA				
Polegada	Cimat	CMT (0-45°) (Ton.)	mm	Gannebo		KWB		Crosby	Van Beest	Julí	BX / BW (Grau S)	G-209 / G-2130 (Ø)	Van Beest	Julí	DX / DW (Grau S)	Crosby	Fischer	Neade / Esco
				Sem Sub-Elo (M)	Com Sub-Elo (MT)	Sem Sub-Elo (A)	Com Sub-Elo (TG)											
1/4"		0,9	6,4	M-8-10	MT-6-10	A 18	TG 07.8	1257002	1257692	0,75 T. - 5/16	5/16"	1,0 TON.	1,0 TON.	1 T. - 3/8	1 T. - 3/8	3/8"	SPF 516	17,46
5/16"		1,9	8,0	M-8-10	MT-6-10	A 18	TG 07.8	1257002	1257692	1 T. - 3/8	3/8"	1,0 TON.	1,0 TON.	1 T. - 3/8	1 T. - 3/8	3/8"	SPF 516	19,1
3/8"		2,4	9,5	M-13-10	MT-6-10	A 22	TG 07.8	1257002	1257692	1,5 T. - 7/16	7/16"	2,0 TON.	2,0 TON.	2 T. - 1/2	2 T. - 1/2	1/2"	SPF 38	23,81
7/16"		3,2	11,0	M-19-10	MT-8-10	A 32	TG 08.8	1257282	1257762	2 T. - 1/2	1/2"	2,0 TON.	3,25 TON.	3,25 T. - 5/8	3,25 T. - 5/8	5/8"	SPF 12	31,75
1/2"		4,3	13,0	M-19-10	MT-10-10	A 32	TG 10.8	1257282	1257972	2 T. - 1/2	1/2"	2,0 TON.	3,25 TON.	3,25 T. - 5/8	3,25 T. - 5/8	5/8"	SPF 12	31,75
9/16"		5,2	14,0	M-2016-10	MT-10-10	A 36	TG 10.8	1257382	1257972	3,25 T. - 5/8	5/8"	3,25 TON.	4,75 TON.	4,75 T. - 3/4	4,75 T. - 3/4	3/4"	SPF 58	38,1
5/8"		6,7	16,0	M-2016-10	MT-10-10	A 36	TG 13.8	1257382	1257972	3,25 T. - 5/8	5/8"	3,25 TON.	4,75 TON.	4,75 T. - 3/4	4,75 T. - 3/4	3/4"	SPF 58	38,1
3/4"		9,5	19,0	M-32-10	MT-13-10	A/T 45	TG 13.8	1257492	1258142	4,75 T. - 3/4	3/4"	4,75 TON.	6,5 TON.	6,5 T. - 7/8	6,5 T. - 7/8	7/8"	SPF 34	44,95
7/8"		12,8	22,0	M-3226-10	MT-13-10	A/T 50	TG 16.8	1257562	1258142	6,5 T. - 7/8	7/8"	6,5 TON.	8,5 TON.	8,5 T. - 1	8,5 T. - 1	1"	SPF 78	50,8
1"		17,0	26,0	M-4536-10	MT-16-10	A/T 56	TG 20.8	1257632	1258182	8,5 T. - 1	1"	9,5 TON.	9,5 TON.	9,5 T. - 1 1/8	9,5 T. - 1 1/8	1 1/8"	SPF 1	58,74
1 1/8"		20,7	29,0	M-90T-10	MT-20-10	-	TG 20.8	-	1258332	9,5 T. - 1 1/8	1 1/8"	12,0 TON.	12 T. - 1 1/4	12 T. - 1 1/4	1 1/4"	SPF 118	63,5	
1 1/4"		26,7	32,0	M-100T-10	MT-20-10	-	TG 22.8	-	1258332	12 T. - 1 1/4	1 1/4"	13,5 TON.	13,5 TON.	13,5 T. - 1 3/8	13,5 T. - 1 3/8	1 3/8"	SPF 114	71,43
1 3/8"		32,1	35,0	-	MT-26-10	-	TG 26.8	-	1258402	13,5 T. - 1 3/8	1 3/8"	17,0 TON.	17 T. - 1 1/2	17 T. - 1 1/2	1 1/2"	SPF 112	76,2	
1 1/2"		38,1	38,0	-	MT-26-10	-	TG 26.8	-	1258402	17 T. - 1 1/2	1 1/2"	25,0 TON.	25 T. - 1 3/4	25 T. - 1 3/4	1 3/4"	SPF 112	82,55	
1 3/4"		51,1	45,0	-	-	-	-	-	1258482	25 T. - 1 3/4	1 3/4"	35,0 TON.	35 T. - 2	35 T. - 2	2"	SPF 134	97,6	
2"		68,1	51,0	-	-	-	-	-	-	35 T. - 2	2"	42,5 TON.	55 T. - 2 1/2	55 T. - 2 1/2	2 1/2"	SPF 2	111,1	





**Laço de Cabo de aço AF (1 Perna)**

CABO		ANEL DE CARGA				MANILHA (CURVA)				MANILHA (RETA)				SAPATILHO		PRESILHA
Cimaf		Gunnedo		KWB		Crosby		Van Beest	Julii	Crosby	Van Beest	Julii	Crosby	Fischer	Neade / Escro	
Polegada	mm	Sem Sub-Elo (M)	Com Sub-Elo (MT)	Sem Sub-Elo (A)	Com Sub-Elo (TG)	Sem Sub-Elo (A-344)	Com Sub-Elo (A-347)	G-4163 (WLL) Ton.	BX / BW (Grau S)	G-209 / G-2130 (φ)	G-4151 / G-4153 (WLL) Ton.	DX / DW (Grau S)	G-210 / G-2150 (φ)	Sapatilho Pesado	Ø Externo (mm)	
1/4"	6,4	M-6-10	-	A 13	-	1256932	-	0,75 TON.	0,75 T. - 5/16	5/16"	1,0 TON.	1 T. - 3/8	3/8"	SPF 516	17,46	
5/16"	8,0	M-6-10	-	A 13	-	1256932	-	0,75 TON.	0,75 T. - 5/16	5/16"	1,0 TON.	1 T. - 3/8	3/8"	SPF 516	19,1	
3/8"	9,5	M-86-10	-	A 13	-	1256932	-	2,0 TON.	1 T. - 3/8	3/8"	2,0 TON.	2 T. - 1/2	1/2"	SPF 38	23,81	
7/16"	11,0	M-86-10	-	A 13	-	1256932	-	2,0 TON.	2 T. - 1/2	1/2"	3,25 TON.	3,25 T. - 5/8	5/8"	SPF 12	31,75	
1/2"	13,0	M-86-10	-	A 16	-	1256932	-	2,0 TON.	2 T. - 1/2	1/2"	3,25 TON.	3,25 T. - 5/8	5/8"	SPF 12	31,75	
9/16"	14,0	M-108-10	-	A 16	-	1256932	-	3,25 TON.	3,25 T. - 5/8	5/8"	4,75 TON.	4,75 T. - 3/4	3/4"	SPF 58	38,1	
5/8"	16,0	M-108-10	-	A 18	-	1257072	-	4,75 TON.	4,75 T. - 3/4	3/4"	4,75 TON.	4,75 T. - 3/4	3/4"	SPF 58	38,1	
3/4"	19,0	M-13-10	-	A 22	-	1257072	-	6,5 TON.	6,5 T. - 7/8	7/8"	8,5 TON.	8,5 T. - 1	1"	SPF 1	58,74	
7/8"	22,0	M-1310-10	-	A 22	-	1257072	-	8,5 TON.	8,5 T. - 1	1"	12,0 TON.	12 T. - 1 1/4	1 1/4"	SPF 118	63,5	
1"	26,0	M-1613-10	-	A 26	-	1257212	-	9,5 TON.	9,5 T. - 1 1/8	1 1/8"	13,5 TON.	13,5 T. - 1 3/8	1 3/8"	SPF 114	71,43	
1 1/8"	29,0	M-19-10	-	A 32	-	1257282	-	12,0 TON.	12 T. - 1 1/4	1 1/4"	13,5 TON.	13,5 T. - 1 3/8	1 3/8"	SPF 114	71,43	
1 1/4"	32,0	M-2016-10	-	A 36	-	1257382	-	12,0 TON.	12 T. - 1 1/4	1 1/4"	13,5 TON.	13,5 T. - 1 3/8	1 3/8"	SPF 114	71,43	

**Laço de Cabo de aço AF (2 Pernas de 0-45°)**

CABO		ANEL DE CARGA				MANILHA (CURVA)				MANILHA (RETA)				SAPATILHO		PRESILHA
Cimaf		Gunnedo		KWB		Crosby		Van Beest	Julii	Crosby	Van Beest	Julii	Crosby	Fischer	Neade / Escro	
Polegada	mm	Sem Sub-Elo (M)	Com Sub-Elo (MT)	Sem Sub-Elo (A)	Com Sub-Elo (TG)	Sem Sub-Elo (A-344)	Com Sub-Elo (A-347)	G-4163 (WLL) Ton.	BX / BW (Grau S)	G-209 / G-2130 (φ)	G-4151 / G-4153 (WLL) Ton.	DX / DW (Grau S)	G-210 / G-2150 (φ)	Sapatilho Pesado	Ø Externo (mm)	
1/4"	6,4	M-6-10	-	A 13	-	1256932	-	0,75 TON.	0,75 T. - 5/16	5/16"	1,0 TON.	1 T. - 3/8	3/8"	SPF 516	17,46	
5/16"	8,0	M-86-10	-	A 13	-	1256932	-	0,75 TON.	0,75 T. - 5/16	5/16"	1,0 TON.	1 T. - 3/8	3/8"	SPF 516	19,1	
3/8"	9,5	M-86-10	-	A 13	-	1256932	-	2,0 TON.	1 T. - 3/8	3/8"	2,0 TON.	2 T. - 1/2	1/2"	SPF 38	23,81	
7/16"	11,0	M-86-10	-	A 16	-	1256932	-	2,0 TON.	2 T. - 1/2	1/2"	3,25 TON.	3,25 T. - 5/8	5/8"	SPF 12	31,75	
1/2"	13,0	M-108-10	-	A 16	-	1257002	-	3,25 TON.	3,25 T. - 5/8	5/8"	4,75 TON.	4,75 T. - 3/4	3/4"	SPF 58	38,1	
9/16"	14,0	M-108-10	-	A 18	-	1257002	-	3,25 TON.	3,25 T. - 5/8	5/8"	4,75 TON.	4,75 T. - 3/4	3/4"	SPF 58	38,1	
5/8"	16,0	M-13-10	-	A 22	-	1257072	-	4,75 TON.	4,75 T. - 3/4	3/4"	6,5 TON.	6,5 T. - 7/8	7/8"	SPF 34	44,95	
3/4"	19,0	M-1310-10	-	A 22	-	1257072	-	6,5 TON.	6,5 T. - 7/8	7/8"	8,5 TON.	8,5 T. - 1	1"	SPF 78	50,8	
7/8"	22,0	M-1613-10	-	A 32	-	1257212	-	8,5 TON.	8,5 T. - 1	1"	9,5 TON.	9,5 T. - 1 1/8	1 1/8"	SPF 1	58,74	
1"	26,0	M-2016-10	-	A 36	-	1257282	-	9,5 TON.	9,5 T. - 1 1/8	1 1/8"	12,0 TON.	12 T. - 1 1/4	1 1/4"	SPF 118	63,5	
1 1/8"	29,0	M-2016-10	-	A 36	-	1257422	-	12,0 TON.	12 T. - 1 1/4	1 1/4"	13,5 TON.	13,5 T. - 1 3/8	1 3/8"	SPF 118	63,5	
1 1/4"	32,0	M-2220-10	-	A 36	-	1257492	-	12,0 TON.	12 T. - 1 1/4	1 1/4"	13,5 TON.	13,5 T. - 1 3/8	1 3/8"	SPF 114	71,43	



**Laço de Cabo de aço AF (3 Pernas de 0-45°)**

CABO DE AÇO		ANEL DE CARGA				MANILHA (CURVA)			MANILHA (RETA)			SAPATILHO	PRESELHA	
Polegada	CMT (0-45°) (Ton.)	mm	Gunnébo		KWB		Crosby	Van Beest	Julii	Crosby	Julii	Crosby	Fischer	Neade / Esco
			Sem Sub-Elo (M)	Com Sub-Elo (MT)	Sem Sub-Elo (A)	Com Sub-Elo (TG)								
1/4"	0,9	6,4	M-6-10	MT-6-10	A 13	TG 07.8	1257692	0,75 TON.	0,75 T. - 5/16	5/16"	1 T. - 3/8	3/8"	SPF 516	17,46
5/16"	1,5	8,0	M-8-10	MT-6-10	A 13	TG 07.8	1257692	0,75 TON.	0,75 T. - 5/16	5/16"	1 T. - 3/8	3/8"	SPF 516	19,1
3/8"	2,2	9,5	M-10-10	MT-6-10	A 16	TG 07.8	1257692	1,0 TON.	1 T. - 3/8	3/8"	2 T. - 1/2	1/2"	SPF 38	23,81
7/16"	3,0	11,0	M-13-10	MT-8-10	A 22	TG 08.8	1257762	2,0 TON.	2 T. - 1/2	1/2"	3,25 T. - 5/8	5/8"	SPF 12	31,75
1/2"	3,9	13,0	M-16-10	MT-8-10	A 22	TG 10.8	1257972	2,0 TON.	2 T. - 1/2	1/2"	3,25 T. - 5/8	5/8"	SPF 12	31,75
9/16"	4,8	14,0	M-19-10	MT-10-10	A 26	TG 10.8	1257972	3,25 TON.	3,25 T. - 5/8	5/8"	4,75 T. - 3/4	3/4"	SPF 58	38,1
5/8"	6,2	16,0	M-22-10	MT-10-10	A 26	TG 13.8	1257972	3,25 TON.	3,25 T. - 5/8	5/8"	4,75 T. - 3/4	3/4"	SPF 58	38,1
3/4"	8,8	19,0	M-26-10	MT-10-10	A 36	TG 13.8	1258142	4,75 TON.	4,75 T. - 3/4	3/4"	6,5 T. - 7/8	7/8"	SPF 34	44,95
7/8"	11,8	22,0	M-32-10	MT-13-10	A 36	TG 16.8	1258142	6,5 TON.	6,5 T. - 7/8	7/8"	8,5 T. - 1	1"	SPF 78	50,8
1"	15,8	26,0	M-40-10	MT-16-10	A/T 45	TG 16.8	1258182	8,5 TON.	8,5 T. - 1	1"	9,5 T. - 1 1/8	1 1/8"	SPF 1	58,74
1 1/8"	19,2	29,0	M-50-10	MT-16-10	A/T 45	TG 20.8	1258332	9,5 TON.	9,5 T. - 1 1/8	1 1/8"	12 T. - 1 1/4	1 1/4"	SPF 118	63,5
1 1/4"	24,7	32,0	M-60-10	MT-20-10	A/T 56	TG 22.8	1258332	12,0 TON.	12 T. - 1 1/4	1 1/4"	13,5 T. - 1 3/8	1 3/8"	SPF 114	71,43

**Laço de Cabo de aço AF (4 Pernas de 0-45°)**

CABO DE AÇO		ANEL DE CARGA				MANILHA (CURVA)			MANILHA (CURVA)			SAPATILHO	PRESELHA	
Polegada	CMT (0-45°) (Ton.)	mm	Gunnébo		KWB		Crosby	Van Beest	Julii	Crosby	Julii	Crosby	Fischer	Neade / Esco
			Sem Sub-Elo (M)	Com Sub-Elo (MT)	Sem Sub-Elo (A)	Com Sub-Elo (TG)								
1/4"	0,9	6,4	M-6-10	MT-6-10	A 18	TG 07.8	1257002	0,75 TON.	0,75 T. - 5/16	5/16"	1 T. - 3/8	3/8"	SPF 516	17,46
5/16"	1,5	8,0	M-8-10	MT-6-10	A 18	TG 07.8	1257002	0,75 TON.	0,75 T. - 5/16	5/16"	1 T. - 3/8	3/8"	SPF 516	19,1
3/8"	2,2	9,5	M-10-10	MT-6-10	A 22	TG 07.8	1257002	1,0 TON.	1 T. - 3/8	3/8"	2 T. - 1/2	1/2"	SPF 38	23,81
7/16"	3,0	11,0	M-13-10	MT-8-10	A 32	TG 08.8	1257282	2,0 TON.	2 T. - 1/2	1/2"	3,25 T. - 5/8	5/8"	SPF 12	31,75
1/2"	3,9	13,0	M-16-10	MT-8-10	A 32	TG 10.8	1257282	2,0 TON.	2 T. - 1/2	1/2"	3,25 T. - 5/8	5/8"	SPF 12	31,75
9/16"	4,8	14,0	M-19-10	MT-10-10	A 36	TG 10.8	1257382	3,25 TON.	3,25 T. - 5/8	5/8"	4,75 T. - 3/4	3/4"	SPF 58	38,1
5/8"	6,2	16,0	M-22-10	MT-10-10	A 36	TG 13.8	1257382	3,25 TON.	3,25 T. - 5/8	5/8"	4,75 T. - 3/4	3/4"	SPF 58	38,1
3/4"	8,8	19,0	M-26-10	MT-10-10	A/T 45	TG 13.8	1257492	4,75 TON.	4,75 T. - 3/4	3/4"	6,5 T. - 7/8	7/8"	SPF 34	44,95
7/8"	11,8	22,0	M-32-10	MT-13-10	A/T 45	TG 16.8	1258142	6,5 TON.	6,5 T. - 7/8	7/8"	8,5 T. - 1	1"	SPF 78	50,8
1"	15,8	26,0	M-40-10	MT-16-10	A/T 50	TG 16.8	1258142	8,5 TON.	8,5 T. - 1	1"	9,5 T. - 1 1/8	1 1/8"	SPF 1	58,74
1 1/8"	19,2	29,0	M-50-10	MT-16-10	A/T 56	TG 16.8	1258182	9,5 TON.	9,5 T. - 1 1/8	1 1/8"	12 T. - 1 1/4	1 1/4"	SPF 118	63,5
1 1/4"	24,7	32,0	M-60-10	MT-20-10	A/T 56	TG 22.8	1258332	12,0 TON.	12 T. - 1 1/4	1 1/4"	13,5 T. - 1 3/8	1 3/8"	SPF 114	71,43