Opmeten | Tekenen | Maken

OTM Project Advice

Measurement | Drawing | Making

Test Report

Strain relief of the OTM cable clamps commissioned by alliander

Commissioned by Alliander,
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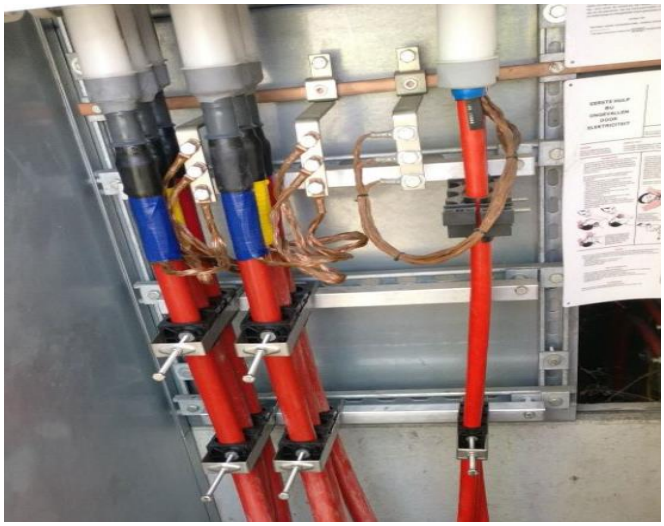


1 Motive

Since the introduction of the RVS OTM cable clamps in June 2012, there has always been an internal need to test the entire range. A broad test to, for example, clearly measure the strain relief in several controlled situations and thereby make a performance comparison with the cable clamps of PUK/Pohlschel and KOZ/HOLEC. The internal need is summarized in the test objectives.

Test Objectives

- Statistical performance of the OTM cable clamps
- Performance comparison with the cable clamps of PUK/Pohlschel and KOZ/HOLEC

Preconditions

In order to carry out all tests as accurately and controlled as possible, we have applied the 4-eye principle. By entering into a partnership with Alliander, the tests were organised in such a way that all measurements were carried out as fairly and transparently as possible. The tests were therefore tested on a standard mounting frame, which was supplied by Alliander and tested in accordance with a pre-approved test set-up.

In summary:

- Alliander approved test methods
- To reflect the results as accurately as possible by means of multiple test situations
- Testing in accordance with the 4-eye principle
- Test the complete range of OTM cable clamps (Type F42 and F20)

1.1 Overview: OTM Cable clamps

Single cable clamps

Type F42	Type F20
n/a	11-29
19,5-40	19,5-40
n/a	34-52
34-60	34-60
60-78	60-78

n/a = Not available (Niet beschikbaar)

3-way cable clamps

Type F42	Type F20
3x 11-29	*n/a* for strain relief see Type F42
3x 34-60	*n/a* for strain relief see Type F42

n/a = Not available (Niet beschikbaar)

1.2 Overview: PUK/Pohlschel cable clamps

Single cable clamps

26 U (Ø 26mm)	38 U (Ø 38mm)	42 U (Ø 42mm)	60 U (Ø 60mm)	70 U (Ø 70mm)	82 U (Ø 82mm)

Execution: Galvanized steel

1.3 Overview: Other cable clamps

3-way cable clamps

KOZ/HOLEC Ø20-43mm - Plastic version	Tested and broke at 150 Kg

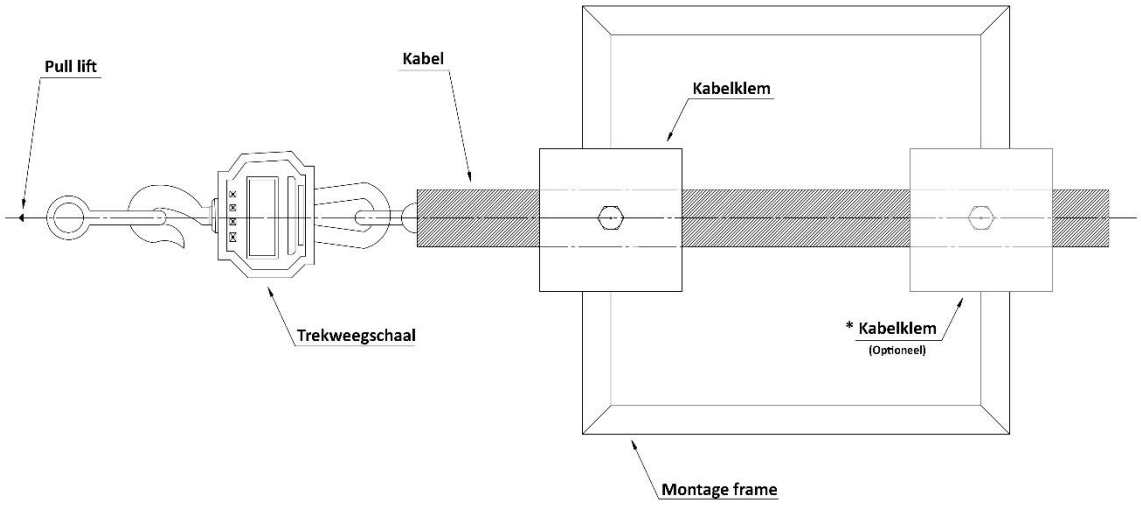
2 Test Setup

The OTM Cable Clamps are designed to provide an optimal strain relief. In practice, a cable from the ground never perfectly rises vertically. In addition to the vertical force, the test set-up also has to take into account a lateral force. These 2 forces can best be described as a force in the extension of the cable (situation 1) and a force of 30 ° on the cable.

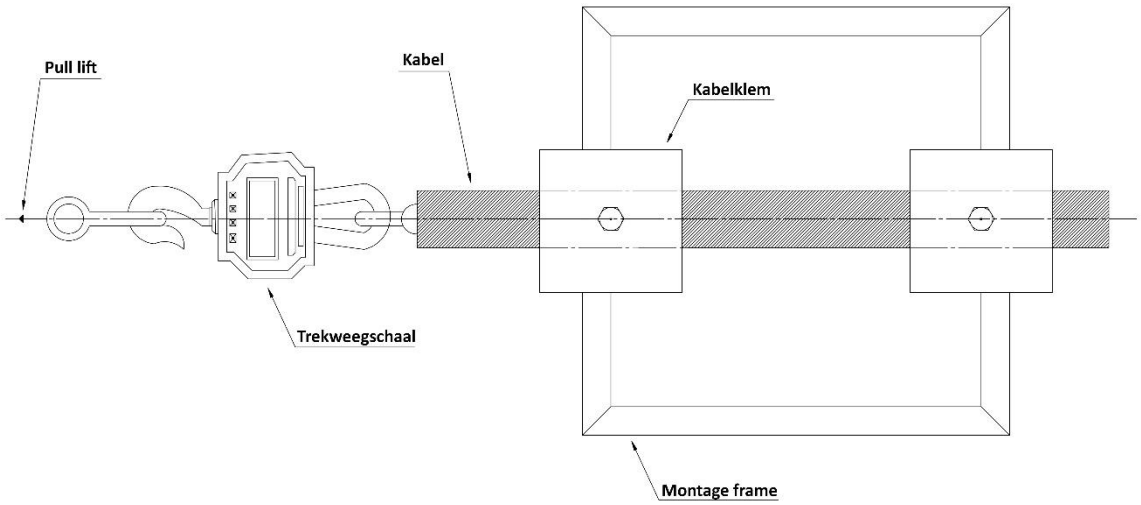
3 Situation 1: Extension of the cable

Clamps have been tested with 1 OTM clamp (image A), and with 2 OTM clamps (image B).

3.1 image A



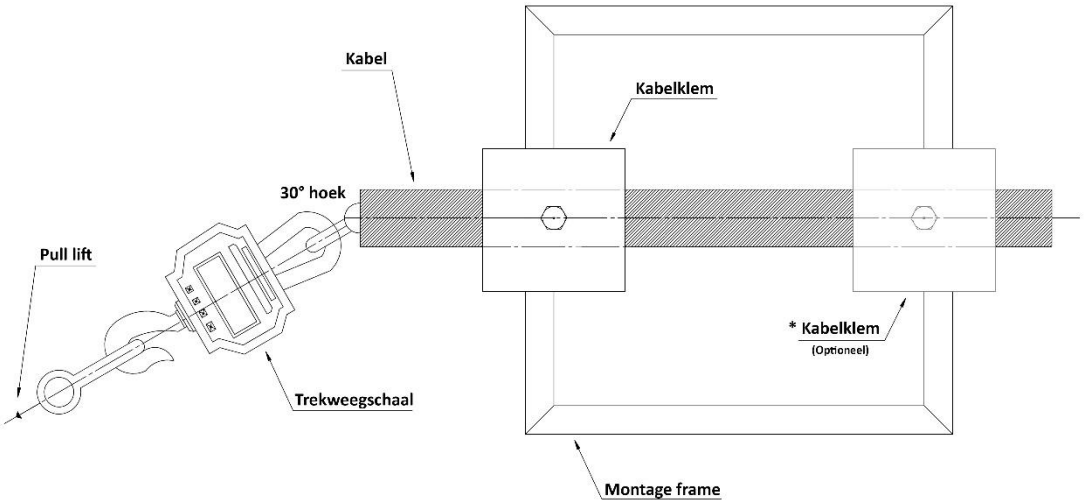
3.2 image B



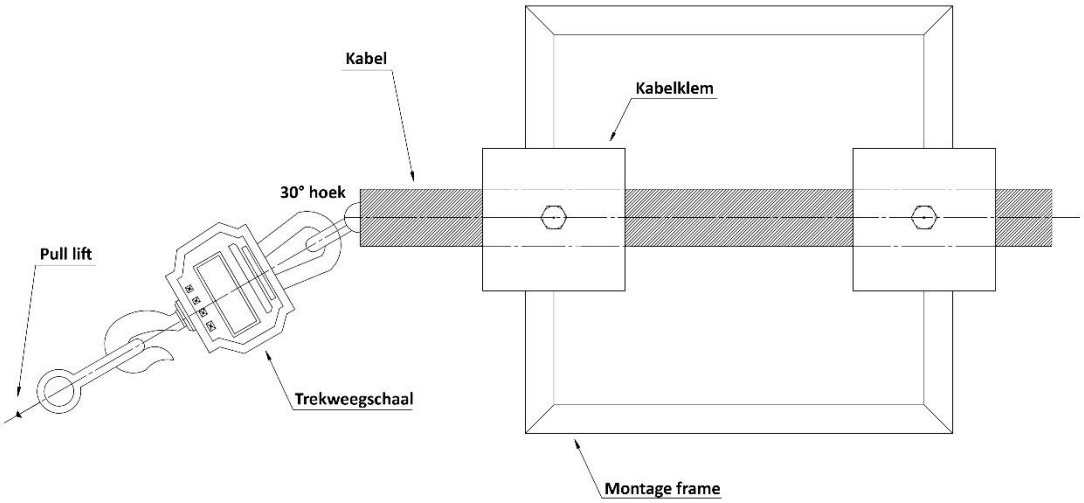
4 Situation 2: 30° degrees on the cable

Clamps have been tested with 1 OTM clamp (image C), and with 2 OTM clamps (image D).

4.1 image C

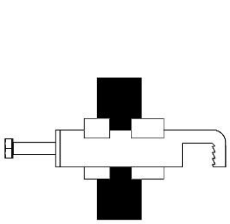


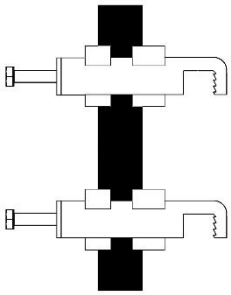
4.2 image D



5 Results

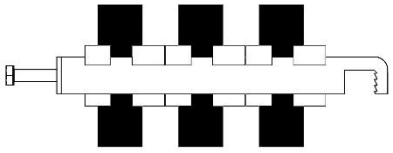
All measurements are in kilograms unless indicated otherwise.

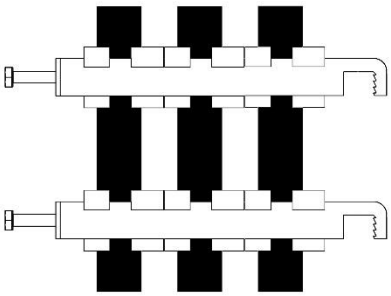




		Single			Double			Double angle 30°
		OTM F20	**OTM F42**	**PUK**	**OTM F20**	**OTM F42**	**PUK**	**OTM F42**
OTM 11-29	2Nm	200	*n/a*	100	225	*n/a*	110	*n/a*
	4Nm	210		100	250		110	
	6Nm	210		100	310		110	
OTM 19,5-40	2Nm	120	120	65	200	200	75	171
	4Nm	120	120	70	210	210	110	174
PUK Ø26	6Nm	120	120	104	220	220	130	188
OTM 34-52	2Nm	220	*n/a*	70	220	*n/a*	70	*n/a*
	4Nm	220		70	240		70	
PUK Ø38 / Ø42	6Nm	270		110	310		100	
OTM 34-60	2Nm	220	220	70	220	220	70	100
PUK Ø38 / Ø42	4Nm	220	220	70	240	240	70	105
/ Ø60	6Nm	270	270	110	310	310	100	113
OTM 60-78	2Nm	250	200	15	270	270	110	240
	4Nm	255	220	40	280	280	140	250
	6Nm	255	250	60	290	290	145	260

n/a = Not available (Niet beschikbaar)





		Single			Double			Double angle 30°
		OTM F20	**OTM F42**	**PUK**	**OTM F20**	**OTM F42**	**PUK**	**OTM F42**
3x 11-29	2Nm	*n/a*	120		*n/a*	230		210
	4Nm		150			270		240
	6Nm		160			280		252
3x 34-60	2Nm	*n/a*	110		*n/a*	130		110
	4Nm		180			210		180
	6Nm		340			360		249

n/a = Not available (Niet beschikbaar)

6 Conclusion

It can be concluded that the OTM cable clamps are the best overall as observed in the results of the strain relief tests.