



ELONGATION

Elongation has become an increasingly important topic as low-stretch ropes gain popularity due to their higher precision, greater safety, and better efficiency; especially in the case of long ascents, descents or complex rescue scenarios.

Elongation put to the test

In the event of a fall on an EN 1891A certified rope, the resulting impact force must not be greater than 6 kN. In order to stay below this value while absorbing the fall, the rope is manufactured with material and constructional characteristics designed to provide a specific amount of elongation. To measure this, in accordance with the EN1891A test standards, the rope is pre-tensioned with a 50 kg load, the load is increased to 150 kg and the elongation is measured.

In addition to the required EN 1891A tests, we also felt that it was beneficial for this report to include tests with the following configurations:

- Elongation % under a load from 5 - 50 kg (incl. constructional elongation)
- Elongation % under a load from 5 - 150 kg (normal working load: height worker + tools)
- Elongation % under a load from 5 - 250 kg (rescue load: rescuer + equipment + patient)

Rope	Diameter	Elongation 5-50 kg	Elongation 5-150 kg	Elongation 5-250 kg	Elongation 50-150 kg	Elongation 150-250 kg
	mm	%	%	%	%	%
KM III	11.0	0.8	2.4	4.3	1.6	1.9
Ultrastatic	11.0	2.1	4.2	6.0	2.0	1.9
Comes	11.0	2.1	4.0	6.0	1.9	2.0
PLATINUM® Protect PES/PA	10.5	2.0	4.0	6.0	2.0	2.0
PLATINUM® Offshore Access	10.5	2.0	4.0	6.0	2.0	2.0
PLATINUM® Protect XG PES/PA	11.0	2.1	4.2	6.2	2.1	2.0
Tutor XG	10.5	3.0	5.5	8.0	2.5	2.5
Patron	11.0	2.2	5.2	8.2	3.0	3.0
Patron Plus	11.0	4.3	7.3	10.4	3.0	3.1
Patron	10.5	2.9	6.1	9.3	3.2	3.2
PLATINUM® Protect PA	10.5	3.6	6.8	10.1	3.2	3.3

*Real values from one time testing

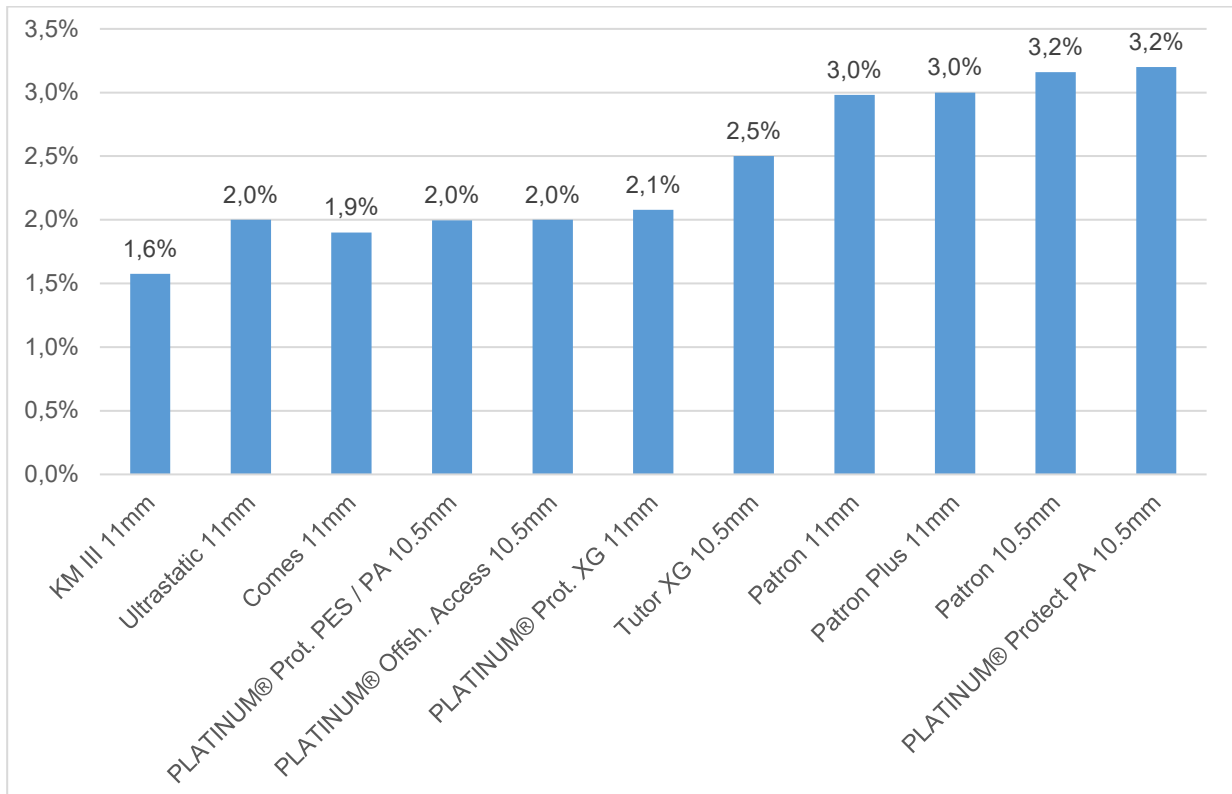


Fig.1: Elongation from 50 to 150 kg load

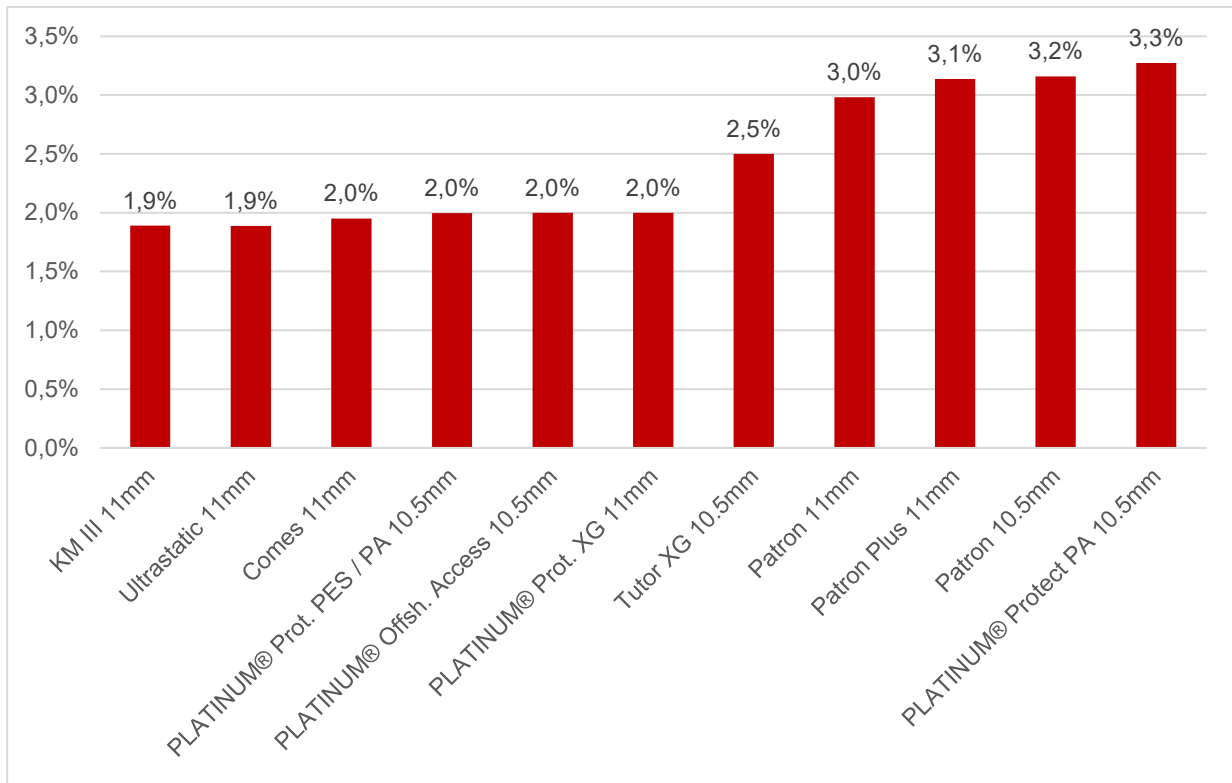


Fig.2: Elongation from 150 to 250 kg

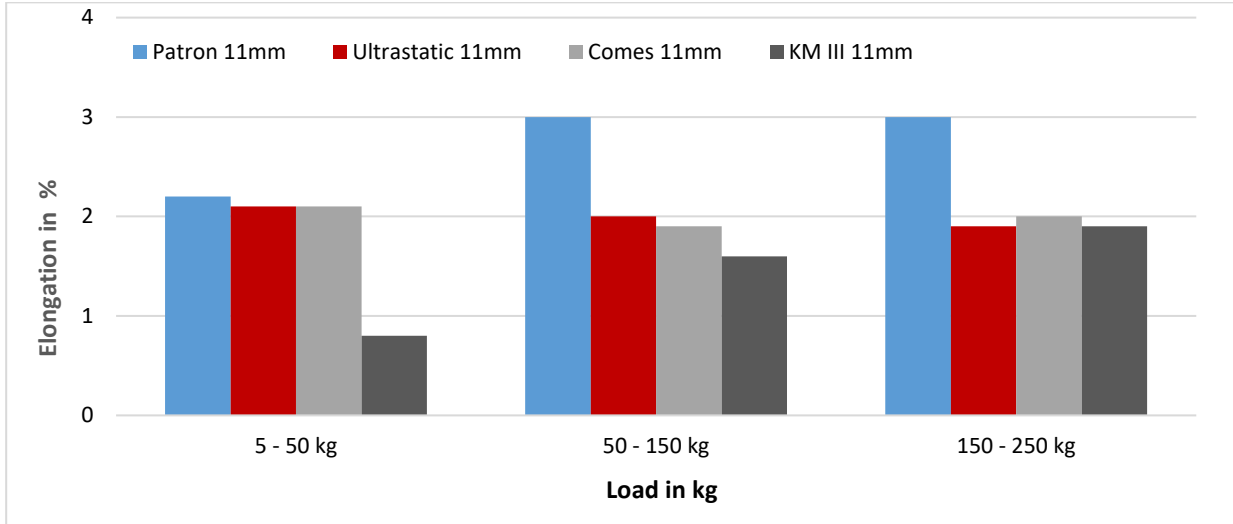


Fig.3: Comparison of Elongation between Patron 11mm, Ultrastatic 11mm, Comes 11mm and KM III 11mm