Teufelberger
Together in Motion

EXAMPLE: BERLIN TV TOWER

Elongation and its reduction have increasingly become a focus of interest in recent years, as low-stretch ropes provide higher precision, greater safety, and better efficiency in work, especially in the case of long rappelling distances such as on Berlin's TV tower.

Elongation & great heights

In the case of work or rescue operations at great heights, elongation often poses a problem. With an average stretch of 5% in conventional ropes to EN 1891 A, the rope exhibits noticeable bounce during work activities. On the one hand, this causes friction at the points of contact with the structure and thus accelerates rope wear. On the other hand, such stretch makes precise positioning during work procedures more difficult and affects the controlled lowering of rescue loads. In work close to the ground, elongation can become a serious threat, as in the case of a fall this can create a danger zone of more than 10% of the rope's length (see diagram below).

Currently, the best solution to this problem is to use ropes to EN 1891 A with minimal elongation such as Ultrastatic and Comes from TEUFELBERGER. The benefits that these ropes offer users during work and rescue operations at great heights are outlined below. Furthermore, efforts are made to come up with possibilities to reduce stretch in the system through measures taken by users, e.g., by using two descenders. By using the system under load, elongation is reduced dramatically, while the redundancy is maintained at the same time.

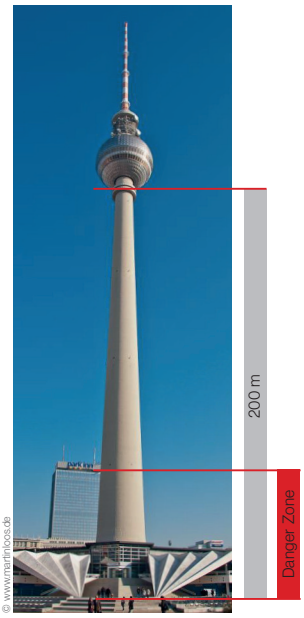
Benefits of a low-stretch rope

- ✔ Better control due to low stretch
- ✔ Greater precision in descending/positioning
- ✔ More effective ascending without bounce
- ✔ Reduced fall arrest distance of belay device.
- ✔ Reduced risk close to the ground/above the structure
- ✔ Reduced risk of damaging the rope (chafing over edges)
- ✔ Avoidance of load peaks (yo-yo effect)

Special benefits in rescue operations

- ✔ Precise control of the rescue load
- ✔ Effective positioning in inclined/horizontal rope systems
- ✔ Increased safety in passive rescue operations
- ✔ Better control in long rappelling distances
- ✔ Effective lifting of the rescue load
- ✔ Increased safety for complex rope-assisted rescue operations
- ✔ Reduced slack in horizontal systems

Example
Berlin TV Tower



	180 m EN 1891 A Devices: ID & ASAP	**190 m** EN 1891 A Devices: ID & ASAP	**196 m** EN 1891 A ULTRASTATIC Devices: ID & ASAP	**200 m** EN 1891 A ULTRASTATIC Devices:: 2 x ID both under load
Elongation	**18 m** 1 m elongation per 10 m ropel (acc. PETZL Asap)	**10 m** Ø 5% Elongation	**4 m** 2% Elongation	
Tear distance ASAP	**3,5 m**	**3,5 m**	**3,5 m**	