

COVID-19: MULTIPLE DISINFECTION OF ROPES

In early 2020, the Coronavirus situation surprised the world. In March, we presented the results of a previous study concerning the impact of disinfection on ropes. In this study, semi-static polyamide (i.e. Nylon) ropes were disinfected with a mix of Isopropyl (70%) and tested for their residual strength. This was a one-time test. No significant change in the ropes' characteristics (diameter, weight, strength, elongation) occurred in these tests. Please find the results of the previous study below ([Link to Anchor – Covid-19: One time-disinfection](#))

This also coincides with the statements made by our fiber suppliers who confirm that, Polyamide fibers are satisfactory resistant to Isopropyl alcohol and disinfection of ropes based on mentioned chemical should not have any negative impact on the ropes.

Later in the year, in the interest of customer safety and as a result of new Covid-19 regulations, climbing gyms around the world were forced to disinfect ropes, holds and equipment at a far more frequent rate, some even after each climber. Gym owners began questioning the impact of all that disinfection on the performance of the ropes. Many of them reached out to us directly for the answer.

In order to answer this question, and to be able to give an official manufacturer's recommendation concerning frequent disinfection of ropes and its impact on the ropes' handling, we conducted a second, more specific study. We are ecstatic to be able to share with you the testing procedures and results of that study.

TEST SAMPLES & PROCEDURE

Tested rope

Dynamic climbing rope
Chalkline 9.7mm
Polyamide core / Polyamide cover
Blue-grey
3 samples / 10m each

Disinfectant

Isopropyl 70% (70% Isopropyl alcohol, 30% distilled water)

Testing procedure

1. Simulation of climbing
Ten climb/lower simulations were performed by pulling the rope through a belay device (Petzl GriGri) bi-directionally (fig. 1)
2. Disinfection of climbing rope
Rope samples were sprayed completely with Isopropyl 70% (distance approx. 30cm) and wiped down with a damp cotton cloth (also with Isopropyl 70%) (fig. 2/3)
3. Drying the rope
Rope sample was left to dry naturally for 30 Minutes



Fig. 1



Fig. 2



Fig. 3

Sample 1:

60 climbing simulations and 6 disinfections (after each cycle of 10 climbing simulations) were executed during one day

Sample 2:

180 climb/lower simulations and 18 disinfections (after each cycle of 10 simulations) were executed each day during 3 days. The sample dried overnight.

CONCLUSION & RECOMMENDATION

The results of the study showed, that there is **NO** significant difference in the tested values (impact force at first fall, dynamic elongation, total falls) or in handling characteristics between the new rope and the two disinfected rope samples. Based on these results and the statement of the fiber suppliers, from a manufacturer's point of view it is acceptable to disinfect a rope multiple times following the instructions below:

- Dynamic climbing ropes (and other ropes made of Polyamide) can be disinfected by spraying them with a solution of 70% Isopropyl and 30% Distilled Water, wiping them down with a damp cloth (also with Isopropyl), then air drying them naturally away from a heat source or direct sunlight.
- The Safety rules provided on the safety data sheet should be followed for all other rope care
- A qualified inspection of the rope is mandatory.
- This data applies to the disinfection of the ropes only and does not make any recommendations as to any other procedures or policies for disinfecting gear, holds or other aspects of the gym.
- The data applies to the impact of the disinfection process on the rope itself, not on the actual effectiveness of the disinfection against the Coronavirus or any other potential infectious diseases.