

Wear of Dynamic Ropes

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Tests on Rope Wear

**Commissione Materiali e Tecniche
del Club Alpino Italiano**



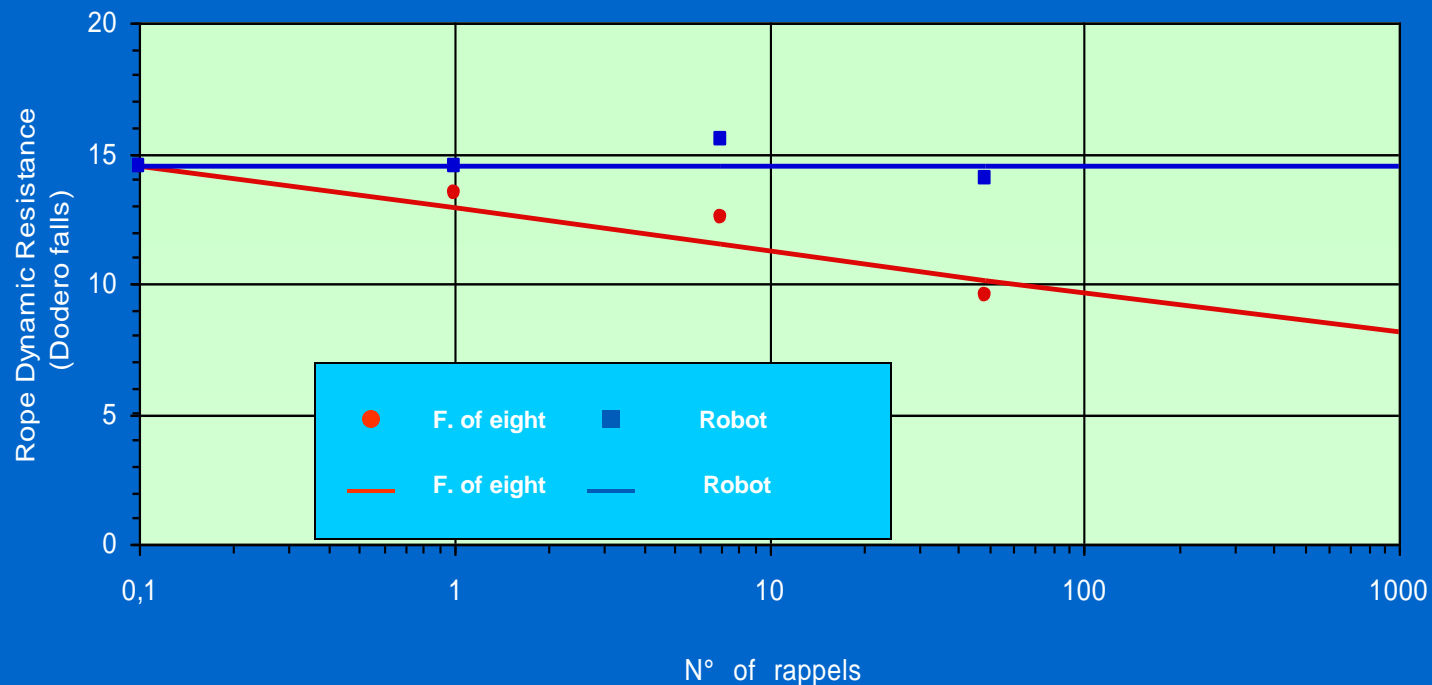
TABLE 1 - Tests on single ropes:

Rappels and Rope Wear

Rope	Date	Declared Values		Reference Values		Use of rope in rappels		DODERO Tests		Note
		N. of falls	Force daN	N. of falls	Force daN	Meters	N. of rappels	N. of falls	Force daN	
EDELWEISS Eldorado (10,5 mm)	01.97	7	975	15	865	10 1	13	876		“Figure of Eight” climber: 80 kg
			14	898		10 1	14	896		
						70 7	11	870		
						70 7	14	880		
						49049	9	888		
						49049	10	874		
	01.97	7	975	15	868	10 1	14	884		“Robot” climber: 80 kg
			14	828		10 1	15	880		
						70 7	14	878		
						70 7	17	890		
						49049	13	870		
						49049	15	862		

Plot 1 - Tests on single ropes: Rappels and Rope Wear

Influence of number of rappels and of rappel device on the dynamic resistance



Plot 2 - Tests on single ropes:

Climbing Wear

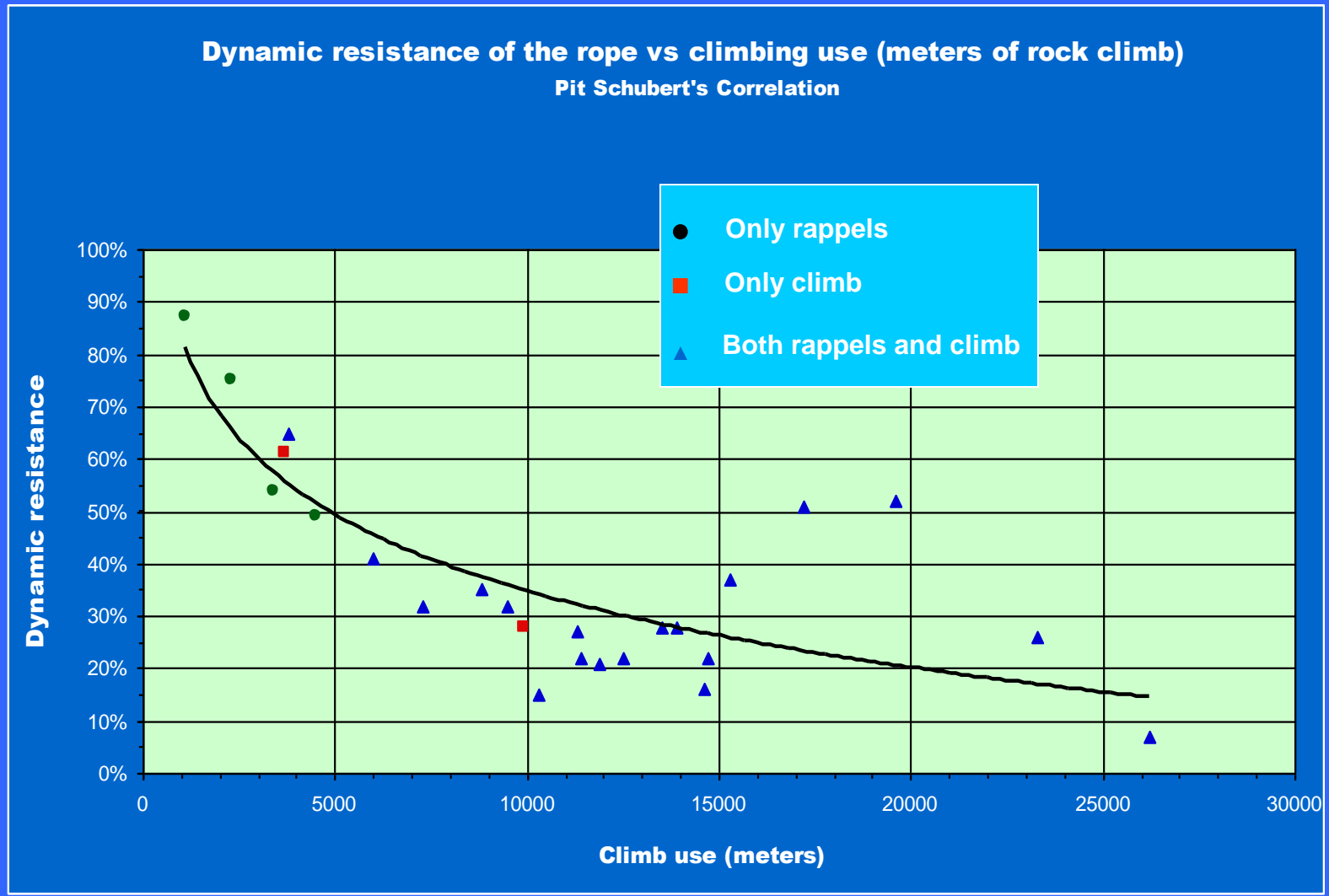


TABLE 2 - Tests on single ropes:

Artificial Wear

1 cycle = 50 m

Rope	Date	Declared values		Reference values		Artificial wear			Note
		N. of falls	Force daN	N. of falls	Force daN	Cycle s	N. of falls	Force daN	
EDELWEISS Eldorado (10,5 mm)	11.96	7	975	11	882	50	9	862	load 38-40 kg
			10	894		7	874		
						9	870		
	3.97	7	975	11	882	50	7	834	max temp. 47°
			10	894		8	850		
						9	846		
	3.97	7	975	11	882	100	7	874	max temp. 50°
			10	894		6	856		
	3.97	7	975	11	882	200	4	882	max temp. 61°
			10	894		5	862		
						6	852		
	5.97	7	975	11	882	300	6	866	load 35-40 kg
			10	894		5	854	max temp. 50-60°	
						6	866		

TABLE 3 - Tests on single ropes:

Climbing Wear

Rope	Period of use	Declared values		Reference values		Use			Note
		N. of falls	Force daN	N. of falls	Force daN	meters	N. of falls	Force daN	
OSELLA Jumbo Alp Joseph (11 mm)	1.12.95 -	/	/	3	944	292602	920	1 year use	
	30.6.96	/	/	2	952	1	924		
	5.97 - 8.97	/	/	1	944	1	930		
		/	/	4	930				
		/	/	2	978				Rif. A) VB
CASSIN (Beal)	1.6.95 -	/	/	10	848	203052	804		
	3.2.96	/	/	10	830	2	796		
		/	/	11	826	2	804		
						2	760		Rif. B) AA

TABLE 4 - Tests on single ropes:

Climbing Wear

Rope	Period of use	Declared values		Reference values		Use			Note
		N. of falls	Force daN	N. of falls	Force daN	Metri	N. of falls	Force daN	
EDELWEISS Calanques (10,5 mm)	1.6.96 - 13.10.96	8	975	17	888	6157	6	932	color purple-
			11	888			4	932	red-black
			14	884			5	914	Rif. C) OP
	11.6.96 - 17.10.96	8	975	17	888	2900	6	932	color purple-
			11	888			4	910	red-black
			14	884			4	908	
	7.2.96 - 9.2.97	8	975	17	888	3043	42	900	Rif. D) SM
			11	888			1	900	color purple-
			14	884			2	914	red-black
								888	Rif. E) AA

NOTE: computations on June 1998

TABLE 5 - Tests on single ropes:

Climbing Wear

Tests with modified Dodero (may 1999)

Rope	Period of use	Decalred values		Reference values		Use			Note
		N. of falls	Force daN	N. of falls	Force daN	meters	N. of falls	Force daN	
BEAL Leader (11 m.)	5.88 - 6.97	11	880	/	/	300002	864	use: 10 years	
						3	844	col. blue-	
						3	848	white-black	
								Rif. F) GB-SB	
EDELWEISS Calanques (10,5 mm)	1.3.97 - 5.4.98	8	975	8	952	250002	958	col. purple-red	
			10	962		1	936	-black	
						1	956	Rif. G) AA	
	25.4.98 - 3.5.98	8	975	8	952	100006	956	col. purple-red	
			10	962		5	958	-black	
						5	956	Rif. H) AA	
EDELWEISS Calanques (10,5 mm)	6.6.98 - 13.9.98	8	975	9	988	200002	962	col.red-yellow	
			9	938		2	972	-black	
			9	982		2	1012	Rif. I) AA	
	3.10.98 - 5.6.99	8	975	9	988	300002	1160	col.red-yellow	
			9	938		1	1001	-black	
			9	982		1	993	Rif. J) AA	

NOTE: computations on Sept. 1999

TABLE 6 - Tests on single ropes: Climbing Wear

Rope	Period of use	Decalred values		Reference values		Use			Note
		N. of falls	Force daN	N. of falls	Force daN	meters	N. of falls	Force daN	
MAMMUT XSR-18 (11,7 mm)	1995	18	1150	/	/	500	4	1118	Made in 1981
							3	1134	
							3	1124	Rif. A1) CZ
MAMMUT Galaxy (10 mm)	1996	6-7	900	/	/	252003	3	980	
							2	1062	Rif. A2) CZ
MAMMUT Pro (10,5 mm)	5.94 - 6.96	7-9	940	/	/	?	1	894	
							1	902	
							1	922	
							1	870	Rif. A3) LB

NOTE: computations on June 1998

Plot 3: Comparison with Schubert's results

