

Wheel Energy Oy

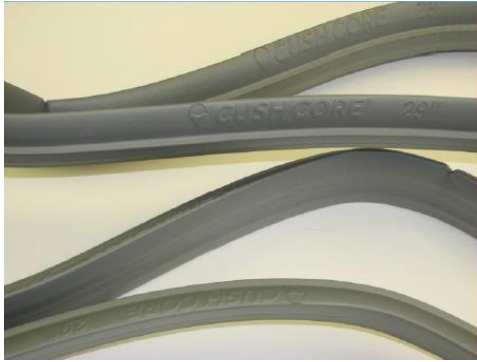
MTB WHEEL PROTECTOR TEST

May - 2019



TEST MODELS

Cush Core, 250 g



Mr Wolf 258 g



Huck Norris 78 g



Rimpact 94 g



Vittoria, 190 g



Flat Tire Defender 218 g



PTN Yellow 109 g



PTN Red 89 g



TEST TYRE SCHWALBE NOBBY NIC 27.5 – 2.35 TUBELESS READY



Sealant



IMPACT DURABILITY TEST

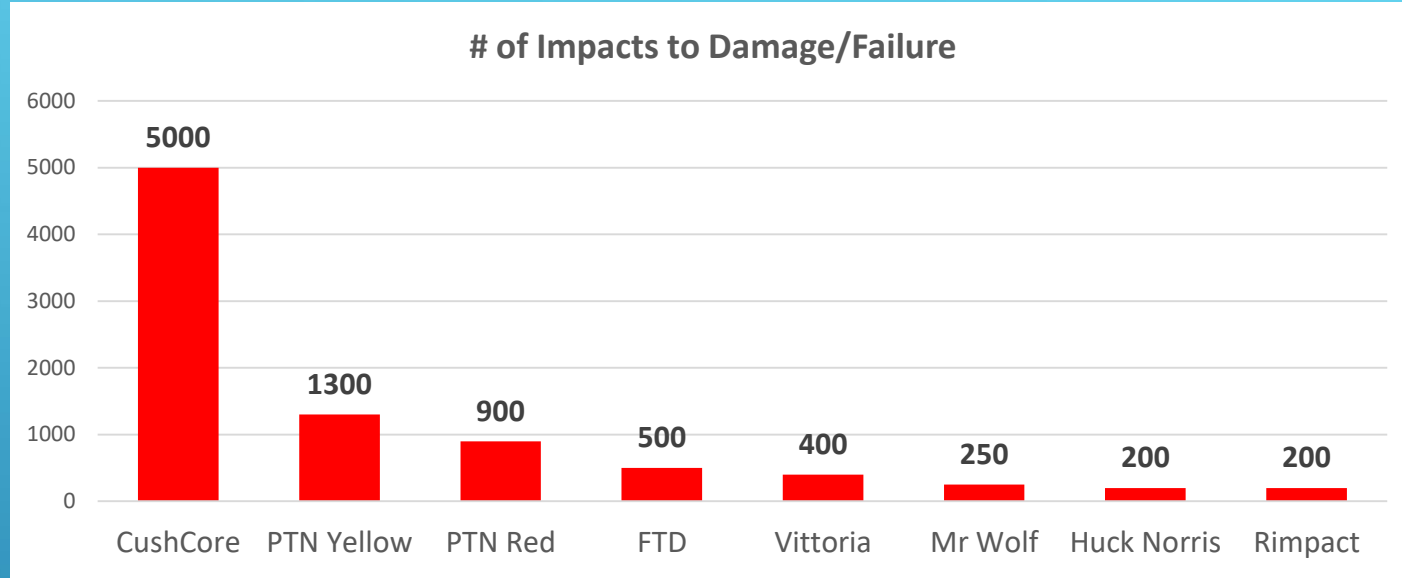


Measurement of flexibility



Impact device

DURABILITY TEST



Cush Core
5000 impacts



PTN Yellow
1300 impacts



PTN Red
900 impacts



Flat Tire Def.
500 impacts



Vittoria
400 impacts



Mr Wolf
250 impacts



Huck Norris
200 impacts



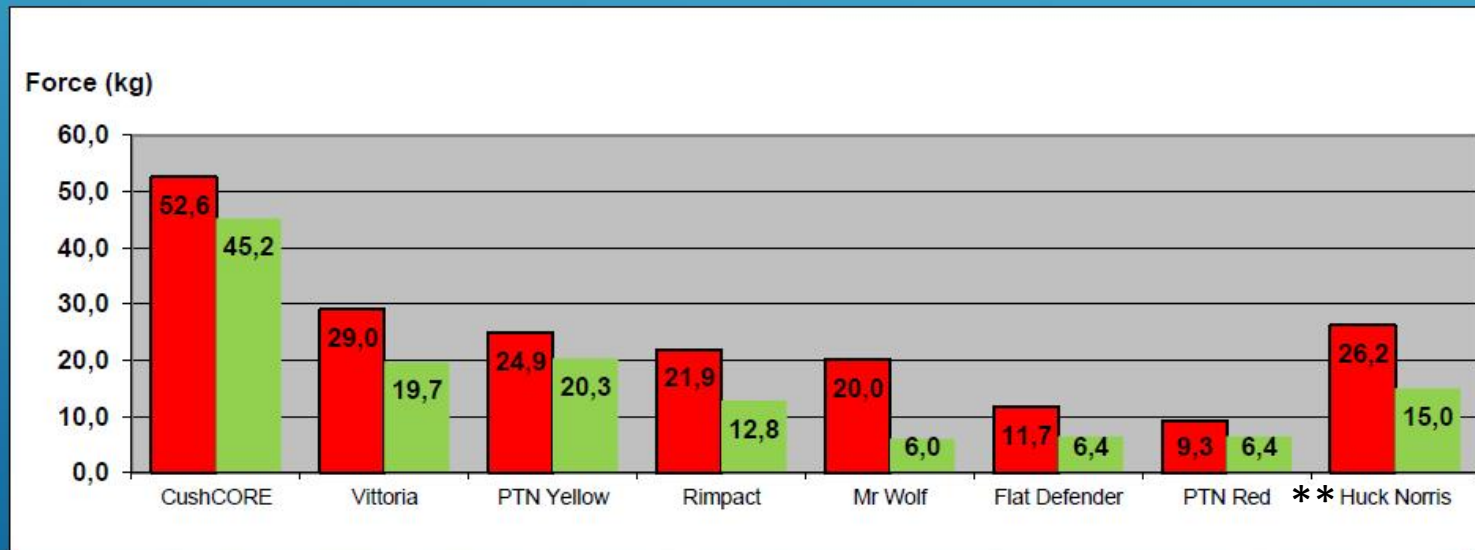
Rimpact
200 impacts



IMPACT TEST RESULTS

Number	Model	NEW	NEW	TEST AFTER	TEST AFTER
		Force (kg)	Force (N)	Force (kg)	Force (N)
1	CushCORE	52,6	516	45,2	443
2	Vittoria	29,0	284	19,7	193
3	PTN Yellow	24,9	244	20,3	199
4	Rimpact	21,9	215	12,8	126
5	Mr Wolf	20,0	196	6,0	59
6	Flat Defender	11,7	115	6,4	63
7	PTN Red	9,3	91	6,4	63
**	8 Huck Norris	26,2	257	15,0	147

flexibility length 5,0 mm



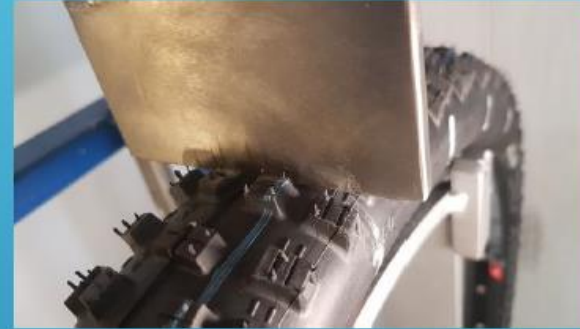
**Note: Huck Norris – invalid test result due to lack of material thickness.



PINCH TEST



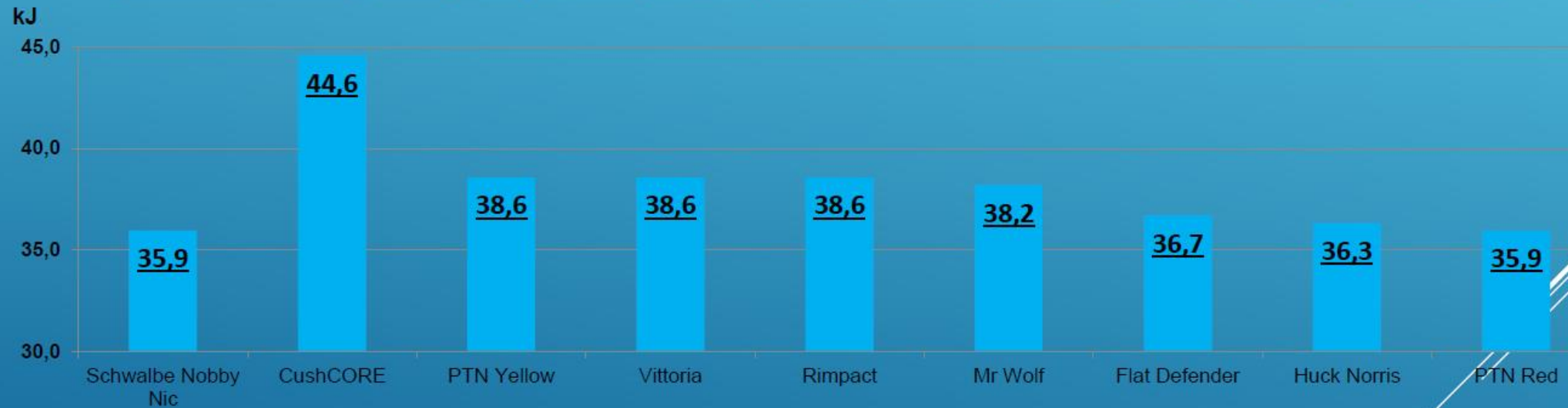
30 degree



90 degree

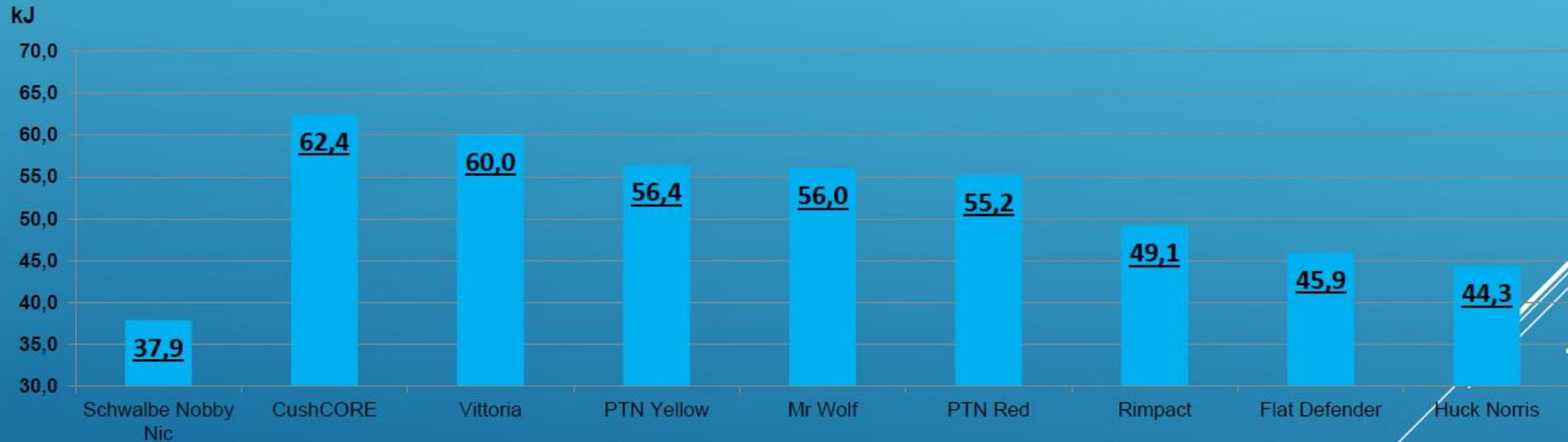
PINCH RESULTS 30 DEGREES

Tyre Model	Blade	Load (kg)	Tyre Press. (bar)	Zone number	Innertube	Energy (j)	1	2	3	Hole Rim	Hole Tread
Schwalbe Nobby Nic	30 degrees	11,450	1,70	1	Sealant 100 ml	35,9	35,94	35,94	35,94	x	x
CushCORE	30 degrees	11,450	1,70	1	Sealant 100 ml	44,6	44,93	44,93	43,81		x
PTN Yellow	30 degrees	11,450	1,70	1	Sealant 100 ml	38,6	38,19	38,19	39,31		x
Vittoria	30 degrees	11,450	1,70	1	Sealant 100 ml	38,6	38,19	38,19	39,31		x
Rimpact	30 degrees	11,450	1,70	1	Sealant 100 ml	38,6	38,19	39,31	38,19	x	x
Mr Wolf	30 degrees	11,450	1,70	1	Sealant 100 ml	38,2	38,19	38,19	38,19		x
Flat Defender	30 degrees	11,450	1,70	1	Sealant 100 ml	36,7	37,07	35,94	37,07	x	x
Huck Norris	30 degrees	11,450	1,70	1	Sealant 100 ml	36,3	37,07	35,94	35,94	x	x
PTN Red	30 degrees	11,450	1,70	1	Sealant 100 ml	35,9	35,94	35,94	35,94		x



PINCH RESULTS 90 DEGREES

Tyre Model	Blade	Load (kg)	Tyre Press. (bar)	Zone number	Innertube	Energy (j)	1	2	3	Hole Rim	Hole Tread
Schwalbe Nobby Nic	90 degrees	12,320	1,70	1	Sealant 100 ml	37,9	38,67	37,47	37,47	x	x
CushCORE	90 degrees	12,320	1,70	1	Sealant 100 ml	62,4	62,85	62,85	61,64	x	
Vittoria	90 degrees	12,320	1,70	1	Sealant 100 ml	60,0	60,43	60,43	59,22	x	
PTN Yellow	90 degrees	12,320	1,70	1	Sealant 100 ml	56,4	56,80	56,80	55,60	x	
Mr Wolf	90 degrees	12,320	1,70	1	Sealant 100 ml	56,0	56,80	55,60	55,60	x	
PTN Red	90 degrees	12,320	1,70	1	Sealant 100 ml	55,2	55,60	55,60	54,39	x	
Rimpact	90 degrees	12,320	1,70	1	Sealant 100 ml	49,1	49,55	49,55	48,34	x	x
Flat Defender	90 degrees	12,320	1,70	1	Sealant 100 ml	45,9	45,93	45,93	45,93	x	x
Huck Norris	90 degrees	12,320	1,70	1	Sealant 100 ml	44,3	44,72	44,72	43,51	x	



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APPENDIX

MTB WHEEL PROTECTOR TEST

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CUSHCORE



0 pcs



5000 pcs after

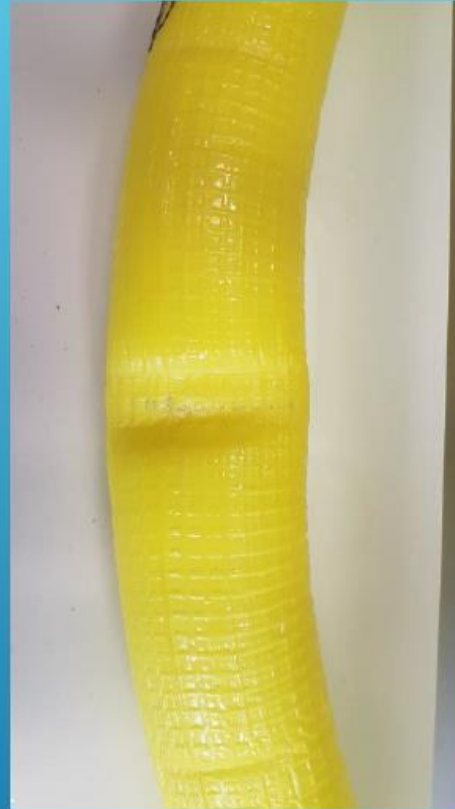
Note: pcs = number of impacts



PTN YELLOW



0 pcs



50 pcs after



1300 pcs after

Note: pcs = number of impacts



PTN RED



0 pcs



50 pcs after



900 pcs after

Note: pcs = number of impacts



FLAT DEFENDER



0 pcs



50 pcs after



500 pcs after

Note: pcs = number of impacts



VITTORIA



0 pcs



50 pcs after



400 pcs after

Note: pcs = number of impacts



MR WOLF



0 pcs



30 pcs after

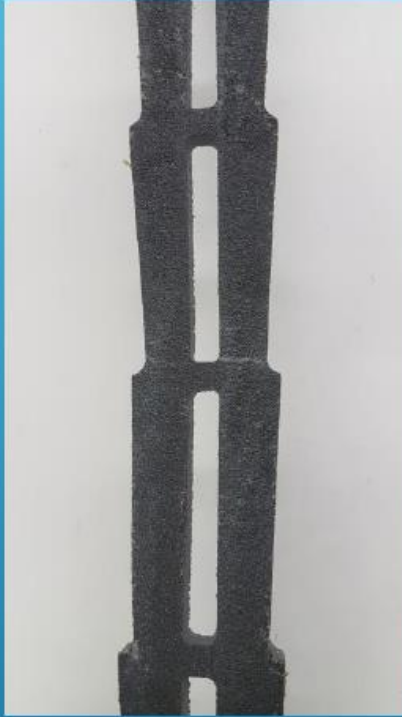


250 pcs after

Note: pcs = number of impacts



HUCK NORRIS



0 pcs



200 pcs after



3000 pcs after

Note: pcs = number of impacts



RIMPACT



0 pcs



40 pcs after



200 pcs after

Note: pcs = number of impacts

