

## Notes:

Crr values are typical for very smooth surfaces - Crr on typical road surfaces may be 50 to 100 % higher  
 Tire Pressure = 120 psig unless otherwise noted  
 Speed ~ 51 km/hr (54X13 - ~ 100 rpm cadence)  
 SRM Pro Power Measurement (Zero'd before each test run - Calibrated every 6 months)  
 Crr Calculation from Tom Anhalt's Spreadsheet  
 Tacx Rollers (79 mm PVC - 26 cm spacing) with Hinged Front Fork Mount  
 Test Run time ~ 2 minutes  
 Power per Wheel at 25 mph with 100 lb load  
 Rear wheel load adjusted per morning weigh in  
 Each tire warmed up for > 5 minutes before testing  
 Aero position used for all tests (to hopefully maximize repeatability of rear wheel load)  
 Control - Ritchey Fortress and/or Michelin Pro 2 Light training tire tested first and/or last each test day  
 Raw Speed Data was corrected for tire roll out prior to Crr calculation  
 Ambient Temperature Range 60 - 75 F (typical 5 degree F range per test day)  
 During the tests tire T increases from 20 - 40 deg F (low Crr tires heat up less than the higher Crr tires) - (Estimated T rise on a flat surface is between 4 to 8 F)  
 Estimated Day to Day Repeatability Std. Dev. ~ 1.3 %  
 Corrected Note on Tubular Gluing - Identified Shop Glued Tires Separately - Previously these had been lumped with Properly Glued (Defined below)  
 Data is included on a set (\*) of Vittoria tubulars tested by "properly" gluing each tire onto the existing glue bed - BTR thread "Vittoria Tubulars including the new 320 tpi CX".

## Notes on Tubular Gluing:

In late 2007 I discovered evidence that the gluing method I had been using to test tubular tires was not producing optimum Crr results. I had been using 2 coats of Continental glue on my Reflex test rim with no glue on the tire. This seemed to secure the tire adequately but this was not the case. The use of less glue seemed in line with improving the Crr of tubulars by reducing the thickness of the "compliant glue layer." It seems now more important to achieve a ~ 100% bond to the base tape - the light gluing I initially used must have allowed some slipping resulting in higher Crr. The test in 2007 was on a Vittoria Crono mounted on a Sub 9 disc using 3 coats of Mastik 1 glue on the rim and 2 coats on the tire (~ 2 tubes of glue per wheel). The tire tested out at a very low Crr, significantly lower than the first test with light Continental gluing. I have repeated the test on several Cronos with similar results. Additionally I have tested other tires with "the same" gluing processes and have seen similar and better results as compared to the light gluing tests. Rev 8 adds those results plus identifies the glue process. I would estimate that the Crr lightly glued tires might improve by ~ 0.0003 - 0.0004 when properly glued. Definitions - Properly glued => Mastik 1 - 3 coats on Rim, 2 coats on Tire Lightly Glued => Continental - 2 coats on Rim, no glue on tire Note on Definitions - in some cases I've tested tires supplied on others wheels and glued by shops - I've identified those cases as Properly Glued.

Tire/tube	Tubular?	Tire Width (mm)	Crr	Std Dev	watts per wheel	Runs	Days	Notes
Vittoria Pista Evo CS Tubular (23) *	X	21	0.00220	0.00002	10.8	4	2	2 New Tires
Specialized Mondo Open Tubular (23)/Mich Latex (18/20)		23	0.00233	0.00001	11.5	2	1	New Tire
Vittoria EVO Corsa Crono (20) Tubular	X	20	0.00233	0.00003	11.5	18	8	New & Used Tires - Properly Glued
Velo Flex Record Tubular	X	19	0.00234	0.00001	11.6	4	2	New Tire - Properly Glued
Bontrager Race X Lite Pro Tubular (22)	X	21	0.00239	0.00001	11.8	2	1	Used Tire - Properly Glued
FMB Silk Tubular (23) Criterium Tread	X	24	0.00240	0.00001	11.8	2	1	New Tire - Properly Glued
Vittoria Ultra Speed (20)/Mich Latex (18/20)		21	0.00243	0.00002	11.9	2	1	Used Tire
Bontrager Race X Lite Pro (23)/Mich Latex (18/20)		23	0.00244	0.00006	12.0	16	5	4 New & 2 Used (> 65 miles) - Slight Crr Decrease with use
Velo Flex Record/Michelin Latex Tube (18/20)		20	0.00245	0.00006	12.1	4	2	2 Used Tires - ~ 30 miles/45 miles
Bontrager R4 Aero (22)/Bontrager Latex (19/23)		22	0.00245	0.00002	12.1	8	2	3 New Tires + 1 Used tire (~ 65 miles)
Vittoria Open Corsa Evo 320 tpi CX (23)/Mich Latex (22/23)		24	0.00250	0.00003	12.3	2	1	Used Tire
Continental Grand Prix Supersonic (20)/Mich Latex (18/20)		20	0.00251	0.00004	12.3	2	1	New Tire - Center Ridge Shaved Off
Michelin Pro 2 Light SC (23)/Mich Latex Tube (18/20)		24	0.00254	0.00005	12.5	6	2	Used Tire ~ 40 miles
Vittoria Corsa Evo CX 320 tpi Tubular (23) *	X	23	0.00254	0.00003	12.5	4	2	2 New Tires
Michelin Pro 3 Light SC (23)/Mich Latex Tube (22/23)		24	0.00257	0.00004	12.6	4	1	2 Used Tires
Michelin Pro 2 Light SC (23)/Mich Latex Tube (22/23)		24	0.00258	0.00008	12.8	100	47	Control Tire - Used Tire (Booted)
Velo Flex Record/Michelin Latex Tube (18/20)		21	0.00259	0.00002	12.7	2	1	New Tire
Torelli Torino (23)/Michelin Latex Tube (18/20)		24	0.00260	0.00003	12.8	2	1	Used Tire - 500 miles
IRC Formula Pro Tubeless "Top Secret"		24	0.00260	0.00003	12.8	6	3	2 New Tires plus 40 miles on one
Bontrager Race X Lite Pro Tubular (22)	X	22	0.00260	0.00004	12.8	2	1	Used Tire - Installed using Tufo Extreme Tape
Vittoria Open Corsa EVO CX (23)/Mich Latex Tube (22/23)		24	0.00261	0.00001	12.8	2	1	Used Tire - 40 miles
Deda Giro Italia (23)/Mich Latex Tube (22/23)		25	0.00261	0.00005	12.8	2	1	Used Tire
Bontrager RXL TT Aero Wing (23) New Design/Mich (18/20)		24	0.00262	0.00000	12.9	2	1	New Tire - New Design (Weight ~ 200 grams)
Michelin Pro Light SC (20)/Michelin Latex Tube (18/20)		22	0.00262	0.00010	12.9	8	2	4 Used Tires
Bontrager R4 Plus (23)/Bontrager Latex (19/23)		23	0.00265	0.00003	13.0	2	1	New Tire
Michelin Pro 2 Light SC (23)/Mich Latex Tube (18/20)		24	0.00267	0.00004	13.1	7	2	New Tire
Velo Flex Record Tubular	X	20	0.00267	0.00005	13.1	3	1	Jens Used Tire - Shop Glued
Zipp Tangente (21) Tubular - New Version Purchased in 2008	X	22	0.00267	0.00001	13.1	2	1	Used Tire - Shop Glued
Vittoria Corsa EVO CX Tubular (21)	X	21	0.00267	0.00003	13.1	2	1	Used Tire - Shop Glued
Zipp Tubular - Original Design	X	22	0.00269	0.00006	13.2	19	5	Used Tire - Properly Glued
Bontrager Select (28)/Vred Latex (18/25)		27	0.00268	0.00001	13.2	2	1	New Tire - Wire Bead - Tested at 120 psig / Rated 100 psig
Michelin Pro Light SC (20)/Michelin Latex Tube (18/20)		22	0.00270	0.00004	13.3	2	1	Used Tire ~ 100 miles (from Jack Watts)
Vittoria EVO KS (23)/Michelin Latex Tube (18/20)		23	0.00271	0.00005	13.3	4	1	Used Tire ~ 50 miles
Michelin Pro 3 Light SC (23)/Mich Latex Tube (22/23)		23	0.00272	0.00003	13.4	2	1	New Tire
Challenge Criterium (23)/Michelin Latex Tube (18/20)		24	0.00272	0.00001	13.4	2	1	New Tire
Bontrager RXL TT Aero Wing (19) New Design/Mich (18/20)		20	0.00274	0.00007	13.5	18	8	6 New Tires - New Design (Weight ~ 180 grams)
Michelin Axial Pro Light (20)/Michelin Latex Tube (18/20)		22	0.00274	0.00003	13.5	2	1	Used Tire

Tire/tube	Tubular?	Tire Width (mm)	Crr	Std Dev	watts per wheel	Runs	Days	Notes
Vittoria EVO KS (23)/Michelin Latex Tube (22/23)		23	0.00274	0.00003	13.5	3	2	Used Tire ~ 50 miles
Zipp Dimpled Clincher/Mich Latex Tube (18/20)		21	0.00275	0.00004	13.5	2	1	Used Tire ~ 60 miles
Vittoria EVO Corsa Crono (20) Tubular	X	20	0.00275	0.00004	13.5	2	1	New Tire - Lightly Glued
Vittoria Diamante Pro Light (23)/Mich Latex (18/20) Tube		24	0.00275	0.00004	13.5	2	1	New Tire
Vittoria Corsa Evo CX 320 tpi Tubular (21) *	X	21	0.00275	0.00007	13.5	8	4	2 New Tires
Bontrager Race X Lite Pro Tubular (22)	X	22	0.00276	0.00001	13.6	2	1	New Tire - Lightly Glued
Bontrager RXXXL Tubular (23)	X	23	0.00277	0.00001	13.6	2	1	New Tire
Michelin Pro 2 Light SC (23)/Mich Latex Tube (22/23)		24	0.00278	0.00005	13.7	4	1	New Tire
Velo Flex Record/Michelin Latex Tube (18/20)		20	0.00279	0.00002	13.7	4	2	Jen's Used Tire
FMB Silk Tubular (20) Criterium Tread	X	21	0.00280	0.00003	13.8	2	1	New Tire - Lightly Glued
Bontrager Race XXX Lite (22)/Mich Latex (18/20)		22	0.00281	0.00001	13.8	2	1	New Tire
FMB Cotton Tubular Criterium Tread (23)	X	23	0.00282	0.00004	13.9	2	1	New Tire - Lightly Glued
Michelin Pro 3 Race (25)/Mich Latex Tube (22/23)		26	0.00283	0.00001	13.9	2	1	New Tire
Continental GP 4000S (23)/Michelin Latex (22/23)		23	0.00284	XXXX	14.0	1	1	Used Tire ~ 1000 miles
Michelin Pro Light SC (20)/Michelin Latex Tube (18/20)		21	0.00285	0.00004	14.0	4	2	Used Tire > 60 miles - Tested 0.00295 New
Zipp Dimpled Clincher/Mich Latex Tube (18/20)		21	0.00286	0.00004	14.1	2	1	New Tire
Bontrager Race X Lite Pro (21)/Mich Latex (18/20)		21	0.00287	0.00002	14.1	4	2	Data for 4 New Tires
Ritchey WCS Race Slick tubular	X	22	0.00287	0.00003	14.1	4	1	Used Tire - Shop Glued
Dugast Speed Silk (22) Tubular	X	22	0.00288	0.00006	14.2	2	1	Used Tire - Lightly Glued
Zipp Tangente (21) Tubular	X	22	0.00288	0.00002	14.2	4	2	2 Used Tires - Lightly Glued
Vittoria Open Corsa EVO KS (23)/Mich Latex Tube (18/20)		23	0.00291	0.00000	14.3	2	1	New Tire
Bontrager Race X Lite (25)/ Vred (18/25) Latex Tube		26	0.00291	0.00000	14.3	2	1	New Tire
IRC Paperlight (20)/ Mich (18/20) Latex Tube		21	0.00291	0.00002	14.3	2	1	New Tire
Vittoria EVO KS (20)/Michelin Latex Tube (18/20)		22	0.00293	0.00005	14.4	2	1	Used Tire ~ 80 miles
Bontrager Select (25)/Vred Latex (18/25)		25	0.00294	0.00001	14.4	2	1	New Tire - Wire Bead - Tested at 120 psig / Rated 100 psig
Michelin Pro Light SC (20)/Michelin Latex Tube (18/20)		21	0.00295	0.00003	14.5	2	1	New Tire
Vittoria Corsa EVO CX Tubular	X	22	0.00296	0.00003	14.6	2	1	Used Tire ~ 200 miles - Shop Glued
Vittoria Open Corsa EVO KS (23)/Mich Latex Tube (22/23)		23	0.00297	0.00005	14.6	2	1	New Tire
Zipp Tubular (21) Original Design	X	22	0.00301	0.00002	14.8	4	2	New Tire - Lightly Glued
Kenda Kaliente Light (23)/Michelin Latex (22/23)		24	0.00301	XXXX	14.8	1	1	Used Tire
Bontrager Race X Lite Aero Wing (25)/Mich Latex (18/20)		25	0.00302	0.00003	14.9	2	1	New Tire
Bontrager Race Lite (25)/Vred Latex (18/25)		25	0.00302	0.00001	14.9	2	1	New Tire
Vittoria Open Corsa CX TT (23) with Mich Latex Tube (22/23)		24	0.00305	0.00002	15.0	2	1	Used - Jen's Tire
Dugast Speed Silk (22) Tubular	X	22	0.00305	0.00004	15.0	4	2	New Tire - Lightly Glued
Michelin Pro Race 2 SC (20)/Mich Latex Tube (18/20)		21	0.00306	0.00005	15.0	2	1	Used ~ 500 miles
Michelin Pro Race 2 SC (23)/Mich Latex Tube (22/23)		24	0.00306	0.00005	15.0	3	1	Used - Jen's Tire
Vittoria EVO KS (20)/Michelin Latex Tube (18/20)		22	0.00306	0.00003	15.1	4	2	New Tire
Zipp Tangente (21) Tubular	X	21	0.00306	0.00003	15.1	6	2	2 New Tires - Lightly Glued
Michelin Pro 3 Race (23)/Mich Latex Tube (22/23)		23	0.00306	0.00004	15.1	2	1	New Tire
Bontrager Sport (25)/Vred Latex (18/25)		24	0.00306	0.00003	15.1	2	1	New Tire - Wire Bead - Tested at 120 psig / Rated 100 psig
Michelin Pro 3 Grip (23)/Mich Latex Tube (22/23)		23	0.00307	0.00001	15.1	2	1	New Tire
Continental GP 4000S (23)/Vred Latex (18/25) Tube		23	0.00307	0.00006	15.1	2	1	Used Tire ~ 200 miles
Vittoria Open Corsa EVO CX (23)/Butyl Tube		24	0.00307	0.00004	15.1	2	1	Used Tire ~ 40 miles
Schwalbe Stelvio Tubular (22)	X	23	0.00307	0.00004	15.1	2	1	Used Tire ~ 500 miles - Made by Tufo - Lightly Glued
Specialized Mondo Tubular	X	23	0.00310	0.00001	15.2	2	1	Used Tire - Shop Glued
Bontrager Race X Lite Aero Wing (19)/Michelin Latex (18/20)		20	0.00311	0.00004	15.3	2	1	Used Tire ~ 200 miles - Old Design (weight ~ 200 grams)
Velo Flex Carbon Tubular	X	23	0.00312	0.00004	15.3	2	1	Used Tire ~ 80 miles - Shop Glued
Continental GP 4000S (23)/Vred Latex (18/25) Tube		23	0.00313	0.00005	15.4	4	2	New Tire
Vittoria Diamante Pro (23)/Mich Latex (18/20) Tube		23	0.00315	0.00003	15.4	2	1	New Tire
FMB Silk Tubular Strada Tread (22)	X	23	0.00315	0.00001	15.5	4	2	New Tire - Lightly Glued
Vredstein Fortezza Pro Tricompt Tubular (21)	X	22	0.00316	0.00001	15.6	2	1	Used Tire - Shop Glued
Bontrager Select (23)/Vred Latex (18/25)		24	0.00316	0.00000	15.6	2	1	New Tire - Wire Bead - Tested at 120 psig / Rated 100 psig
Velo Flex Pave/Mich Latex Tube (18/20)		23	0.00317	0.00004	15.6	2	1	Used Tire
Bontrager Race Lite (23)/Vred Latex (18/25)		23	0.00317	0.00006	15.6	2	1	New Tire
Velo Flex Pave/Mich Latex Tube (22/23)		23	0.00318	0.00004	15.7	3	1	Used Tire
FMB Silk Tubular Strada Tread (20)	X	21	0.00322	0.00002	15.8	2	1	New Tire - Lightly Glued

Tire/tube	Tubular?	Tire Width (mm)	Crr	Std Dev	watts per wheel	Runs	Days	Notes
Scwalbe Ultrero (23)/Michelin Latex Tube (22/23)		24	0.00322	0.00005	15.8	2	1	Used Tire
Tufo Race Lite < 125 grams Tubular	X	20	0.00322	0.00001	15.8	2	1	Used Tire - Shop Glued
Continental SuperSonic (20)/Michelin Latex (18/20) Tube		20	0.00322	0.00005	15.8	2	1	Used Tire - ~ 1000 miles
Tufo S3 Lite < 135 grams Tubular (21)	X	23	0.00324	0.00005	15.9	2	1	Used Tire - Lightly Glued
Vittoria Open Extreme (20)/Michelin Latex (18/20) Tube		21	0.00324	0.00008	15.9	2	1	New Tire - Stored 3 years
Scwalbe Ultrero (23)/Michelin Latex Tube (18/20)		24	0.00325	0.00004	16.0	2	1	Used Tire
Continental Sprinter (22) Tubular	X	23	0.00327	0.00001	16.1	2	1	New Tire - Shop Glued
Bontrager Race X Lite Race Day (23)/ Vred (18/25) Latex Tube		23	0.00328	0.00001	16.1	2	1	New Tire
Bontrager Race X Lite (23)/ Latex Tubes		23	0.00328	0.00001	16.2	3	6	3 New Tires - Mich (18/20) & (22/23), Vred (18/25) Latex Tubes
Vittoria Open Pave Evo CG (24)/Mich Latex (22/23)		25	0.00329	0.00001	16.2	4	1	2 New Tires
Bontrager Race X Lite Aero Wing (19)/Michelin Latex (18/20)		20	0.00330	0.00003	16.2	2	1	New Tire - Old Design (weight ~ 200 grams)
Vittoria EVO Corsa Triathlon (21) Tubular	X	20	0.00330	0.00001	16.2	2	1	New Tire - Lightly Glued
Hutchinson Fusion 2 Tubeless (23)		25	0.00331	0.00003	16.3	2	1	Used Tire ~ 200 miles
IRC Red Storm Lite (19)/Mich Latex (18/20)		19	0.00331	0.00001	16.3	2	1	Used Tire
Vittoria Pave Evo CG Tubular (27) *	X	26	0.00331	0.00005	16.3	4	2	2 New Tires
Maxxis Hors Catagorie (20)/Mich Latex (22/23) Tube		21	0.00334	0.00009	16.4	4	1	2 Used Tires
Scwalbe Ultrero (23)/Butyl Tube		24	0.00335	0.00003	16.5	2	1	Used Tire
Clement Criterium Seta Servizio Corsa Tubular	X	22	0.00338	0.00003	16.6	2	1	Used Tire - Lightly Glued
Continental Competition (22) Tubular	X	22	0.00340	0.00006	16.7	2	1	New Tire - Lightly Glued
Vittoria Pave Evo CG Tubular (24) *	X	24	0.00343	0.00001	16.9	4	2	2 New Tires
Tufo Clinchular Elite Jet < 160 grams	X	22	0.00350	0.00005	17.2	2	1	Used Tire
IRC Formula Pro Tubeless "HC"		24	0.00351	0.00002	17.2	2	1	New Tire
Continental SuperSonic (23)/Michelin Latex (18/20) Tube		22	0.00352	0.00004	17.3	2	1	New Tire
IRC Formula Pro Tubeless "SC"		24	0.00355	0.00004	17.4	2	1	New Tire
Specialized Mondo/Butyl Tube (23)		25	0.00360	0.00000	17.7	2	1	Used Tire
Vredstein Fortezza Tricomp (23)/Michelin Latex (18/20) Tube		24	0.00360	0.00004	17.7	2	1	Used Tire - stored 2 years
Specialized Turbo C (18)/Michelin Latex (18/20) Tube		19	0.00369	0.00002	18.1	2	1	Used Tire - ~ 1000 miles
IRC Formula Pro Tubeless "RBC"		24	0.00370	0.00003	18.2	2	1	New Tire
Continental Grand Prix 4 Season (23)/Michelin Latex (22/23)		23	0.00371	0.00004	18.2	2	1	New Tire
Schwalbe Stelvio Tubular (25)	X	25	0.00373	0.00002	18.3	2	1	New Tire - Made by Tufo - Shop Glued
Velo Flex Pave/Butyl Tube (22/23)		23	0.00376	0.00008	18.5	4	1	Used Tire
Conti Grand Prix 4000 (Black Chili) Tubular (22)	X	21	0.00384	0.00004	18.9	2	1	New Tire - Lightly Glued
Continental GP 4000 (23)/Michelin Latex (18/20) Tube		24	0.00384	0.00000	18.9	1	1	Used Tire - 350 miles
Specialized Turbo R (18)/Michelin Latex (18/20) Tube		19	0.00386	0.00003	19.0	2	1	New Tire
Scwalbe Stelvio (23)/Butyl Tube		24	0.00392	0.00005	19.3	2	1	Used Tire
Avocet TT/30 (20)/Butyl Tube		21	0.00394	0.00010	19.4	2	2	Used Tire
Vredstein Fortezza (20)/Michelin Latex (18/20) Tube		21	0.00397	0.00004	19.5	2	1	Used Tire - stored 2 years
IRC Formula Pro Tubeless "XG"		24	0.00399	0.00006	19.6	2	1	New Tire
Continental Ultra 2000/Vred Thick Latex Tube		19	0.00400	0.00005	19.7	4	1	2 Used Tires
Specialized Turbo C (18)/Michelin Latex (18/20) Tube		19	0.00404	0.00004	19.9	2	1	New Tire
Vittoria Corsa CG Squadra Prof - Tubular	X	23	0.00418	0.00007	20.6	2	1	Used Tire ~ 8 years old - Pre Velo Flex - Lightly Glued
Tufo S3 Pro Tubular (21)	X	22	0.00420	0.00000	20.7	1	1	Used Tire with 1/2 Tube of Tufo Sealant - Lightly Glued
Kenda Kaliente (23)/Vred Thick Latex (18/25)		23	0.00420	0.00004	20.7	4	2	1 New & 1 Used Tire
Maxxis Equipe Legere (20)/Michelin Latex (18/20) Tube		20	0.00422	0.00005	20.7	2	1	New Tire
Michelin Axial Pro (23)/Michelin Latex (18/20) Tube		24	0.00423	0.00004	20.8	2	1	Used Tire - Stored 3 years
Continental Ultra Sport (23)/Michelin Latex (18/20) Tube		24	0.00428	0.00009	21.0	2	1	Used Tire - 1000 miles
Bontrager Race Lite Tubular (22)	X	22	0.00440	0.00001	21.7	2	1	New Tire - Lightly Glued
Bontrager Sport (23)/Vred Latex (18/25)		23	0.00453	0.00001	22.3	2	2	New Tire - Wire Bead - Tested at 120 psig / Rated 100 psig
Ritchey Fortress/Butyl Tube		24	0.00462	0.00013	22.7	78	43	Control Tire - first and last run each test day
Tufo S33 Special (21)	X	22	0.00467	0.00002	23.0	2	1	Used Tire - ~ 100 miles - Lightly Glued
Conti GP 3000 (20)/Butyl Tube		19	0.00488	0.00040	24.0	2	1	Used Tire

Tire/tube	Tubular?	Tire Width (mm)	Crr	Std Dev	watts per wheel	Runs	Days	Notes
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**Tubular Glue Aging Tests**

Velo Flex Carbon Tubular - Vittoria Mastik 1 Glue	X	23	0.00334	0.00004	16.4	2	1	Glued 10/31/06 Tested 11/1/06 2 cts rim/1 ct tire
	X	23	0.00324	0.00006	15.9	2	1	Reglued 11/16/06 Tested 11/23/06 add 1 ct ~ 80 miles
	X	23	0.00312	0.00004	15.3	2	1	Tested 12/16/06 ~ 80 miles
	X	23	0.00316	0.00003	15.6	2	1	Tested 1/26/07 ~ 125 miles

Zipp Tubular - Continental Glue	X	22	0.00299	0.00002	14.7	2	1	Glued 12/31/06 Tested 1/1/07 2 cts rim dry/1 ct tire - New Tire
	X	22	0.00302	0.00000	14.9	2	1	Tested 1/6/07 - New Tire/Zero Miles on Road
	X	22	0.00301	0.00001	14.8	2	1	Tested 1/26/07 - New Tire/Zero Miles on Road
	X	22	0.00307	0.00010	15.1	2	1	Tested 2/9/07 - New Tire/Zero Miles on Road

**Latex vs. Butyl Tube Tests**

Velo Flex Pave/Butyl Tube (22/23)		23	0.00376	0.00008	18.5	4	1	Used Tire ~ 500 miles - Torelli Extra Light Butyl Tube
Velo Flex Pave/Mich Latex Tube (18/20)		23	0.00317	0.00004	15.7	2	1	Same Tire
Vittoria Open Corsa EVO CX (23)/Butyl Tube		24	0.00307	0.00040	15.1	2	1	Used Tire ~ 40 miles - Specialized Turbo Butyl Tube
Vittoria Open Corsa EVO CX (23)/Mich Latex Tube (22/23)		24	0.00261	0.00001	12.8	2	1	Same Tire
Scwalbe Ultrero (23)/Butyl Tube		24	0.00335	0.00003	16.5	2	1	Used Tire - Bontrager SL Butyl Tube
Scwalbe Ultrero (23)/Michelin Latex Tube (22/23)		24	0.00322	0.00005	15.8	2	1	Same Tire

Michelin Pro 2 Light/Michelin Latex (22/23)		24	0.00266	0.00001	13.1	2	1	Same Tire
Michelin Pro 2 Light/Bontrager RXXXL Butyl Tube (18/25)		24	0.00292	0.00001	14.4	2	1	Same Tire
Michelin Pro 2 Light/Bontrager RXL Butyl Tube (18/25)		24	0.00292	0.00001	14.4	2	1	Same Tire
Michelin Pro 2 Light/Bontrager Standard Butyl Tube (18/25)		24	0.00322	0.00001	15.8	2	1	Same Tire

**Michelin (18/20) vs. Vredestein (18/25) Latex Tube Tests**

Mich Pro 2 Light (23)/Michelin Latex (18/20) Tube		24	0.00259	0.00003	13.0	4	1	Used Tire ~ 100 miles
Mich Pro 2 Light (23)/Vred Thick Latex (18/25) 40 mm valve		24	0.00259	0.00004	13.0	2	1	Used Tire ~ 100 miles
Conti Supersonic (20)/Michelin Latex (18/20) Tube		20	0.00318	0.00005	15.8	2	1	Used Tire ~ 1000 miles
Conti Supersonic (20)/Vred Thick Latex (18/25) 40 mm valve		20	0.00316	0.00005	15.5	2	1	Used Tire ~ 1000 miles
Mich Pro 2 Light (23)/Michelin Latex (18/20) Tube		24	0.00244	0.00000	12.1	1	1	Used Tire ~ 100 miles - Warm Day
Mich Pro 2 Light (23)/Vred Thin Latex (18/25) 60 mm valve		24	0.00244	0.00000	12.1	1	1	Used Tire ~ 100 miles - Warm Day

**Misc Inner Tube Tests**

Michelin Pro 2 Light (23)/Vred Thin Latex (18/25)		24	0.00253	0.00000	12.5	2	1	Very used tire
Michelin Pro 2 Light (23)/Pannacer Greenlite Urethane (20/26)		24	0.00258	0.00001	12.7	2	1	Very used tire
Michelin Pro 2 Light (23)/Pannacer Butyl Coated Latex (18/23)		24	0.00307	0.00003	15.1	2	1	Very used tire
Michelin Pro 2 Light (23)/Hutchinson Latex (18/23)		24	0.00251	0.00006	12.4	2	1	Very used tire - Hutchy Latex Tubes may not be available
Michelin Pro 2 Light (23)/Bontrager Latex Tube (19/23)		24	0.00249	0.00002	12.2	2	1	Very used tire

**Tufo Sealant Tests**

Tufo S3 Lite < 135 grams Tubular (21)	X	23	0.00324	0.00005	15.9	2	1	Used Tire - Tested 6/20/07 - Add 1/2 Small Tube Tufo Sealant
Tufo S3 Lite < 135 grams Tubular (21)	X	23	0.00330	0.00002	16.2	2	1	Used Tire - Tested 6/22/07
Tufo S3 Lite < 135 grams Tubular (21)	X	23	0.00333	0.00000	16.4	1	1	Used Tire - Tested 7/31/07

**Pressures Other Than 120 psig**

Velo Flex Record/Michelin Latex Tube (18/20)		20	0.00240	X	11.8	1	1	New Tire - 140 psig
Vittoria EVO KS (20)/Michelin Latex Tube (18/20)		22	0.00291	X	14.3	1	1	New Tire - 140 psig

Tufo C Elite Jet < 160 grams	X	22	0.00350	0.00005	17.2	2	1	120 psig
Tufo C Elite Jet < 160 grams	X	22	0.00331	X	16.3	1	1	140 psig
Tufo C Elite Jet < 160 grams	X	22	0.00313	X	15.4	1	1	160 psig
Tufo C Elite Jet < 160 grams	X	22	0.00302	X	14.9	1	1	180 psig
Tufo C Elite Jet < 160 grams	X	22	0.00294	X	14.5	1	1	200 psig

Tufo Race Lite < 125 grams Tubular	X	20	0.00322	0.00001	15.8	2	1	120 psig
Tufo Race Lite < 125 grams Tubular	X	20	0.00304	X	15.0	1	1	140 psig
Tufo Race Lite < 125 grams Tubular	X	20	0.00292	X	14.4	1	1	160 psig
Tufo Race Lite < 125 grams Tubular	X	20	0.00275	X	13.5	1	1	180 psig
Tufo Race Lite < 125 grams Tubular	X	20	0.00267	0.00004	13.1	2	1	200 psig