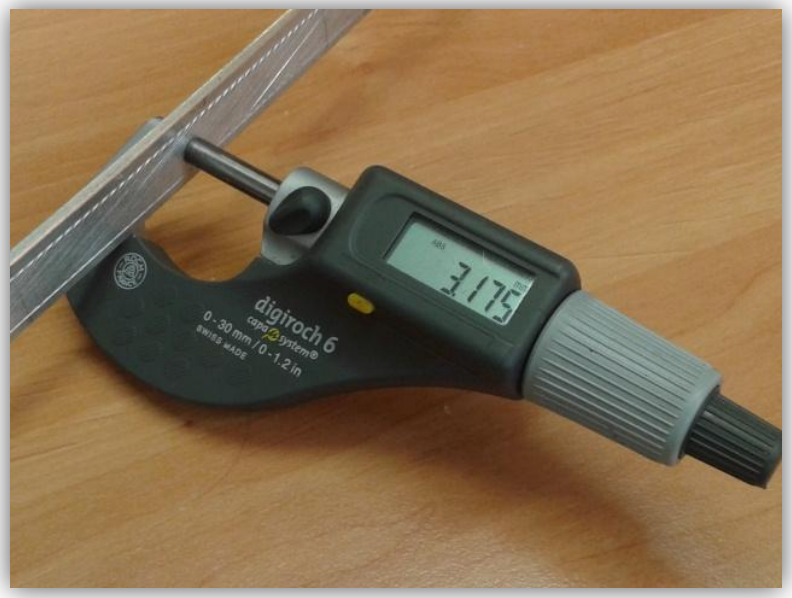
Dimensional analysis of the conductor

24 October 2012

Dimensional analysis of the conductor

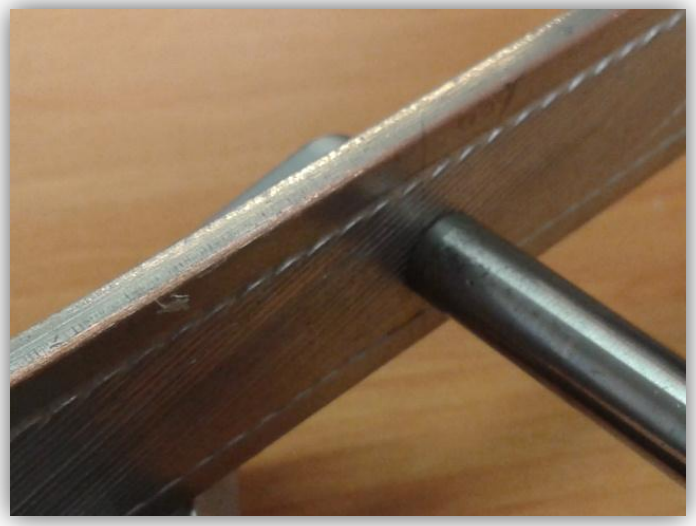
Materials

- One meter of serial conductor : Dipole E002. The first 20 meters have been removed.
- One meter of prototype conductor.



Methods

- Measurement of the thickness on left and right shoulders and in SC cable area thanks to a micrometer.
- Measurement of the total thickness with a caliper.
- These measurements are made every 50 mm.



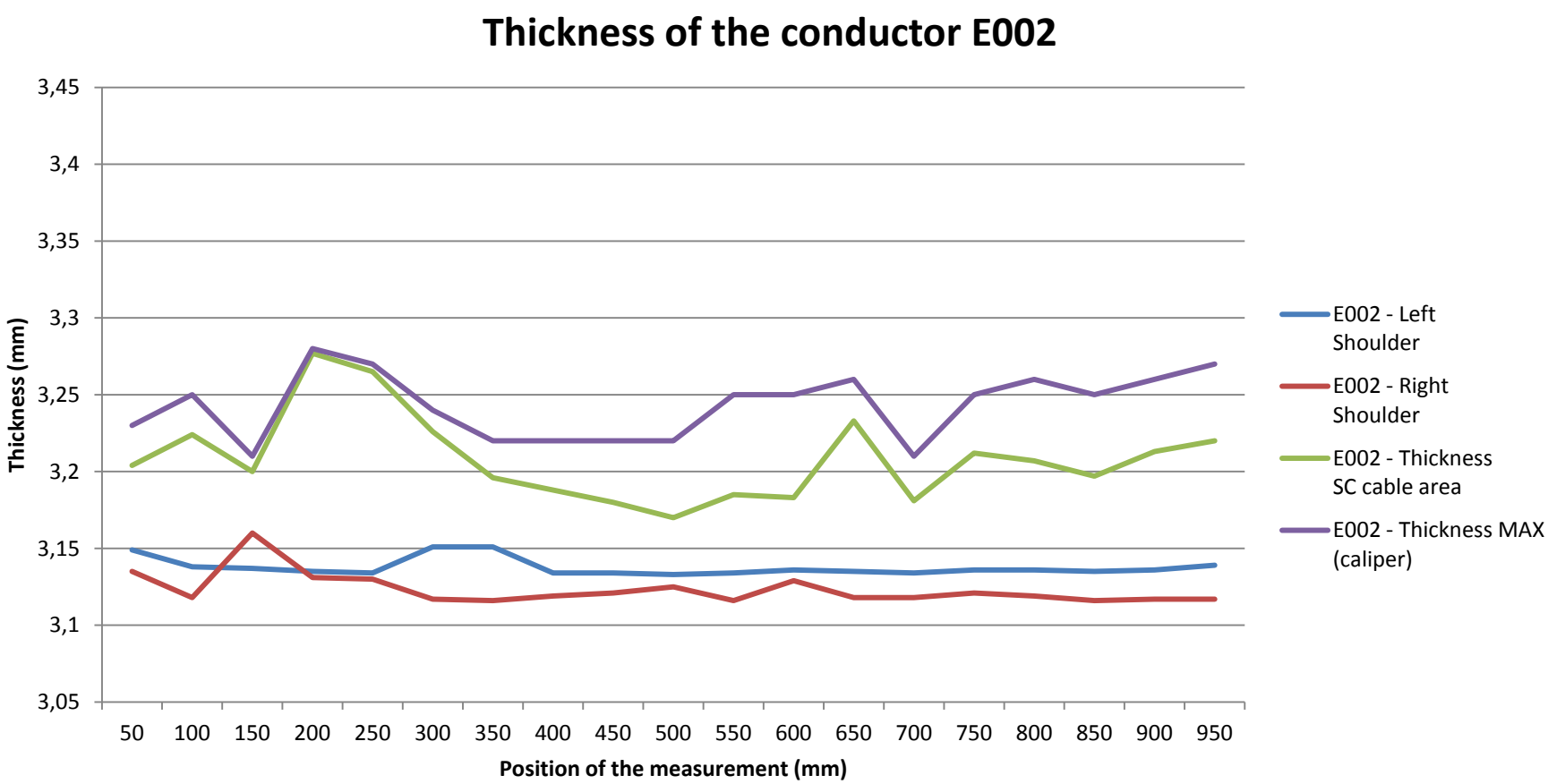
Dimensional analysis of the conductor

➢ **Dipole E002**

Dipole E002					
Position	Left Shoulder	Right Shoulder	Thickness SC cable area	Thickness MAX (caliper)	Width
50	3.149	3.135	3.204	3.23	18.682
100	3.138	3.118	3.224	3.25	18.683
150	3.137	3.16	3.2	3.21	18.684
200	3.135	3.131	3.277	3.28	18.68
250	3.134	3.13	3.265	3.27	18.7
300	3.151	3.117	3.226	3.24	18.68
350	3.151	3.116	3.196	3.22	18.678
400	3.134	3.119	3.188	3.22	18.684
450	3.134	3.121	3.18	3.22	18.686
500	3.133	3.125	3.17	3.22	18.69
550	3.134	3.116	3.185	3.25	18.687
600	3.136	3.129	3.183	3.25	18.682
650	3.135	3.118	3.233	3.26	18.692
700	3.134	3.118	3.181	3.21	18.684
750	3.136	3.121	3.212	3.25	18.69
800	3.136	3.119	3.207	3.26	18.69
850	3.135	3.116	3.197	3.25	18.686
900	3.136	3.117	3.213	3.26	18.672
950	3.139	3.117	3.22	3.27	18.679
Average	**3.138**	**3.123**	**3.208**	**3.243**	**18.685**
Min	3.133	3.116	3.17	3.21	18.672
Max	3.151	3.16	3.277	3.28	18.7

Dimensional analysis of the conductor

➢ **Dipole E002**



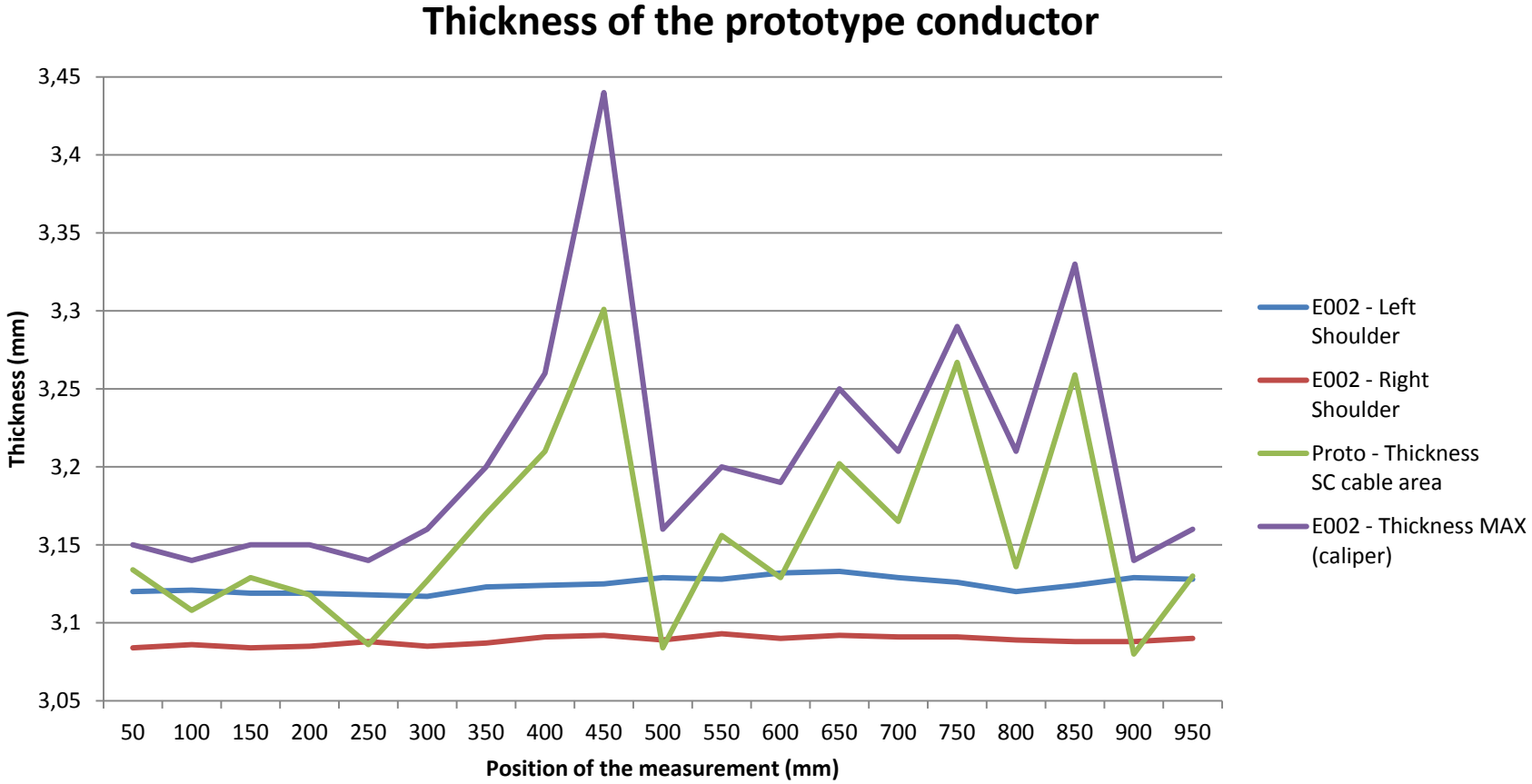
Dimensional analysis of the conductor

➢ **Prototype**

Prototype					
Position	Left Shoulder	Right Shoulder	Thickness SC cable area	Thickness MAX (caliper)	Width
50	3.12	3.084	3.134	3.15	18.441
100	3.121	3.086	3.108	3.14	18.444
150	3.119	3.084	3.129	3.15	18.445
200	3.119	3.085	3.118	3.15	18.448
250	3.118	3.088	3.086	3.14	18.45
300	3.117	3.085	3.127	3.16	18.45
350	3.123	3.087	3.17	3.2	18.452
400	3.124	3.091	3.21	3.26	18.445
450	3.125	3.092	3.301	3.44	18.473
500	3.129	3.089	3.084	3.16	18.454
550	3.128	3.093	3.156	3.2	18.449
600	3.132	3.09	3.129	3.19	18.453
650	3.133	3.092	3.202	3.25	18.454
700	3.129	3.091	3.165	3.21	18.455
750	3.126	3.091	3.267	3.29	18.448
800	3.12	3.089	3.136	3.21	18.46
850	3.124	3.088	3.259	3.33	18.452
900	3.129	3.088	3.08	3.14	18.438
950	3.128	3.09	3.13	3.16	18.446
Average	**3.124**	**3.089**	**3.157**	**3.207**	**18.450**
Min	3.117	3.084	3.08	3.14	18.438
Max	3.133	3.093	3.301	3.44	18.473

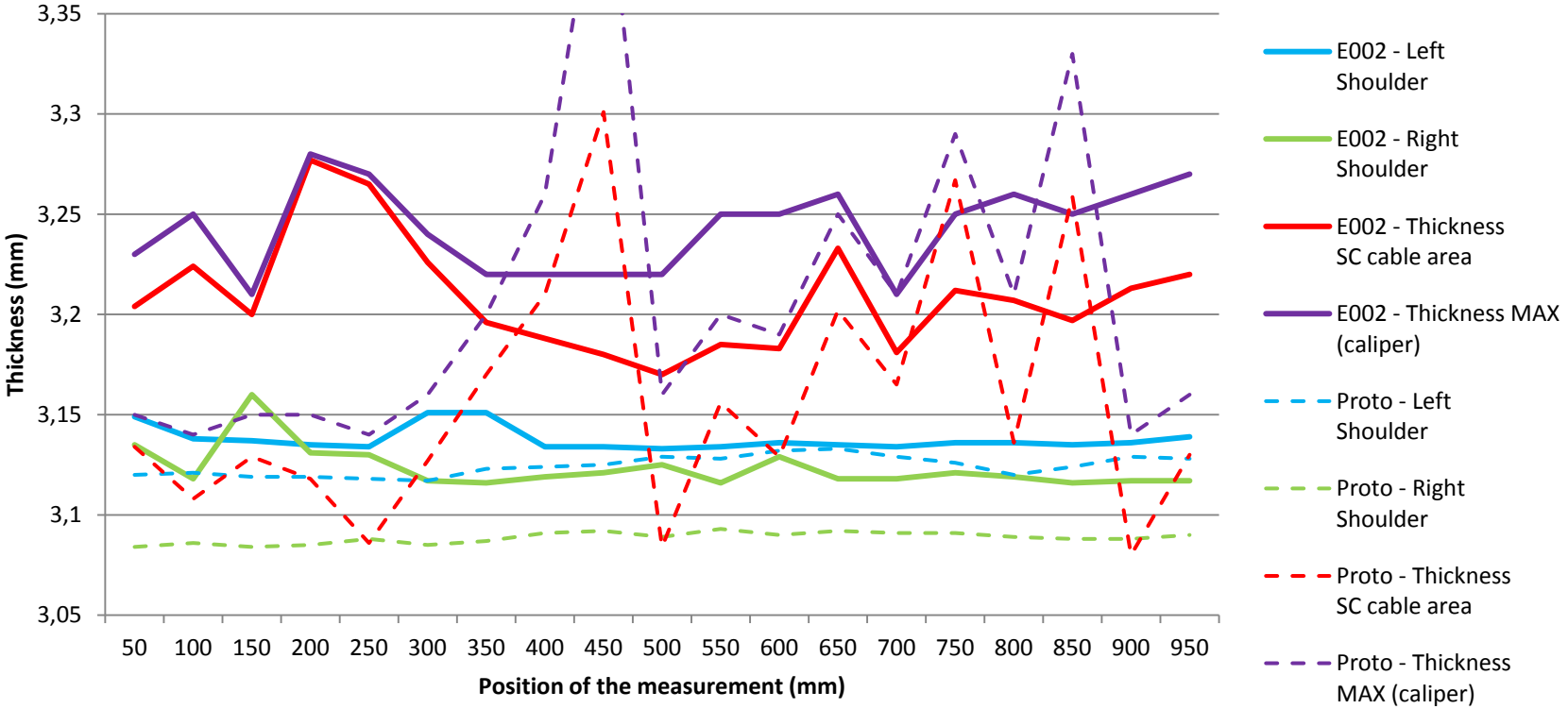
Dimensional analysis of the conductor

- **Prototype**



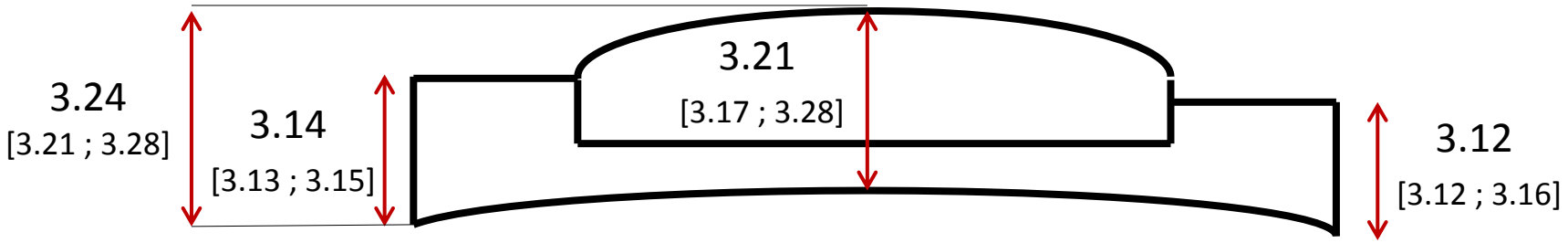
Dimensional analysis of the conductor

➢ **Comparison**



Dimensional analysis of the conductor

- **Dipole E002**



- **Prototype**