





# LINEA 6 – METROPOLITANA DI NAPOLI

				(PRIMA EMISSIONE) – AGOSTO-SETTEMBRE 2013	AGO- SET 13																																											
Albinati	De Risi	Manferlotti	Di Luccio																																													
REDATTO	CONTROLLATO	APPROVATO	AUTORIZZATO	DESCRIZIONE REVISIONE DOCUMENTO	DATA	REV																																										
 <p><b>Ansaldo STS</b> A Finmeccanica Company CONCESSIONARIA</p>				 <p><b>COMUNE DI NAPOLI</b> CONCEDENTE</p>		<table border="1"> <tr> <td colspan="2">PROG</td> <td colspan="2">IMP</td> <td colspan="4">NUMERO</td> </tr> <tr> <td>L</td> <td>M</td> <td>6</td> <td>7</td> <td>F</td> <td>X</td> <td>2</td> <td>C</td> <td>I</td> <td>2</td> <td>5</td> </tr> <tr> <td colspan="4">CODICE PRODOTTO</td> <td colspan="2">AREA</td> <td colspan="2">TIPO</td> <td colspan="2">FASE</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>2</td> <td>C</td> <td></td> <td></td> <td>E</td> <td>S</td> </tr> </table>		PROG		IMP		NUMERO				L	M	6	7	F	X	2	C	I	2	5	CODICE PRODOTTO				AREA		TIPO		FASE								2	C			E	S
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						2	C			E	S																																					
A termini di legge è rigorosamente vietato riprodurre e comunicare a terzi il contenuto del presente documento	<b>TITOLO DOCUMENTO:</b> LINEA 6 METROPOLITANA DI NAPOLI PROGETTO ESECUTIVO <b>OPERE CIVILI – MONITORAGGIO GEOTECNICO GEOREFERENZIATO                  REPORT DELLE MISURE (INTERNO) – STAZIONE CHIAIA</b>																																															
	<b>EMITTENTE</b>  METROPOLITANA DI NAPOLI S.p.A. RESPONSABILE PROGETTAZIONE OPERE CIVILI				<b>CODICE ENTE</b> 			<b>FORMATO</b> A4																																								
	 Monitoraggio delle gallerie e prove di laboratorio per la qualifica dei materiali e loro controllo Monitoraggio opere civili e monitoraggio ambientale				<b>SCALA</b> /		<b>FOGLIO</b> 1 DI 138																																									

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## 1. PREMESSA

Nell'ambito della realizzazione della nuova Metropolitana di Napoli (**Linea 6, tratta Mergellina - Municipio**) è prevista una rete di monitoraggio e controllo finalizzata alla periodica registrazione delle grandezze fisiche di maggiore interesse e agli effetti legati alle attività di cantiere.

In generale, per le stazioni il sistema di monitoraggio prevede i seguenti strumenti:

- Capisaldi di livellazione, posti sul terreno e sui marciapiedi degli edifici adiacenti il pozzo di stazione;
- Staffe livellometriche, poste sugli edifici adiacenti il pozzo di stazione;
- Piezometri Casagrande o a tubo aperto, realizzati in prossimità delle paratie del pozzo di stazione;
- Piezometri elettrici, realizzati all'interno del pozzo di stazione;
- Inclinometri ed estenso-inclinometri, realizzati in prossimità delle paratie del pozzo di stazione;
- Inclinometri, realizzati nelle paratie perimetrali del pozzo di stazione;
- Mire ottiche, poste sulle paratie all'interno del pozzo di stazione
- Celle di carico, disposte sui puntoni metallici di contrasto;
- Barrette estensimetriche, disposte sui puntoni metallici di contrasto e/o all'interno delle paratie perimetrali del pozzo di stazione.

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L'installazione di tale strumentazione impiegata lungo le aree di cantiere (stazione Chiaia, S. Pasquale, Arco Mirelli e Municipio) risulta completa all'interno ed all'esterno dei pozzi di stazione; diversamente, quella relativa alla Galleria di linea è ad oggi in fase d'installazione.

Di seguito saranno restituiti i grafici frutto delle letture svolte nel cantiere, relativi alla sola strumentazione interna:


- Inclinatori, Estensimetri, Piezometri, acquisizione elaborazione restituzione dati competenza Tre Esse.
- Staffe di livellazione, Capisaldi acquisizione competenza ATI, elaborazione restituzione dati competenza Tre Esse.

## **2. DATI GENERALI**

Commessa: Linea 6 – Metropolitana Di Napoli

Impresa esecutrice: Chiaia S.c.a.r.l.

Monitoraggio: Tre Esse Engineering S.r.l.

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### 3. STRUMENTAZIONE INTERNA INSTALLATA

La nomenclatura della strumentazione di monitoraggio ha subito una variazione rispetto all'installazione, necessaria per rendere uniforme ed univoco il nome di ogni strumento installato lungo tutta la tratta.

**Esempio:**                    **CH\_P50\_S1;**

la prima serie di simboli identifica la stazione di monitoraggio (in questo caso San Pasquale),

la seconda è identificativa del numero di pannello monitorato,

la terza corrisponde al tipo di barretta estensimetrica installata (S sta per Strain gauge – corda vibrante) e al numero progressivo della barretta (1,2,...).

#### **Elenco strumentazione installata e funzionante.**

- n°4 Inclinometri

CH\_IN\_P13  
CH\_IN\_P50  
CH\_IN\_P67  
CH\_IN\_P81

- n°24 Barrette Estensimetriche a corda vibrante per metallo

CH\_P13\_S1-6  
CH\_P50\_S1-6  
CH\_P67\_S1-6  
CH\_PU1\_S1-4  
CH\_PU2\_S5-8

- n°11 Celle di Carico

Primo Ordine di Tiranti

CH\_CC1-4

Secondo Ordine di Tiranti

CH\_CC5-9

Puntoni

CH\_PU1\_CC

CH\_PU2\_CC

- n°64 Mire Ottiche

Primo Ordine

CH\_MO1-16

Secondo Ordine

CH\_MO17-32

Terzo Ordine


CH\_MO33-40

Quarto Ordine

CH\_MO36-44

Supplementari

CH\_MO45-64

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#### **4. PLANIMETRIA STRUMENTAZIONE MONITORAGGIO**

Nella figura successiva viene rappresentata la planimetria del cantiere e la disposizione degli strumenti previsti per il monitoraggio geotecnico installati internamente al pozzo stazione.

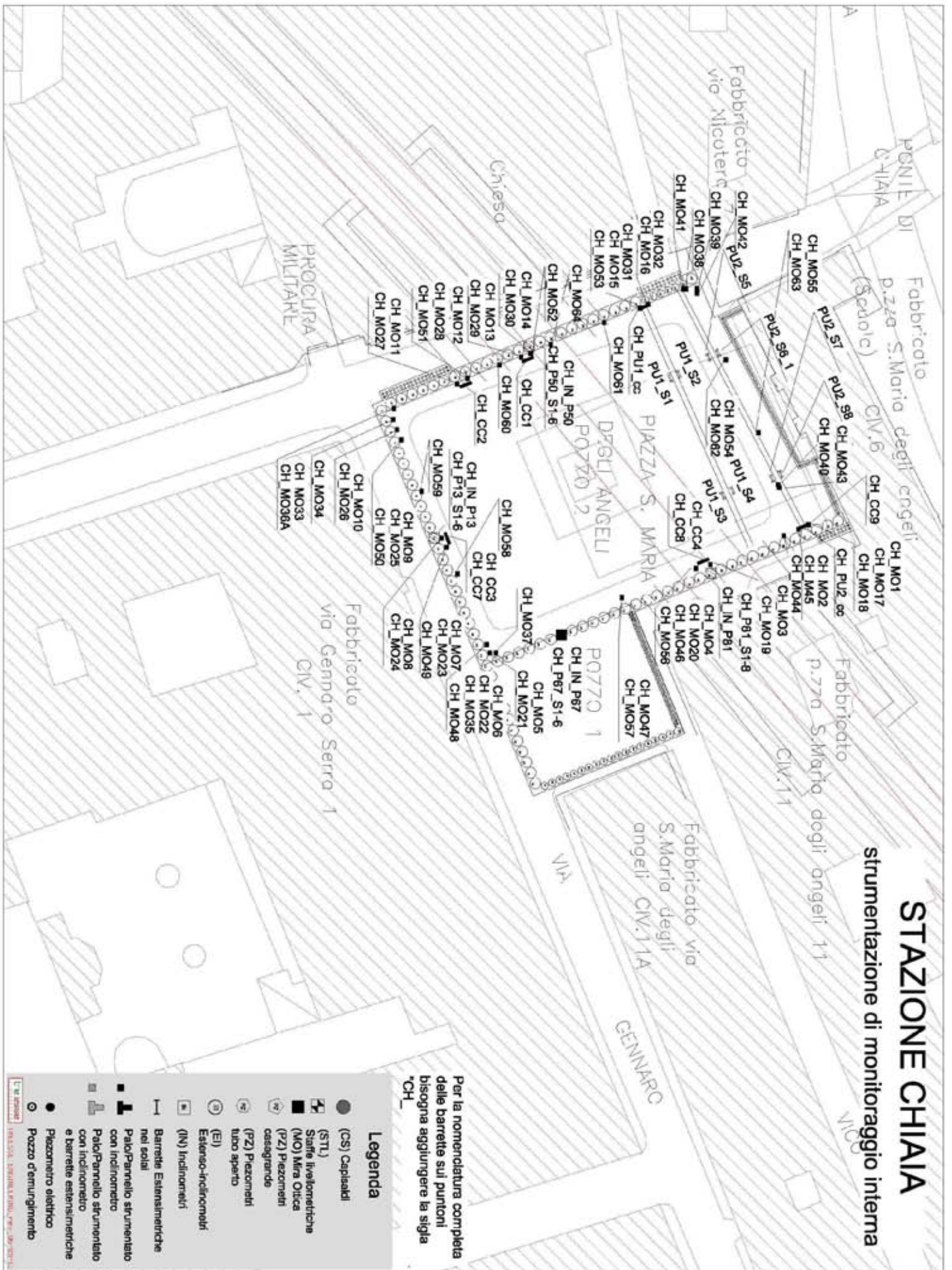



Figura 4.1.: Planimetria pozzo stazione, raffigurante la disposizione della strumentazione di monitoraggio geotecnico interno installata.



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## **5. PLANIMETRIA E SEZIONI ANDAMENTO TETTO DEL TUFO**

Nella figura 5.1 viene rappresentata la Planimetria pozzo stazione, nella quale è riportata la collocazione di alcuni sondaggi effettuati per la campagna propedeutica alla stesura del Progetto Definitivo (2005).

Nella figura 5.2 viene rappresentato l'andamento del tetto del Tufo (lato monte e lato mare) con uno stralcio tratto dall'elaborato grafico del Progetto Definitivo (Stazione Chiaia) allegato alla Relazione Geologica (cod. doc.:LM67F2C0159 – ANNO 2005).

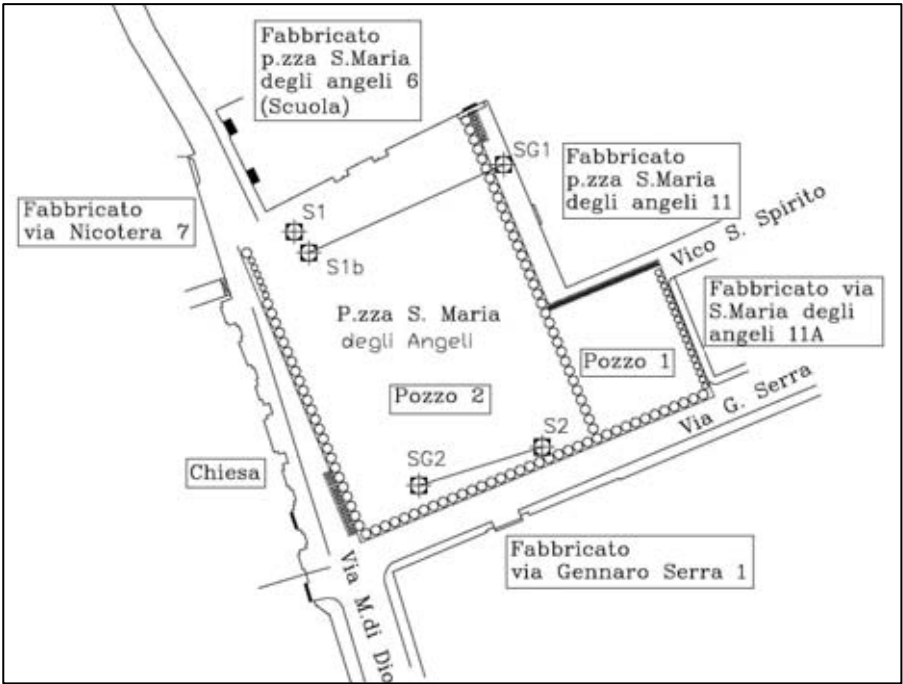


Figura 5.1.: Planimetria pozzo stazione, raffigurante la collocazione di alcuni sondaggi effettuati per la campagna propedeutica alla stesura del Progetto Definitivo (2005).

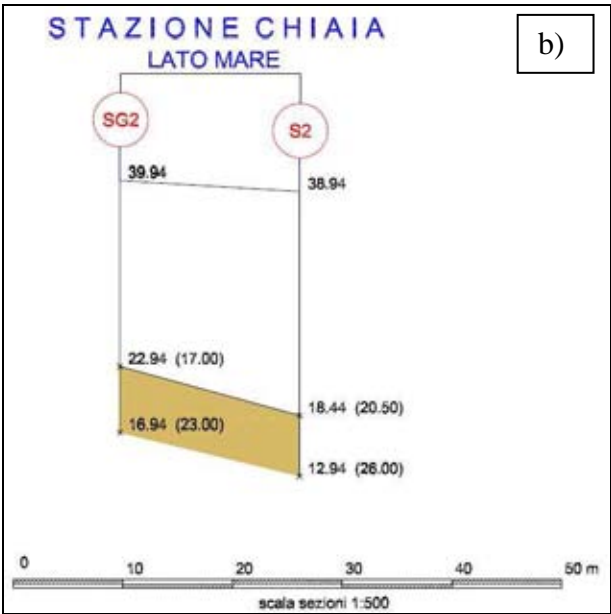
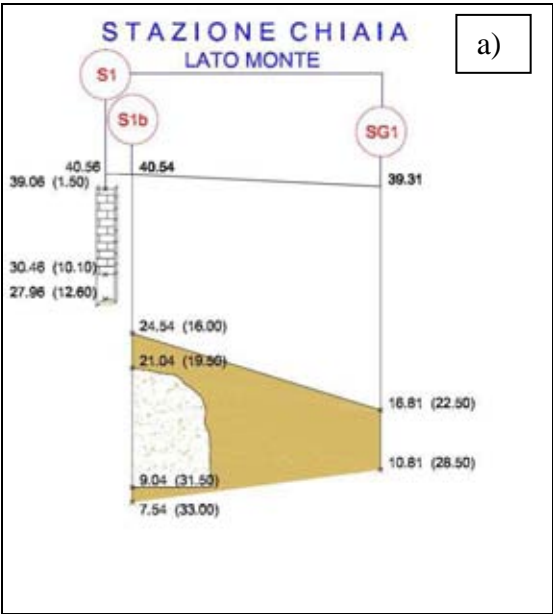



Figura 5.2a e5.2b : Andamento del tetto del Tufo (lato monte e lato mare) - Stralcio da Elaborato grafico Progetto Definitivo Stazione Chiaia allegato alla Relazione Geologica (cod. doc.: LM67F2C0159 – ANNO 2005).


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## **6.FASI LAVORATIVE**

Nel presente capitolo vengono espone le principali lavorazioni in svolgimento nel cantiere di Chiaia (Metropolitana di Napoli - Linea 6).

Le indicazioni riportate, aggiornate al periodo di riferimento del presente report, sono frutto sia delle osservazioni in sito dei tecnici Tre Esse sia delle informazioni comunicateci dall'Impresa Esecutrice.

Nella planimetria e nelle sezioni realizzate dalla Scrivente, di seguito riportate, sono state individuate e stimate qualitativamente le aree interessate dalle lavorazioni ritenute significative ai fini del monitoraggio, che rispetto al periodo d'osservazione precedente non hanno subito variazioni rilevanti. La planimetria in figura 6.1 raffigura il pozzo stazione, con la suddivisione in aree di lavoro. Riferendoci alle sezioni A-A'(fig.6.2), B-B'(fig.6.3), si osserva quanto di seguito riportatoLe principali fasi lavorative hanno riguardato il proseguimento degli scavi per l'approfondimento del pozzo stazione, la conclusione dei lavori per l'allargamento della galleria lato san Pasquale e l'inizio degli scavi per l'allargo lato Municipio. Sul lato prossimo alla scuola, longitudinalmente alla facciata principale dell'edificio sono presenti 2 puntoni in acciaio di contrasto fra le paratie di pannelli. Le paratie di pannelli sono inoltre collegate fra di loro a varie quote grazie all'utilizzo di travi in acciaio tirantate, che risultano sul lato V.G.

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Serra 1 sotto l'impalcato in fase di completamento fino il terzo ordine di tiranti, sugli altri lati è stato completato il secondo ordine.

La strumentazione geotecnica prossima alle sezioni è la seguente:

- tubi inclinometrici CH\_IN1, CH\_IN\_P67, tubo piezometrico (a tubo aperto) CH\_PZ2, per la sezione A-A'
- tubo estenso-inclinometrico CH\_EI1/ES1 e inclinometrico CH\_IN3, CH\_PZ3 per la sezione B-B'

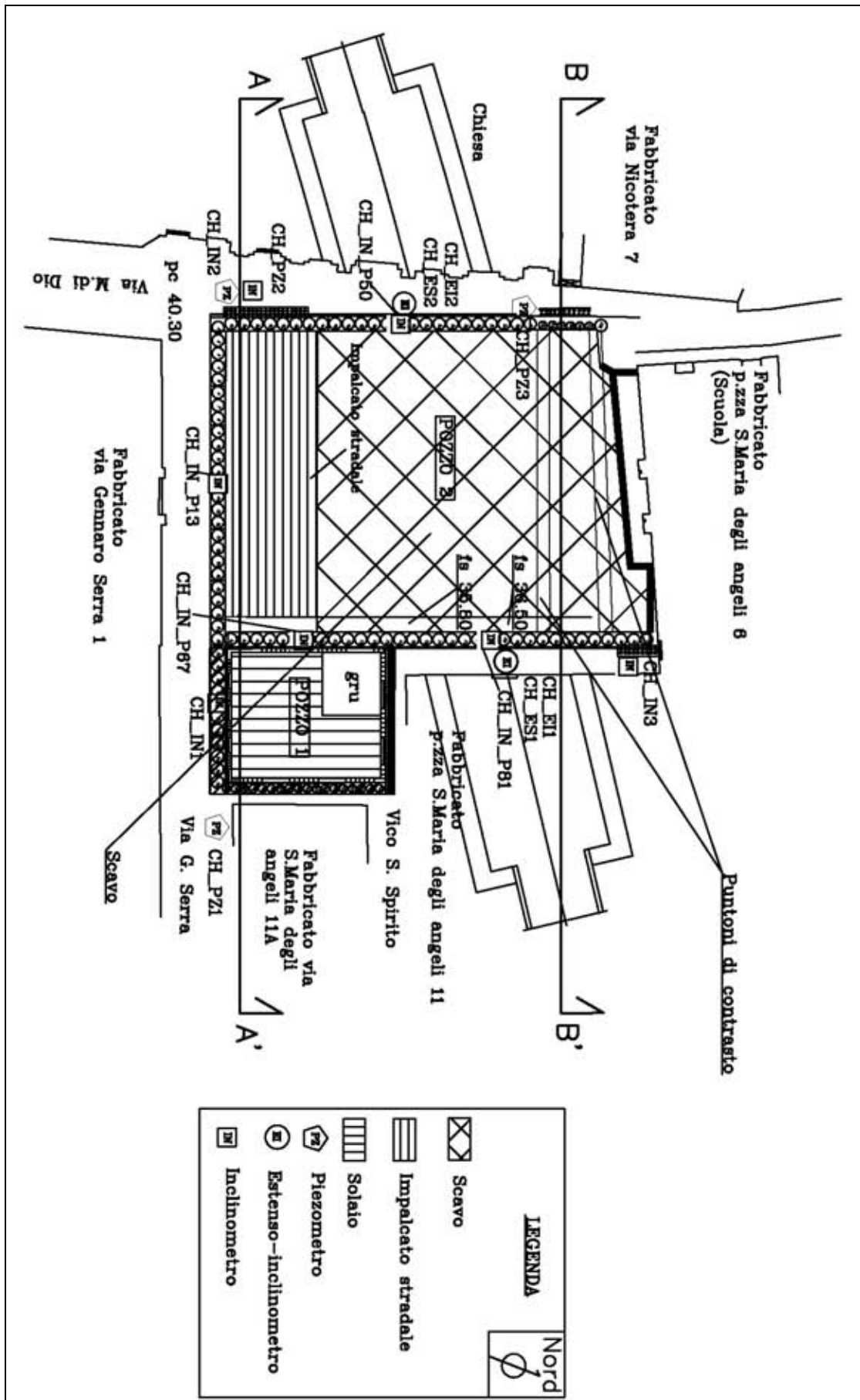


Figura 6.1.: Planimetria pozzo stazione, raffigurante la suddivisione in aree di lavoro.



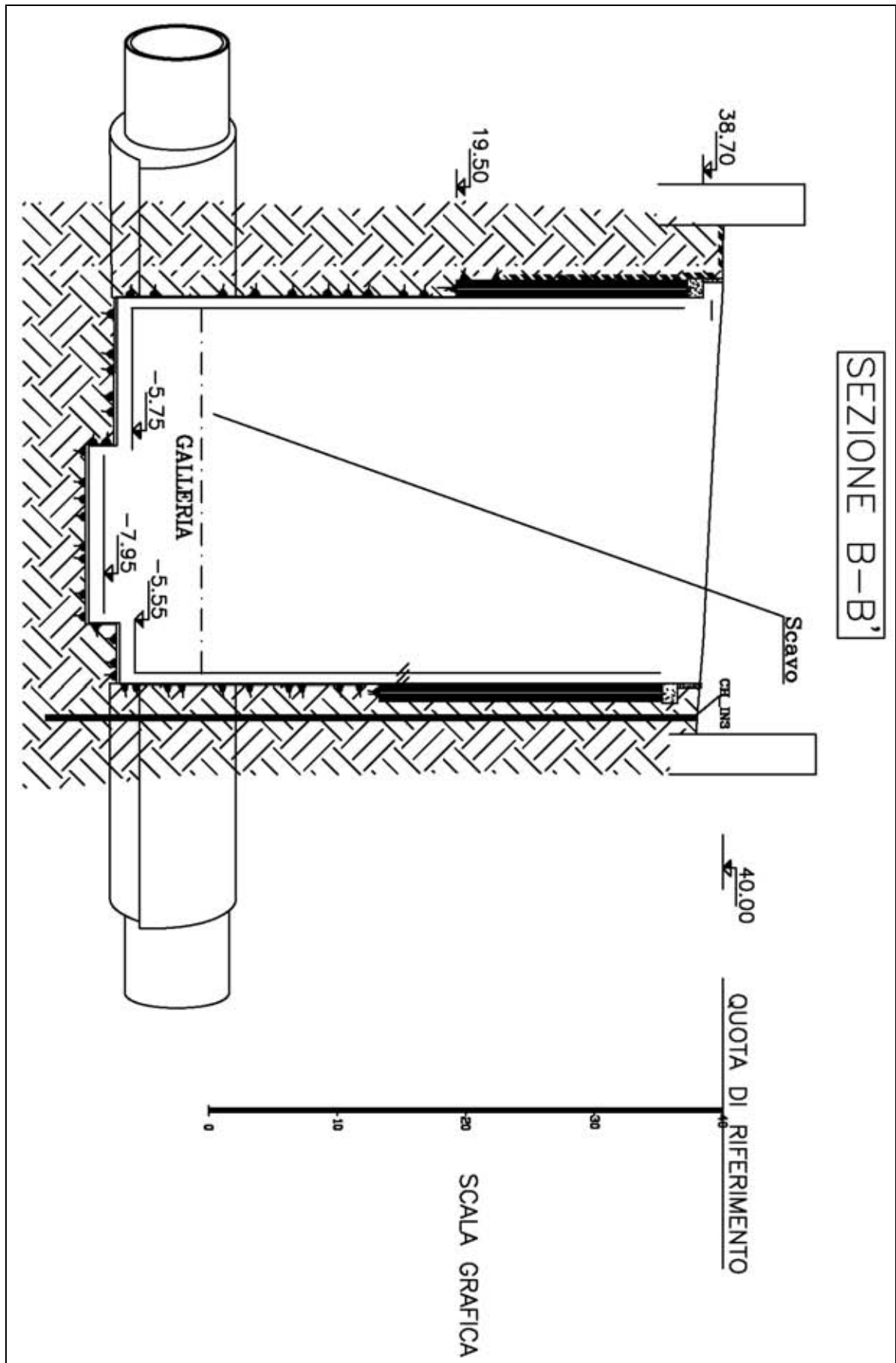


Figura 6.3.: Sezione B-B' pozzo stazione, raffigurante la suddivisione in aree di lavoro.

## 7. MISURE GEOTECNICHE – INCLINOMETRICHE

Gli inclinometri sono strumenti di controllo dei movimenti e delle deformazioni dei terreni nonché delle variazioni di assetto delle strutture. I rilievi consistono nella misura della variazione delle inclinazioni rispetto alla verticale di punti significativi, dall'inclinazione, mediante integrazione numerica si risale agli spostamenti sul piano x-y. La strumentazione di base è composta da tubo inclinometrico a sezione circolare provvisto di scanalature con funzione di guida per la sonda, sonda inclinometrica, cavo e centralina di misura.

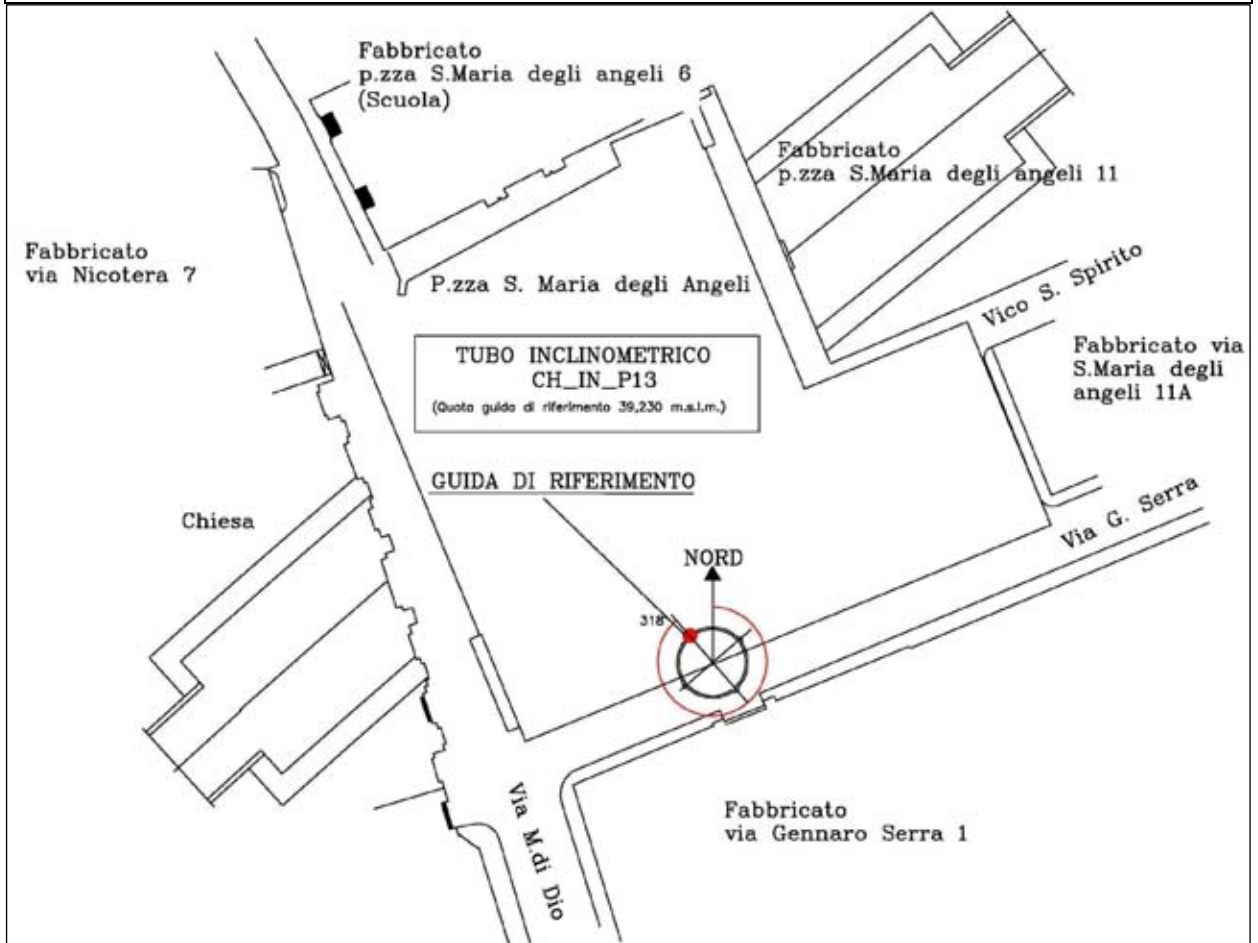
Tabella riepilogativa per gli inclinometri installati in cantiere

NOME	TIPOLOGIA STRUMENTO	DATA INSTALLAZIONE	DISPONIBILITA' LETTURA			NOTE
			DATA LETTURA DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
CH_IN_P13	INCLINOMETRO	06/12/10	22/12/10			
CH_IN_P50	INCLINOMETRO	21/12/10	21/01/11			
CH_IN_P67	INCLINOMETRO	18/11/09	25/11/09			
CH_IN_P81	INCLINOMETRO	21/12/10	21/01/11			



Inclinometro

CH\_IN\_P13



Affidabilità strumentale  
A.T.I. LM6 – TreEsse

buono  
da rivedere  
da scartare

X

Congruenza progettuale  
C.T. ATI LM6 – C.T. Monitoraggio

congruente  
non congruente, da valutare  
non congruente con implicazioni sulla  
sicurezza


**NOTE**


Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P13**  
 Azimut di riferimento **318**  
 Quota guida rif. (m.s.l.m.) **39,23**  
 Data lettura di zero **22/12/2010**  
 Data posa in opera **06/12/2010**

Misura **75** in data **25/09/2013 10.38**

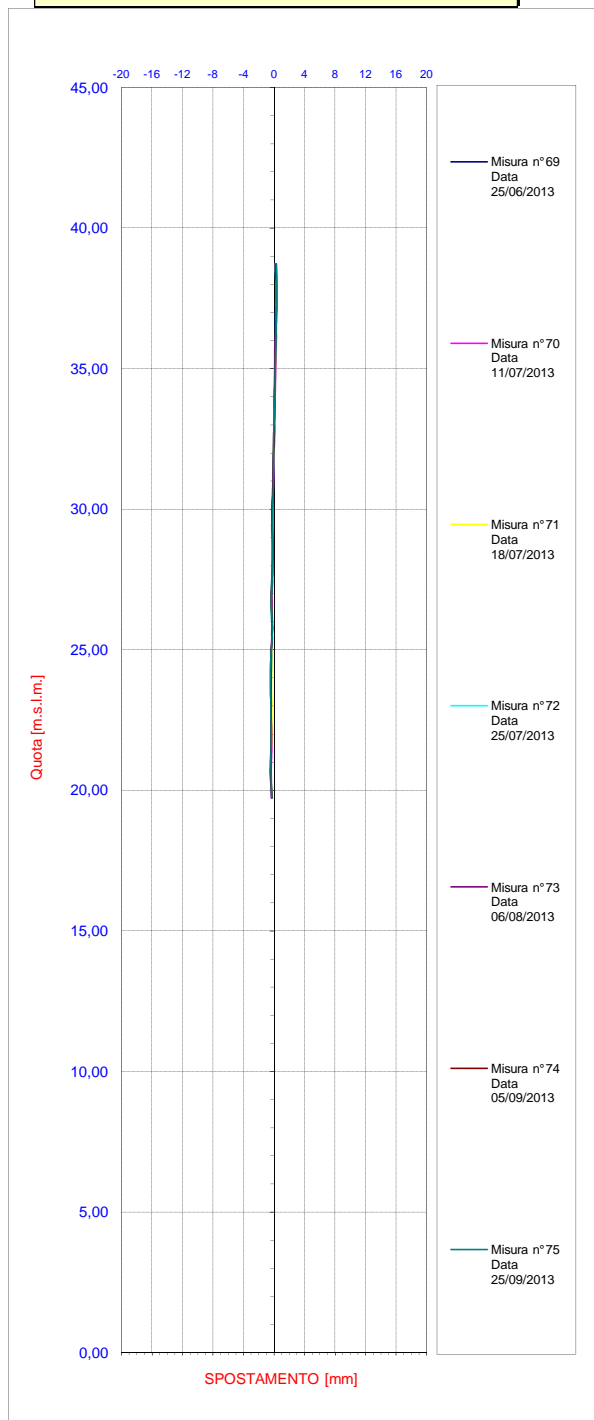
SPOSTAMENTI LOCALI (mm)				
PROFONDITA (m.s.l.m.)	EST	NORD	RISULTANTE	AZIMUT
38,7	0,317	0,108	0,335	71,181
37,7	0,354	-0,137	0,380	111,115
36,7	0,317	-0,370	0,488	139,415
35,7	0,213	-0,247	0,326	139,146
34,7	0,145	-0,212	0,257	145,621
33,7	0,097	-0,097	0,137	135,114
32,7	-0,015	-0,130	0,130	186,525
31,7	-0,078	-0,253	0,265	197,209
30,7	-0,069	-0,077	0,103	222,111
29,7	-0,218	-0,062	0,226	254,070
28,7	-0,194	0,008	0,194	272,435
27,7	-0,199	-0,031	0,202	261,303
26,7	-0,349	0,120	0,370	288,976
25,7	-0,207	0,260	0,332	321,419
24,7	-0,413	0,416	0,587	315,230
23,7	-0,447	0,404	0,603	312,042
22,7	-0,393	0,488	0,627	321,140
21,7	-0,367	0,387	0,533	316,522
20,7	-0,410	0,542	0,679	322,928
19,7	-0,268	0,531	0,595	333,268

SPOSTAMENTI INTEGRALI (mm)				
PROFONDITA (m.s.l.m.)	EST	NORD	RISULTANTE	AZIMUT
38,7	-2,183	1,650	2,736	307,075
37,7	-2,501	1,541	2,938	301,651
36,7	-2,855	1,678	3,312	300,449
35,7	-3,172	2,049	3,776	302,854
34,7	-3,386	2,295	4,090	304,136
33,7	-3,531	2,508	4,331	305,383
32,7	-3,627	2,605	4,466	305,680
31,7	-3,613	2,734	4,531	307,120
30,7	-3,534	2,987	4,627	310,203
29,7	-3,465	3,064	4,625	311,483
28,7	-3,247	3,126	4,507	313,907
27,7	-3,054	3,118	4,364	315,592
26,7	-2,854	3,148	4,249	317,801
25,7	-2,505	3,028	3,930	320,400
24,7	-2,298	2,768	3,598	320,306
23,7	-1,885	2,352	3,014	321,292
22,7	-1,437	1,948	2,421	323,585
21,7	-1,044	1,460	1,795	324,439
20,7	-0,677	1,073	1,269	327,755
19,7	-0,268	0,531	0,595	333,268

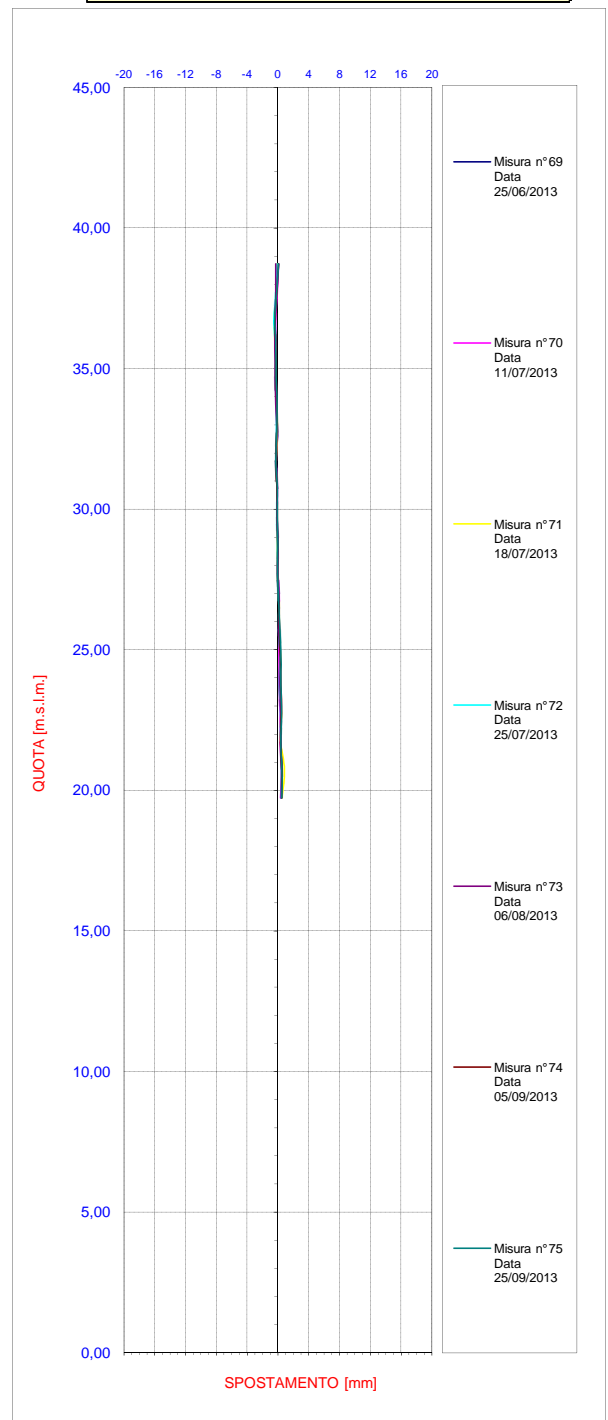
Ubicazione **STAZIONE CHIAIA**  
Tipo Strumento **Tubo inclinometrico**  
Nome tubo **CH\_IN\_P13**  
Azimut di riferimento **318**  
Quota guida rif. (m.s.l.m.) **39,23**  
Data lettura di zero **22/12/2010**  
Data posa in opera **06/12/2010**

Ultima Misura **75** in data **25/09/2013 10.38**

**Spostamenti Differenziali Locali  
OVEST- (valori negativi) / EST + (valori positivi)**

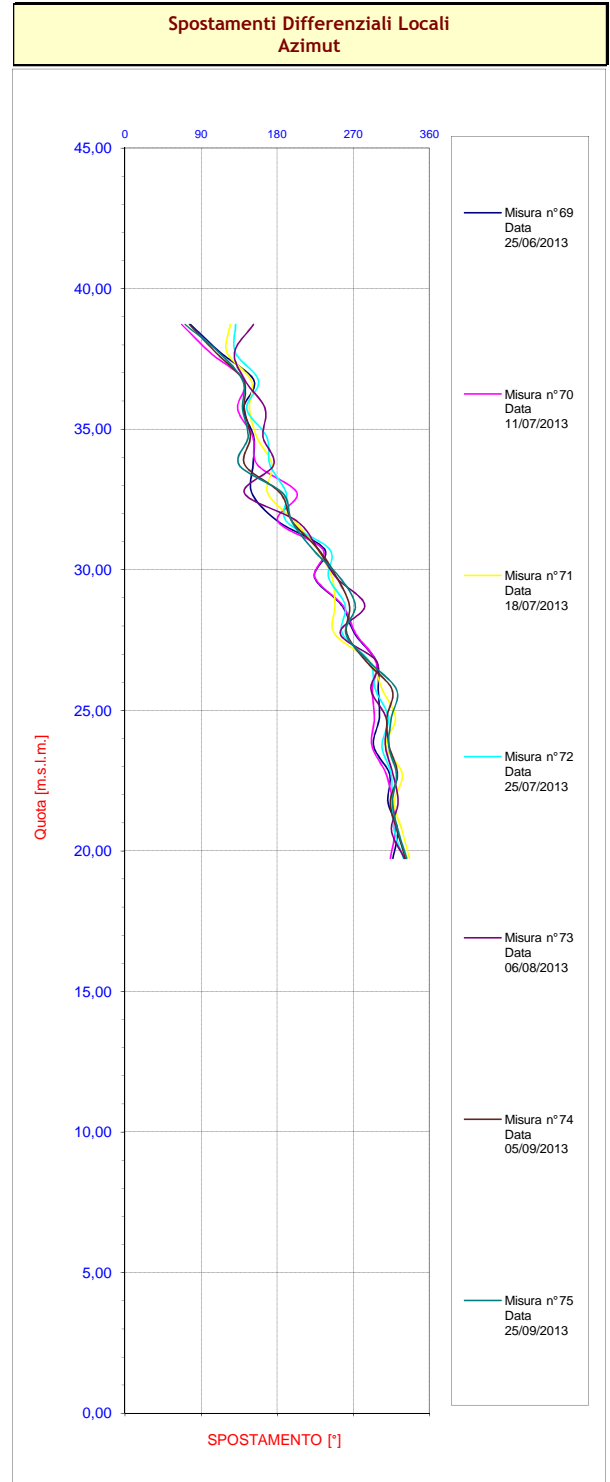
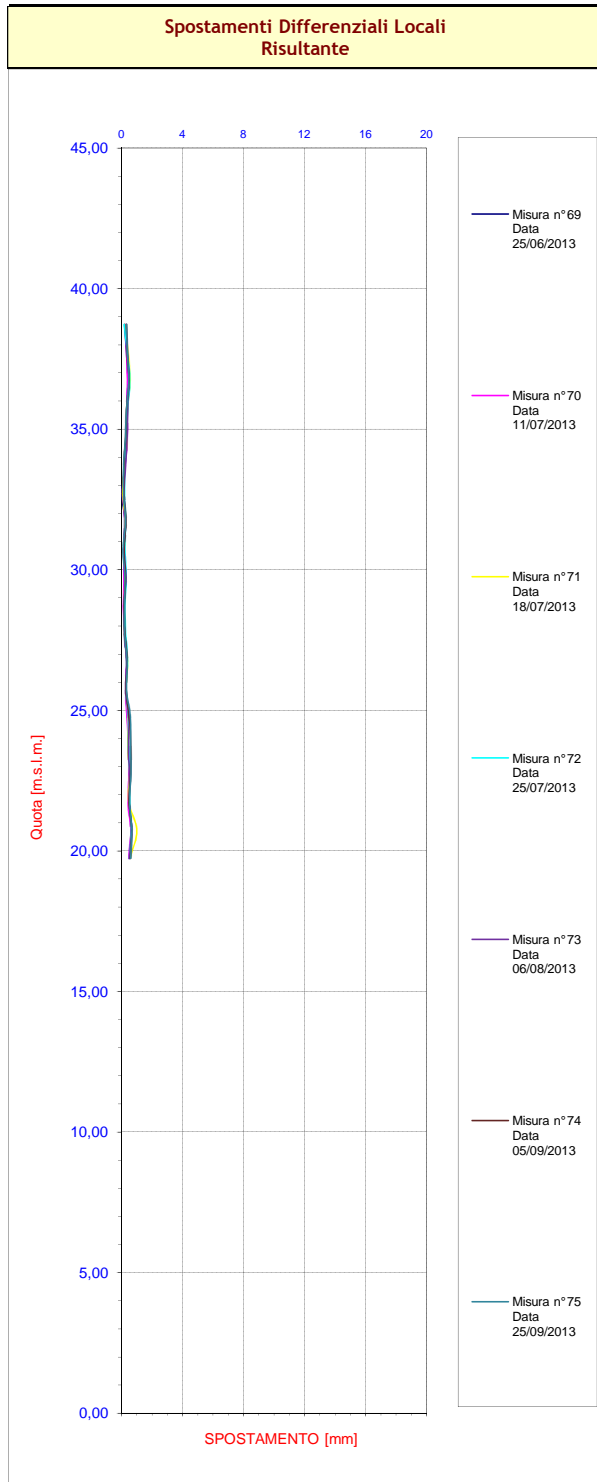


**Spostamenti Differenziali Locali  
SUD - (valori negativi) / NORD + (valori positivi)**



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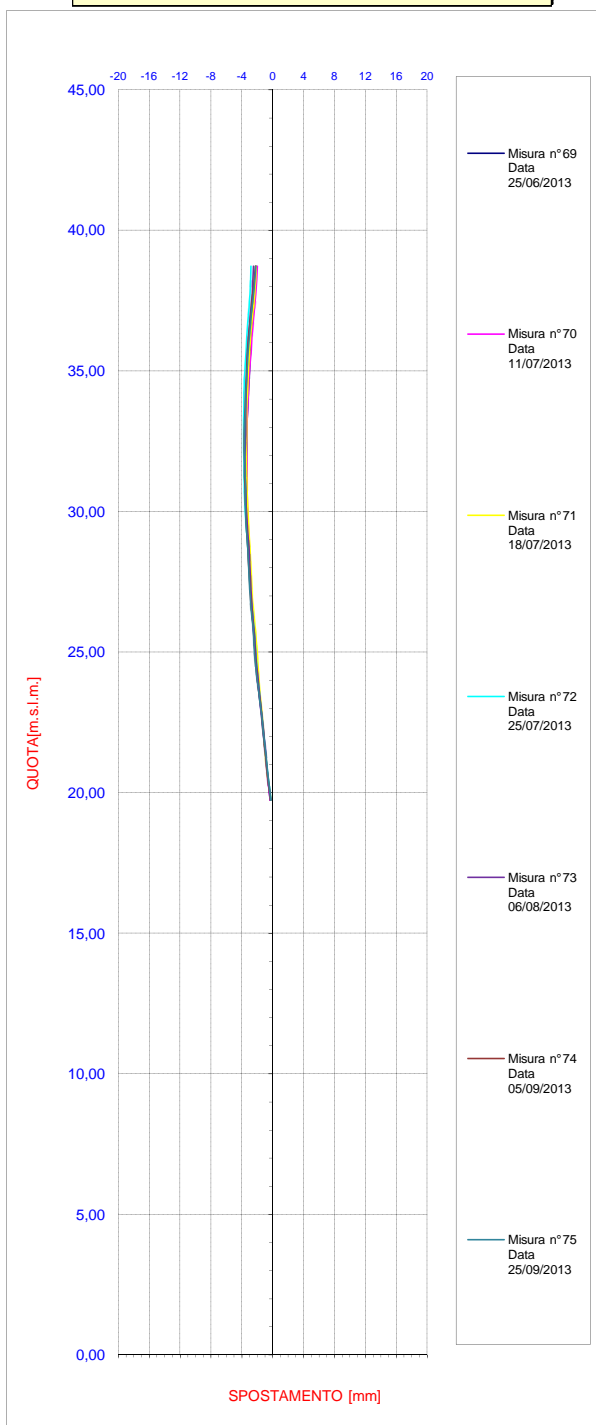
Ultima Misura **75** in data **25/09/2013 10.38**



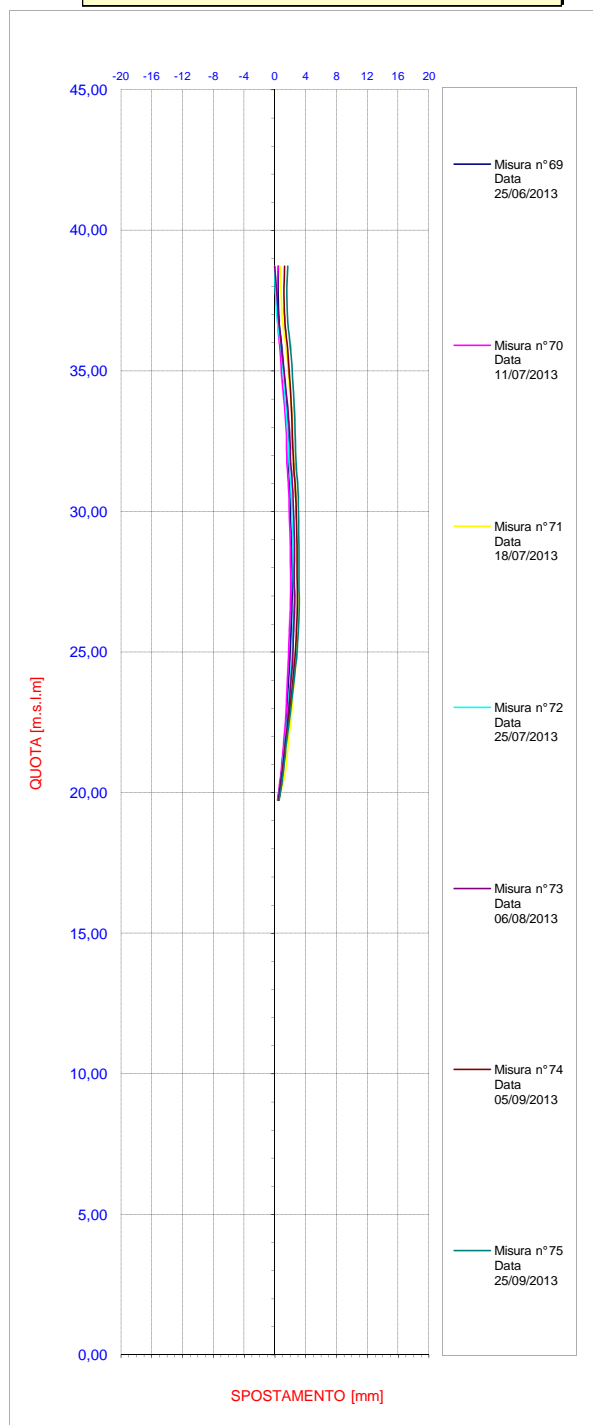
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Ultima Misura **75** in data **25/09/2013 10.38**

Spostamenti Differenziali Integrali  
OVEST- (valori negativi) / EST + (valori positivi)



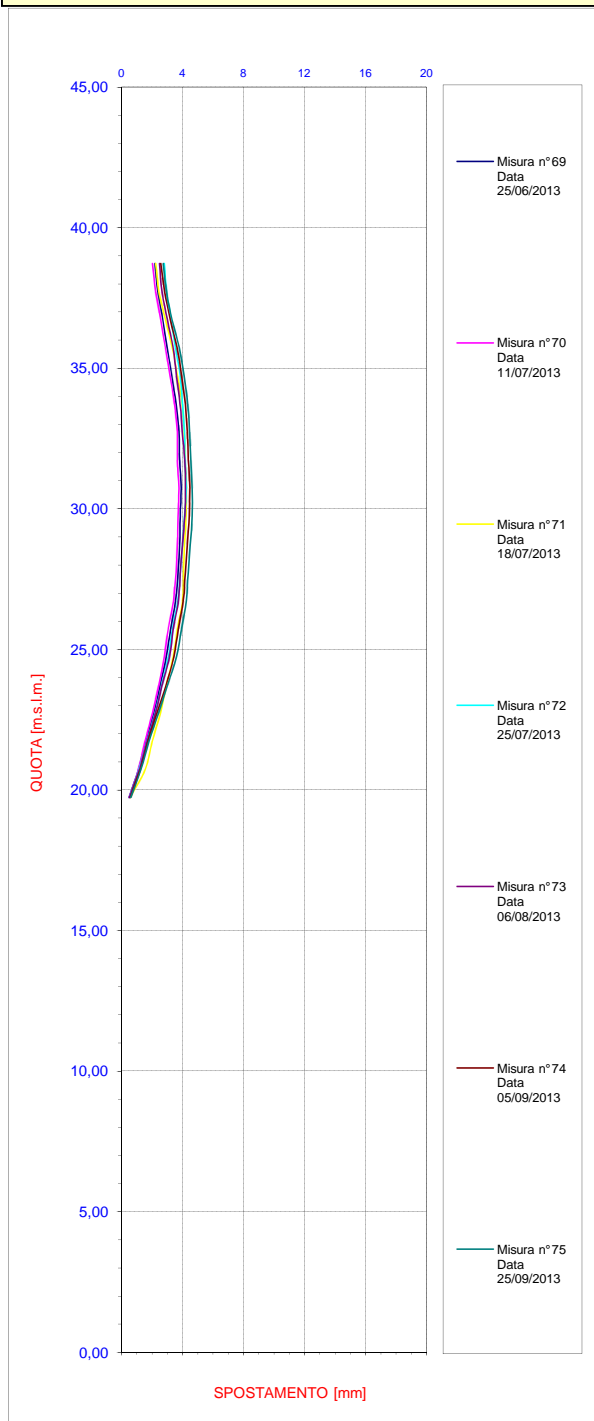
Spostamenti Differenziali Integrali  
SUD - (valori negativi) / NORD + (valori positivi)



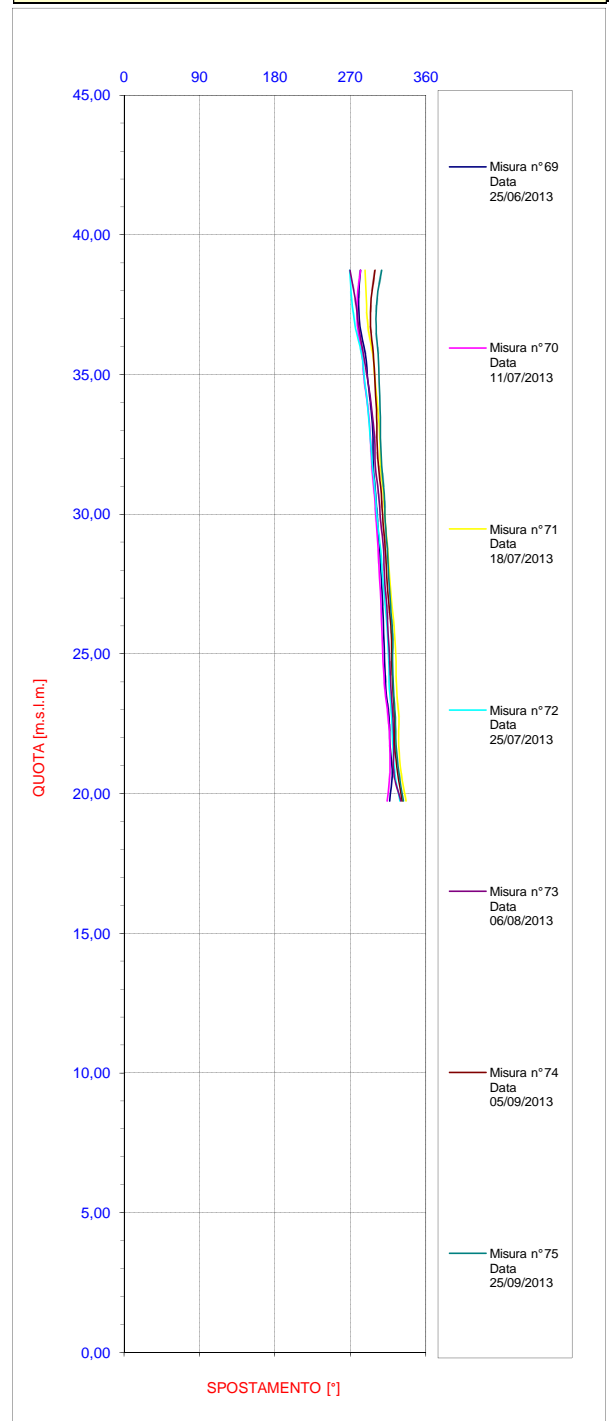
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Spostamenti Differenziali Integrali Risultante



Spostamenti Differenziali Integrali Azimut



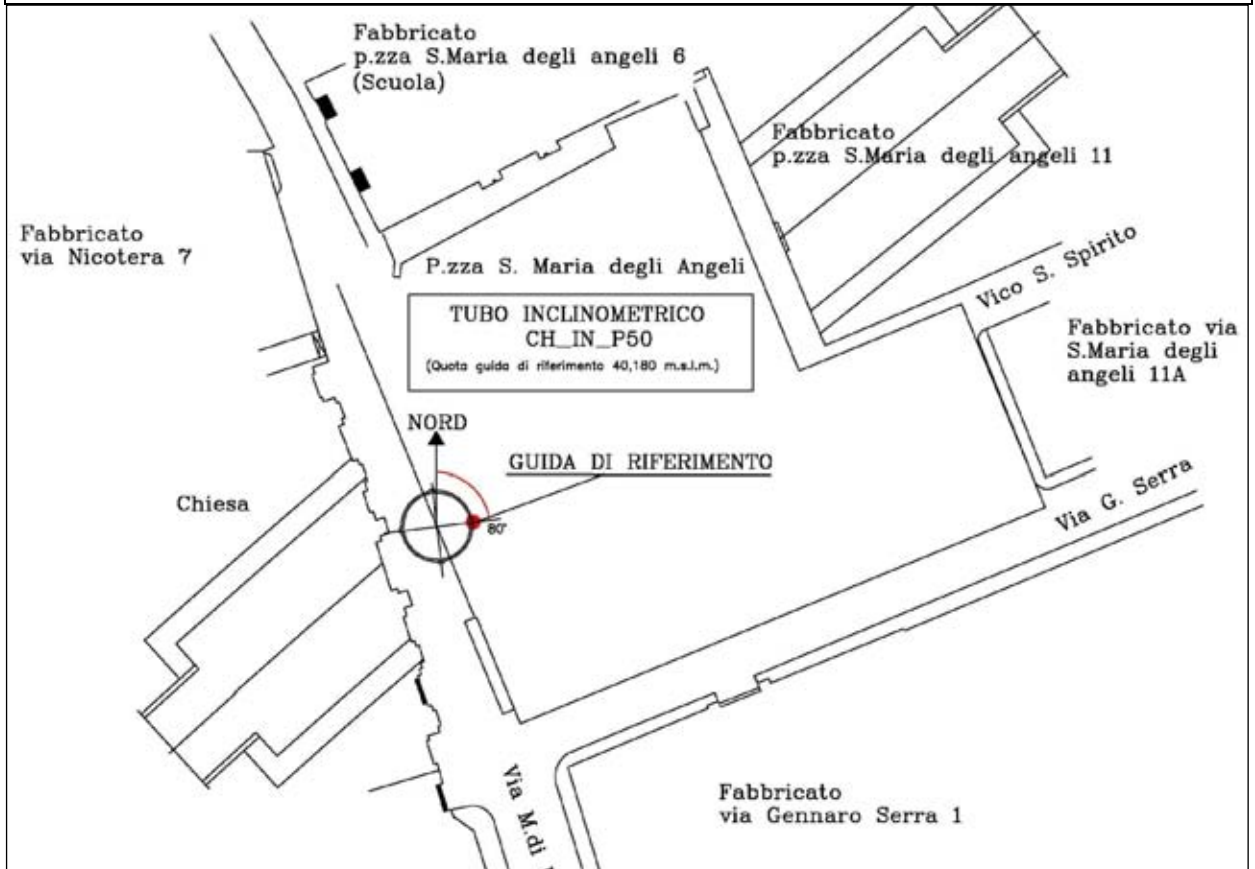
Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P13**  
 Azimut di riferimento **318**  
 Quota guida rif. (m.s.l.m.) **39,23**  
 Data lettura di zero **22/12/2010**  
 Data posa in opera **06/12/2010**

Ultima Misura **75** in data **25/09/2013 10.38**

Spostamenti Differenziali Integrali  
Diagramma polare



Inclinometro CH\_IN\_P50



Affidabilità strumentale  
A.T.I. LM6 – TreEsse

buono  
da rivedere  
da scartare

X

Congruenza progettuale  
C.T. ATI LM6 – C.T. Monitoraggio

congruente  
non congruente, da valutare  
non congruente con implicazioni sulla  
sicurezza


**NOTE**




Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P50**  
 Azimut di riferimento **80**  
 Quota guida rif. (m.s.l.m.) **40,18**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

Misura **80** in data **25/09/2013 10.49**

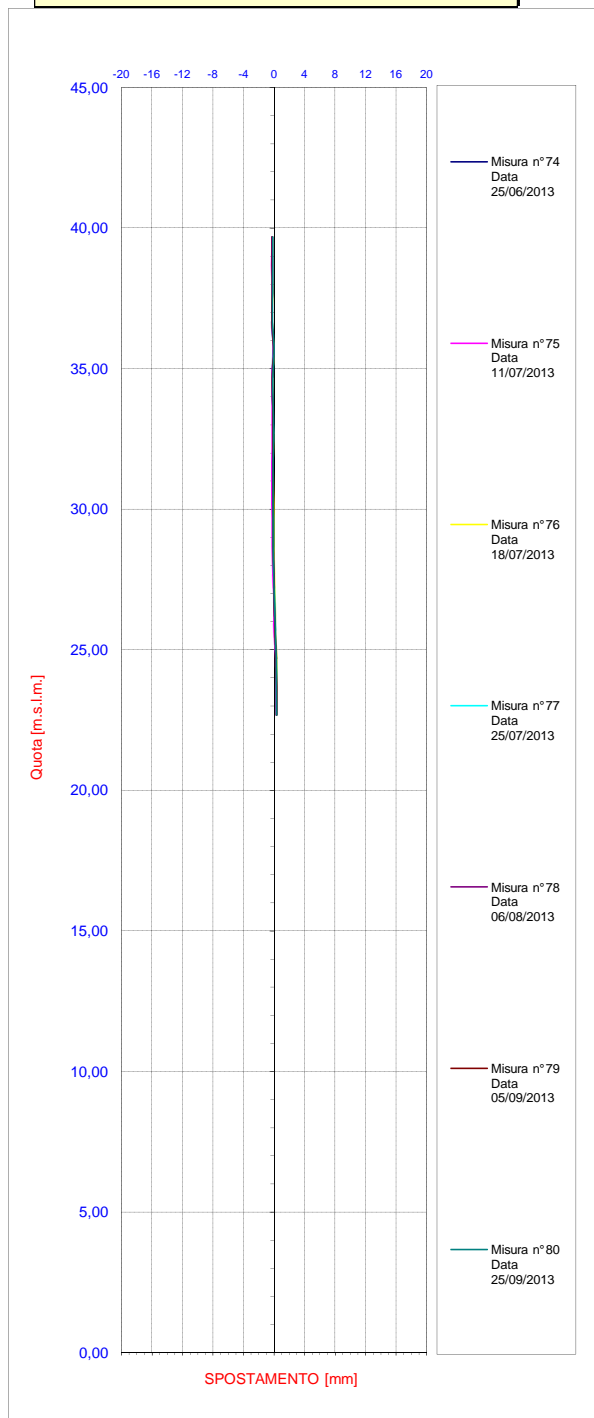
SPOSTAMENTI LOCALI (mm)				
PROFONDITA (m.s.l.m.)	EST	NORD	RISULTANTE	AZIMUT
39,7	-0,163	-0,134	0,211	230,475
38,7	-0,195	-0,097	0,218	243,719
37,7	-0,198	-0,061	0,207	252,833
36,7	-0,234	-0,104	0,256	246,013
35,7	-0,007	-0,217	0,218	181,793
34,7	-0,188	-0,119	0,222	237,657
33,7	-0,120	-0,128	0,176	223,312
32,7	-0,072	0,002	0,072	271,644
31,7	-0,126	0,024	0,129	280,899
30,7	-0,147	0,079	0,167	298,385
29,7	-0,126	0,025	0,129	281,347
28,7	-0,119	-0,011	0,119	264,718
27,7	-0,036	0,037	0,052	315,661
26,7	0,049	0,094	0,106	27,322
25,7	0,157	0,151	0,218	46,082
24,7	0,283	0,116	0,306	67,742
23,7	0,309	0,147	0,342	64,615
22,7	0,338	0,074	0,346	77,579

SPOSTAMENTI INTEGRALI (mm)				
PROFONDITA (m.s.l.m.)	EST	NORD	RISULTANTE	AZIMUT
39,7	-0,597	-0,121	0,609	258,559
38,7	-0,434	0,014	0,434	271,784
37,7	-0,239	0,110	0,263	294,766
36,7	-0,041	0,171	0,176	346,568
35,7	0,193	0,275	0,336	35,084
34,7	0,200	0,493	0,532	22,111
33,7	0,388	0,612	0,724	32,391
32,7	0,509	0,740	0,897	34,515
31,7	0,581	0,737	0,939	38,221
30,7	0,707	0,713	1,004	44,756
29,7	0,854	0,634	1,064	53,432
28,7	0,980	0,608	1,154	58,185
27,7	1,099	0,619	1,261	60,601
26,7	1,135	0,582	1,276	62,855
25,7	1,087	0,488	1,191	65,820
24,7	0,930	0,337	0,989	70,089
23,7	0,647	0,221	0,684	71,138
22,7	0,338	0,074	0,346	77,579

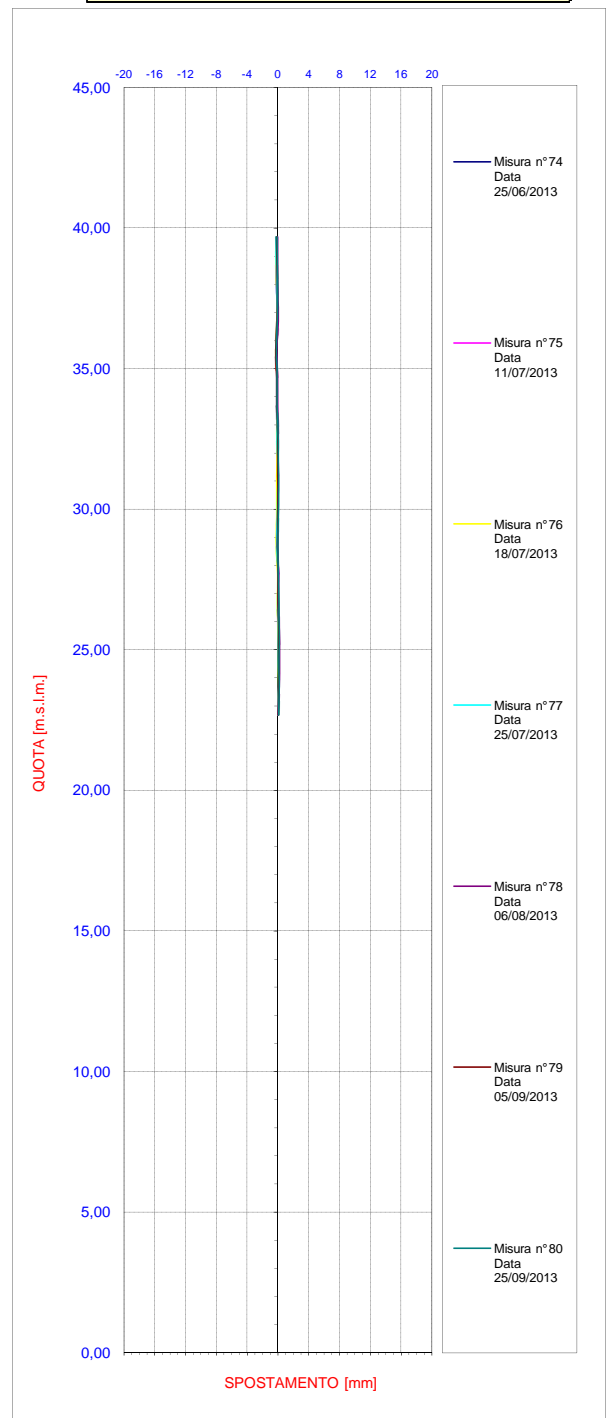
Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P50**  
 Azimut di riferimento **80**  
 Quota guida rif. (m.s.l.m.) **40,18**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

Ultima Misura **80** in data **25/09/2013 10.49**

**Spostamenti Differenziali Locali  
OVEST- (valori negativi) / EST + (valori positivi)**

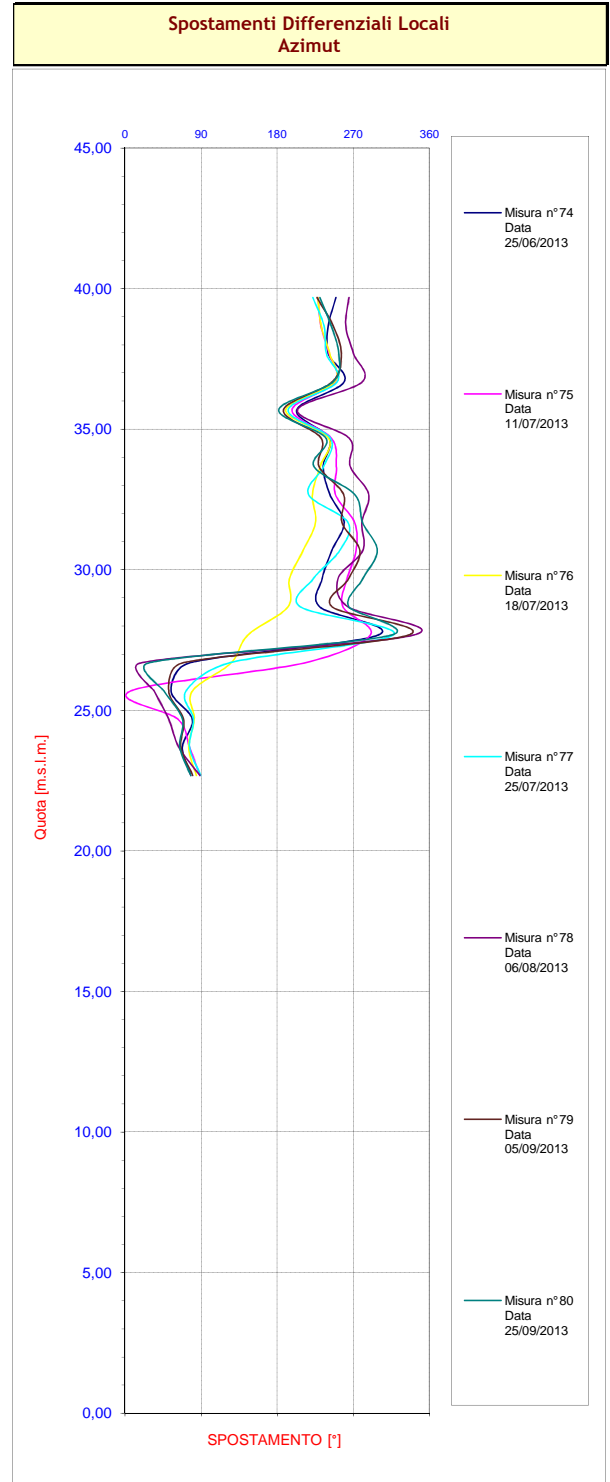
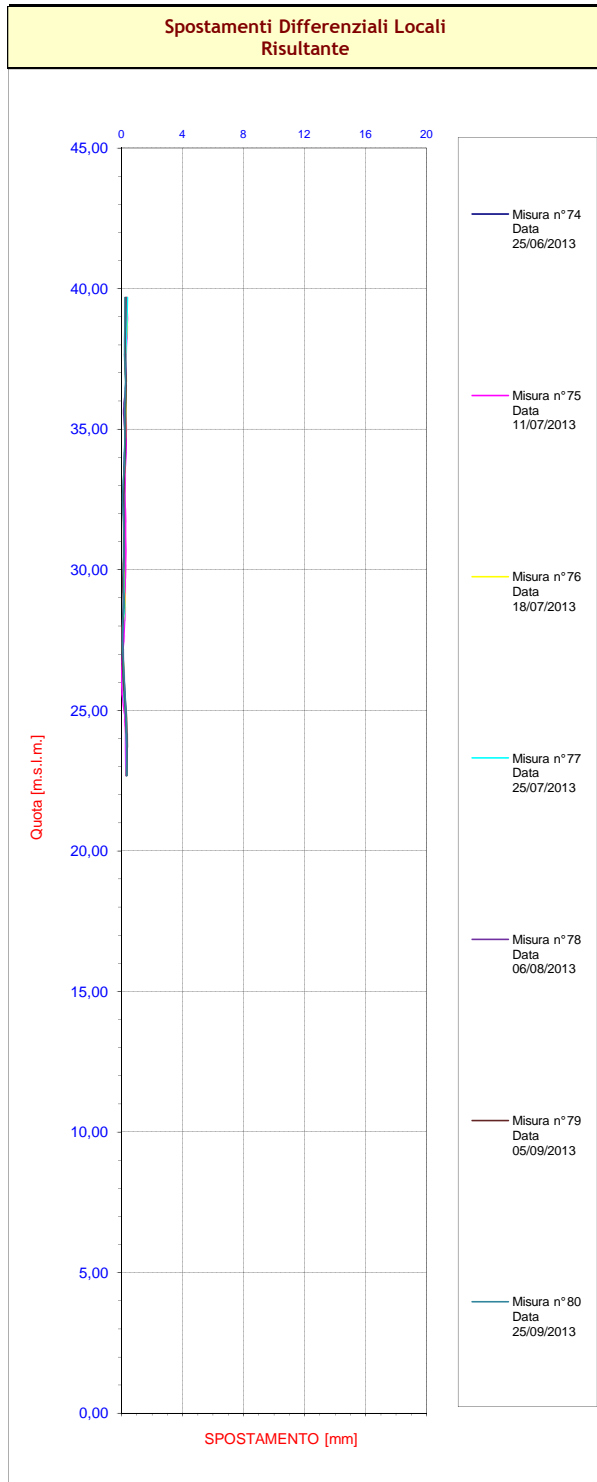


**Spostamenti Differenziali Locali  
SUD - (valori negativi) / NORD + (valori positivi)**



Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P50**  
 Azimut di riferimento **80**  
 Quota guida rif. (m.s.l.m.) **40,18**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

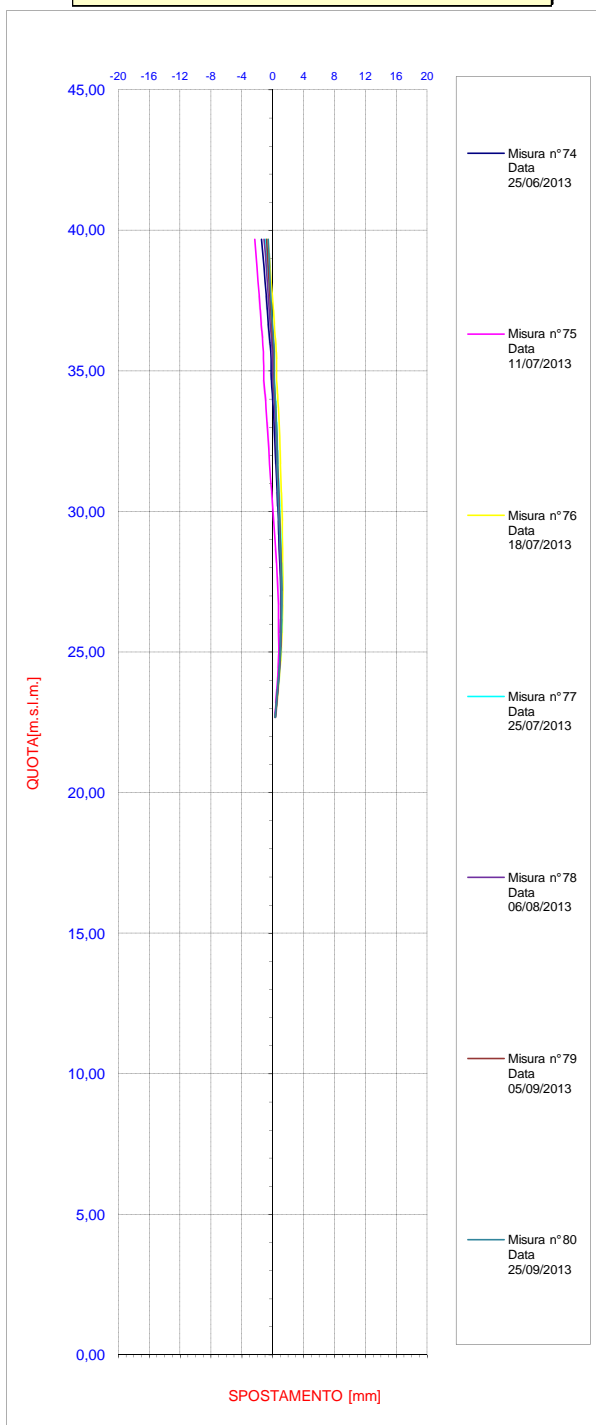
Ultima Misura **80** in data **25/09/2013 10.49**



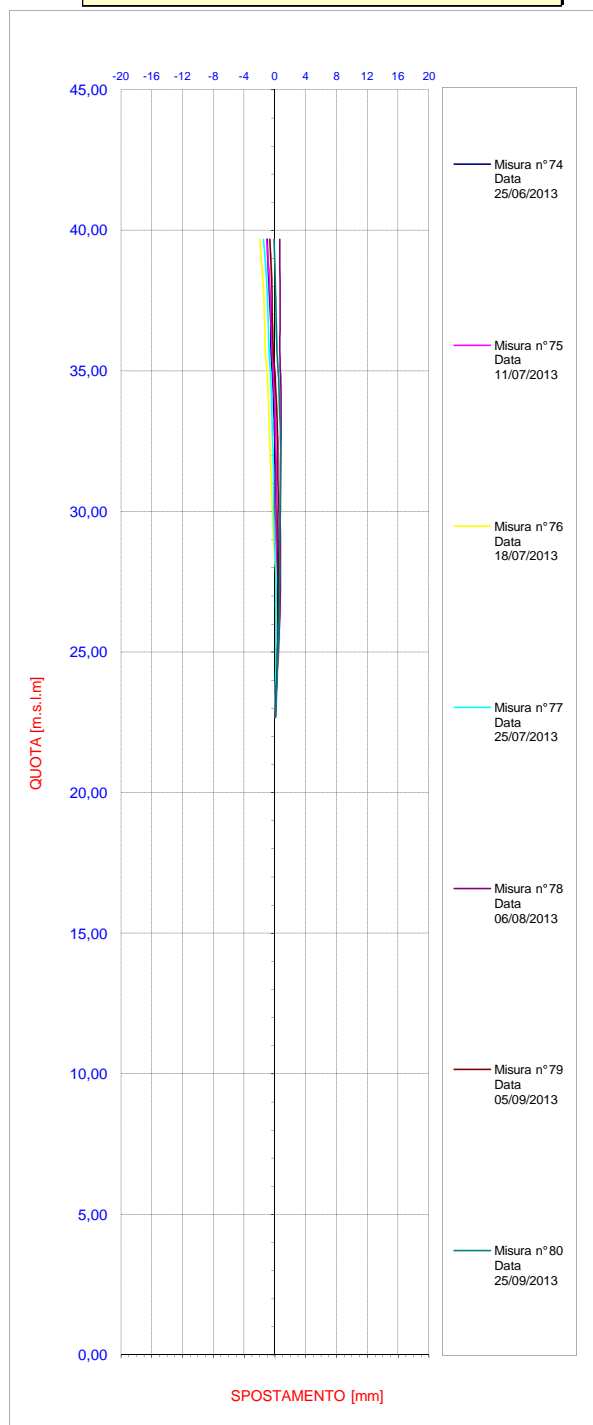
Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P50**  
 Azimut di riferimento **80**  
 Quota guida rif. (m.s.l.m.) **40,18**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

Ultima Misura **80** in data **25/09/2013 10.49**

Spostamenti Differenziali Integrali  
OVEST- (valori negativi) / EST + (valori positivi)



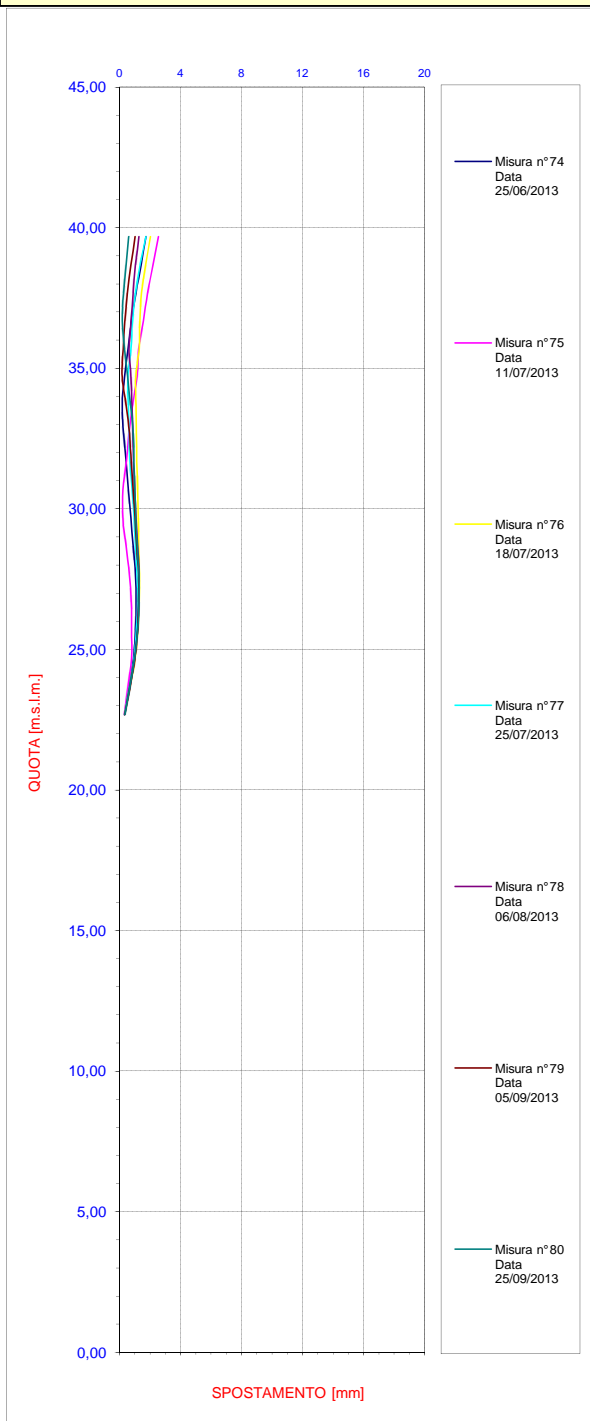
Spostamenti Differenziali Integrali  
SUD - (valori negativi) / NORD + (valori positivi)



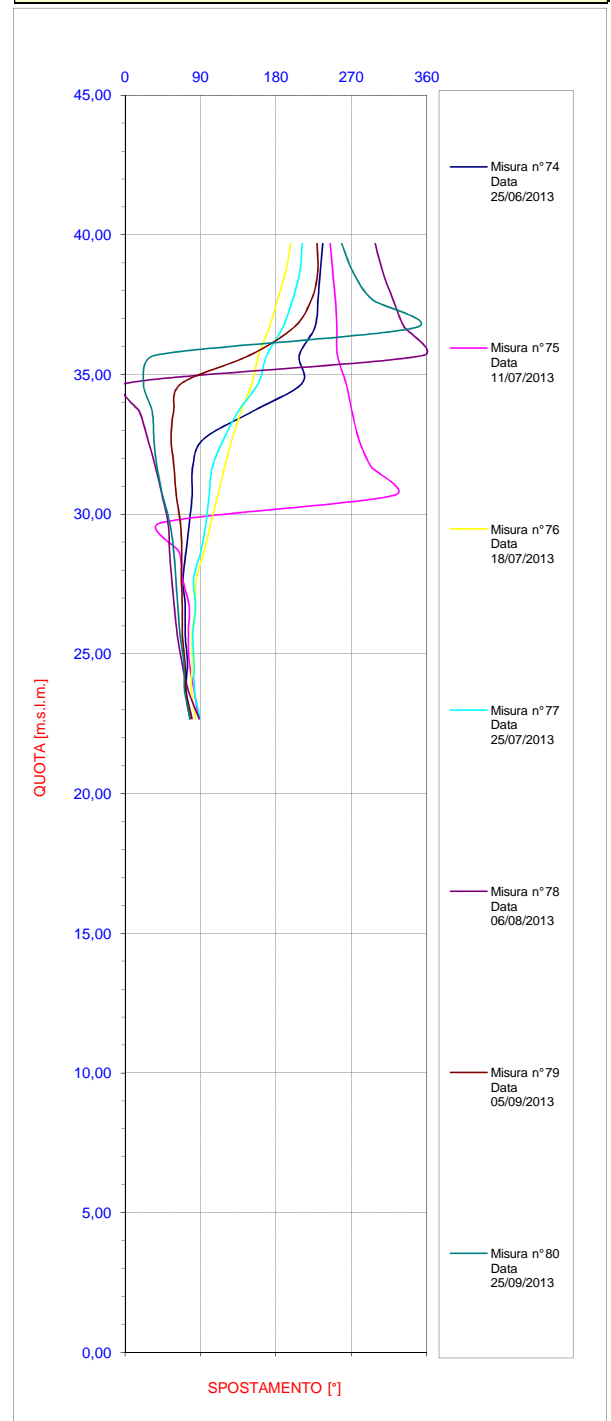
Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P50**  
 Azimut di riferimento **80**  
 Quota guida rif. (m.s.l.m.) **40,18**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

Ultima Misura **80** in data **25/09/2013 10.49**

Spostamenti Differenziali Integrali Risultante



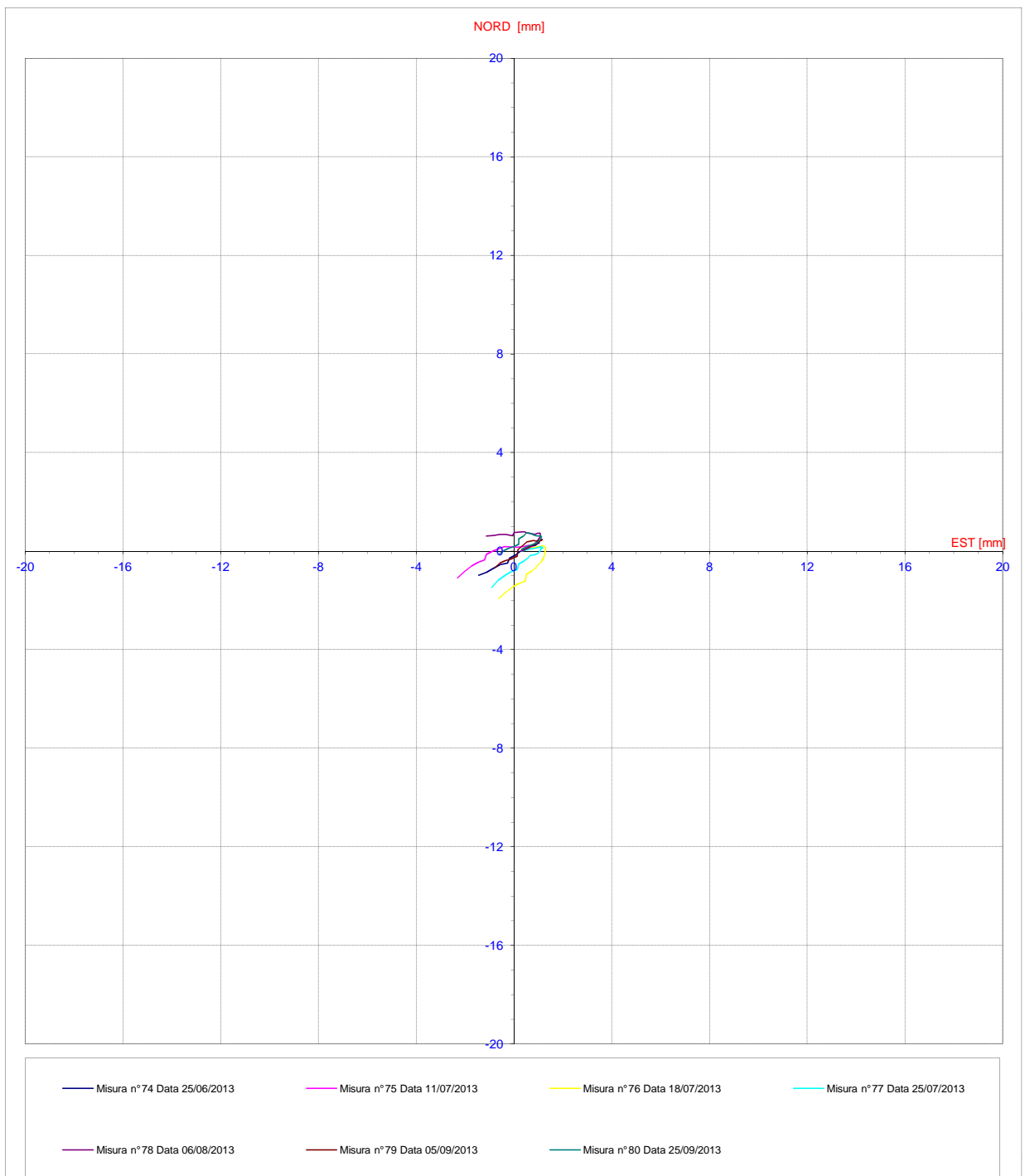
Spostamenti Differenziali Integrali Azimut



Ubicazione	STAZIONE CHIAIA
Tipo Strumento	Tubo inclinometrico
Nome tubo	CH_IN_P50
Azimut di riferimento	80
Quota guida rif. (m.s.l.m.)	40,18
Data lettura di zero	21/01/2011
Data posa in opera	21/12/2010

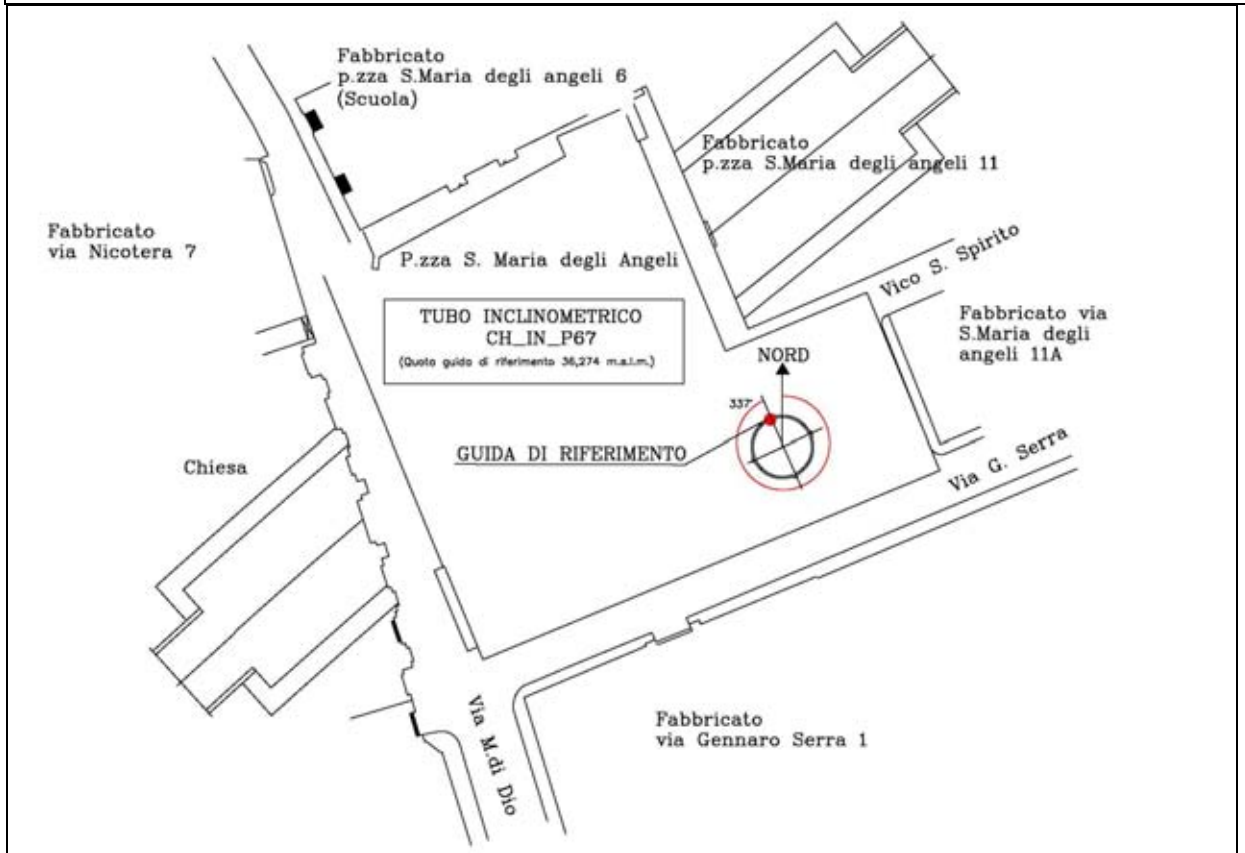
Ultima Misura	80	in data	25/09/2013 10.49
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Spostamenti Differenziali Integrali  
Diagramma polare



Inclinometro

CH\_IN\_P67



Affidabilità strumentale  
A.T.I. LM6 – TreEsse

buono  
da rivedere  
da scartare

X

Congruenza progettuale  
C.T. ATI LM6 – C.T. Monitoraggio

congruente  
non congruente, da valutare  
non congruente con implicazioni sulla  
sicurezza


NOTE



**MISURE INCLINOMETRICHE  
 ELABORAZIONE DA FONDO FORO  
 -TABULATI-**

**Ubicazione** STAZIONE CHIAIA  
**Tipo Strumento** Tubo inclinometrico  
**Nome tubo** CH\_IN\_P67  
**Azimut di riferimento** 337  
**Quota guida rif. (m.s.l.m.)** 36,274  
**Data lettura di zero** 25/11/2009  
**Data posa in opera** 18/11/2009

**Misura** 132 **in data** 25/09/2013 10.36

SPOSTAMENTI LOCALI (mm)				
PROFONDITA (m.s.l.m.)	EST	NORD	RISULTANTE	AZIMUT
35,8	-0,355	-0,067	0,361	259,378
34,8	-0,403	-0,010	0,404	268,617
33,8	-0,313	0,004	0,313	270,672
32,8	-0,291	0,127	0,318	293,668
31,8	-0,173	0,128	0,215	306,460
30,8	-0,253	0,041	0,256	279,158
29,8	-0,246	0,338	0,418	323,941
28,8	-0,304	0,023	0,305	274,417
27,8	0,078	0,207	0,221	20,739
26,8	0,021	0,216	0,217	5,530
25,8	-0,015	0,696	0,696	358,776
24,8	0,030	0,438	0,440	3,978
23,8	0,193	0,259	0,323	36,751
22,8	0,246	0,272	0,367	42,053
21,8	0,337	0,035	0,339	84,077
20,8	0,227	0,130	0,261	60,068
19,8	0,030	0,269	0,271	6,312
18,8	0,048	0,196	0,202	13,857
17,8	-0,111	0,020	0,112	280,004
16,8	-0,273	0,061	0,280	282,564
15,8	-0,360	0,004	0,360	270,677
14,8	-0,211	0,037	0,214	279,968
13,8	-0,203	0,047	0,208	282,984

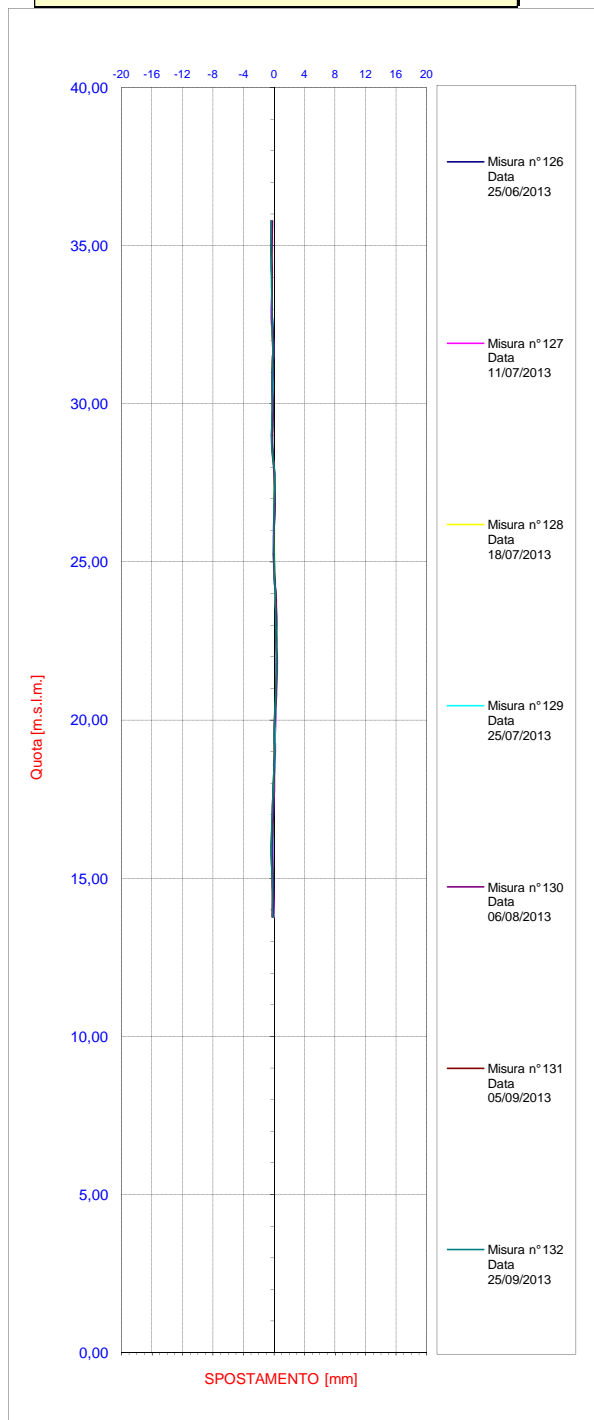
SPOSTAMENTI INTEGRALI (mm)				
PROFONDITA (m.s.l.m.)	EST	NORD	RISULTANTE	AZIMUT
35,8	-2,301	3,473	4,166	326,478
34,8	-1,946	3,539	4,039	331,203
33,8	-1,542	3,549	3,870	336,515
32,8	-1,229	3,545	3,752	340,880
31,8	-0,938	3,418	3,544	344,649
30,8	-0,765	3,290	3,378	346,908
29,8	-0,512	3,249	3,289	351,038
28,8	-0,266	2,911	2,923	354,772
27,8	0,037	2,888	2,888	0,740
26,8	-0,041	2,681	2,681	359,124
25,8	-0,062	2,465	2,465	358,560
24,8	-0,047	1,769	1,770	358,475
23,8	-0,078	1,331	1,333	356,664
22,8	-0,271	1,072	1,106	345,819
21,8	-0,517	0,799	0,952	327,134
20,8	-0,853	0,765	1,146	311,862
19,8	-1,080	0,634	1,252	300,420
18,8	-1,110	0,365	1,168	288,197
17,8	-1,158	0,169	1,170	278,284
16,8	-1,047	0,149	1,058	278,101
15,8	-0,774	0,088	0,779	276,498
14,8	-0,414	0,084	0,422	281,454
13,8	-0,203	0,047	0,208	282,984



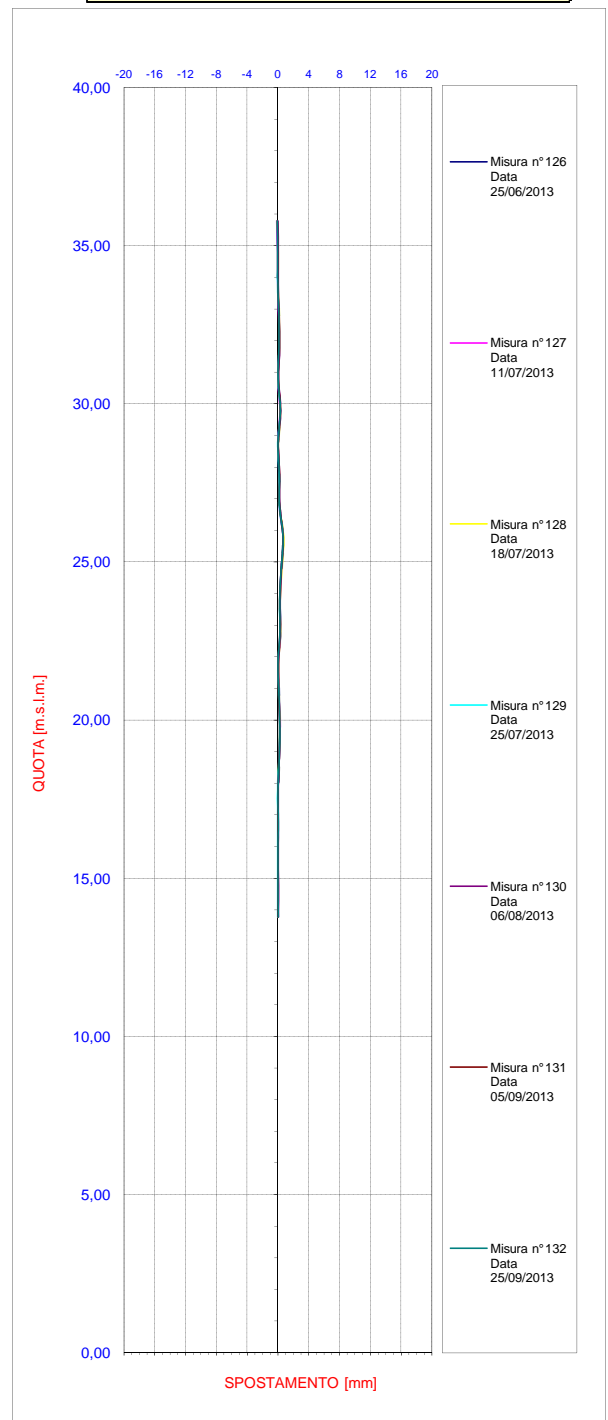
Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P67**  
 Azimut di riferimento **337**  
 Quota guida rif. (m.s.l.m.) **36,274**  
 Data lettura di zero **25/11/2009**  
 Data posa in opera **18/11/2009**

Ultima Misura **132** in data **25/09/2013 10.36**

**Spostamenti Differenziali Locali  
OVEST- (valori negativi) / EST + (valori positivi)**

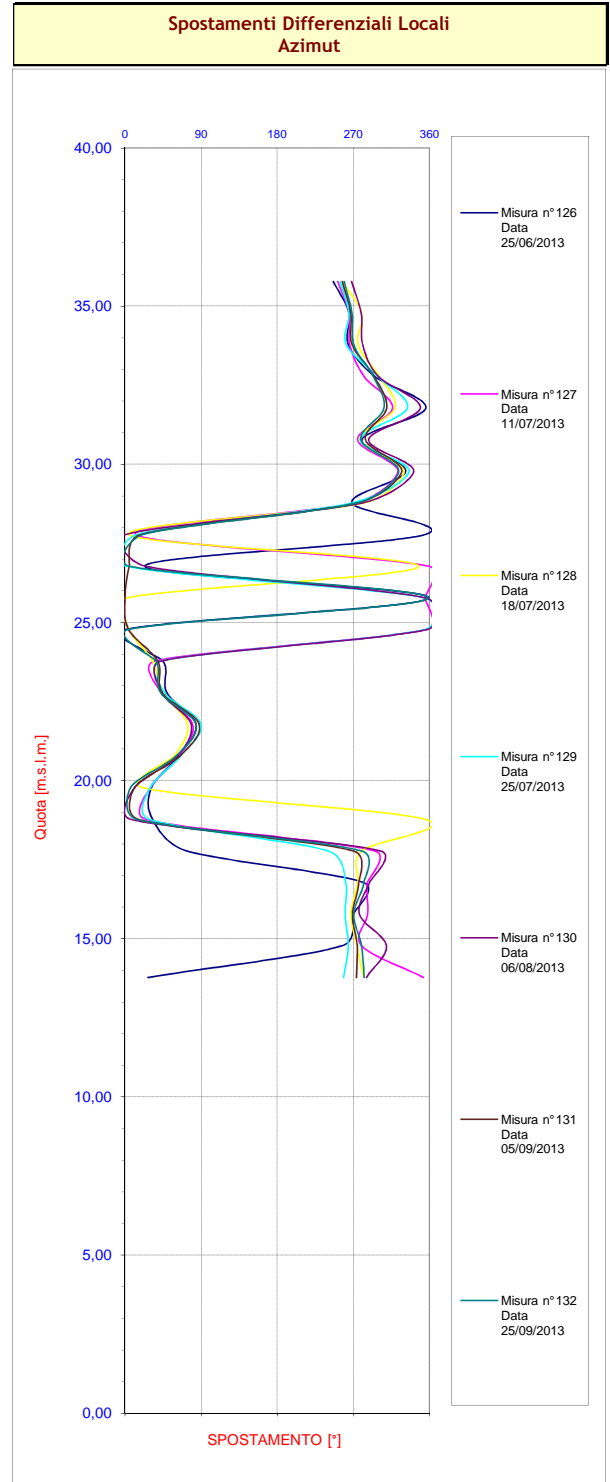
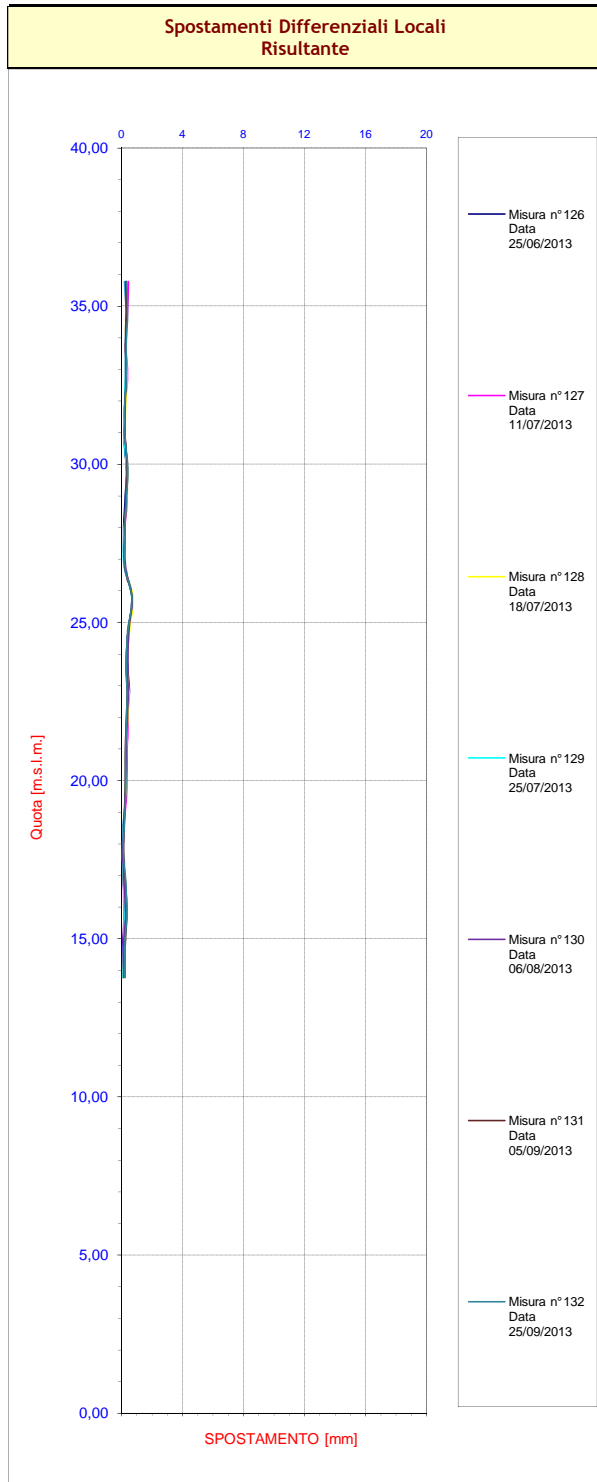


**Spostamenti Differenziali Locali  
SUD - (valori negativi) / NORD + (valori positivi)**



Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P67**  
 Azimut di riferimento **337**  
 Quota guida rif. (m.s.l.m.) **36,274**  
 Data lettura di zero **25/11/2009**  
 Data posa in opera **18/11/2009**

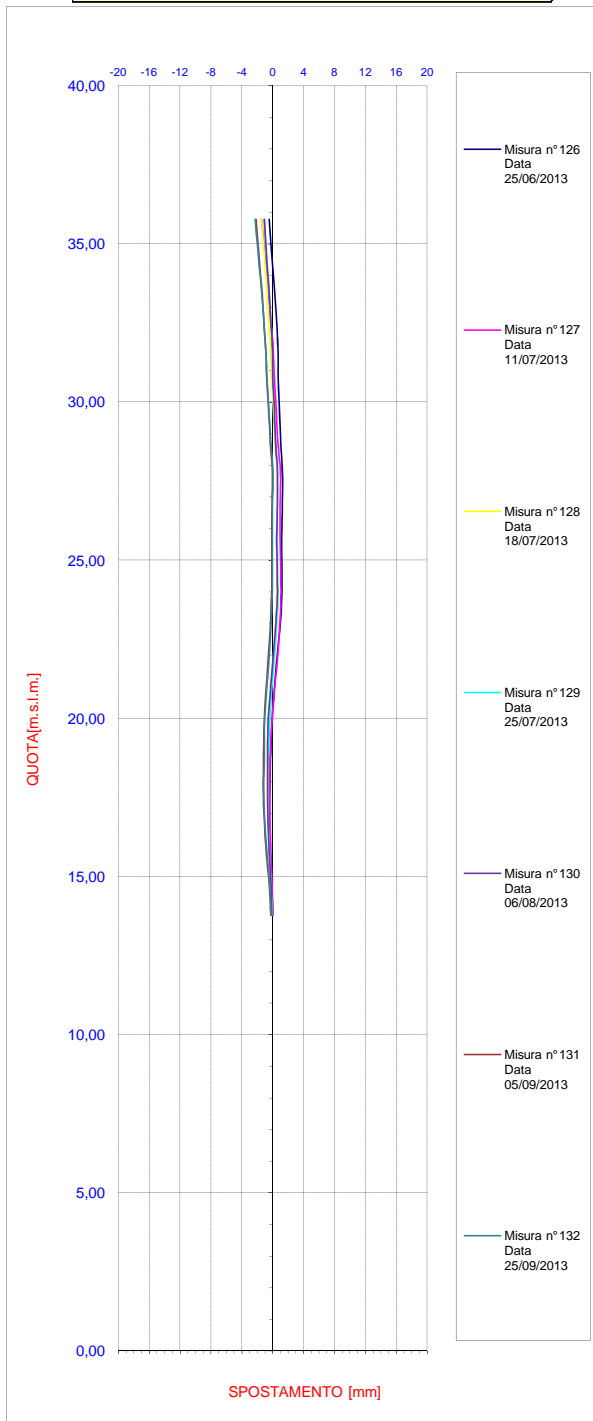
Ultima Misura **132** in data **25/09/2013 10.36**



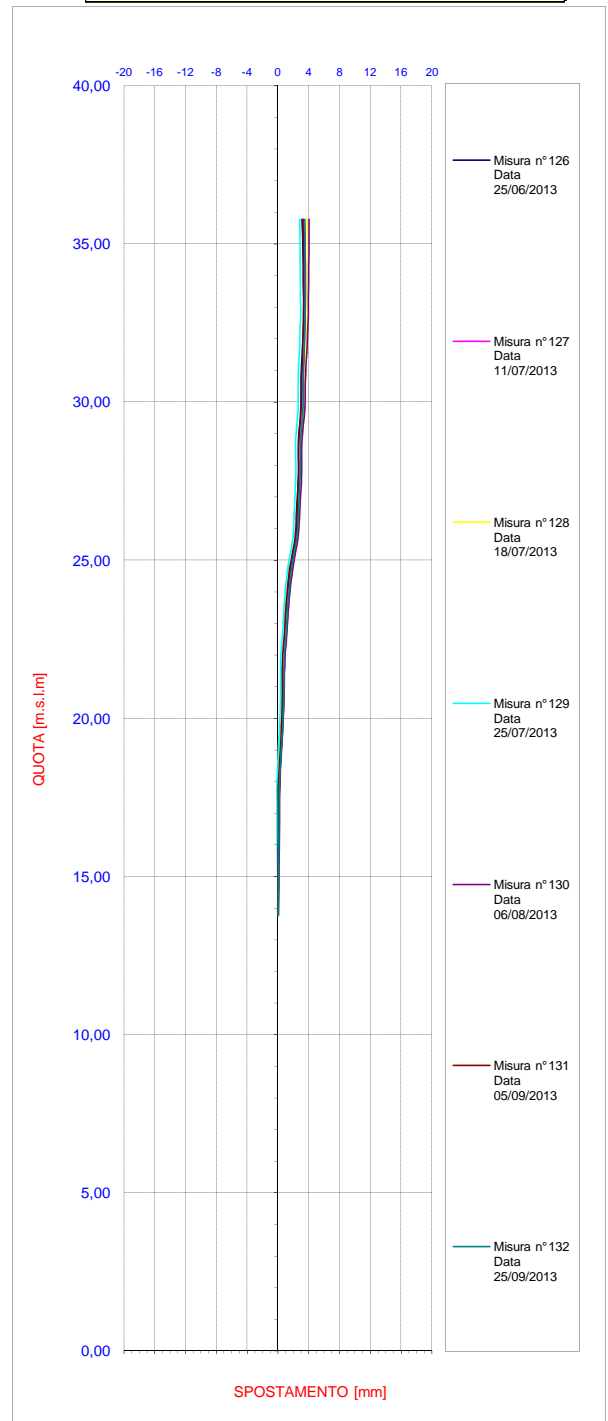
Ubicazione **STAZIONE CHIAIA**  
Tipo Strumento **Tubo inclinometrico**  
Nome tubo **CH\_IN\_P67**  
Azimut di riferimento **337**  
Quota guida rif. (m.s.l.m.) **36,274**  
Data lettura di zero **25/11/2009**  
Data posa in opera **18/11/2009**

Ultima Misura **132** in data **25/09/2013 10.36**

Spostamenti Differenziali Integrali  
OVEST- (valori negativi) / EST + (valori positivi)



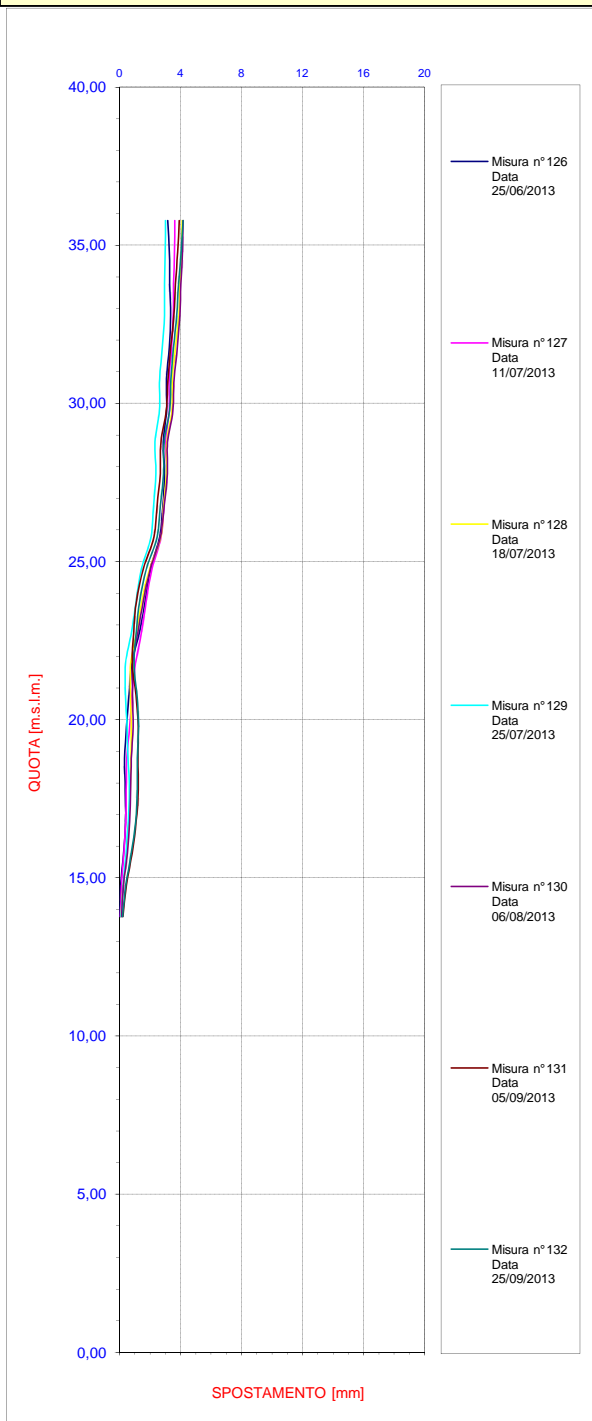
Spostamenti Differenziali Integrali  
SUD - (valori negativi) / NORD + (valori positivi)



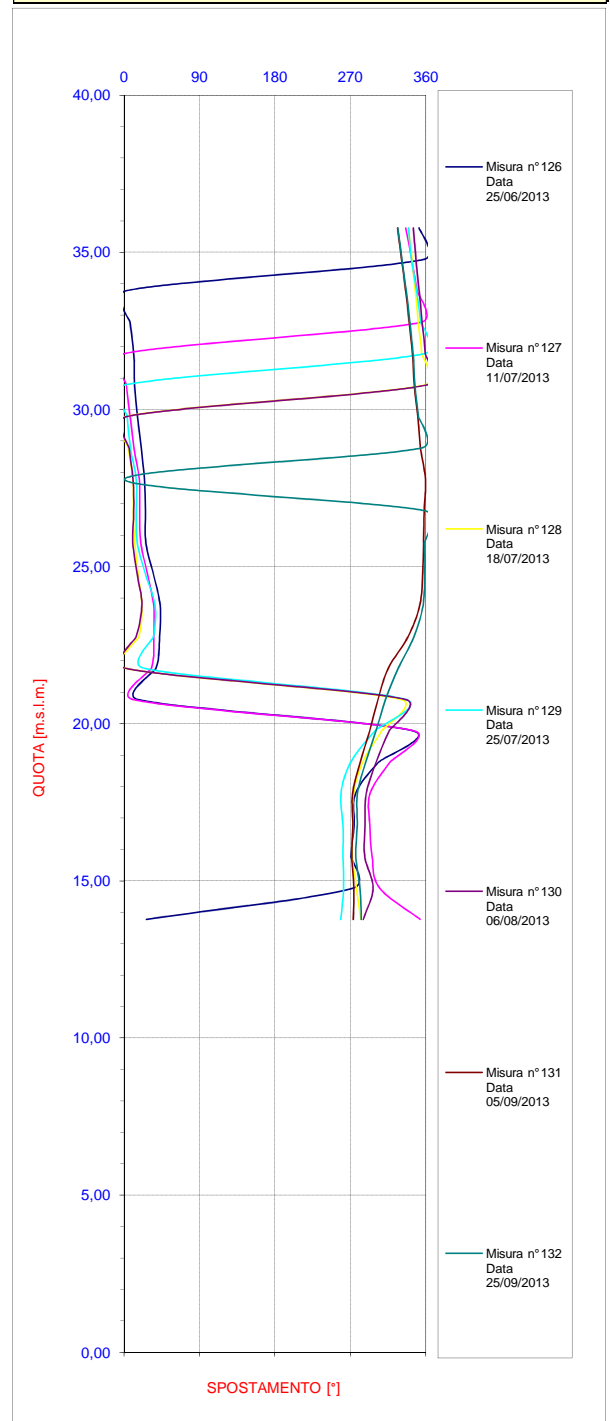
Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P67**  
 Azimut di riferimento **337**  
 Quota guida rif. (m.s.l.m.) **36,274**  
 Data lettura di zero **25/11/2009**  
 Data posa in opera **18/11/2009**

Ultima Misura **132** in data **25/09/2013 10.36**

Spostamenti Differenziali Integrali Risultante



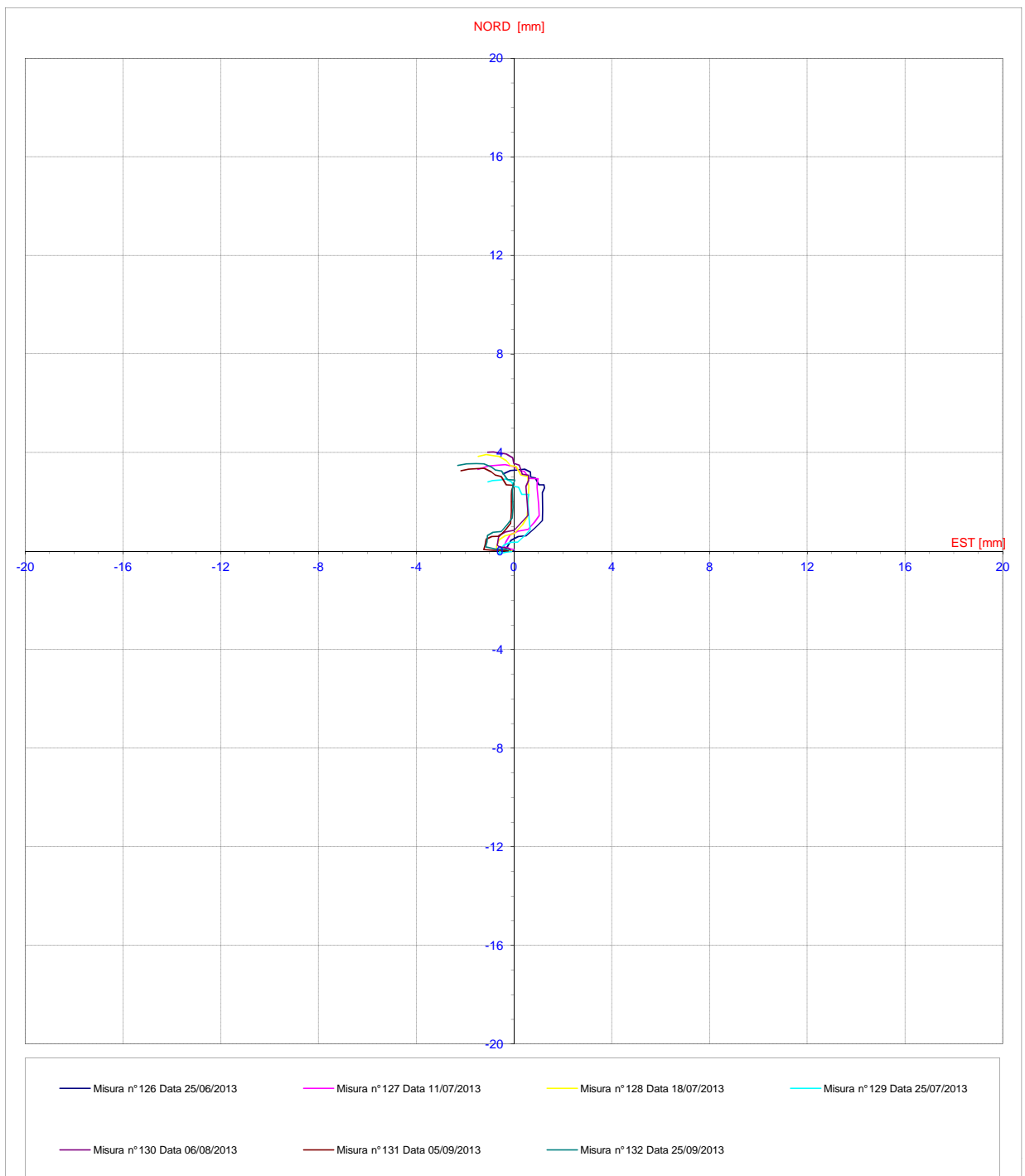
Spostamenti Differenziali Integrali Azimut

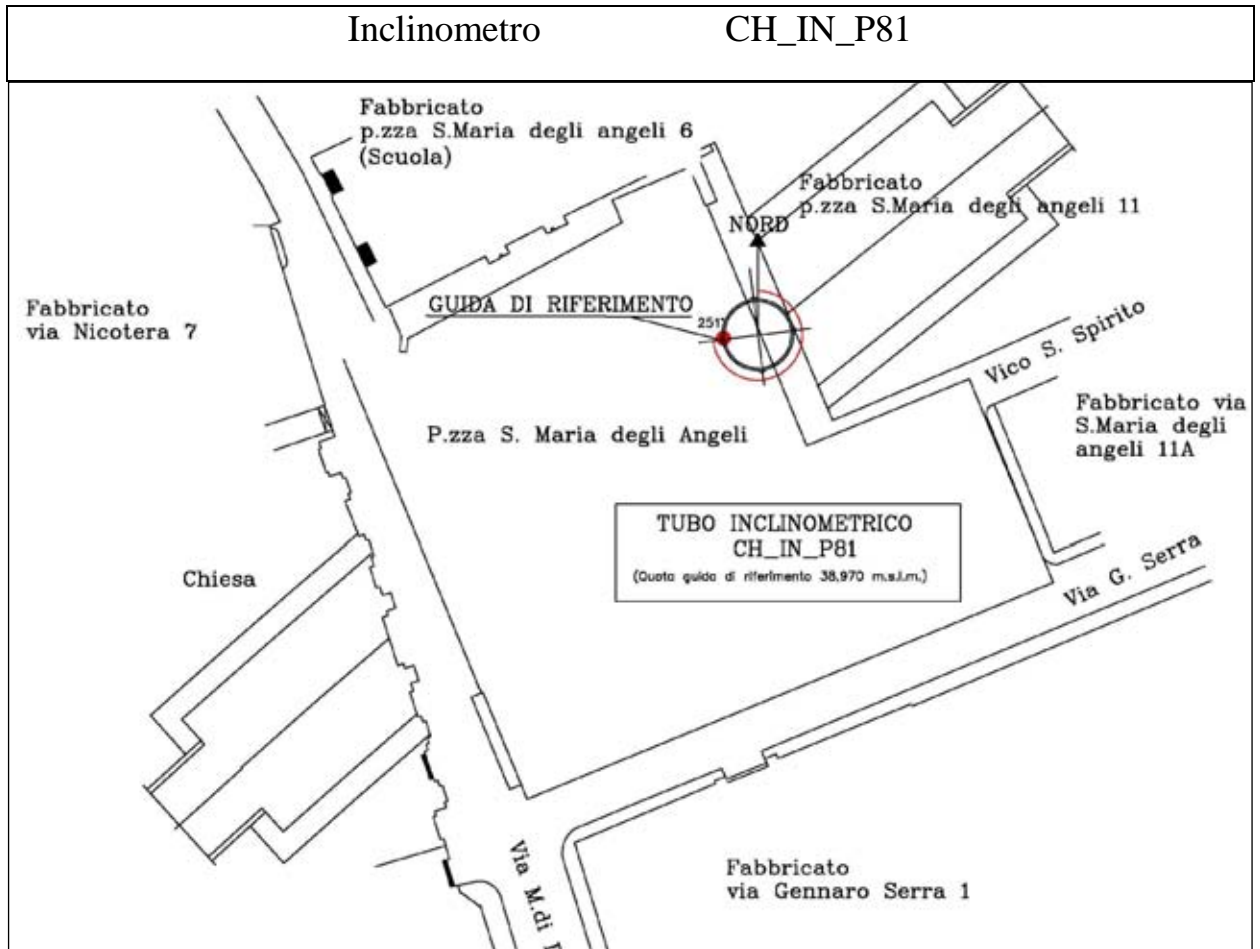


Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P67**  
 Azimut di riferimento **337**  
 Quota guida rif. (m.s.l.m.) **36,274**  
 Data lettura di zero **25/11/2009**  
 Data posa in opera **18/11/2009**

Ultima Misura **132** in data **25/09/2013 10.36**

Spostamenti Differenziali Integrali  
Diagramma polare





<p>Affidabilità strumentale A.T.I. LM6 – TreEsse</p>	<p>Congruenza progettuale C.T. ATI LM6 – C.T. Monitoraggio</p>
<p>buono <input checked="" type="checkbox"/></p> <p>da rivedere <input type="checkbox"/></p> <p>da scartare <input type="checkbox"/></p>	<p>congruente <input type="checkbox"/></p> <p>non congruente, da valutare <input type="checkbox"/></p> <p>non congruente con implicazioni sulla sicurezza <input type="checkbox"/></p>

<b>NOTE</b>

Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P81**  
 Azimut di riferimento **251**  
 Quota guida rif. (m.s.l.m.) **38,97**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

Misura **79** in data **25/09/2013 10.38**

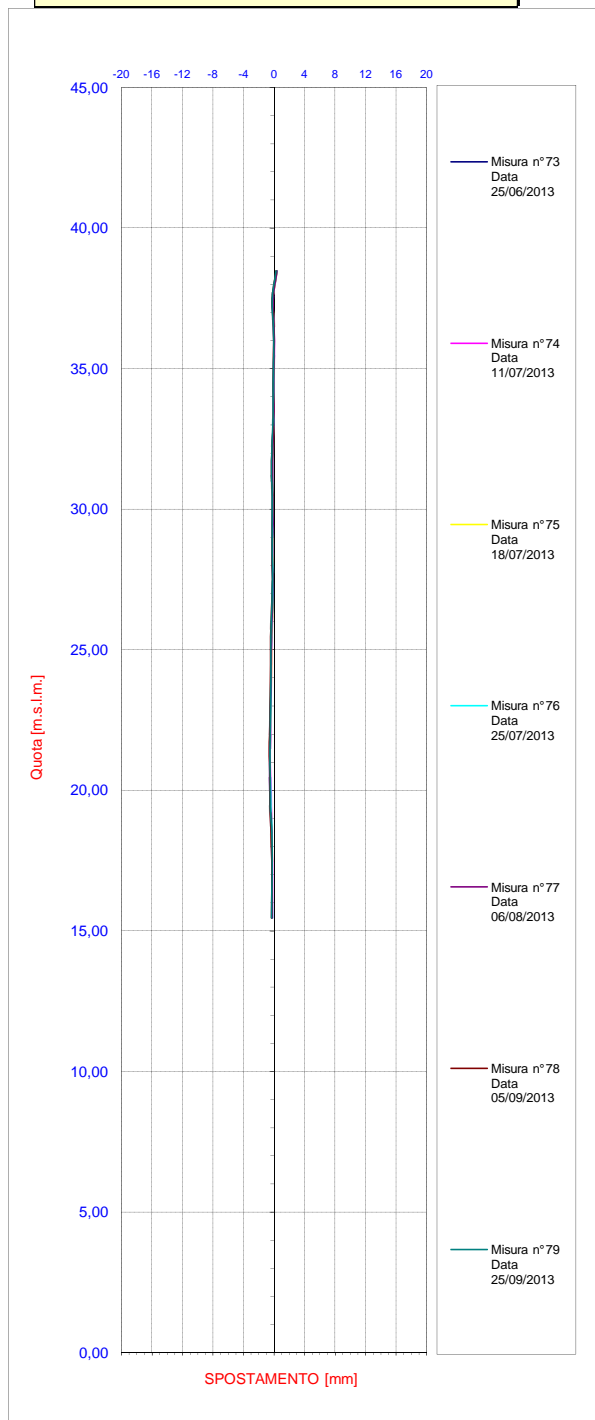
SPOSTAMENTI LOCALI (mm)				
PROFONDITA (m.s.l.m.)	EST	NORD	RISULTANTE	AZIMUT
38,5	0,273	-0,297	0,403	137,425
37,5	-0,245	-0,240	0,343	225,521
36,5	-0,074	0,160	0,177	335,289
35,5	-0,042	0,129	0,135	341,931
34,5	-0,110	0,189	0,219	329,761
33,5	-0,103	0,148	0,180	325,315
32,5	-0,226	0,132	0,262	300,257
31,5	-0,332	0,312	0,455	313,234
30,5	-0,227	0,008	0,228	271,954
29,5	-0,239	0,027	0,241	276,377
28,5	-0,227	-0,004	0,227	268,980
27,5	-0,225	0,040	0,228	280,086
26,5	-0,305	-0,034	0,307	263,589
25,5	-0,411	-0,118	0,427	253,979
24,5	-0,400	-0,148	0,427	249,771
23,5	-0,456	-0,161	0,483	250,577
22,5	-0,490	-0,228	0,541	245,011
21,5	-0,546	-0,119	0,558	257,737
20,5	-0,516	-0,260	0,578	243,322
19,5	-0,490	-0,204	0,531	247,339
18,5	-0,308	-0,289	0,423	226,836
17,5	-0,245	-0,356	0,433	214,548
16,5	-0,283	-0,287	0,403	224,642
15,5	-0,316	-0,276	0,420	228,911

SPOSTAMENTI INTEGRALI (mm)				
PROFONDITA (m.s.l.m.)	EST	NORD	RISULTANTE	AZIMUT
38,5	-6,544	-1,876	6,808	254,001
37,5	-6,817	-1,580	6,998	256,953
36,5	-6,572	-1,339	6,707	258,482
35,5	-6,498	-1,500	6,669	257,005
34,5	-6,456	-1,628	6,658	255,845
33,5	-6,346	-1,817	6,601	254,022
32,5	-6,244	-1,965	6,546	252,528
31,5	-6,017	-2,097	6,372	250,785
30,5	-5,686	-2,409	6,175	247,035
29,5	-5,458	-2,417	5,969	246,115
28,5	-5,219	-2,444	5,763	244,910
27,5	-4,992	-2,440	5,556	243,953
26,5	-4,767	-2,480	5,373	242,518
25,5	-4,462	-2,445	5,088	241,275
24,5	-4,051	-2,327	4,672	240,122
23,5	-3,651	-2,180	4,252	239,158
22,5	-3,195	-2,019	3,780	237,709
21,5	-2,705	-1,791	3,244	236,495
20,5	-2,160	-1,672	2,731	232,247
19,5	-1,643	-1,413	2,167	229,311
18,5	-1,153	-1,208	1,670	223,667
17,5	-0,845	-0,919	1,248	222,595
16,5	-0,600	-0,563	0,822	226,819
15,5	-0,316	-0,276	0,420	228,911

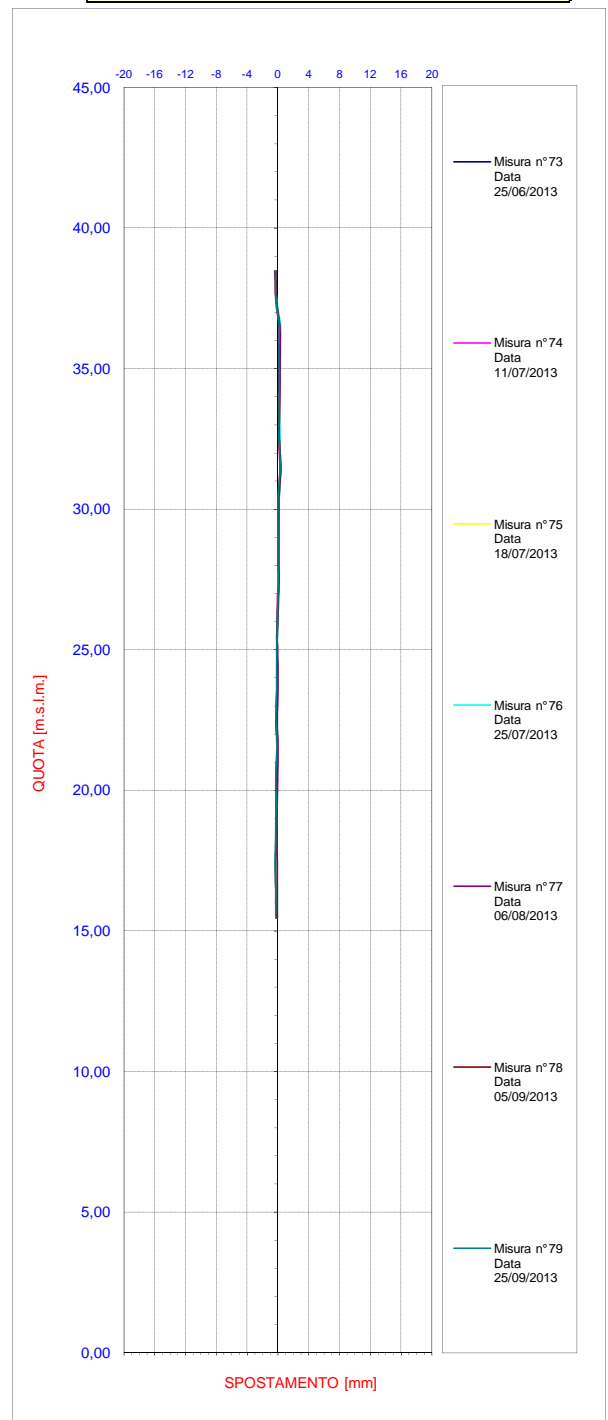
Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P81**  
 Azimut di riferimento **251**  
 Quota guida rif. (m.s.l.m.) **38,97**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

Ultima Misura **79** in data **25/09/2013 10.38**

**Spostamenti Differenziali Locali**  
OVEST- (valori negativi) / EST + (valori positivi)



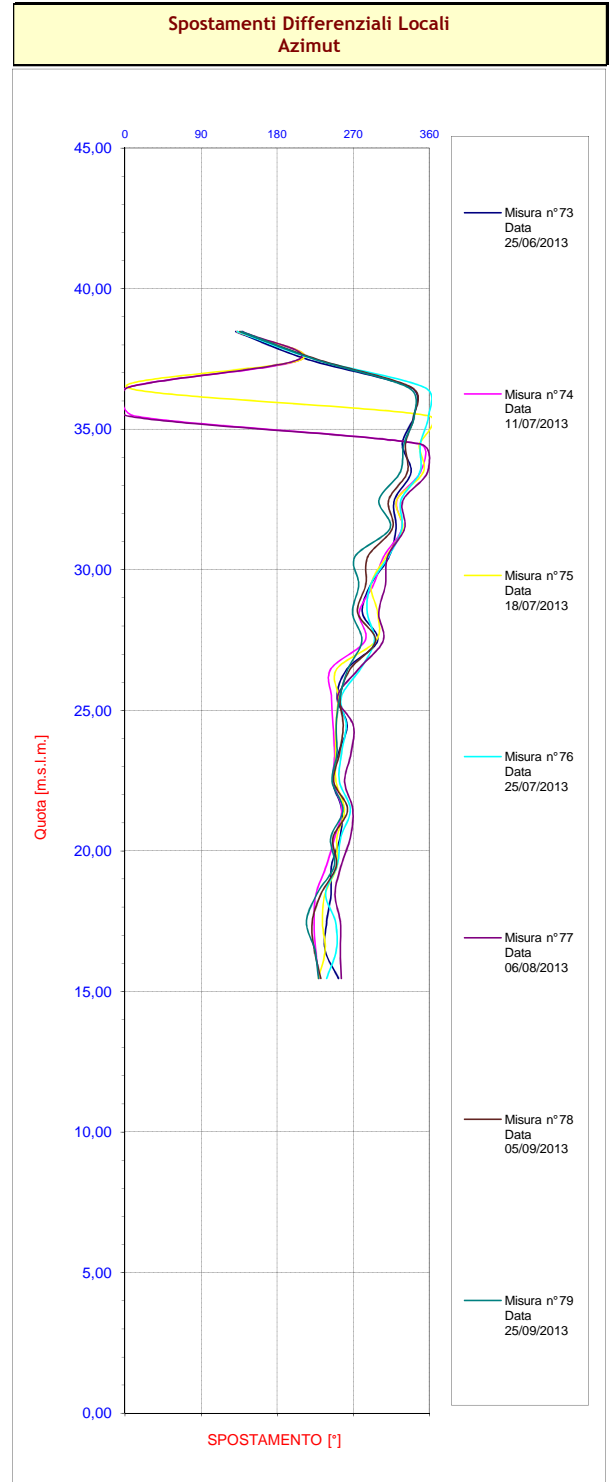
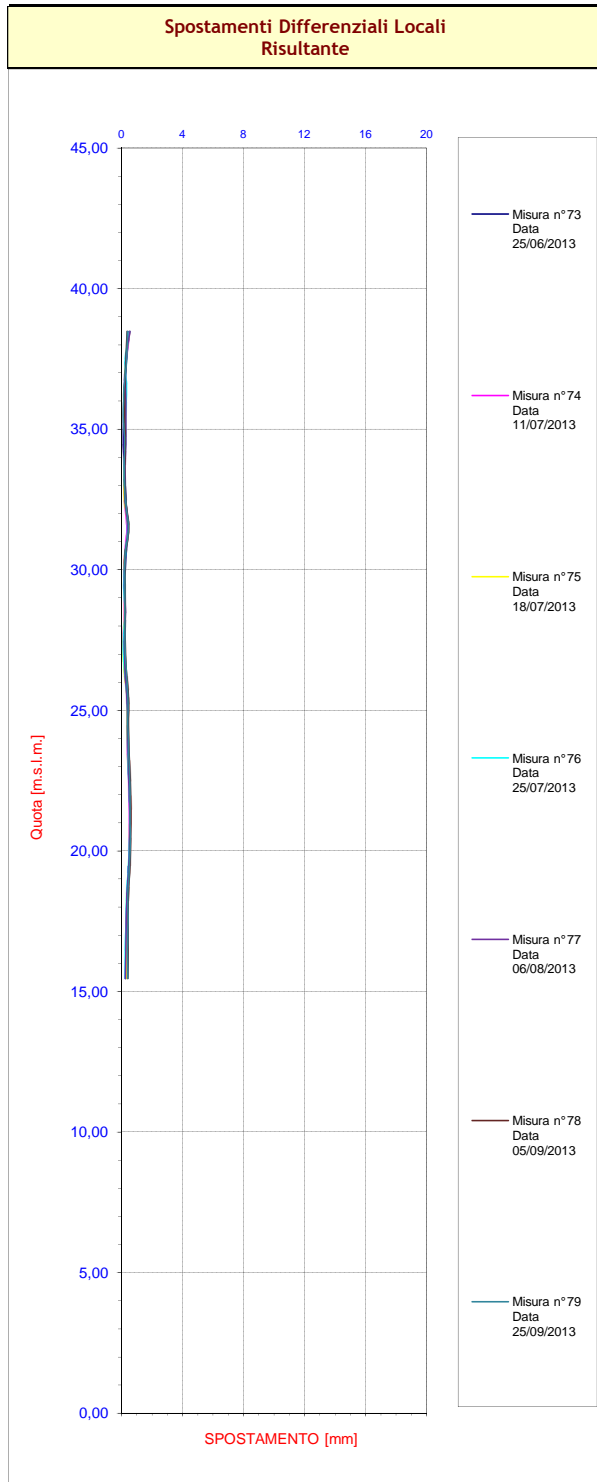
**Spostamenti Differenziali Locali**  
SUD - (valori negativi) / NORD + (valori positivi)





Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P81**  
 Azimut di riferimento **251**  
 Quota guida rif. (m.s.l.m.) **38,97**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

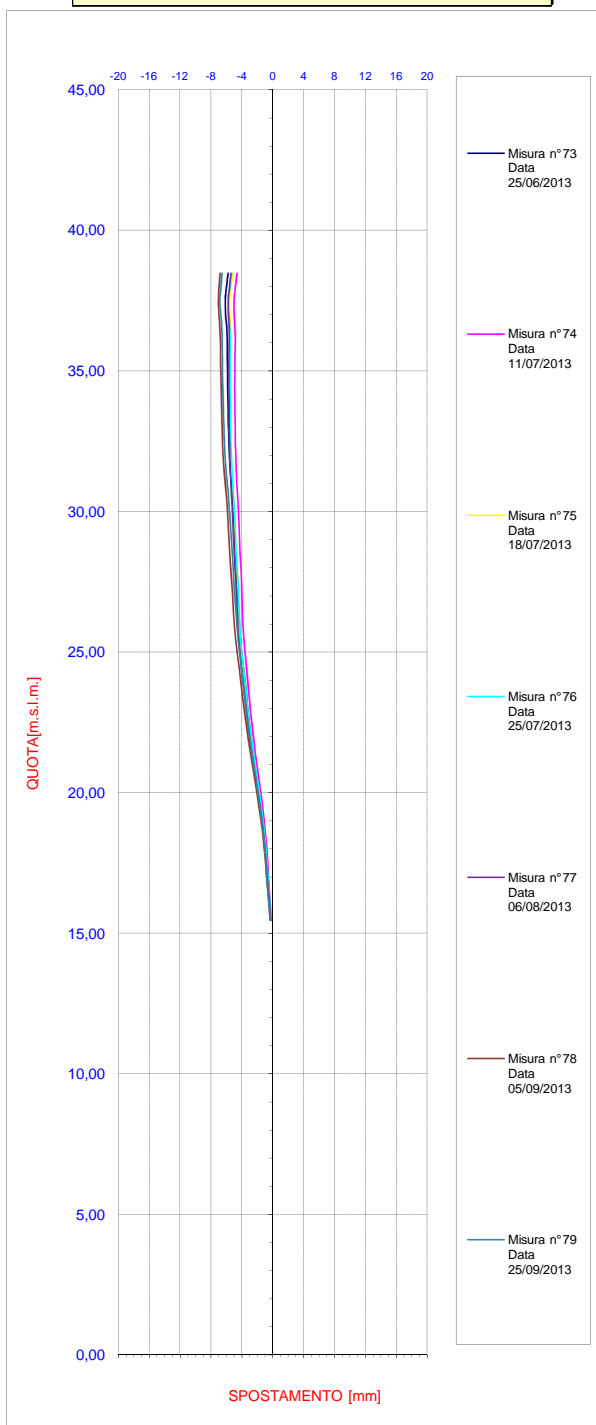
Ultima Misura **79** in data **25/09/2013 10.38**



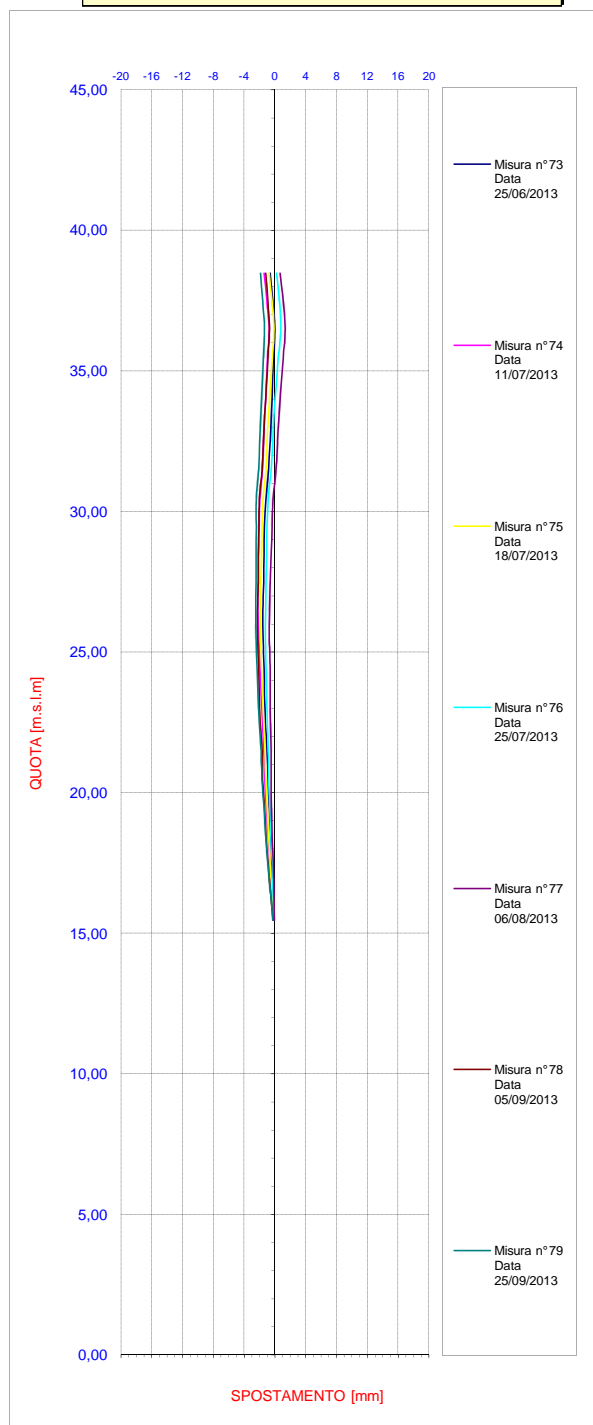
Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P81**  
 Azimut di riferimento **251**  
 Quota guida rif. (m.s.l.m.) **38,97**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

Ultima Misura **79** in data **25/09/2013 10.38**

Spostamenti Differenziali Integrali  
OVEST- (valori negativi) / EST + (valori positivi)



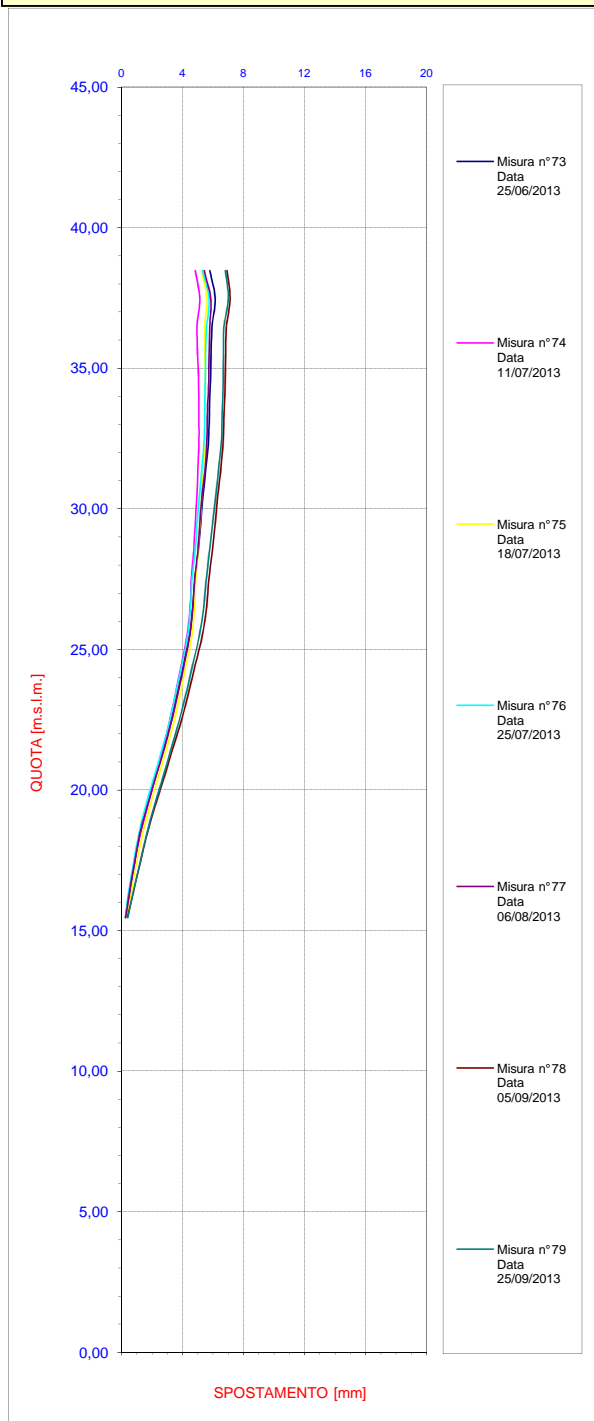
Spostamenti Differenziali Integrali  
SUD - (valori negativi) / NORD + (valori positivi)



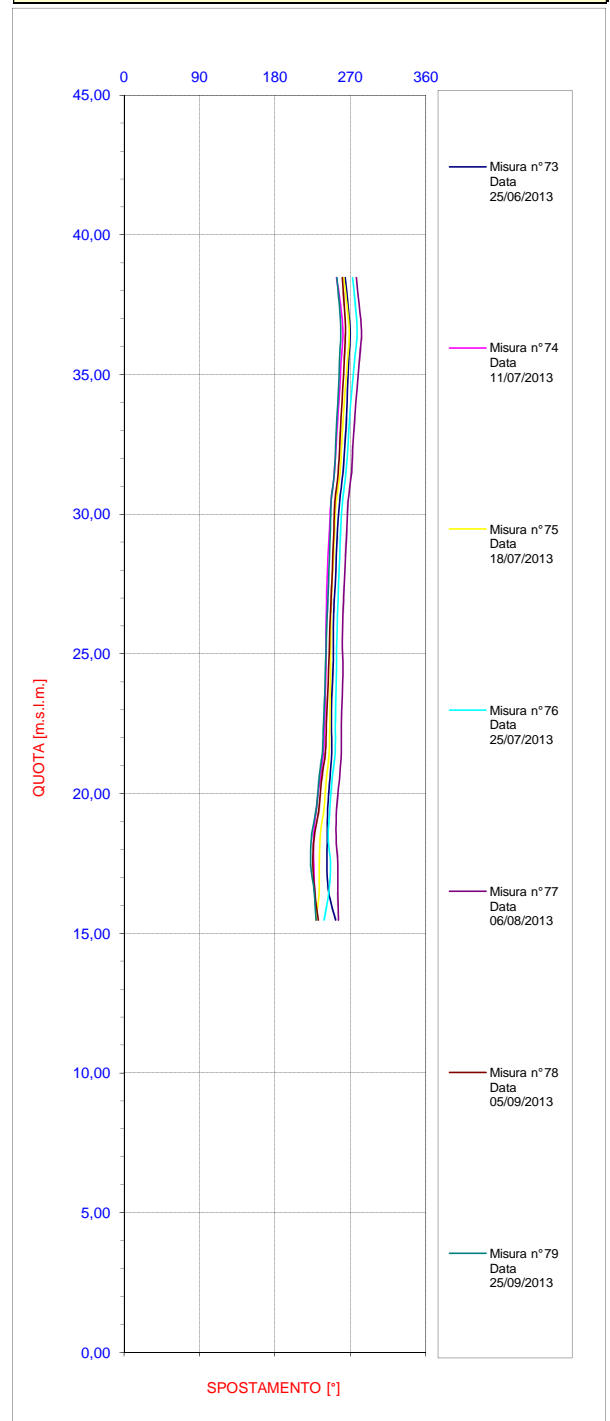
Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P81**  
 Azimut di riferimento **251**  
 Quota guida rif. (m.s.l.m.) **38,97**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

Ultima Misura **79** in data **25/09/2013 10.38**

**Spostamenti Differenziali Integrali Risultante**



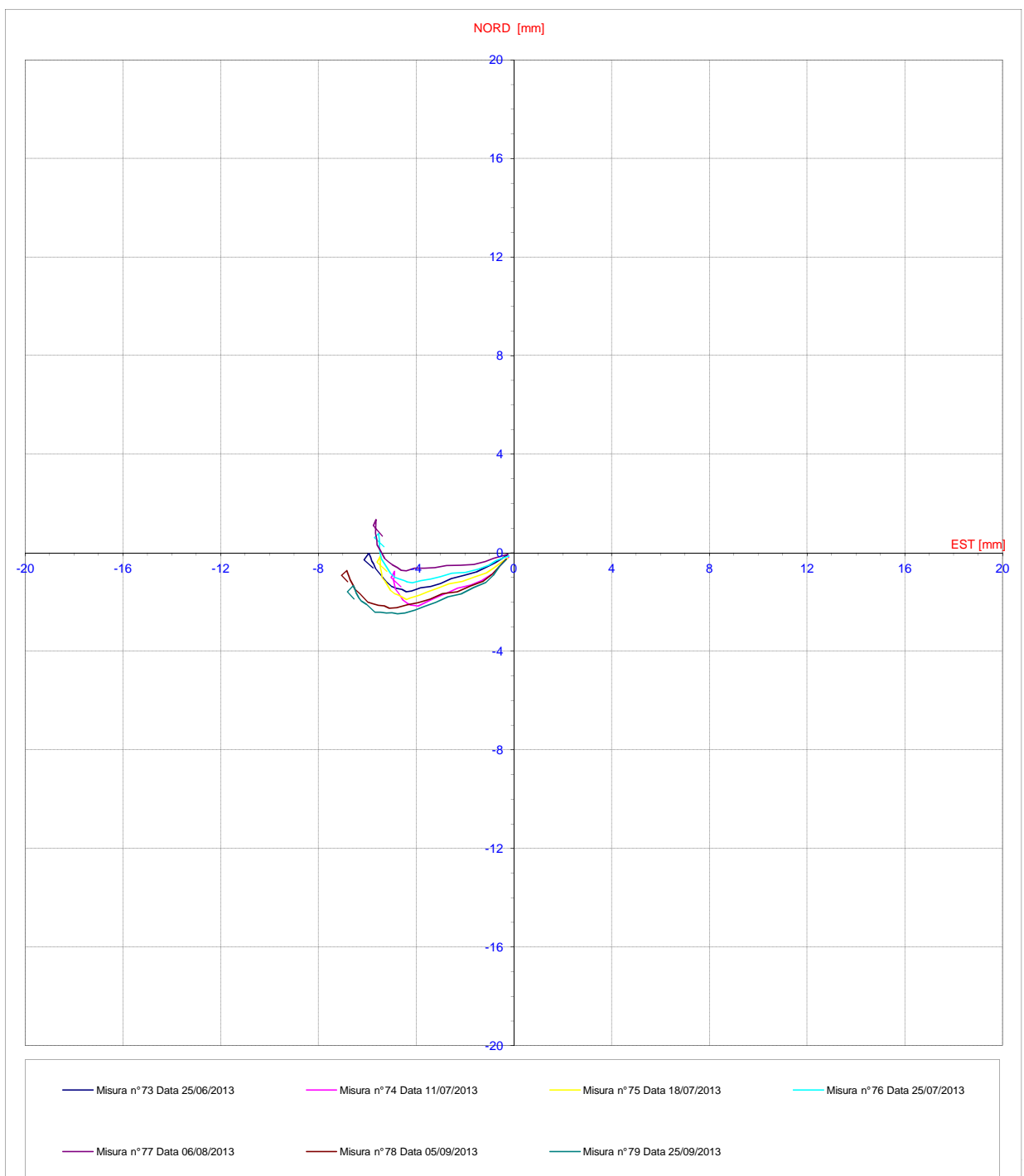
**Spostamenti Differenziali Integrali Azimut**




Ubicazione **STAZIONE CHIAIA**  
 Tipo Strumento **Tubo inclinometrico**  
 Nome tubo **CH\_IN\_P81**  
 Azimut di riferimento **251**  
 Quota guida rif. (m.s.l.m.) **38,97**  
 Data lettura di zero **21/01/2011**  
 Data posa in opera **21/12/2010**

Ultima Misura **79** in data **25/09/2013 10.38**

**Spostamenti Differenziali Integrali  
Diagramma polare**



 <p><b>Ansaldo STS</b> A Finmeccanica Company</p>	<p><b>LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO</b></p> <p><i>OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO</i> <i>REPORT DELLE MISURE - STAZIONE CHIAIA</i></p>	<p>LM6 7FX 2C I 25 Data: 27/09/13 Metropolitana di Napoli A.T.I. LM6 TreEsse Engineering S.r.l.</p>
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## **8. MISURE GEOTECNICHE – BARRETTE ESTENSIMETRICHE A CORDA VIBRANTE**

Gli estensimetri a corda vibrante sono costituiti da un filo d'acciaio, teso tra due supporti ancorati alla struttura da monitorare e messo in vibrazione da un elettromagnete.

Le deformazioni della struttura causano un movimento dei due supporti, facendo variare il tensionamento del filo. Questa variazione di tesatura provoca un mutamento della frequenza di vibrazione della corda, che risulta proporzionale alle deformazioni agenti.

Tutte le barrette estensimetriche installate sono del tipo a corda vibrante per metallo, rese solidali alla struttura mediante saldatura.


 <p><b>Ansaldo STS</b> A Finmeccanica Company</p>	<p><b>LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO</b></p> <p><i>OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO REPORT DELLE MISURE - STAZIONE CHIAIA</i></p>	<p>LM6 7FX 2C I 25 Data: 27/09/13 Metropolitana di Napoli A.T.I. LM6 TreEsse Engineering S.r.l.</p>
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Tabelle Riepilogative Per Le Barrette Estensimetriche Installate In Cantiere

Tabella Pannello N°13

NOME	TIPOLOGIA STRUMENTAZIONE	DATA INSTALL.	DISPONIBILITA' LETTURA			NOTE
			DATA LETT. DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
CH_P13_S1	BARRETTE ESTENSIMETRICHE A C.V.	07/01/09	03/09/09			
CH_P13_S2	BARRETTE ESTENSIMETRICHE A C.V.	07/01/09				Non funzionante
CH_P13_S3	BARRETTE ESTENSIMETRICHE A C.V.	07/01/09	03/09/09			
CH_P13_S4	BARRETTE ESTENSIMETRICHE A C.V.	07/01/09	03/09/09			
CH_P13_S5	BARRETTE ESTENSIMETRICHE A C.V.	07/01/09	03/09/09			
CH_P13_S6	BARRETTE ESTENSIMETRICHE A C.V.	07/01/09	03/09/09			

Tabella Pannello N°50

NOME	TIPOLOGIA STRUMENTAZIONE	DATA INSTALL.	DISPONIBILITA' LETTURA			NOTE
			DATA LETT. DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
CH_P50_S1	BARRETTE ESTENSIMETRICHE A C.V.	20/01/09	03/09/09			
CH_P50_S2	BARRETTE ESTENSIMETRICHE A C.V.	20/01/09	03/09/09			
CH_P50_S3	BARRETTE ESTENSIMETRICHE A C.V.	20/01/09	03/09/09			
CH_P50_S4	BARRETTE ESTENSIMETRICHE A C.V.	20/01/09	03/09/09			
CH_P50_S5	BARRETTE ESTENSIMETRICHE A C.V.	20/01/09	03/09/09			
CH_P50_S6	BARRETTE ESTENSIMETRICHE A C.V.	20/01/09	03/09/09			


 <p><b>Ansaldo STS</b> A Finmeccanica Company</p>	<p><b>LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO</b></p> <p><i>OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO</i></p> <p><i>REPORT DELLE MISURE - STAZIONE CHIAIA</i></p>	<p>LM6 7FX 2C I 25 Data: 27/09/13 Metropolitana di Napoli A.T.I. LM6 TreEsse Engineering S.r.l.</p>
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Tabella Pannello N°67

NOME	TIPOLOGIA STRUMENTAZIONE	DATA INSTALL.	DISPONIBILITA' LETTURA			NOTE
			DATA LETT. DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
CH_P67_S1	BARRETTE ESTENSIMETRICHE A C.V.	04/03/09	03/09/09		28/09/11	Lo strumento restituisce valore discontinuo
CH_P67_S2	BARRETTE ESTENSIMETRICHE A C.V.	04/03/09	03/09/09			
CH_P67_S3	BARRETTE ESTENSIMETRICHE A C.V.	04/03/09	03/09/09			
CH_P67_S4	BARRETTE ESTENSIMETRICHE A C.V.	04/03/09	03/09/09			
CH_P67_S5	BARRETTE ESTENSIMETRICHE A C.V.	04/03/09	03/09/09			
CH_P67_S6	BARRETTE ESTENSIMETRICHE A C.V.	04/03/09	03/09/09			

Tabella Pannello N°81

NOME	TIPOLOGIA STRUMENTAZIONE	DATA INSTALL.	DISPONIBILITA' LETTURA			NOTE
			DATA LETT. DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
CH_P81_S1	BARRETTE ESTENSIMETRICHE A C.V.	31/03/09	03/09/09		20/04/11	(*)
CH_P81_S2	BARRETTE ESTENSIMETRICHE A C.V.	31/03/09	03/09/09		20/04/11	(*)
CH_P81_S3	BARRETTE ESTENSIMETRICHE A C.V.	31/03/09	03/09/09		20/04/11	(*)
CH_P81_S4	BARRETTE ESTENSIMETRICHE A C.V.	31/03/09	03/09/09		25/03/10	(*)
CH_P81_S5	BARRETTE ESTENSIMETRICHE A C.V.	31/03/09	03/09/09		20/04/11	(*)
CH_P81_S6	BARRETTE ESTENSIMETRICHE A C.V.	31/03/09	03/09/09		20/04/11	(*)
CH_P81_S7	BARRETTE ESTENSIMETRICHE A C.V.	31/03/09				(*)
CH_P81_S8	BARRETTE ESTENSIMETRICHE A C.V.	31/03/09	03/09/09		20/04/11	(*)

(\*) Le barrette estensimetriche non restituiscono un segnale coerente pertanto non verranno più inserite nel programma di monitoraggio.


 <p><b>Ansaldo STS</b> A Finmeccanica Company</p>	<p><b>LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO</b></p> <p><i>OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO</i></p> <p><i>REPORT DELLE MISURE - STAZIONE CHIAIA</i></p>	<p>LM6 7FX 2C I 25 Data: 27/09/13 Metropolitana di Napoli A.T.I. LM6 TreEsse Engineering S.r.l.</p>
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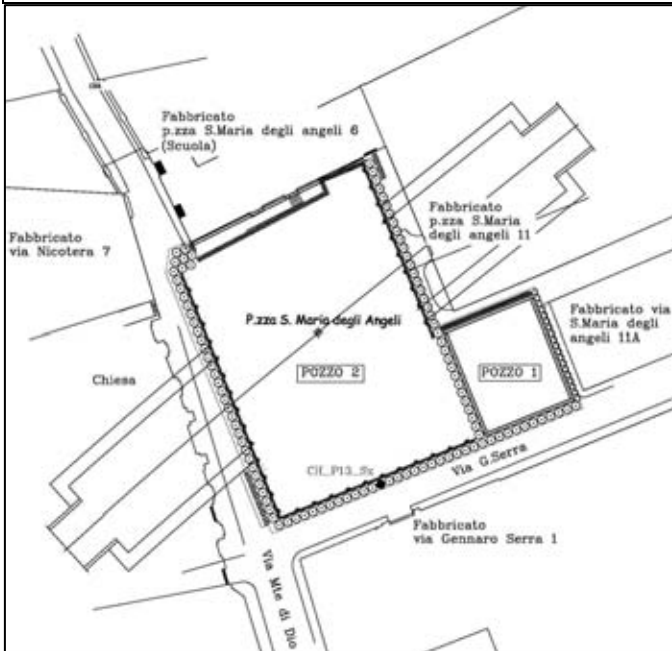
Tabella Puntoni PU1 e PU2

NOME	TIPOLOGIA STRUMENTAZIONE	DATA INSTALL.	DISPONIBILITA' LETTURA			NOTE
			DATA LETT. DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
CH_PU1_S1	BARRETTE ESTENSIMETRICHE A C.V.	12/09/11	14/09/11			
CH_PU1_S2	BARRETTE ESTENSIMETRICHE A C.V.	12/09/11	14/09/11			
CH_PU1_S3	BARRETTE ESTENSIMETRICHE A C.V.	12/09/11	14/09/11			
CH_PU1_S4	BARRETTE ESTENSIMETRICHE A C.V.	12/09/11	14/09/11			
CH_PU2_S5	BARRETTE ESTENSIMETRICHE A C.V.	12/09/11	14/09/11			
CH_PU2_S6	BARRETTE ESTENSIMETRICHE A C.V.	12/09/11	14/09/11		15/10/12	Danneggiata. nessun valore
CH_PU2_S6_1	BARRETTE ESTENSIMETRICHE A C.V.	19/11/12	19/11/12			Sostituisce la CH_PU2_S6
CH_PU2_S7	BARRETTE ESTENSIMETRICHE A C.V.	12/09/11	14/09/11			
CH_PU2_S8	BARRETTE ESTENSIMETRICHE A C.V.	12/09/11	14/09/11			

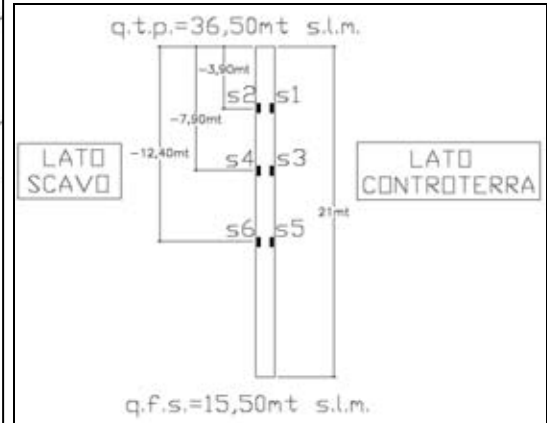


Pannello strumentato

CH\_P13



SCHEMA INSTALLAZIONE  
STRUMENT. GEOTECNICA  
(BECV PER METALLO)  
PALO N°13



Le barrette con numero progressivi dispari (s1,s3,s5) sono installate lato contro terra, mentre quelle con numero pari (s2,s4,s6) sono poste lato scavo; la direzione di installazione è parallela all'asse di scavo.

Affidabilità strumentale

A.T.I. LM6 – TreEsse

buono  
da rivedere  
da scartare

X

Congruenza progettuale

C.T. ATI LM6 – C.T.  
Monitoraggio

congruente  
non congruente, da valutare  
non congruente con implicazioni  
sulla sicurezza


**NOTE**

Le elaborazioni di seguito riportate includono lo storico delle misure.

La barretta estensimetrica a c.v. CH\_P13\_S2 non è funzionante.



**TABULATI**

Ubicazione STAZIONE CHIAIA

Opera \ \ P13

Strumento Barretta Est. per Metallo

Data posa in opera 03/09/2009

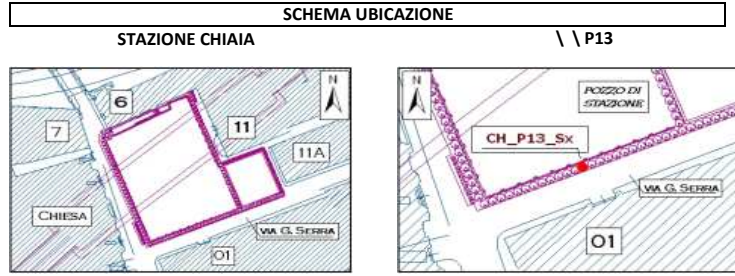
Data lettura di zero 03/09/2009

Ultima Misura 153 in data 25/09/2013

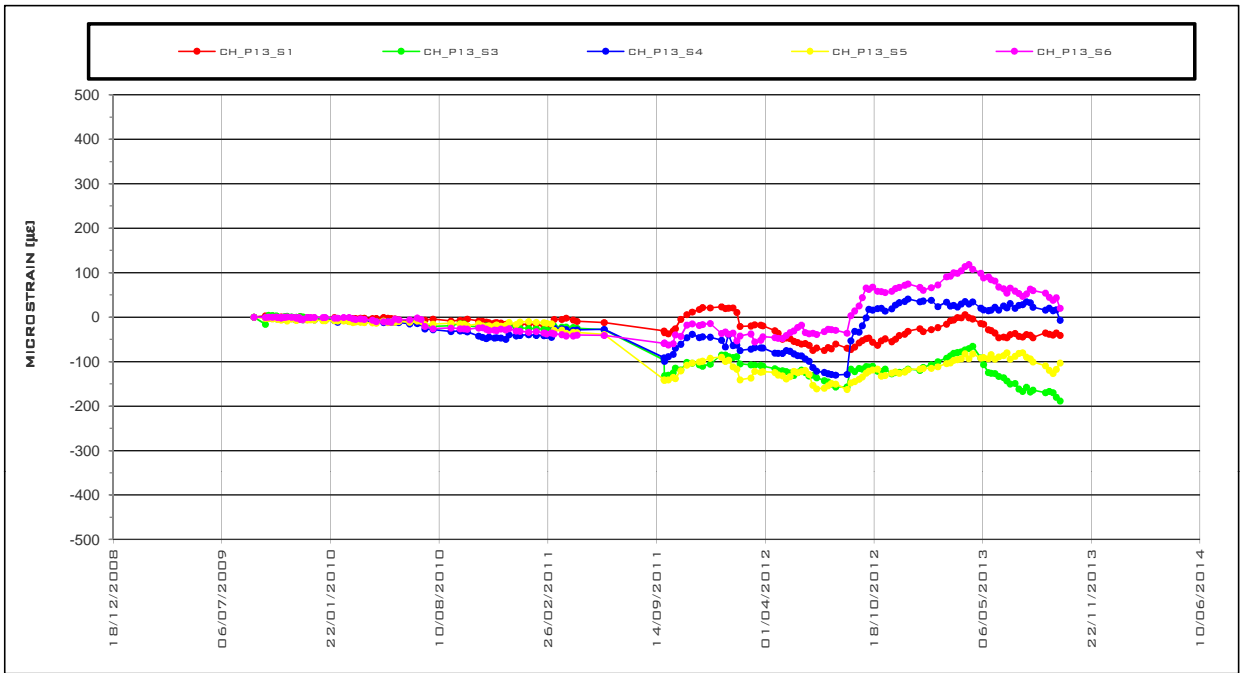
Letture n°	DATA	CH_P13_S1		CH_P13_S3		CH_P13_S4		CH_P13_S5		CH_P13_S6	
		Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]
101	4/7/12 11.00	-69,1	16,7	-136,2	15,6	-121,2	15,6	-161,0	14,2	-38,7	18,3
102	18/7/12 10.00	-74,4	16,6	-142,7	15,4	-124,0	15,7	-159,4	14,0	-32,2	18,5
103	25/7/12 10.00	-67,9	16,8	-145,5	15,5	-126,9	15,8	-154,1	14,1	-26,9	18,6
104	31/7/12 10.00	-70,8	16,9	-150,0	15,8	-128,5	16,0	-148,8	14,2	-27,7	18,2
105	8/8/12 10.30	-60,2	17,1	-156,9	15,9	-130,1	16,2	-150,4	14,4	-29,3	18,4
106	29/8/12 10.00	-69,5	17,0	-156,5	15,6	-128,5	16,0	-162,2	14,1	-35,8	18,2
107	5/9/12 10.30	-72,3	20,1	-116,6	18,2	-52,9	19,2	-147,6	17,3	3,6	21,1
108	12/9/12 10.00	-67,1	20,2	-121,9	18,1	-31,7	20,6	-144,7	17,2	14,2	22,3
109	20/9/12 10.00	-57,7	20,3	-115,0	18,0	-33,4	21,8	-139,4	17,3	25,6	22,9
110	26/9/12 11.00	-52,4	20,4	-116,6	18,2	-19,1	22,3	-134,1	17,4	44,3	24,1
111	3/10/12 11.00	-48,0	20,1	-111,0	18,0	-1,2	23,1	-125,6	17,1	65,8	25,2
112	8/10/12 10.00	-46,8	19,2	-111,8	17,6	17,9	24,0	-121,2	16,8	62,6	25,6
113	15/10/12 11.00	-56,1	19,1	-110,2	17,4	16,2	24,2	-118,3	16,7	67,9	25,7
114	24/10/12 11.00	-63,0	19,2	-121,1	17,5	19,5	24,8	-116,7	16,5	58,5	25,6
115	31/10/12 11.30	-52,9	18,7	-121,9	17,1	20,3	24,2	-132,5	16,2	57,7	25,2
116	7/11/12 11.00	-48,4	18,4	-116,7	17,2	13,8	24,0	-130,9	16,0	55,7	24,7
117	19/11/12 15.00	-54,9	18,2	-127,2	17,0	19,1	24,1	-125,6	16,1	58,5	24,6
118	26/11/12 11.00	-49,2	18,0	-124,0	16,6	27,6	23,8	-122,8	16,0	64,6	24,1
119	3/12/12 10.00	-41,1	18,0	-123,6	16,3	32,9	23,9	-126,1	15,4	67,4	24,0
120	13/12/12 10.30	-38,2	17,9	-122,0	16,1	35,7	23,8	-123,2	15,3	71,9	23,7
121	19/12/12 10.00	-31,7	18,1	-116,7	16,2	41,0	23,9	-117,9	15,4	74,7	23,6
122	10/1/13 10.00	-25,7	17,6	-119,5	16,3	34,9	22,4	-116,7	15,5	67,4	22,0
123	16/1/13 10.45	-32,2	17,4	-112,6	16,2	36,5	22,2	-115,1	15,3	60,9	21,8
124	31/1/13 9.30	-27,7	17,1	-106,9	16,0	38,1	22,0	-114,7	15,0	66,6	21,6
125	12/2/13 11.30	-23,2	16,8	-100,0	15,9	23,9	21,5	-111,4	14,6	72,7	21,1
126	28/2/13 11.00	-15,5	16,1	-92,3	15,2	34,1	21,0	-104,1	14,2	90,9	20,6
127	7/3/13 11.00	-7,8	15,4	-86,6	15,0	25,1	20,6	-102,5	14,0	92,6	20,4
128	13/3/13 11.30	-6,2	15,2	-80,9	14,8	26,7	20,4	-96,8	13,8	99,9	20,0
129	20/3/13 11.00	-0,5	15,0	-79,3	14,6	23,1	20,1	-95,2	13,6	99,1	19,6
130	27/3/13 12.00	-1,3	14,6	-77,7	14,4	30,0	20,0	-93,6	13,4	104,7	19,4
131	3/4/13 11.30	6,0	14,2	-73,2	14,1	35,3	19,1	-82,2	13,0	114,1	19,5
132	10/4/13 11.50	-0,9	14,3	-70,4	14,0	30,0	19,0	-93,2	13,1	118,5	19,2
133	17/4/13 11.00	-3,8	14,4	-65,1	14,1	34,4	18,7	-82,2	13,0	108,0	19,0
134	2/5/13 10.00	-13,9	14,9	-91,5	14,6	20,6	18,9	-92,0	13,2	99,1	19,6
135	7/5/13 11.30	-15,5	15,1	-106,5	14,7	16,6	18,9	-90,3	13,0	88,5	19,4
136	16/5/13 11.00	-28,1	15,4	-124,4	14,9	14,9	19,1	-93,2	13,1	90,9	19,6
137	21/5/13 11.30	-29,7	15,6	-126,0	15,1	16,2	19,2	-83,8	13,2	84,4	19,4
138	28/5/13 10.40	-35,4	15,8	-126,4	15,4	22,7	19,4	-94,4	13,0	81,6	19,5
139	4/6/13 11.00	-46,0	15,6	-132,9	15,2	16,2	19,2	-89,1	13,1	68,2	19,4
140	13/6/13 10.00	-44,4	15,4	-135,8	15,3	25,5	19,3	-86,3	13,0	64,1	19,4
141	19/6/13 11.00	-46,0	15,6	-143,1	15,7	21,0	19,6	-79,8	13,2	54,4	19,6
142	25/6/13 10.30	-39,1	15,5	-150,0	15,8	30,8	19,4	-94,4	13,0	65,7	19,2
143	4/7/13 12.00	-36,2	15,4	-148,8	15,9	20,2	19,2	-87,9	13,2	58,8	19,3
144	11/7/13 11.00	-42,7	15,2	-161,4	15,2	26,7	19,4	-81,4	13,4	53,6	19,2
145	18/7/13 10.00	-44,4	15,4	-166,7	15,1	28,4	19,2	-79,8	13,2	47,1	19,0
146	25/7/13 10.30	-38,7	15,2	-157,3	15,2	34,9	19,4	-89,5	13,4	52,3	19,1
147	1/8/13 12.30	-40,3	15,4	-167,9	15,0	32,8	17,9	-93,6	13,4	63,3	18,0
148	6/8/13 11.30	-46,0	15,6	-163,8	15,0	22,6	17,4	-100,5	13,5	60,0	17,4
149	29/8/13 11.00	-35,4	15,8	-169,5	15,2	16,1	17,2	-109,0	13,8	54,3	17,6
150	5/9/13 11.00	-38,3	15,9	-166,7	15,1	20,6	16,9	-119,2	14,3	45,0	17,5
151	12/9/13 10.00	-39,9	16,1	-169,5	15,2	14,9	17,1	-126,5	14,7	38,1	17,6
152	18/9/13 10.30	-35,4	15,8	-180,1	15,0	16,9	16,6	-117,1	14,8	43,8	17,4
153	25/9/13 10.30	-40,7	15,7	-188,2	15,0	-6,6	16,0	-102,9	14,3	20,2	16,8



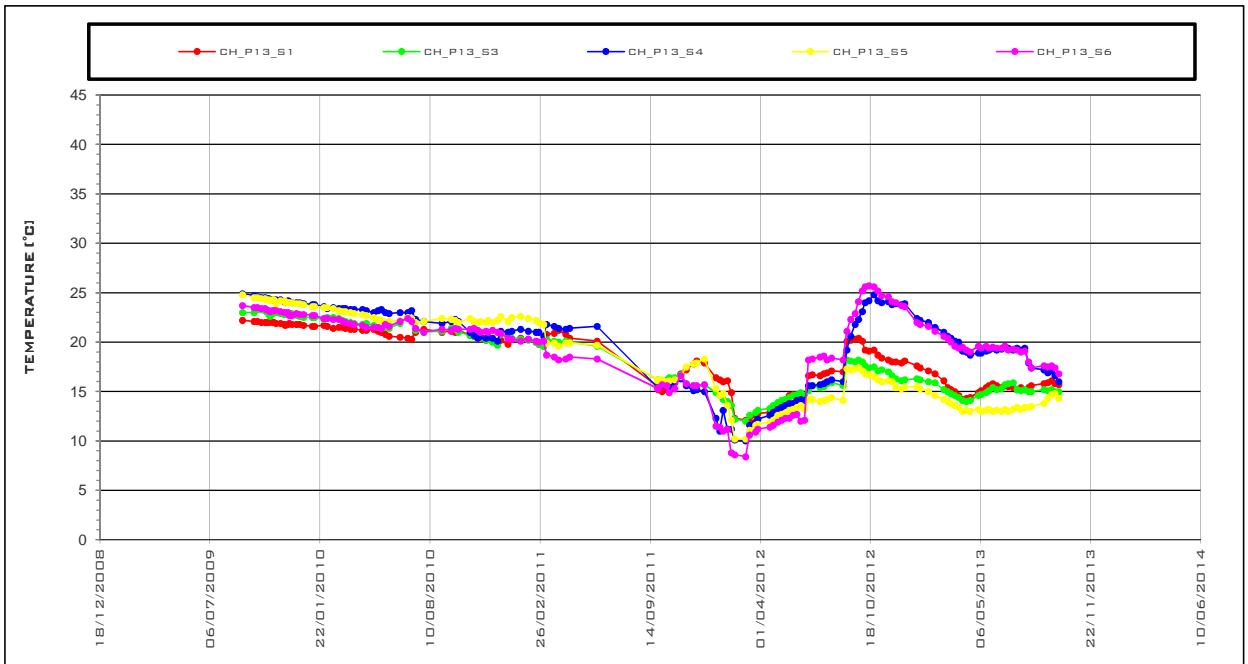
Ubicazione STAZIONE CHIAIA  
Opera \ \ P13  
Strumento Barretta Est. per Metallo  
Data posa in opera 03/09/2009  
Data lettura di zero 03/09/2009



**GRAFICO MICROSTRAIN**

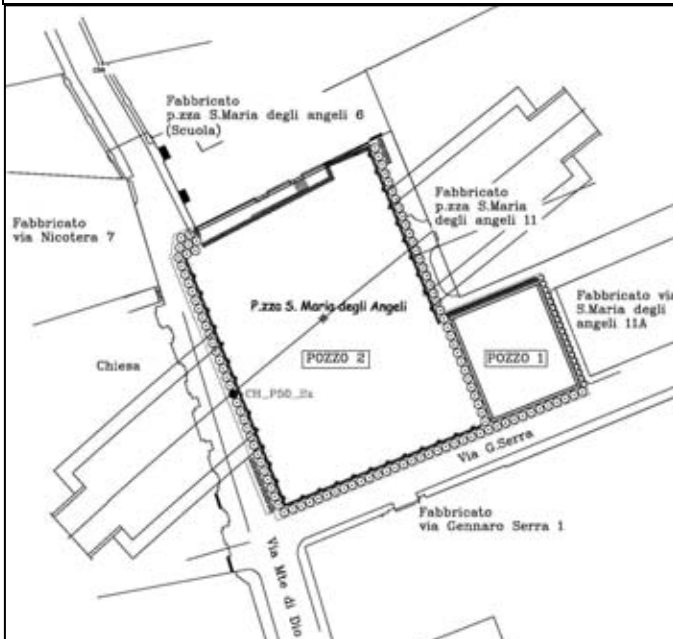


**GRAFICO TEMPERATURE**

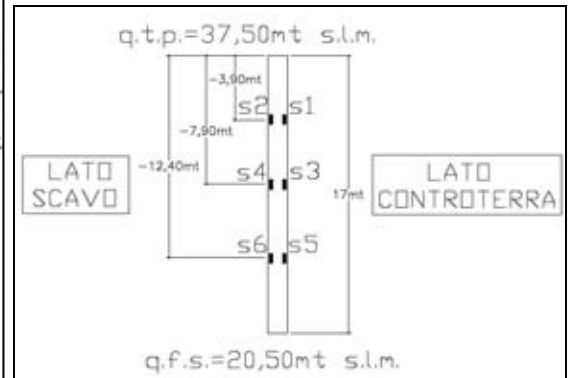


Pannello strumentato

CH\_P50



SCHEMA INSTALLAZIONE  
STRUMENT. GEOTECNICA (BECV  
PER METALLO)  
PALO N°50



Le barrette con numero progressivi dispari (s1,s3,s5) sono installate lato contro terra, mentre quelle con numero pari (s2,s4,s6) sono poste lato scavo; la direzione di installazione è parallela all'asse di scavo.

Affidabilità strumentale

A.T.I. LM6 – TreEsse

buono  
da rivedere  
da scartare

X

Congruenza progettuale  
C.T. ATI LM6 – C.T.  
Monitoraggio

congruente  
non congruente, da valutare  
non congruente con implicazioni  
sulla sicurezza


**NOTE**

Le elaborazioni di seguito riportate includono lo storico delle misure.


**TABULATI**

Ubicazione STAZIONE CHIAIA

Opera \ \ P50

Strumento Barretta Est. per Metallo

Data posa in opera 03/09/2009

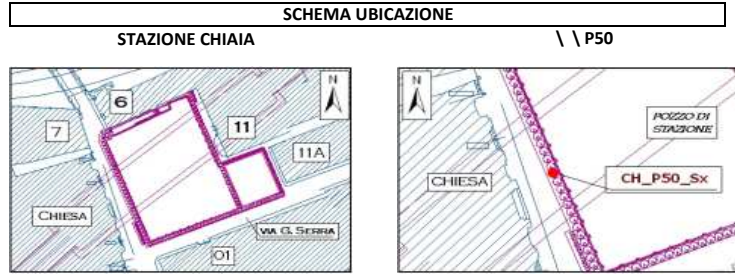
Data lettura di zero 03/09/2009

Ultima Misura 174 in data 25/09/2013

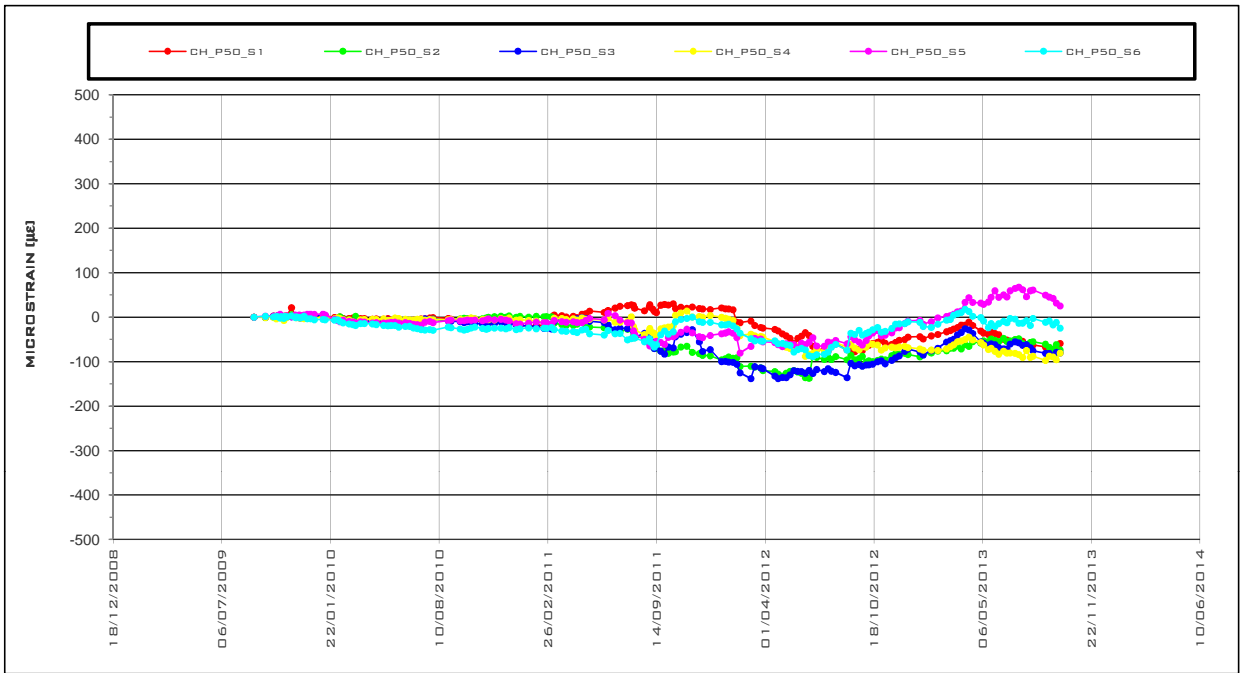
Letture n°	DATA	CH_P50_S1		CH_P50_S2		CH_P50_S3		CH_P50_S4		CH_P50_S5		CH_P50_S6	
		Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]
122	4/7/12 11.30	-71,5	19,9	-90,2	18,3	-117,5	15,6	-71,6	18,3	-64,7	18,0	-84,2	18,7
123	18/7/12 11.00	-73,2	20,1	-94,7	18,6	-122,0	15,9	-76,0	18,6	-65,1	18,3	-83,3	19,1
124	25/7/12 10.00	-76,0	20,2	-89,4	18,7	-115,5	16,1	-70,8	18,7	-55,7	18,4	-78,1	19,2
125	31/7/12 10.00	-65,4	20,4	-95,1	18,9	-121,2	16,3	-64,3	18,9	-57,3	18,6	-67,5	19,4
126	8/8/12 10.30	-60,1	20,5	-88,6	19,1	-124,0	16,4	-57,8	19,1	-52,1	18,7	-61,0	19,6
127	29/8/12 10.00	-73,2	20,1	-95,5	19,2	-135,8	16,1	-67,1	19,0	-59,8	18,4	-74,0	19,2
128	5/9/12 10.30	-71,1	19,6	-85,4	18,7	-103,7	16,4	-61,0	18,5	-43,9	18,7	-35,8	19,0
129	12/9/12 10.00	-77,6	19,4	-95,9	18,5	-109,0	16,3	-69,1	18,5	-50,4	18,5	-38,7	19,1
130	20/9/12 10.30	-71,9	19,2	-93,1	18,4	-106,1	16,2	-73,2	18,5	-55,7	18,4	-29,3	19,2
131	26/9/12 10.00	-74,8	19,3	-87,8	18,5	-110,2	16,2	-66,3	18,4	-62,2	18,2	-39,9	19,0
132	3/10/12 10.30	-65,0	19,1	-100,8	18,1	-107,3	16,1	-67,1	18,0	-52,5	18,0	-36,2	18,3
133	8/10/12 11.00	-63,0	18,6	-98,0	18,0	-106,9	15,8	-59,0	18,0	-41,9	18,2	-33,4	18,2
134	15/10/12 11.30	-59,0	18,6	-99,6	18,2	-105,3	15,6	-60,6	18,2	-35,4	18,4	-28,1	18,3
135	24/10/12 11.00	-56,1	18,5	-97,1	18,4	-100,0	15,7	-62,2	18,4	-30,1	18,5	-22,8	18,4
136	31/10/12 11.20	-51,7	18,2	-93,9	18,0	-98,0	15,2	-74,0	18,1	-41,9	18,2	-33,4	18,2
137	7/11/12 11.00	-58,2	18,0	-95,5	18,2	-104,5	15,0	-68,7	18,2	-40,3	18,0	-31,8	18,0
138	19/11/12 15.00	-61,0	18,1	-86,2	18,3	-96,8	15,3	-67,1	18,0	-35,0	18,1	-25,3	18,2
139	26/11/12 12.00	-56,5	17,8	-81,7	18,0	-91,1	15,1	-68,7	17,2	-24,0	18,0	-15,5	18,0
140	3/12/12 11.00	-51,7	17,2	-82,5	17,6	-86,6	14,8	-67,1	17,0	-23,6	17,7	-14,7	17,4
141	13/12/12 11.30	-50,0	17,0	-80,9	17,4	-76,9	14,6	-65,5	16,8	-13,9	17,5	-14,3	17,1
142	19/12/12 11.00	-44,8	17,1	-83,8	17,5	-71,6	14,7	-68,3	16,9	-8,6	17,6	-10,2	17,1
143	10/1/13 10.00	-43,5	17,2	-89,0	17,4	-78,1	14,5	-71,2	17,0	-7,0	17,4	-11,5	17,0
144	16/1/13 10.45	-48,8	17,1	-83,8	17,5	-85,0	14,6	-74,0	17,1	-15,9	17,0	-20,8	16,9
145	31/1/13 9.30	-41,9	17,0	-80,5	17,1	-75,3	14,4	-73,6	16,8	-10,2	16,8	-22,8	16,4
146	12/2/13 10.00	-38,7	16,6	-76,0	16,8	-69,6	14,2	-74,4	16,4	-1,3	16,2	-15,5	16,0
147	28/2/13 11.00	-32,6	16,1	-75,2	16,2	-55,8	14,0	-71,2	16,0	1,9	15,8	-6,6	15,4
148	7/3/13 11.00	-29,7	16,0	-69,6	16,0	-52,5	13,6	-66,3	15,4	3,5	15,6	-5,0	15,2
149	13/3/13 11.30	-26,5	15,6	-69,6	16,0	-49,3	13,2	-61,9	15,1	6,8	15,2	4,8	15,0
150	20/3/13 11.00	-23,3	15,2	-64,7	15,4	-39,6	13,0	-55,0	15,0	12,5	15,0	8,0	14,6
151	27/3/13 11.30	-17,6	15,0	-71,2	15,2	-34,3	13,1	-53,3	14,8	14,1	14,8	10,8	14,5
152	3/4/13 11.30	-17,6	14,0	-61,4	15,0	-25,7	12,8	-50,1	14,4	33,6	14,4	18,1	14,1
153	10/4/13 12.00	-10,7	13,9	-65,5	15,0	-28,6	12,9	-44,4	14,2	44,2	14,6	12,9	14,0
154	17/4/13 11.00	-18,4	13,6	-54,9	15,2	-36,3	12,6	-50,9	14,0	33,6	14,4	2,3	13,8
155	2/5/13 10.30	-31,0	13,9	-58,2	15,6	-55,4	12,7	-56,6	14,2	32,0	14,6	-0,5	13,9
156	7/5/13 11.00	-35,5	14,2	-52,9	15,7	-58,2	12,8	-62,3	14,4	29,1	14,7	-8,3	13,6
157	16/5/13 11.30	-38,7	14,6	-54,5	15,9	-62,7	13,1	-72,4	14,9	34,4	14,8	-23,3	13,7
158	21/5/13 11.00	-33,4	14,7	-48,8	15,7	-59,9	13,0	-69,6	14,8	45,0	15,0	-13,9	13,8
159	28/5/13 11.40	-36,3	14,8	-51,7	15,8	-61,5	13,2	-76,5	14,9	59,6	15,2	-20,9	13,9
160	4/6/13 11.00	-39,1	14,9	-54,5	15,9	-68,0	13,0	-83,0	14,7	45,0	15,0	-14,4	14,1
161	13/6/13 10.00	-49,7	14,7	-47,6	15,8	-70,8	13,1	-76,1	14,6	50,3	15,1	-9,1	14,2
162	19/6/13 11.00	-51,3	14,9	-54,5	15,9	-71,2	13,4	-80,6	14,9	45,8	15,4	-12,3	14,6
163	25/6/13 10.30	-56,6	14,8	-52,9	15,7	-60,3	13,3	-80,2	14,6	59,6	15,2	-2,6	14,4
164	4/7/13 12.30	-51,3	14,9	-50,1	15,6	-55,0	13,4	-81,0	14,2	64,9	15,3	-4,2	14,6
165	11/7/13 12.00	-57,0	15,1	-48,4	15,4	-57,4	13,2	-83,8	14,3	67,7	15,2	-13,5	14,5
166	18/7/13 10.00	-54,1	15,0	-59,0	15,2	-63,1	13,4	-90,3	14,1	62,0	15,4	-13,1	14,2
167	25/7/13 10.45	-61,4	15,4	-61,8	15,3	-61,5	13,2	-74,5	14,4	46,2	15,1	-7,4	14,0
168	1/8/13 12.45	-67,9	15,2	-56,6	15,4	-68,4	13,3	-90,3	14,1	59,6	15,2	-18,4	14,1
169	6/8/13 11.45	-62,7	15,3	-54,9	15,2	-75,3	13,4	-87,5	14,0	61,2	15,0	-2,6	14,4
170	29/8/13 11.00	-67,1	15,6	-60,6	15,4	-81,0	13,6	-97,2	14,2	49,9	15,4	-11,1	14,7
171	5/9/13 11.30	-68,7	15,8	-67,5	15,5	-81,4	13,9	-87,5	14,0	45,4	15,7	-8,3	14,6
172	12/9/13 10.00	-73,2	16,1	-72,0	15,8	-87,1	14,1	-89,1	14,2	42,5	15,8	-17,2	14,2
173	18/9/13 10.30	-68,7	15,8	-61,4	16,0	-78,9	14,1	-95,6	14,0	32,0	15,6	-11,5	14,0
174	25/9/13 11.30	-59,0	15,6	-73,6	16,0	-80,2	14,0	-80,6	13,9	25,5	15,4	-24,5	14,6



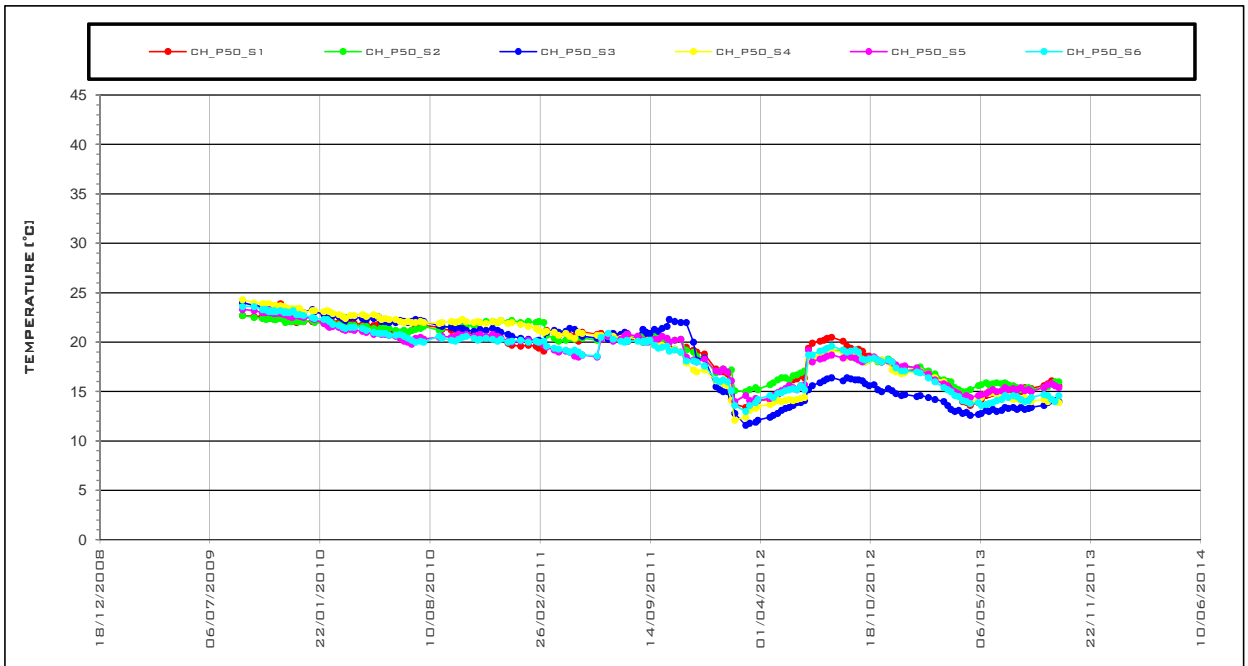
Ubicazione STAZIONE CHIAIA  
Opera \ \ P50  
Strumento Barretta Est. per Metallo  
Data posa in opera 03/09/2009  
Data lettura di zero 03/09/2009



**GRAFICO MICROSTRAIN**

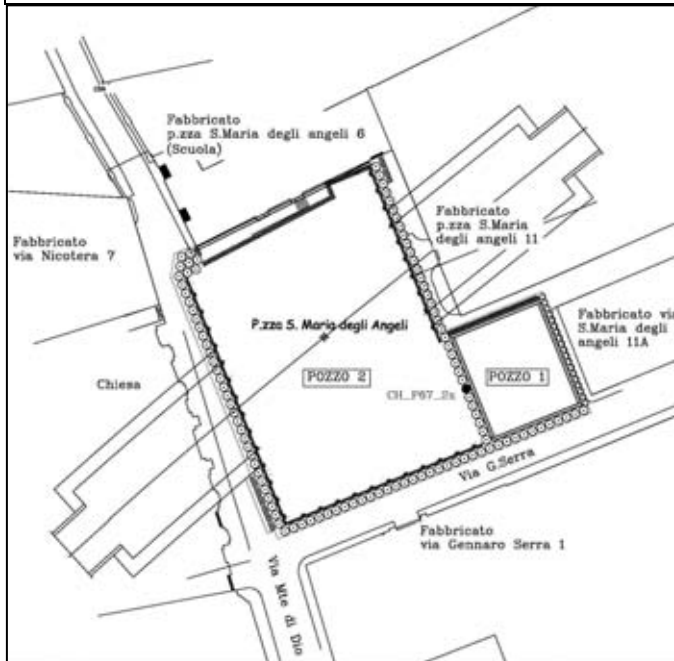


**GRAFICO TEMPERATURE**

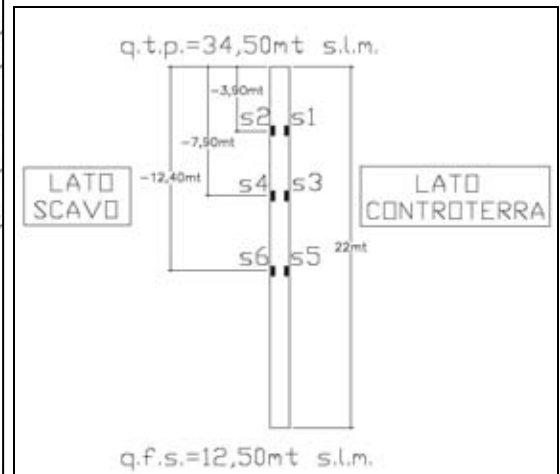


Pannello strumentato

CH\_P67



SCHEMA INSTALLAZIONE  
STRUMENT. GEOTECNICA (BECV  
PER METALLO)  
PALO N°67



Le barrette con numero progressivi dispari (s1,s3,s5) sono installate lato contro terra, mentre quelle con numero pari (s2,s4,s6) sono poste lato scavo; la direzione di installazione è parallela all'asse di scavo.

Affidabilità strumentale

A.T.I. LM6 – TreEsse

buono  
da rivedere  
da scartare

X

Congruenza progettuale  
C.T. ATI LM6 – C.T.  
Monitoraggio

congruente  
non congruente, da valutare  
non congruente con implicazioni  
sulla sicurezza


**NOTE**

Le elaborazioni di seguito riportate includono lo storico delle misure.

La barretta estensimetrica a c.v. CH\_P67\_S1 restituisce valori discontinui dal 28/09/2011.



**TABULATI**

Ubicazione STAZIONE CHIAIA

Opera \ \ P67

Strumento Barretta Est. per Metallo

Data posa in opera 03/09/2009

Data lettura di zero 03/09/2009

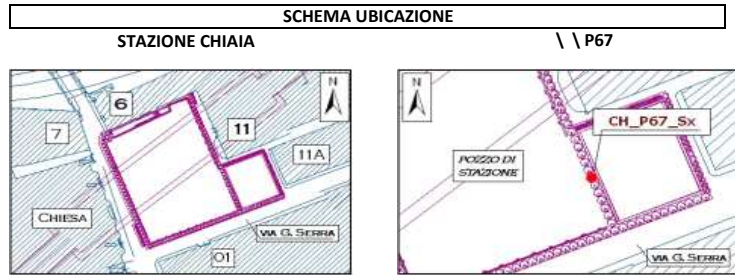
Ultima Misura 178 in data 25/09/2013

Letture n°	DATA	CH_P67_S1		CH_P67_S2		CH_P67_S3		CH_P67_S4		CH_P67_S5		CH_P67_S6	
		Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]
126	4/7/12 11.00			-92,7	18,6	-18,3	22,6	-140,2	17,9	-53,3	20,4	-146,3	21,1
127	18/7/12 11.30			-93,1	18,9	-22,8	22,9	-140,6	18,2	-51,2	20,9	-134,1	22,1
128	25/7/12 11.00			-84,2	19,3	-15,1	23,2	-138,6	18,7	-51,6	21,2	-126,4	22,4
129	31/7/12 11.00			-92,7	19,6	-29,7	23,0	-144,3	18,9	-57,3	21,4	-131,7	22,3
130	8/8/12 11.30			-95,5	19,7	-24,4	23,1	-145,9	19,1	-50,8	21,6	-122,3	22,4
131	29/8/12 11.30			-100,8	19,6	-33,8	23,0	-139,0	19,0	-56,5	21,8	-134,1	22,1
132	5/9/12 11.00			-131,3	19,1	-17,1	22,7	-135,8	18,6	-59,4	21,9	-110,5	22,7
133	12/9/12 11.30			-124,4	19,0	-14,3	22,6	-150,4	18,4	-69,9	21,7	-130,8	21,7
134	20/9/12 11.00			-124,0	19,7	-12,6	22,4	-156,9	18,2	-63,0	21,6	-140,2	21,6
135	26/9/12 11.30			-121,1	19,6	-20,8	22,4	-154,1	18,1	-61,4	21,4	-138,6	21,4
136	3/10/12 11.00			-115,0	19,1	-12,2	22,1	-147,1	18,0	-52,9	21,1	-134,1	21,1
137	8/10/12 11.30			-119,1	18,1	-13,5	21,0	-153,6	17,8	-50,0	21,0	-131,3	21,0
138	15/10/12 11.00			-117,1	18,6	-5,8	21,3	-160,2	17,6	-55,7	21,2	-141,0	21,2
139	24/10/12 11.00			-119,9	18,7	-0,5	21,4	-146,7	17,7	-61,4	21,4	-130,4	21,4
140	31/10/12 10.30			-115,5	18,4	1,1	21,2	-144,7	17,2	-59,8	21,2	-128,8	21,2
141	7/11/12 10.00			-122,0	18,2	-5,4	21,0	-138,2	17,4	-66,3	21,0	-139,4	21,0
142	19/11/12 15.00			-128,5	18,0	-11,0	21,2	-135,4	17,3	-67,9	21,2	-134,1	21,1
143	26/11/12 12.00			-128,5	18,0	-11,0	21,2	-135,4	17,3	-67,9	21,2	-134,1	21,1
144	3/12/12 11.00			-123,6	17,4	-12,7	20,4	-130,5	16,7	-58,1	21,0	-134,5	21,4
145	13/12/12 11.30			-122,0	17,2	-16,3	20,1	-115,5	16,6	-57,7	20,7	-128,8	21,2
146	19/12/12 11.00			-119,1	17,1	-11,1	20,2	-110,2	16,7	-48,4	20,8	-122,3	21,4
147	10/1/13 10.00			-112,2	17,0	-25,7	18,0	-103,3	16,6	-55,3	19,9	-143,1	18,7
148	16/1/13 10.45			-116,3	17,0	-35,1	17,9	-98,8	16,3	-64,7	19,8	-153,6	18,5
149	31/1/13 9.30			-110,6	16,8	-32,2	17,8	-104,1	16,2	-63,0	19,6	-150,8	18,4
150	12/2/13 10.30			-109,8	16,2	-27,3	17,2	-94,4	16,0	-53,3	19,4	-141,1	18,2
151	28/2/13 10.00			-91,5	15,7	-24,1	16,8	-88,7	15,8	-46,0	19,0	-126,8	17,7
152	7/3/13 11.00			-88,7	15,6	-22,5	16,6	-87,1	15,6	-42,7	18,6	-121,2	17,5
153	13/3/13 11.30			-84,2	15,3	-20,9	16,4	-85,4	15,4	-37,1	18,4	-122,0	17,1
154	20/3/13 11.00			-78,5	15,1	-3,8	16,8	-79,8	15,2	-32,6	18,1	-116,7	17,2
155	27/3/13 11.30			-71,6	15,0	6,0	16,6	-78,1	15,0	-29,8	18,0	-123,2	17,0
156	3/4/13 11.00			-94,4	12,8	-47,7	13,2	-170,4	12,1	-24,5	15,1	-96,4	14,2
157	10/4/13 12.00			-100,9	12,6	-42,4	13,3	-187,0	12,4	-27,4	15,2	-90,7	14,0
158	17/4/13 11.00			-95,2	12,4	-42,0	13,0	-161,0	12,2	-18,0	15,3	-101,7	14,1
159	2/5/13 11.30			-113,1	12,6	-41,2	13,4	-150,5	12,4	-22,5	15,6	-108,6	14,2
160	7/5/13 11.00			-126,9	12,8	-55,0	13,6	-163,1	12,7	-20,0	15,8	-106,2	14,4
161	16/5/13 11.30			-131,4	13,1	-66,4	14,0	-146,4	12,4	-22,9	15,9	-95,6	14,6
162	21/5/13 11.00			-126,1	13,2	-69,2	14,1	-148,0	12,6	-16,4	16,1	-106,2	14,4
163	28/5/13 11.00			-126,1	13,2	-69,2	14,1	-148,0	12,6	-16,4	16,1	-106,2	14,4
164	4/6/13 11.30			-138,3	13,2	-82,6	14,0	-156,6	12,9	-29,8	16,0	-114,3	14,4
165	13/6/13 11.00			-135,4	13,1	-76,1	14,2	-149,7	12,8	-22,1	16,3	-120,8	14,2
166	19/6/13 10.30			-145,2	13,3	-81,8	14,4	-160,6	12,9	-29,0	16,4	-126,5	14,4
167	25/6/13 10.30			-146,4	13,2	-88,3	14,2	-161,8	12,8	-23,3	16,2	-122,4	14,4
168	4/7/13 12.30			-152,1	13,4	-77,8	14,4	-159,0	12,7	-16,8	16,4	-117,1	14,5
169	11/7/13 12.00			-150,5	13,2	-84,3	14,2	-156,2	12,6	-23,3	16,2	-122,4	14,4
170	18/7/13 10.00			-156,1	13,4	-90,8	14,0	-162,7	12,4	-33,8	16,0	-128,9	14,2
171	25/7/13 10.30			-157,8	13,6	-73,7	14,4	-152,1	12,6	-20,4	16,1	-143,5	14,0
172	1/8/13 12.30			-168,3	13,4	-85,5	14,1	-161,8	12,8	-25,7	16,0	-142,3	14,1
173	6/8/13 11.30			-161,8	13,6	-94,0	14,4	-170,4	13,1	-21,3	15,7	-149,2	14,2
174	29/8/13 11.00			-171,6	13,8	-99,7	14,6	-173,2	13,2	-26,9	15,9	-146,8	14,4
175	5/9/13 11.30			-178,5	13,9	-101,3	14,8	-167,9	13,3	-39,1	15,9	-140,3	14,6
176	12/9/13 10.00			-184,2	14,1	-112,3	14,9	-175,2	13,7	-47,7	16,2	-141,9	14,8
177	18/9/13 10.30			-196,0	13,8	-118,0	15,1	-180,5	13,6	-53,3	16,4	-136,6	14,9
178	25/9/13 11.00			-191,9	13,8	-113,5	14,8	-183,4	13,7	-52,1	16,5	-147,6	15,0

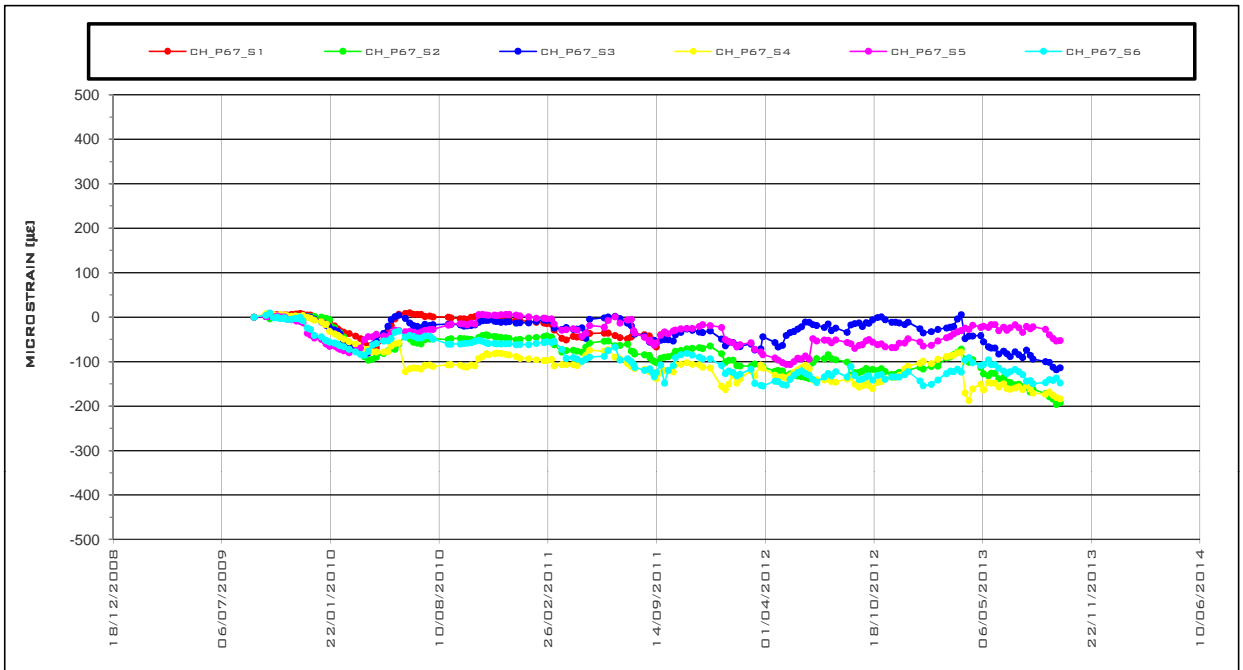




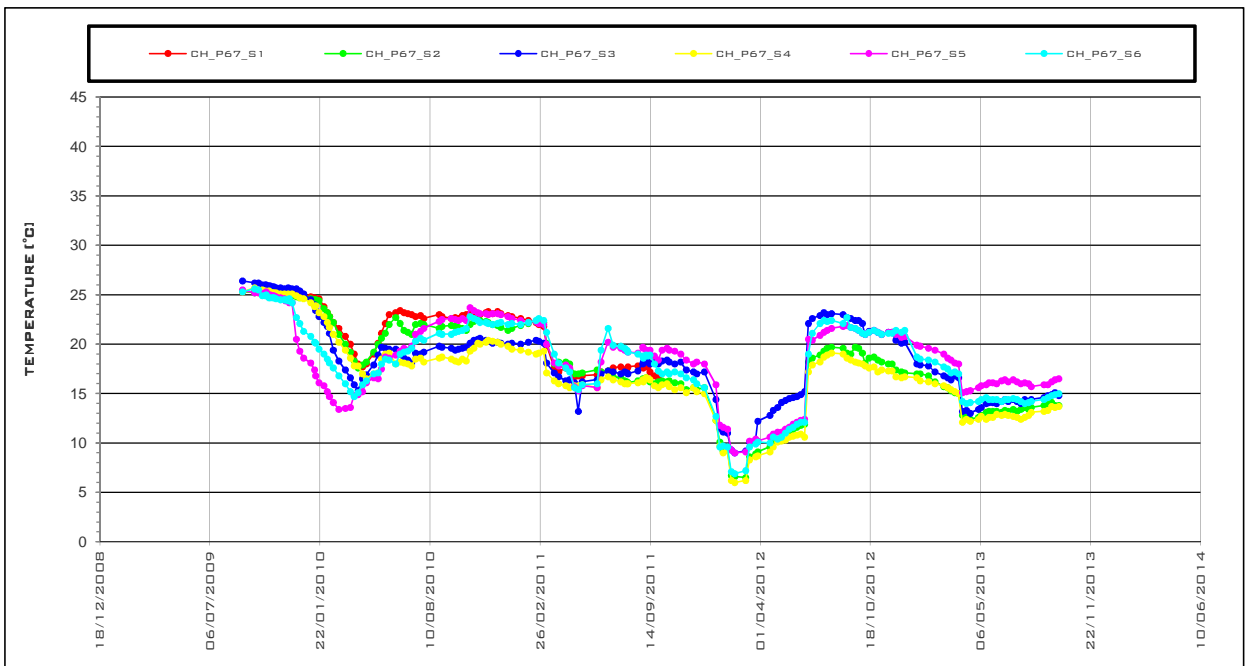
Ubicazione STAZIONE CHIAIA  
Opera \ \ P67  
Strumento Barretta Est. per Metallo  
Data posa in opera 03/09/2009  
Data lettura di zero 03/09/2009



**GRAFICO MICROSTRAIN**

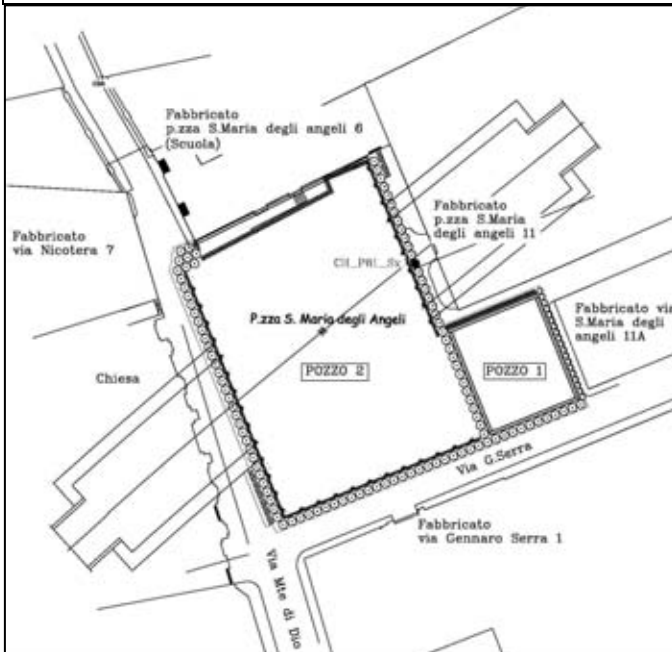


**GRAFICO TEMPERATURE**

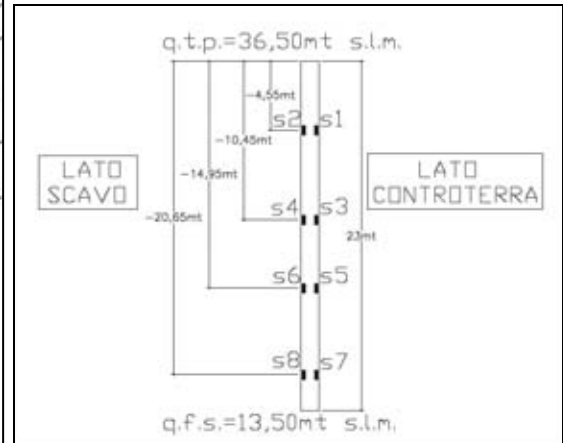


Pannello strumentato

CH\_P81



SCHEMA INSTALLAZIONE  
STRUMENT. GEOTECNICA (BECV  
PER METALLO)  
PALO N°81



Le barrette con numero progressivi dispari (s1,s3,s5,s7) sono installate lato contro terra, mentre quelle con numero pari (s2,s4,s6,s8) sono poste lato scavo; la direzione di installazione è parallela all'asse di scavo.

Affidabilità strumentale

A.T.I. LM6 – TreEsse

buono  
da rivedere

da scartare

X

Congruenza progettuale

C.T. ATI LM6 – C.T.

Monitoraggio

congruente  
non congruente, da valutare  
non congruente con implicazioni  
sulla sicurezza


**NOTE**

La barretta estensimetrica a c.v. CH\_P81\_S7 non è funzionante.

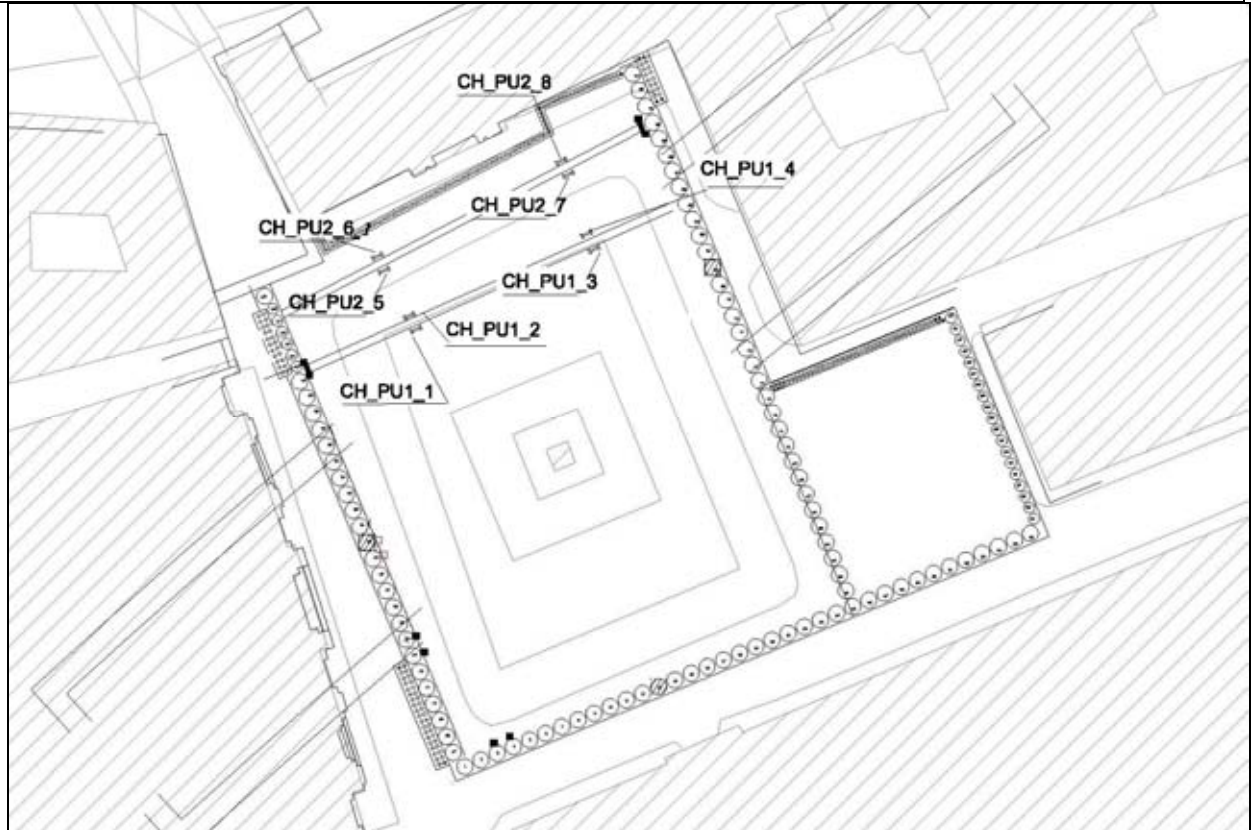
La barretta estensimetrica a c.v. CH\_P81\_S4 dalla data 25/03/10 non restituisce segnale

Le restanti barrette estensimetriche restituiscono valore discontinuo dal 20/04/2011

L'ultima misura disponibile è riportata nel report APR 2011 con codifica: LM6 7FX 2C I 00

Puntoni strumentati

CH\_PU1 CH\_PU2



Affidabilità strumentale

A.T.I. LM6 – TreEsse

buono   
da rivedere   
da scartare

X

Congruenza progettuale

C.T. ATI LM6 – C.T.  
Monitoraggio

congruente   
non congruente, da valutare   
non congruente con implicazioni  
sulla sicurezza


**NOTE**

La Barretta estensimetrica CH\_PU2\_6 risulta danneggiata e non restituisce valore.

La Barretta estensimetrica CH\_PU2\_6\_1 sostituisce la CH\_PU2\_6\_1

**TABULATI**

Ubicazione STAZIONE CHIAIA

Opera \ \ Puntone 1

Strumento Barretta Est. per Metallo

Data posa in opera 14/09/2011

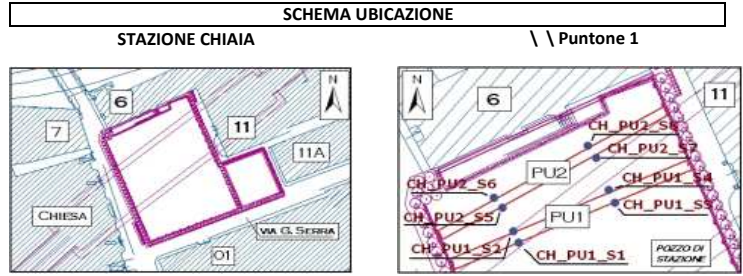
Data lettura di zero 14/09/2011

Ultima Misura 88 in data 25/09/2013

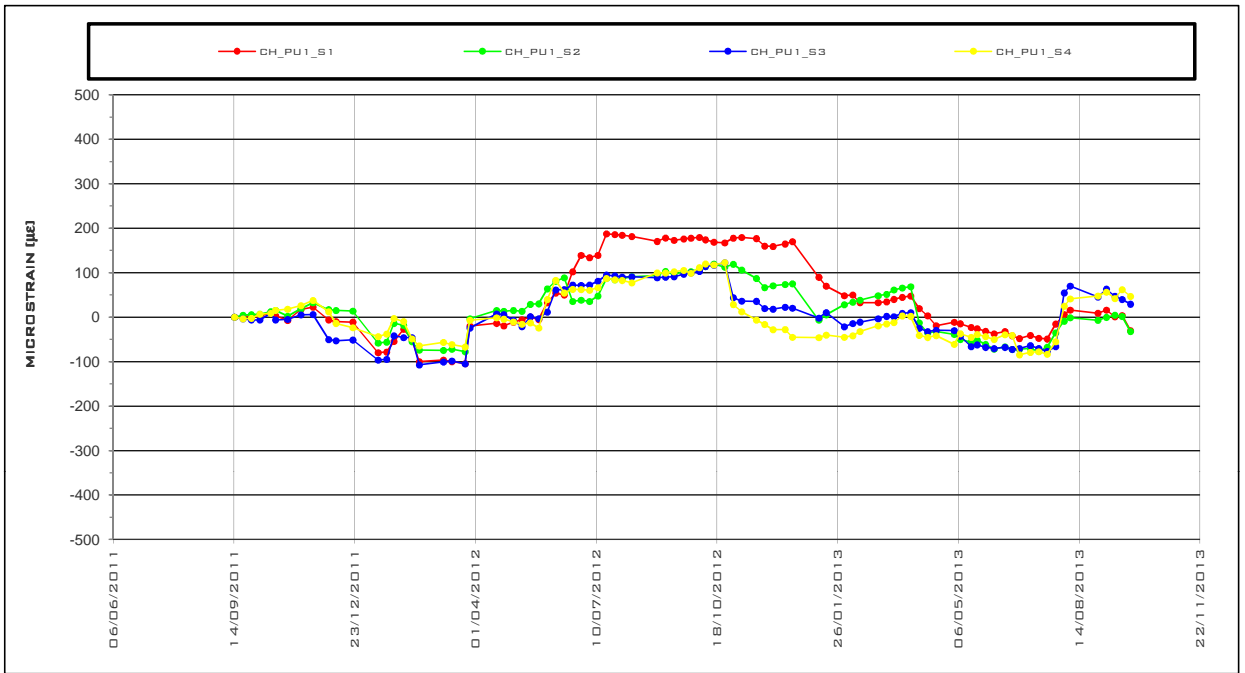
Letture n°	DATA	CH_PU1_S1		CH_PU1_S2		CH_PU1_S3		CH_PU1_S4	
		Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]
36	18/7/12 10.30	187,5	33,2	87,1	29,1	94,8	28,6	87,1	29,1
37	25/7/12 10.00	185,9	33,4	84,3	29,2	93,2	28,8	84,3	29,2
38	31/7/12 10.00	184,2	33,6	86,7	29,4	90,3	28,9	82,6	29,4
39	8/8/12 11.00	181,4	33,7	91,2	29,1	90,7	28,6	77,3	29,3
40	29/8/12 10.30	170,4	33,8	94,0	29,0	88,7	28,1	99,7	28,8
41	5/9/12 10.00	178,1	33,1	102,9	28,4	89,9	27,2	99,3	28,1
42	12/9/12 11.00	172,9	33,0	96,4	28,2	91,1	27,3	102,1	28,0
43	20/9/12 10.40	176,1	32,6	102,1	28,0	96,8	27,1	105,4	27,6
44	26/9/12 10.00	177,7	32,4	102,5	27,7	99,7	27,0	98,8	27,4
45	3/10/12 11.00	179,3	32,2	108,6	27,2	102,9	26,6	111,4	27,1
46	8/10/12 11.30	174,0	31,1	114,3	27,0	114,3	26,2	120,0	26,8
47	15/10/12 11.00	168,8	31,0	119,6	27,1	117,1	26,1	117,5	26,6
48	24/10/12 11.00	167,1	31,2	112,7	27,2	122,4	26,2	122,8	26,7
49	31/10/12 12.00	177,7	31,4	119,2	27,4	43,9	22,1	28,5	22,3
50	7/11/12 11.00	179,3	31,2	106,2	27,0	36,2	21,8	12,2	20,3
51	19/11/12 15.00	176,9	31,0	87,1	26,1	35,8	21,1	-6,5	19,1
52	26/11/12 11.00	159,8	29,6	66,7	24,1	19,5	20,1	-16,2	18,3
53	3/12/12 10.00	159,0	29,2	70,8	24,1	17,9	19,3	-28,0	17,0
54	13/12/12 10.00	164,7	29,0	73,6	24,0	22,4	19,0	-27,6	16,7
55	19/12/12 11.00	170,0	29,1	75,2	23,8	20,3	18,5	-45,1	15,6
56	10/1/13 9.30	89,8	21,2	-6,5	18,1	-2,1	16,0	-45,9	15,2
57	16/1/13 10.30	69,9	18,9	5,3	17,4	10,5	15,7	-40,2	15,0
58	31/1/13 9.30	48,3	16,8	28,0	16,6	-21,6	15,4	-45,1	14,6
59	7/2/13 10.30	50,0	16,6	33,7	16,4	-14,3	15,0	-41,9	14,2
60	13/2/13 10.00	32,9	14,2	38,2	16,1	-11,0	14,6	-32,1	14,0
61	28/2/13 10.30	32,8	12,2	48,3	15,6	-3,7	14,2	-19,5	13,7
62	7/3/13 11.00	34,5	12,0	51,6	15,2	2,0	14,0	-15,1	13,4
63	13/3/13 11.30	40,1	11,8	61,3	15,0	1,2	13,6	-11,8	13,0
64	20/3/13 10.30	44,6	11,5	65,8	14,7	8,5	13,2	2,8	13,2
65	27/3/13 11.00	47,4	11,4	68,6	14,6	10,1	13,0	2,0	12,8
66	3/4/13 10.30	19,5	15,1	-12,6	16,6	-24,8	15,8	-41,1	14,6
67	10/4/13 11.00	3,2	17,1	-35,3	17,4	-32,5	18,5	-45,5	16,9
68	17/4/13 11.30	-19,1	17,6	-32,1	17,0	-29,6	18,4	-41,4	17,9
69	2/5/13 11.00	-11,4	17,9	-38,6	17,8	-30,0	18,7	-60,9	18,3
70	7/5/13 11.30	-14,6	18,3	-50,0	18,2	-42,6	19,0	-36,9	18,6
71	16/5/13 11.00	-23,1	18,6	-55,6	18,4	-66,2	18,4	-45,5	18,9
72	21/5/13 10.30	-26,0	18,7	-51,6	18,4	-62,1	19,4	-39,0	19,1
73	28/5/13 10.40	-31,7	18,9	-61,3	18,6	-67,8	19,6	-43,4	19,4
74	4/6/13 11.00	-37,3	19,1	-71,9	18,4	-70,6	19,7	-49,9	19,2
75	13/6/13 11.30	-32,1	19,2	-66,6	18,5	-67,8	19,6	-39,4	19,4
76	19/6/13 11.00	-41,8	19,4	-72,3	18,7	-72,3	19,9	-41,0	19,6
77	25/6/13 11.45	-47,9	20,9	-71,9	20,4	-70,6	20,7	-84,5	17,7
78	4/7/13 12.15	-41,0	20,8	-70,2	20,2	-63,7	20,6	-79,2	17,8
79	11/7/13 11.00	-47,5	20,6	-76,7	20,0	-70,2	20,4	-77,6	17,6
80	18/7/13 10.00	-49,1	20,8	-67,4	20,1	-76,7	20,2	-83,3	17,8
81	25/7/13 10.50	-15,3	24,9	-35,3	23,4	-66,1	22,4	-55,2	19,1
82	1/8/13 12.45	5,8	27,3	-8,8	26,9	54,6	28,3	24,9	26,0
83	6/8/13 11.45	16,0	28,8	-1,1	28,2	70,0	28,9	41,2	28,0
84	29/8/13 11.00	9,1	28,9	-6,8	28,4	45,2	28,2	47,7	28,2
85	5/9/13 11.00	16,0	30,8	-0,2	30,6	63,2	31,0	56,2	30,9
86	12/9/13 11.30	1,0	28,9	4,6	29,0	47,3	28,7	42,0	28,4
87	18/9/13 11.00	3,8	26,8	1,8	27,1	39,9	27,1	61,9	26,7
88	25/9/13 10.00	-30,4	24,0	-32,0	24,0	29,3	23,9	46,8	23,8



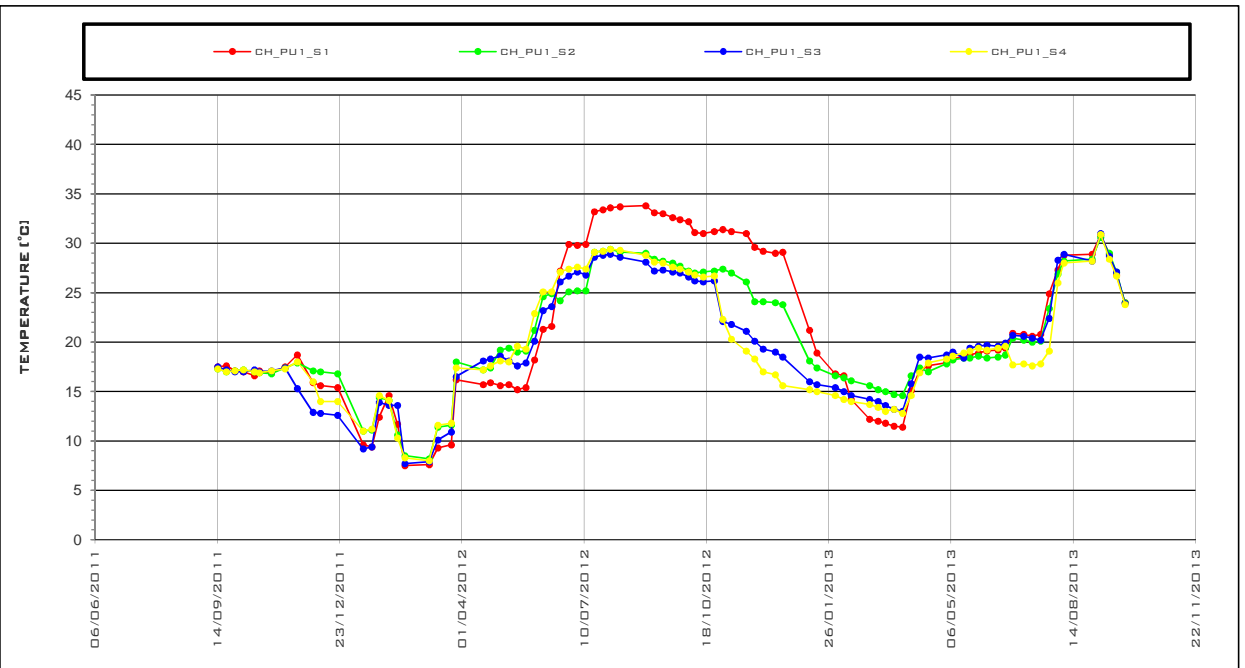
Ubicazione STAZIONE CHIAIA  
Opera \ \ Puntone 1  
Strumento Barretta Est. per Metallo  
Data posa in opera 14/09/2011  
Data lettura di zero 14/09/2011



**GRAFICO MICROSTRAIN**



**GRAFICO TEMPERATURE**





**TABULATI**

Ubicazione STAZIONE CHIAIA

Opera \ \ Puntone 2

Strumento Barretta Est. per Metallo

Data posa in opera 14/09/2011

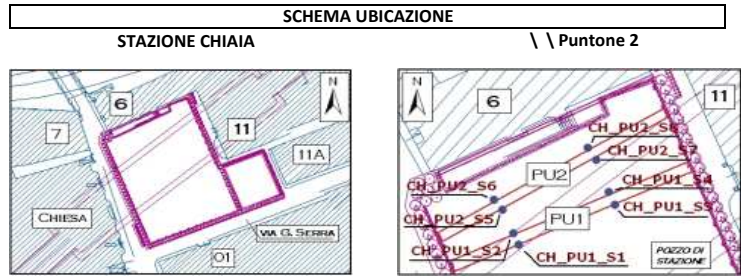
Data lettura di zero 14/09/2011

Ultima Misura 89 in data 25/09/2013

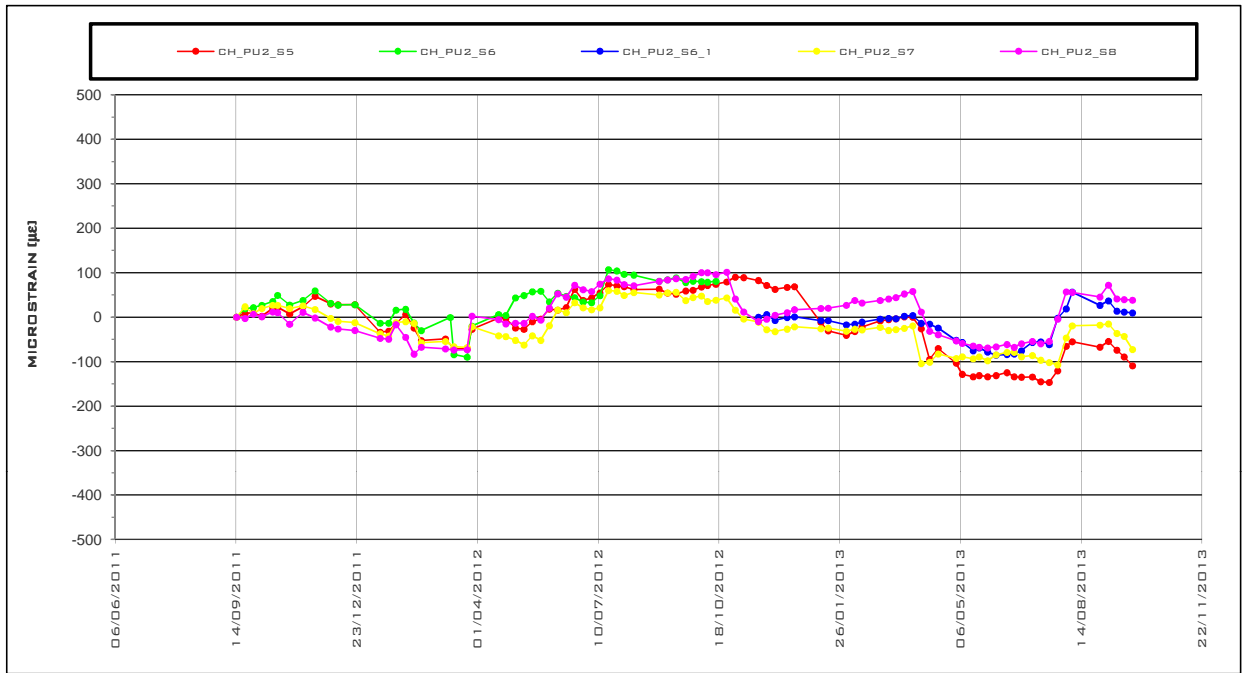
Letture n°	DATA	CH_PU2_S5		CH_PU2_S6		CH_PU2_S6.1		CH_PU2_S7		CH_PU2_S8	
		Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]	Micro strain [µε]	Temp. [°C]
37	18/7/12 10.30	73,3	31,1	107,0	31,2			59,9	30,1	86,3	29,3
38	25/7/12 10.00	70,5	31,2	104,2	31,3			58,3	30,3	83,4	29,4
39	31/7/12 10.00	68,8	31,4	96,5	31,0			48,9	30,2	73,7	29,6
40	8/8/12 11.00	62,3	31,2	94,8	31,2			55,4	30,4	70,8	29,7
41	29/8/12 10.30	63,1	30,6	81,0	28,4			50,1	29,3	80,6	27,5
42	5/9/12 10.00	54,2	29,2	84,2	28,0			54,6	29,0	83,8	27,1
43	12/9/12 11.00	51,7	29,0	88,7	27,7			56,2	28,8	86,6	27,0
44	20/9/12 10.40	59,0	28,6	78,1	27,5			37,5	28,6	85,0	27,2
45	26/9/12 10.00	60,7	28,4	81,0	27,4			44,4	28,5	91,9	27,1
46	3/10/12 11.00	68,0	28,0	80,1	27,0			47,7	28,1	100,5	26,8
47	8/10/12 11.30	71,2	27,6	78,9	26,9			35,5	27,1	100,0	26,1
48	15/10/12 11.00	74,1	27,5	80,5	26,7			38,3	27,0	96,0	26,1
49	24/10/12 11.00	79,3	27,6					43,6	27,1	101,3	26,2
50	31/10/12 12.00	89,9	27,8					15,9	22,5	41,1	22,6
51	7/11/12 11.00	89,1	27,4					-4,0	21,2	11,8	21,2
52	19/11/12 15.00	82,6	27,2			0,0	18,6	-10,9	20,3	-9,7	20,1
53	26/11/12 11.00	71,6	25,3			6,1	18,1	-28,0	18,9	-4,4	19,2
54	3/12/12 10.00	62,7	24,9			-7,3	18,0	-32,5	18,2	4,5	18,6
55	13/12/12 10.00	67,1	24,6			-0,8	18,2	-26,8	18,0	10,2	18,4
56	19/12/12 11.00	68,7	24,4			0,8	18,0	-21,5	18,1	17,1	18,3
57	10/1/13 9.30	-11,4	19,5			-7,8	16,3	-26,0	17,4	19,9	17,2
58	16/1/13 10.30	-30,5	16,6			-7,8	15,3	-24,4	16,2	20,3	15,9
59	31/1/13 9.30	-40,7	15,1			-17,1	15,2	-31,3	16,3	26,8	16,1
60	7/2/13 10.30	-32,1	14,8			-15,5	15,0	-26,8	16,0	37,8	16,0
61	13/2/13 10.00	-22,4	14,6			-11,0	14,7	-28,5	15,2	32,1	15,2
62	28/2/13 10.30	-8,2	14,1			-4,1	14,6	-22,8	15,0	37,7	15,0
63	7/3/13 11.00	-5,3	14,0			-2,5	14,4	-29,7	15,1	41,0	14,6
64	13/3/13 11.30	-3,7	13,8			-3,3	14,0	-27,7	14,6	44,2	14,2
65	20/3/13 10.30	0,7	13,5			2,4	13,8	-24,8	14,5	52,3	14,2
66	27/3/13 11.00	-0,1	13,1			4,0	13,6	-19,5	14,6	58,0	14,0
67	3/4/13 10.30	-26,0	16,3			-13,8	16,8	-104,4	16,3	11,8	16,2
68	10/4/13 11.00	-94,6	18,0			-15,5	17,0	-101,1	17,9	-31,7	17,3
69	17/4/13 11.30	-70,3	19,0			-24,4	16,6	-82,9	18,4	-39,4	17,0
70	2/5/13 11.00	-103,2	19,3			-52,0	17,0	-92,6	18,6	-53,2	17,2
71	7/5/13 11.30	-128,3	19,9			-56,5	17,3	-88,9	18,9	-58,9	17,4
72	16/5/13 11.00	-134,0	20,1			-75,6	17,4	-93,4	19,2	-64,6	17,6
73	21/5/13 10.30	-131,2	20,0			-69,1	17,6	-89,4	19,2	-67,4	17,7
74	28/5/13 10.40	-134,0	20,1			-78,4	17,5	-97,9	19,5	-69,1	17,9
75	4/6/13 11.00	-131,2	20,0			-85,3	17,6	-84,5	19,6	-66,6	18,1
76	13/6/13 11.30	-124,7	20,2			-83,7	17,4	-79,2	19,7	-61,3	18,2
77	19/6/13 11.00	-134,0	20,1			-82,9	17,8	-78,8	19,4	-67,8	18,0
78	25/6/13 11.45	-134,8	20,7			-75,5	20,4	-88,9	19,9	-59,7	20,0
79	4/7/13 12.15	-134,4	20,4			-56,8	20,6	-86,1	19,8	-54,4	20,1
80	11/7/13 11.00	-145,0	20,2			-55,2	20,4	-96,7	19,6	-59,7	20,0
81	18/7/13 10.00	-146,6	20,4			-61,7	20,2	-101,9	19,5	-54,4	20,1
82	25/7/13 10.50	-120,6	23,2			-2,4	24,4	-107,2	20,4	-4,4	23,2
83	1/8/13 12.45	-65,3	27,4			18,8	26,8	-46,6	25,7	57,0	27,9
84	6/8/13 11.45	-55,1	28,9			56,6	28,9	-19,4	28,6	55,8	28,8
85	29/8/13 11.00	-67,3	28,9			26,6	29,1	-17,7	28,4	45,2	28,6
86	5/9/13 11.00	-54,2	31,3			36,7	31,6	-15,2	31,6	72,1	31,8
87	12/9/13 11.30	-74,2	29,0			13,5	28,7	-36,4	28,2	41,2	28,6
88	18/9/13 11.00	-89,2	27,1			11,5	26,2	-42,9	26,0	39,5	26,8
89	25/9/13 10.00	-109,2	23,8			9,8	23,4	-72,6	22,9	38,3	23,7



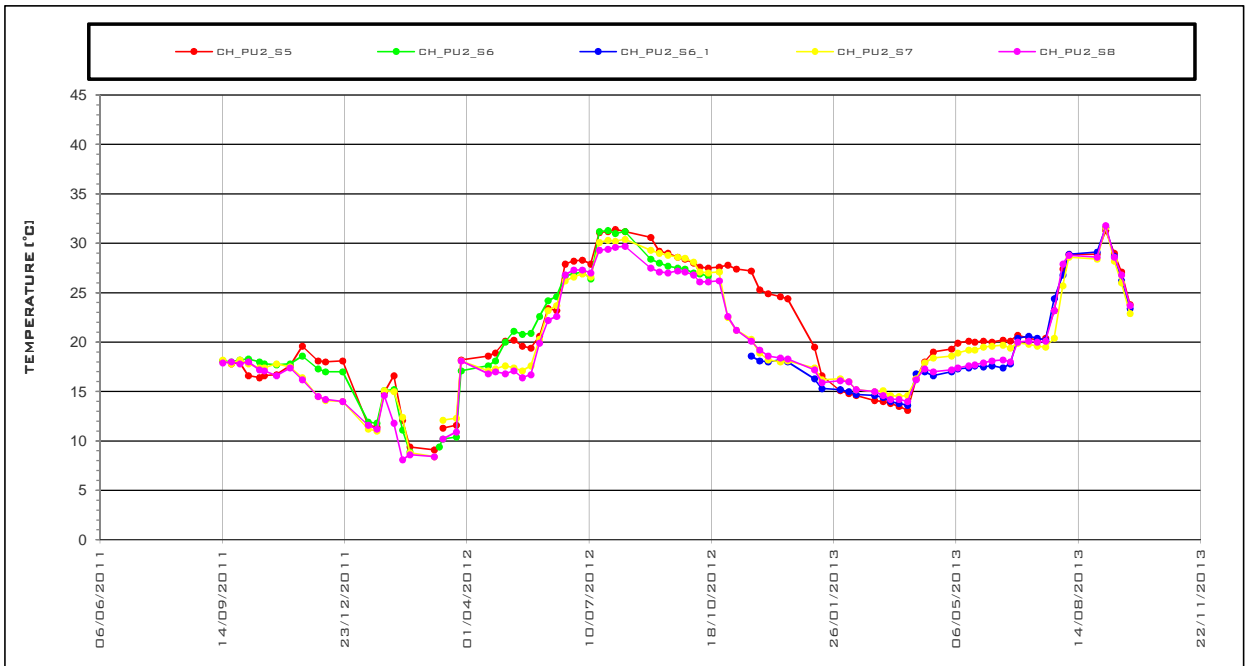
Ubicazione STAZIONE CHIAIA  
Opera \ \ Puntone 2  
Strumento Barretta Est. per Metallo  
Data posa in opera 14/09/2011  
Data lettura di zero 14/09/2011




**GRAFICO MICROSTRAIN**



**GRAFICO TEMPERATURE**



 <p><b>Ansaldo STS</b> A Finmeccanica Company</p>	<p><b>LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO</b></p> <p><i>OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO</i> <i>REPORT DELLE MISURE - STAZIONE CHIAIA</i></p>	<p>LM6 7FX 2C I 25 Data: 27/09/13 Metropolitana di Napoli A.T.I. LM6 TreEsse Engineering S.r.l.</p>
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## **9. MISURE GEOTECNICHE – CELLE DI CARICO TOROIDALI**

Le celle di carico toroidali a compressione, costituite da un anello di acciaio di diverso diametro in funzione alla tipologia di utilizzo, trovano applicazione nel controllo della tesatura di tiranti o di bulloni per chiodature in roccia o nel terreno; servono inoltre per tenere sotto controllo gli stessi durante il servizio evidenziando eventuali rilasci o sovraccarichi tensionali.

Le celle, sottoposte ad un carico, subiscono una deformazione che viene rilevata dagli estensimetri, i quali variando il loro valore di resistenza, generano in uscita un segnale elettrico proporzionale al carico applicato.




 <p><b>Ansaldo STS</b> A Finmeccanica Company</p>	<p><b>LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO</b></p> <p><i>OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO REPORT DELLE MISURE - STAZIONE CHIAIA</i></p>	<p>LM6 7FX 2C I 25 Data: 27/09/13 Metropolitana di Napoli A.T.I. LM6 TreEsse Engineering S.r.l.</p>
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Tabelle riepilogative per le Celle di Carico toroidali installate in cantiere.

Tabella Celle di Carico Primo Ordine di Tiranti

NOME	TIPOLOGIA STRUMENTO	DATA INSTALLAZIONE	DISPONIBILITA' LETTURA			NOTE
			DATA LETTURA DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
CH_CC1	CC.TOROIDALI	16/05/11	16/05/11			
CH_CC2	CC.TOROIDALI	16/05/11	16/05/11			
CH_CC3	CC.TOROIDALI	16/05/11	16/05/11			
CH_CC4	CC.TOROIDALI	16/05/11	16/05/11			

Tabella Celle di Carico Secondo Ordine di Tiranti

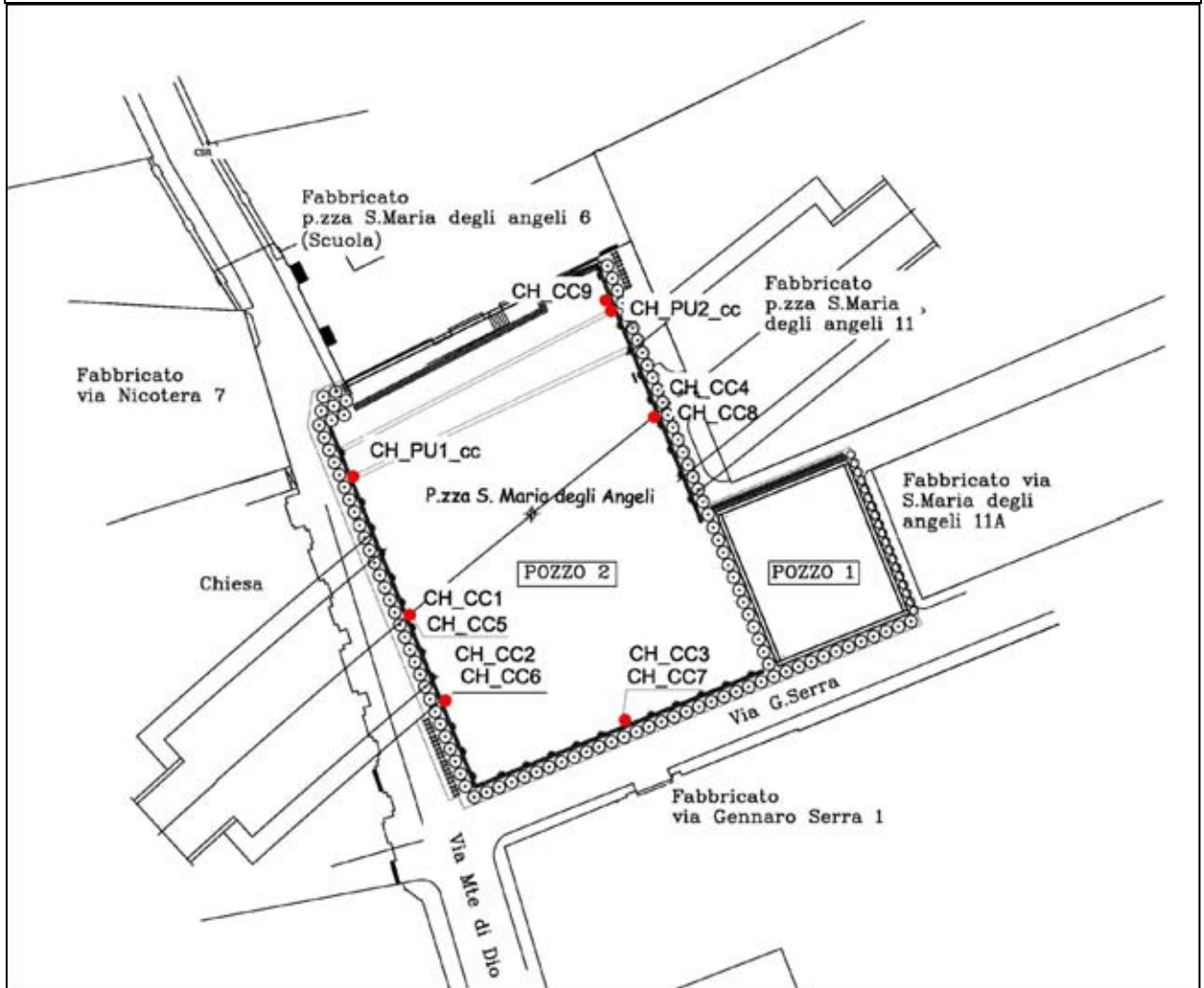
NOME	TIPOLOGIA STRUMENTO	DATA INSTALLAZIONE	DISPONIBILITA' LETTURA			NOTE
			DATA LETTURA DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
<b>SECONDO ORDINE DI TIRANTI</b>						
CH_CC5	CC. TOROIDALI	02/08/11	02/08/11			
CH_CC6	CC. TOROIDALI	02/08/11	02/08/11			
CH_CC7	CC. TOROIDALI	16/05/11	19/07/11			
CH_CC8	CC. TOROIDALI	16/05/11	19/07/11			
CH_CC9	CC. TOROIDALI	02/04/12	02/04/12			

Tabella Celle di Carico Puntoni

NOME	TIPOLOGIA STRUMENTO	DATA INSTALLAZIONE	DISPONIBILITA' LETTURA			NOTE
			DATA LETTURA DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
<b>PUNTONI</b>						
CH_PU1_CC	CC. TOROIDALI	14/09/11	14/09/11			
CH_PU2_CC	CC. TOROIDALI	14/09/11	14/09/11			

Celle di Carico

CH\_CC1-9 / CH\_PU1-2\_CC



Affidabilità strumentale  
A.T.I. LM6 – TreEsse

buono  
da rivedere  
da scartare

X

Congruenza progettuale  
C.T. ATI LM6 – C.T. Monitoraggio

congruente  
non congruente, da valutare  
non congruente con implicazioni sulla  
sicurezza


**NOTE**


**TABULATI**
**Ubicazione** STAZIONE CHIAIA

**Tipo Strumento** Cella di Carico

**Posizione** \ \ 1° Ordine Di Tiranti

**Data posa in opera** 16/05/2011

**Data lettura di zero** 16/06/2011

**Ultima  
misura**

117

**in data**

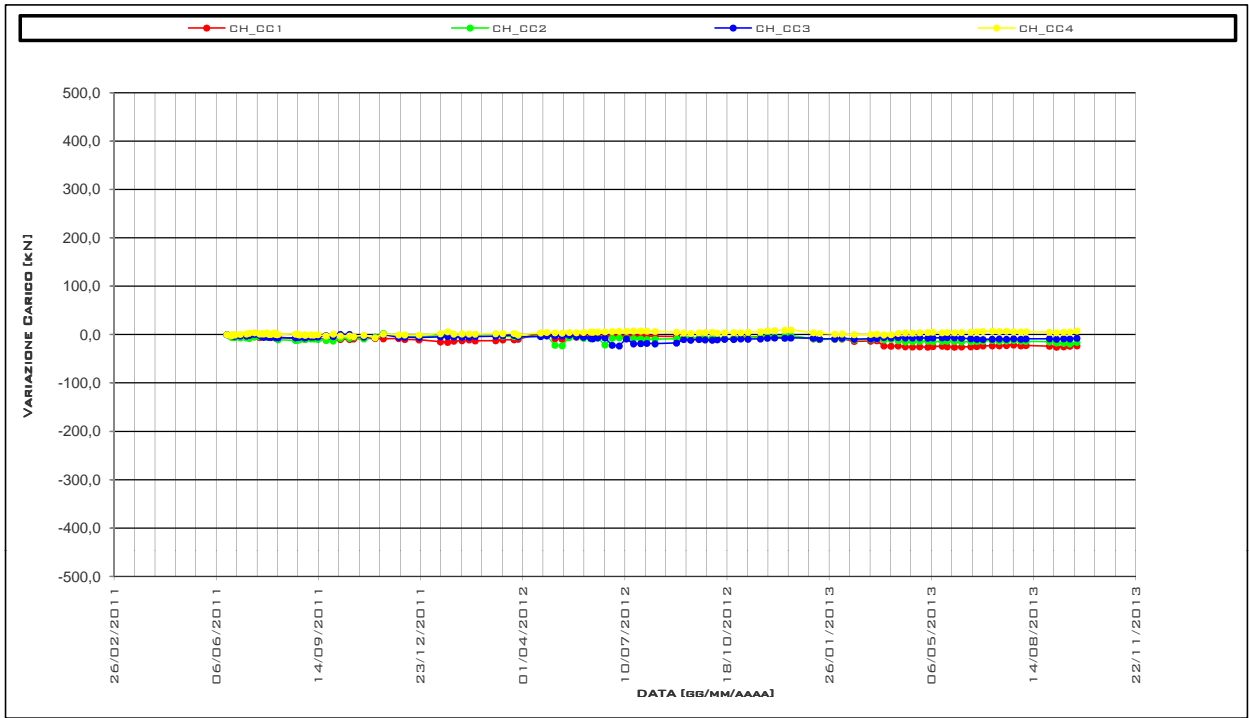
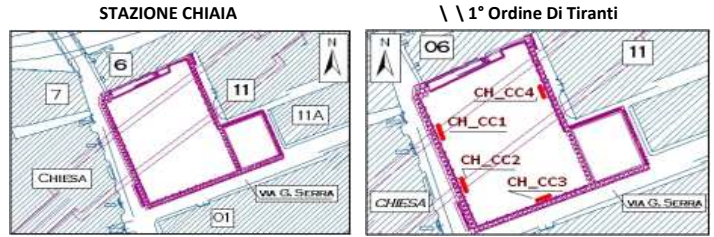
25/09/2013

Letture n°	DATA	CH_CC1		CH_CC2		CH_CC3		CH_CC4	
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64	11/07/2012 10.30	-3,00	297,97	-7,50	292,58	-9,00	320,53	7,00	292,88
65	18/07/2012 10.00	-3,00	297,97	-8,00	292,08	-19,00	310,53	7,50	293,38
66	25/07/2012 10.00	-2,50	298,47	-9,00	291,08	-18,50	311,03	7,50	293,38
67	31/07/2012 10.00	-3,00	297,97	-10,01	290,08	-18,00	311,53	7,00	292,88
68	08/08/2012 10.30	-3,50	297,47	-9,51	290,58	-19,00	310,53	6,50	292,38
69	29/08/2012 10.00	-4,00	296,97	-8,50	291,58	-17,50	312,03	5,00	290,88
70	05/09/2012 10.00	-9,00	291,97	-6,50	293,58	-10,00	319,53	3,50	289,38
71	12/09/2012 10.00	-8,00	292,97	-7,50	292,58	-11,50	318,03	2,50	288,38
72	20/09/2012 11.00	-7,50	293,47	-7,00	293,08	-10,00	319,53	4,00	289,88
73	26/09/2012 11.30	-8,50	292,47	-7,50	292,58	-11,00	318,53	4,50	290,38
74	03/10/2012 11.00	-8,00	292,97	-8,00	292,08	-11,50	318,03	5,00	290,88
75	08/10/2012 10.00	-9,00	291,97	-9,00	291,08	-10,50	319,03	3,00	288,88
76	15/10/2012 11.00	-8,50	292,47	-8,50	291,58	-9,50	320,03	4,00	289,88
77	24/10/2012 11.00	-8,00	292,97	-8,00	292,08	-10,00	319,53	4,50	290,38
78	31/10/2012 10.00	-6,00	294,97	-7,50	292,58	-9,00	320,53	4,00	289,88
79	07/11/2012 11.00	-5,50	295,47	-6,50	293,58	-9,50	320,03	5,00	290,88
80	19/11/2012 15.00	-4,50	296,47	-5,00	295,08	-9,00	320,53	5,50	291,38
81	26/11/2012 12.00	-4,00	296,97	-4,00	296,08	-7,50	322,03	8,00	293,88
82	03/12/2012 11.00	-5,00	295,97	-4,00	296,08	-7,00	322,53	8,50	294,38
83	13/12/2012 10.00	-4,50	296,47	-3,00	297,08	-7,50	322,03	9,00	294,88
84	19/12/2012 10.00	-4,00	296,97	-2,00	298,08	-7,00	322,53	9,50	295,38
85	10/01/2013 10.30	-8,50	292,47	-8,50	291,58	-7,50	322,03	4,00	289,88
86	16/01/2013 10.00	-10,00	290,97	-10,01	290,08	-9,00	320,53	2,50	288,38
87	31/01/2013 10.00	-9,50	291,47	-9,51	290,58	-8,50	321,03	1,00	286,88
88	07/02/2013 11.00	-9,00	291,97	-9,00	291,08	-7,50	322,03	1,50	287,38
89	19/02/2013 10.00	-14,00	286,97	-11,01	289,08	-9,50	320,03	0,00	285,88
90	07/03/2013 11.00	-13,50	287,47	-10,01	290,08	-9,00	320,53	0,50	286,38
91	13/03/2013 11.30	-12,50	288,47	-9,00	291,08	-8,00	321,53	1,00	286,88
92	20/03/2013 10.00	-23,50	277,47	-11,01	289,08	-6,00	323,53	-0,50	285,38
93	27/03/2013 10.30	-24,00	276,97	-10,01	290,08	-6,50	323,03	0,00	285,88
94	03/04/2013 10.00	-23,50	277,47	-12,51	287,58	-6,00	323,53	2,50	288,38
95	10/04/2013 10.15	-25,00	275,97	-15,01	285,07	-7,00	322,53	3,50	289,38
96	17/04/2013 10.00	-25,50	275,47	-14,51	285,57	-7,00	322,53	3,00	288,88
97	24/04/2013 11.30	-25,00	275,97	-14,01	286,07	-6,50	323,03	4,00	289,88
98	02/05/2013 10.30	-26,00	274,97	-13,51	286,58	-7,50	322,03	4,50	290,38
99	07/05/2013 10.30	-24,50	276,47	-14,51	285,57	-7,00	322,53	5,00	290,88
100	16/05/2013 11.30	-24,00	276,97	-14,01	286,07	-6,50	323,03	4,00	289,88
101	21/05/2013 10.30	-25,00	275,97	-13,51	286,58	-6,00	323,53	4,50	290,38
102	28/05/2013 11.30	-26,00	274,97	-14,01	286,07	-6,50	323,03	4,00	289,88
103	04/06/2013 11.00	-25,50	275,47	-15,01	285,07	-7,50	322,03	4,50	290,38
104	13/06/2013 11.30	-25,00	275,97	-14,51	285,57	-8,50	321,03	5,00	290,88
105	19/06/2013 11.00	-24,50	276,47	-14,01	286,07	-9,50	320,03	5,50	291,38
106	25/06/2013 11.30	-23,50	277,47	-13,51	286,58	-10,00	319,53	6,50	292,38
107	04/07/2013 12.00	-23,00	277,97	-12,01	288,08	-9,50	320,03	7,00	292,88
108	11/07/2013 11.00	-23,00	277,97	-14,01	286,07	-9,00	320,53	6,50	292,38
109	18/07/2013 10.30	-22,50	278,47	-13,01	287,08	-9,50	320,03	7,00	292,88
110	25/07/2013 11.30	-21,50	279,47	-12,01	288,08	-8,50	321,03	6,00	291,88
111	01/08/2013 12.30	-23,00	277,97	-13,51	286,58	-9,50	320,03	5,50	291,38
112	06/08/2013 12.30	-22,50	278,47	-14,01	286,07	-9,00	320,53	6,00	291,88
113	29/08/2013 12.30	-24,00	276,97	-15,01	285,07	-8,50	321,03	5,00	290,88
114	05/09/2013 10.30	-26,00	274,97	-17,01	283,07	-9,50	320,03	4,00	289,88
115	12/09/2013 11.00	-25,00	275,97	-18,01	282,07	-8,50	321,03	5,00	290,88
116	18/09/2013 11.30	-24,00	276,97	-19,01	281,07	-9,00	320,53	5,50	291,38
117	25/09/2013 11.30	-23,00	277,97	-16,01	284,07	-7,50	322,03	7,50	293,38



SCHEMA UBICAZIONE

Ubicazione STAZIONE CHIAIA  
Tipo Strumento Cella di Carico  
Posizione \ \ 1° Ordine Di Tiranti  
Data posa in opera 16/05/2011  
Data lettura di zero 16/06/2011




**TABULATI**
**Ubicazione** STAZIONE CHIAIA

**Tipo Strumento** Cella di Carico

**Posizione** \ \ 2° Ordine Di Tiranti

**Data posa in opera** 02/08/2011

**Data lettura di zero** 02/08/2011

**Ultima  
misura**

109

**in data**

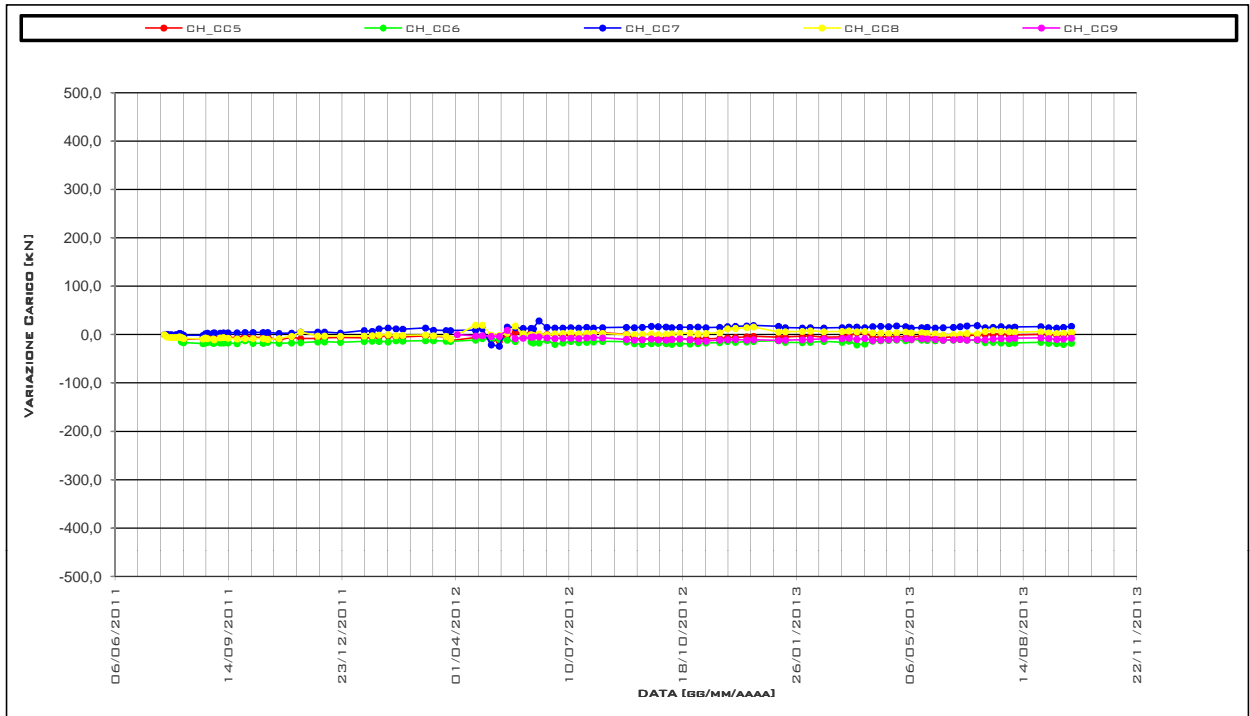
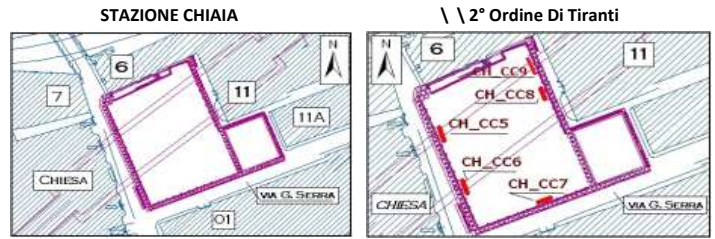
25/09/2013

Letture n°	DATA	CH_CC5		CH_CC6		CH_CC7		CH_CC8		CH_CC9	
		Δ Carico [kN]	Carico [kN]	Δ Carico [kN]	Carico [kN]	Δ Carico [kN]	Carico [kN]	Δ Carico [kN]	Carico [kN]	Δ Carico [kN]	Carico [kN]
56	11/07/2012 11.00	-1,50	537,56	-14,25	508,71	14,25	495,68	3,75	365,09	-7,50	393,75
57	18/07/2012 10.00	0,00	539,06	-16,50	506,46	13,50	494,93	1,50	362,84	-8,25	393,00
58	25/07/2012 10.00	1,50	540,56	-15,75	507,21	15,00	496,43	2,25	363,59	-6,75	394,50
59	31/07/2012 10.00	3,00	542,06	-15,00	507,96	13,50	494,93	3,00	364,34	-6,00	395,25
60	08/08/2012 10.30	3,75	542,81	-14,25	508,71	14,25	495,68	2,25	363,59	-6,75	394,50
61	29/08/2012 10.00	0,75	539,81	-15,00	507,96	15,00	496,43	0,00	361,34	-9,75	391,50
62	05/09/2012 10.00	-8,25	530,81	-18,75	504,21	14,25	495,68	0,00	361,34	-11,25	390,00
63	12/09/2012 10.00	-9,75	529,31	-20,25	502,71	15,00	496,43	0,75	362,09	-10,50	390,75
64	20/09/2012 10.00	-9,00	530,06	-18,75	504,21	17,25	498,68	1,50	362,84	-9,00	392,25
65	26/09/2012 10.00	-8,25	530,81	-18,00	504,96	16,50	497,93	0,00	361,34	-10,50	390,75
66	03/10/2012 10.00	-7,50	531,56	-18,75	504,21	15,75	497,18	0,75	362,09	-11,25	390,00
67	08/10/2012 11.00	-9,75	529,31	-20,25	502,71	14,25	495,68	1,50	362,84	-9,75	391,50
68	15/10/2012 11.00	-9,00	530,06	-18,75	504,21	15,00	496,43	2,25	363,59	-9,00	392,25
69	24/10/2012 11.00	-9,75	529,31	-19,50	503,46	15,00	496,43	3,00	364,34	-10,50	390,75
70	31/10/2012 10.00	-8,25	530,81	-18,75	504,21	15,75	497,18	1,50	362,84	-14,25	387,00
71	07/11/2012 11.00	-9,00	530,06	-17,25	505,71	14,25	495,68	2,25	363,59	-13,50	387,75
72	19/11/2012 15.00	-8,25	530,81	-16,50	506,46	15,00	496,43	3,75	365,09	-11,25	390,00
73	26/11/2012 12.00	-6,75	532,31	-14,25	508,71	16,50	497,93	12,00	373,34	-10,50	390,75
74	03/12/2012 11.00	-6,00	533,06	-15,75	507,21	17,25	498,68	12,75	374,08	-9,75	391,50
75	13/12/2012 10.00	-4,50	534,56	-15,00	507,96	18,00	499,43	14,25	375,58	-11,25	390,00
76	19/12/2012 10.00	-3,75	535,31	-14,25	508,71	18,75	500,18	15,75	377,08	-10,50	390,75
77	10/01/2013 10.30	-5,25	533,81	-12,75	510,21	17,25	498,68	5,25	366,59	-12,00	389,25
78	16/01/2013 10.00	-4,50	534,56	-15,75	507,21	14,25	495,68	6,00	367,34	-11,25	390,00
79	31/01/2013 10.00	-3,75	535,31	-16,50	506,46	13,50	494,93	6,75	368,09	-10,50	390,75
80	07/02/2013 10.30	-3,00	536,06	-15,75	507,21	14,25	495,68	7,50	368,84	-9,75	391,50
81	19/02/2013 10.00	-5,25	533,81	-14,25	508,71	13,50	494,93	6,00	367,34	-9,00	392,25
82	07/03/2013 11.00	-4,50	534,56	-15,75	507,21	14,25	495,68	6,75	368,09	-8,25	393,00
83	13/03/2013 11.30	-3,00	536,06	-13,50	509,46	15,75	497,18	7,50	368,84	-7,50	393,75
84	20/03/2013 10.00	3,75	542,81	-21,00	501,96	15,75	497,18	6,00	367,34	-9,75	391,50
85	27/03/2013 10.30	4,50	543,56	-19,50	503,46	14,25	495,68	6,75	368,09	-8,25	393,00
86	03/04/2013 10.00	-5,25	533,81	-13,50	509,46	16,50	497,93	3,75	365,09	-12,00	389,25
87	10/04/2013 10.15	-5,25	533,81	-12,75	510,21	17,25	498,68	3,00	364,34	-11,25	390,00
88	17/04/2013 10.00	-4,50	534,56	-12,00	510,96	16,50	497,93	2,25	363,59	-10,50	390,75
89	24/04/2013 11.00	-3,75	535,31	-11,25	511,71	18,00	499,43	3,75	365,09	-9,75	391,50
90	02/05/2013 10.30	-5,25	533,81	-12,75	510,21	16,50	497,93	5,25	366,59	-8,25	393,00
91	07/05/2013 10.30	-4,50	534,56	-10,50	512,46	13,50	494,93	3,75	365,09	-9,75	391,50
92	16/05/2013 11.30	-3,75	535,31	-11,25	511,71	14,25	495,68	4,50	365,84	-8,25	393,00
93	21/05/2013 10.30	-5,25	533,81	-12,00	510,96	15,00	496,43	2,25	363,59	-9,00	392,25
94	28/05/2013 11.30	-6,75	532,31	-12,75	510,21	13,50	494,93	1,50	362,84	-9,75	391,50
95	04/06/2013 11.00	-6,00	533,06	-12,00	510,96	14,25	495,68	-0,75	360,59	-11,25	390,00
96	13/06/2013 11.30	-4,50	534,56	-11,25	511,71	15,00	496,43	0,00	361,34	-10,50	390,75
97	19/06/2013 11.00	-3,75	535,31	-9,75	513,21	16,50	497,93	0,75	362,09	-9,75	391,50
98	25/06/2013 11.30	-2,25	536,81	-11,25	511,71	18,00	499,43	2,25	363,59	-11,25	390,00
99	04/07/2013 12.30	-0,75	538,31	-12,00	510,96	18,75	500,18	1,50	362,84	-10,50	390,75
100	11/07/2013 11.00	0,00	539,06	-16,50	506,46	14,25	495,68	6,75	368,09	-10,50	390,75
101	18/07/2013 10.00	0,75	539,81	-15,75	507,21	15,00	496,43	8,25	369,59	-9,00	392,25
102	25/07/2013 11.00	1,50	540,56	-17,25	505,71	16,50	497,93	6,75	368,09	-8,25	393,00
103	01/08/2013 12.30	-0,75	538,31	-18,75	504,21	14,25	495,68	6,00	367,34	-9,00	392,25
104	06/08/2013 12.30	-0,75	538,31	-17,25	505,71	15,75	497,18	5,25	366,59	-7,50	393,75
105	29/08/2013 12.30	0,75	539,81	-15,75	507,21	16,50	497,93	6,00	367,34	-6,75	394,50
106	05/09/2013 10.30	0,00	539,06	-18,00	504,96	14,25	495,68	3,75	365,09	-8,25	393,00
107	12/09/2013 11.00	-0,75	538,31	-18,75	504,21	13,50	494,93	2,25	363,59	-9,75	391,50
108	18/09/2013 10.30	0,00	539,06	-20,25	502,71	15,00	496,43	3,00	364,34	-9,00	392,25
109	25/09/2013 10.30	2,25	541,31	-18,00	504,96	17,25	498,68	4,50	365,84	-7,50	393,75



SCHEMA UBICAZIONE

Ubicazione STAZIONE CHIAIA  
Tipo Strumento Cella di Carico  
Posizione \ \ 2° Ordine Di Tiranti  
Data posa in opera 02/08/2011  
Data lettura di zero 02/08/2011




**TABULATI**
**Ubicazione** STAZIONE CHIAIA

**Tipo Strumento** Cella di Carico

**Posizione** \ \ Puntoni

**Data posa in opera** 14/09/2011

**Data lettura di zero** 14/09/2011

**Ultima  
misura**

90

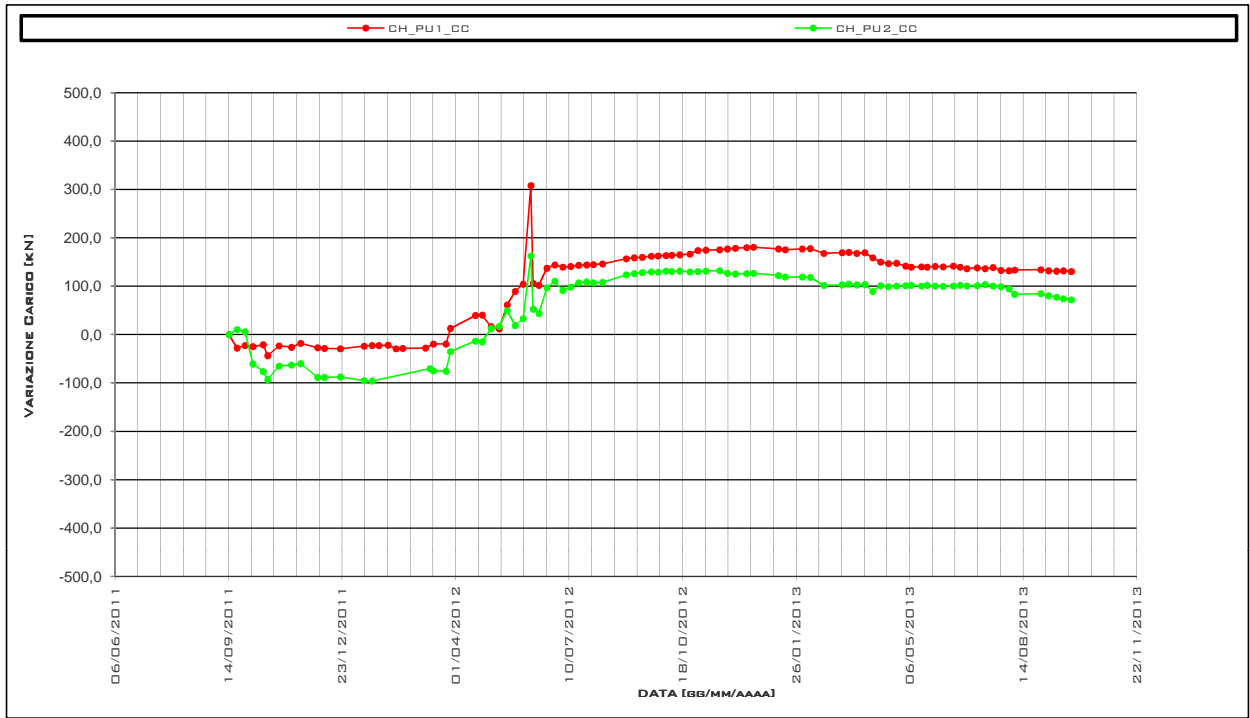
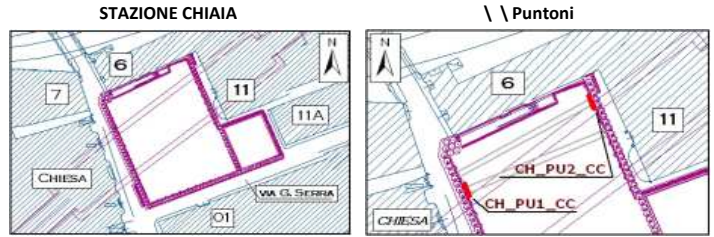
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**25/09/2013**

Letture n°	DATA	CH_PU1_CC		CH_PU2_CC	
		Δ Carico [kN]	Carico [kN]	Δ Carico [kN]	Carico [kN]
37	11/07/2012 11.00	140,97	444,19	98,25	674,29
38	18/07/2012 10.00	143,22	446,44	107,25	683,29
39	25/07/2012 10.00	143,97	447,19	108,75	684,79
40	31/07/2012 10.00	144,72	447,94	107,25	683,29
41	08/08/2012 10.30	146,22	449,44	108,00	684,04
42	29/08/2012 10.00	156,72	459,93	123,75	699,79
43	05/09/2012 10.00	158,97	462,18	126,00	702,04
44	12/09/2012 10.00	159,72	462,93	128,25	704,29
45	20/09/2012 10.00	161,97	465,18	129,75	705,79
46	26/09/2012 10.00	162,72	465,93	129,00	705,04
47	03/10/2012 10.00	163,47	466,68	131,25	707,29
48	08/10/2012 11.00	164,22	467,43	130,50	706,54
49	15/10/2012 11.00	164,97	468,18	131,25	707,29
50	24/10/2012 11.00	166,47	469,68	129,75	705,79
51	31/10/2012 10.00	173,97	477,18	130,50	706,54
52	07/11/2012 11.00	174,72	477,93	131,25	707,29
53	19/11/2012 15.00	175,47	478,68	132,00	708,04
54	26/11/2012 11.00	176,97	480,18	126,75	702,79
55	03/12/2012 11.00	178,47	481,68	125,25	701,29
56	13/12/2012 10.30	179,97	483,18	126,00	702,04
57	19/12/2012 10.00	180,72	483,93	126,75	702,79
58	10/01/2013 10.30	176,97	480,18	122,25	698,29
59	16/01/2013 10.00	175,47	478,68	119,25	695,29
60	31/01/2013 10.00	176,97	480,18	119,25	695,29
61	07/02/2013 10.30	177,72	480,93	118,50	694,54
62	19/02/2013 10.00	167,97	471,18	102,00	678,04
63	07/03/2013 11.00	169,47	472,68	102,75	678,79
64	13/03/2013 11.00	170,22	473,43	104,25	680,29
65	20/03/2013 10.00	167,97	471,18	102,75	678,79
66	27/03/2013 11.00	169,47	472,68	103,50	679,54
67	03/04/2013 11.00	158,97	462,18	89,25	665,29
68	10/04/2013 10.30	149,97	453,19	101,25	677,29
69	17/04/2013 10.00	146,97	450,19	99,00	675,04
70	24/04/2013 11.00	147,72	450,94	100,50	676,54
71	02/05/2013 10.30	141,72	444,94	101,25	677,29
72	07/05/2013 10.30	139,47	442,69	102,00	678,04
73	16/05/2013 10.30	140,22	443,44	100,50	676,54
74	21/05/2013 10.30	139,47	442,69	102,00	678,04
75	28/05/2013 11.30	140,97	444,19	100,50	676,54
76	04/06/2013 12.00	140,22	443,44	99,75	675,79
77	13/06/2013 11.00	141,72	444,94	100,50	676,54
78	19/06/2013 11.00	139,47	442,69	102,00	678,04
79	25/06/2013 11.30	136,47	439,69	100,50	676,54
80	04/07/2013 12.30	137,97	441,19	101,25	677,29
81	11/07/2013 12.30	136,47	439,69	103,50	679,54
82	18/07/2013 11.30	138,72	441,94	100,50	676,54
83	25/07/2013 11.00	132,73	435,94	99,00	675,04
84	01/08/2013 12.30	131,98	435,19	94,50	670,54
85	06/08/2013 12.30	133,48	436,69	83,25	659,29
86	29/08/2013 12.30	134,22	437,44	84,75	660,79
87	05/09/2013 10.30	131,98	435,19	80,25	656,29
88	12/09/2013 11.00	131,23	434,44	77,25	653,29
89	18/09/2013 10.30	131,98	435,19	74,25	650,29
90	25/09/2013 10.30	130,48	433,69	72,00	648,04




**SCHEMA UBICAZIONE**

**Ubicazione** STAZIONE CHIAIA  
**Tipo Strumento** Cella di Carico  
**Posizione** \ \ Puntoni  
**Data posa in opera** 14/09/2011  
**Data lettura di zero** 14/09/2011





 <p><b>Ansaldo STS</b> A Finmeccanica Company</p>	<p><b>LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO</b></p> <p><i>OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO</i> <i>REPORT DELLE MISURE - STAZIONE CHIAIA</i></p>	<p>LM6 7FX 2C I 25 Data: 27/09/13 Metropolitana di Napoli A.T.I. LM6 TreEsse Engineering S.r.l.</p>
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## **10. MISURE TOPOGRAFICHE – MIRE OTTICHE**

Le Mire Ottiche, installate in prossimità delle travi di distribuzione dei carichi, che collegano i tiranti in testa, permettono di controllare in tali aree l'influenza delle lavorazioni, registrando eventuali variazioni di quota e spostamenti sul piano orizzontale. La misurazione verrà effettuata tramite Teodolite dall'ATI.

Tabelle riepilogative per le Mire Ottiche installate in cantiere. Tabella Mire Ottiche Primo Ordine di Tiranti

NOME	TIPOLOGIA STRUMENTO	DATA INSTALLAZIONE	DISPONIBILITA' LETTURA			NOTE
			DATA LETTURA DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
CH_MO1	M. OTTICHE		13/09/11			
CH_MO2	M. OTTICHE		13/09/11			
CH_MO3	M. OTTICHE		15/07/11			
CH_MO4	M. OTTICHE		15/07/11			
CH_MO5	M. OTTICHE		15/07/11			
CH_MO6	M. OTTICHE		15/07/11			
CH_MO7	M. OTTICHE		15/07/11			
CH_MO8	M. OTTICHE		15/07/11			
CH_MO9	M. OTTICHE		15/07/11			
CH_MO10	M. OTTICHE		15/07/11			
CH_MO11	M. OTTICHE		15/07/11			
CH_MO12	M. OTTICHE		15/07/11			
CH_MO13	M. OTTICHE		15/07/11			
CH_MO14	M. OTTICHE		19/07/11			
CH_MO15	M. OTTICHE		06/09/11			
CH_MO16	M. OTTICHE		06/09/11			

Tabella Mire Ottiche Secondo Ordine di Tiranti

NOME	TIPOLOGIA STRUMENTO	DATA INSTALLAZIONE	DISPONIBILITA' LETTURA			NOTE
			DATA LETTURA DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
CH_MO17	M. OTTICHE		17/04/12			
CH_MO18	M. OTTICHE		17/04/12			
CH_MO19	M. OTTICHE		15/11/11			
CH_MO20	M. OTTICHE		15/11/11			
CH_MO21	M. OTTICHE		02/08/11			
CH_MO22	M. OTTICHE		02/08/11			
CH_MO23	M. OTTICHE		02/08/11			
CH_MO24	M. OTTICHE		02/08/11			
CH_MO25	M. OTTICHE		25/07/11			
CH_MO26	M. OTTICHE		25/07/11			
CH_MO27	M. OTTICHE		24/08/11			
CH_MO28	M. OTTICHE		24/08/11			
CH_MO29	M. OTTICHE		24/08/11			
CH_MO30	M. OTTICHE		24/08/11			
CH_MO31	M. OTTICHE		29/11/11			
CH_MO32	M. OTTICHE		29/11/11			


 <p><b>Ansaldo STS</b> A Finmeccanica Company</p>	<p><b>LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO</b></p> <p><i>OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO</i></p> <p><i>REPORT DELLE MISURE - STAZIONE CHIAIA</i></p>	<p>LM6 7FX 2C I 25 Data: 27/09/13 Metropolitana di Napoli A.T.I. LM6 TreEsse Engineering S.r.l.</p>
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Tabella Mire Ottiche Terzo e Quarto Ordine - Tufo

NOME	TIPOLOGIA STRUMENTO	DATA INSTALLAZIONE	DISPONIBILITA' LETTURA			NOTE
			DATA LETTURA DI ZERO	PERIODO INTERRUZIONE	DATA FINE ATTIVITA'	
CH_MO33	M. OTTICHE		12/07/12			
CH_MO34	M. OTTICHE		18/07/12			
CH_MO35	M. OTTICHE		13/09/12			
CH_MO36	M. OTTICHE		13/09/12		27/02/13	
CH_MO36A	M. OTTICHE		28/03/13			Sostituisce CH_MO36
CH_MO37	M. OTTICHE		18/09/12		13/06/13	
CH_MO37A	M. OTTICHE		01/07/13			Sostituisce CH_MO37
CH_MO38	M. OTTICHE		07/02/13			
CH_MO39	M. OTTICHE		07/02/13			
CH_MO40	M. OTTICHE		14/02/13			
CH_MO41	M. OTTICHE		05/03/13			
CH_MO42	M. OTTICHE		05/03/13			
CH_MO43	M. OTTICHE		05/03/13			
CH_MO44	M. OTTICHE		05/03/13			
CH_MO45	M. OTTICHE		28/03/13			
CH_MO46	M. OTTICHE		28/03/13			
CH_MO47	M. OTTICHE		28/03/13			
CH_MO48	M. OTTICHE		28/03/13			
CH_MO49	M. OTTICHE		28/03/13			
CH_MO50	M. OTTICHE		28/03/13			
CH_MO51	M. OTTICHE		03/04/13			
CH_MO52	M. OTTICHE		28/03/13			
CH_MO53	M. OTTICHE		28/03/13			
CH_MO54	M. OTTICHE		28/03/13			
CH_MO55	M. OTTICHE		28/03/13			
CH_MO56	M. OTTICHE		28/03/13			
CH_MO57	M. OTTICHE		28/03/13			
CH_MO58	M. OTTICHE		28/03/13			
CH_MO59	M. OTTICHE		28/03/13			
CH_MO60	M. OTTICHE		28/03/13			
CH_MO61	M. OTTICHE		28/03/13			
CH_MO62	M. OTTICHE		28/03/13			
CH_MO63	M. OTTICHE		28/03/13			
CH_MO64	M. OTTICHE		28/03/13			







UBICAZIONE

STAZIONE CHIAIA

\\ I Ordine di Tiranti \ 01-04

Ubicazione STAZIONE CHIAIA  
Opera \\ I Ordine di Tiranti \ 01-  
Tipo Strumento Mire Ottiche  
Data posa in opera 13/09/2011  
Data lettura di zero 13/09/2011

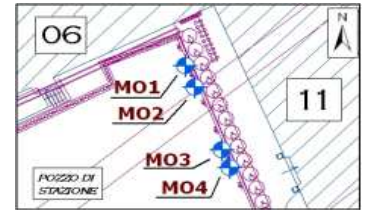
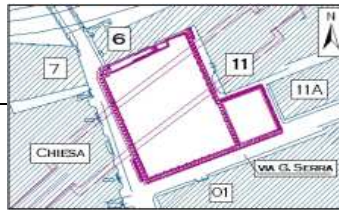


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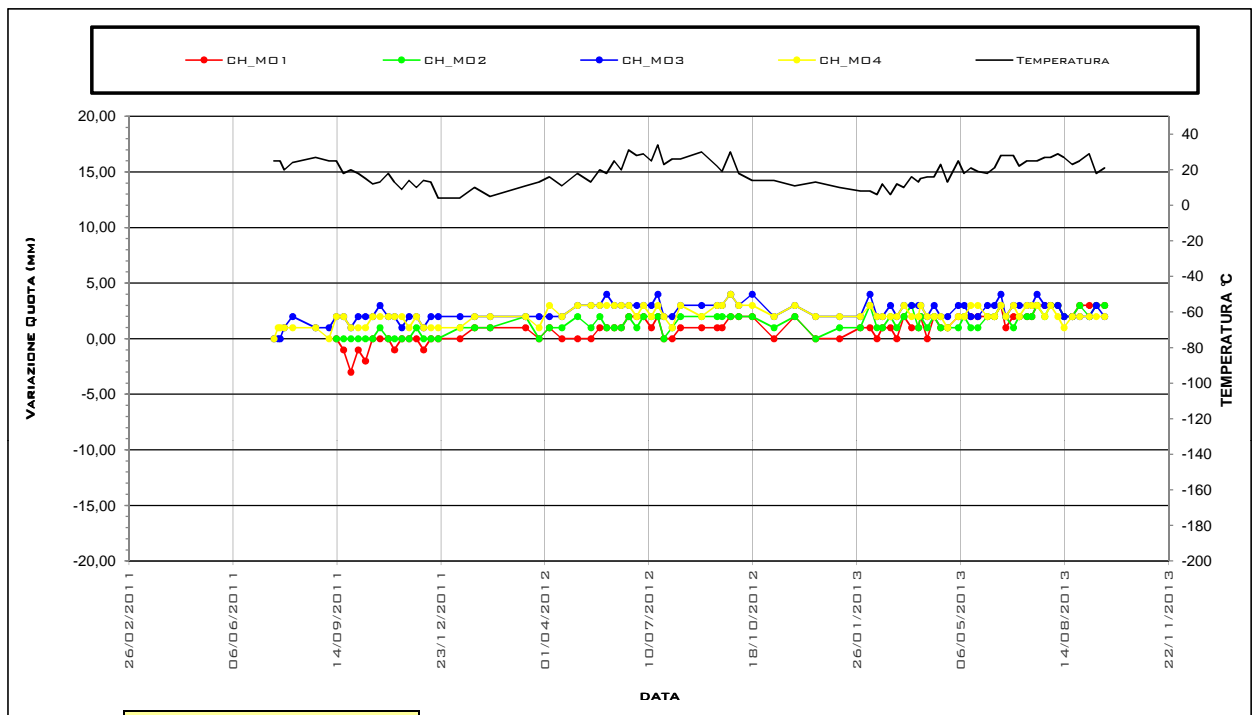
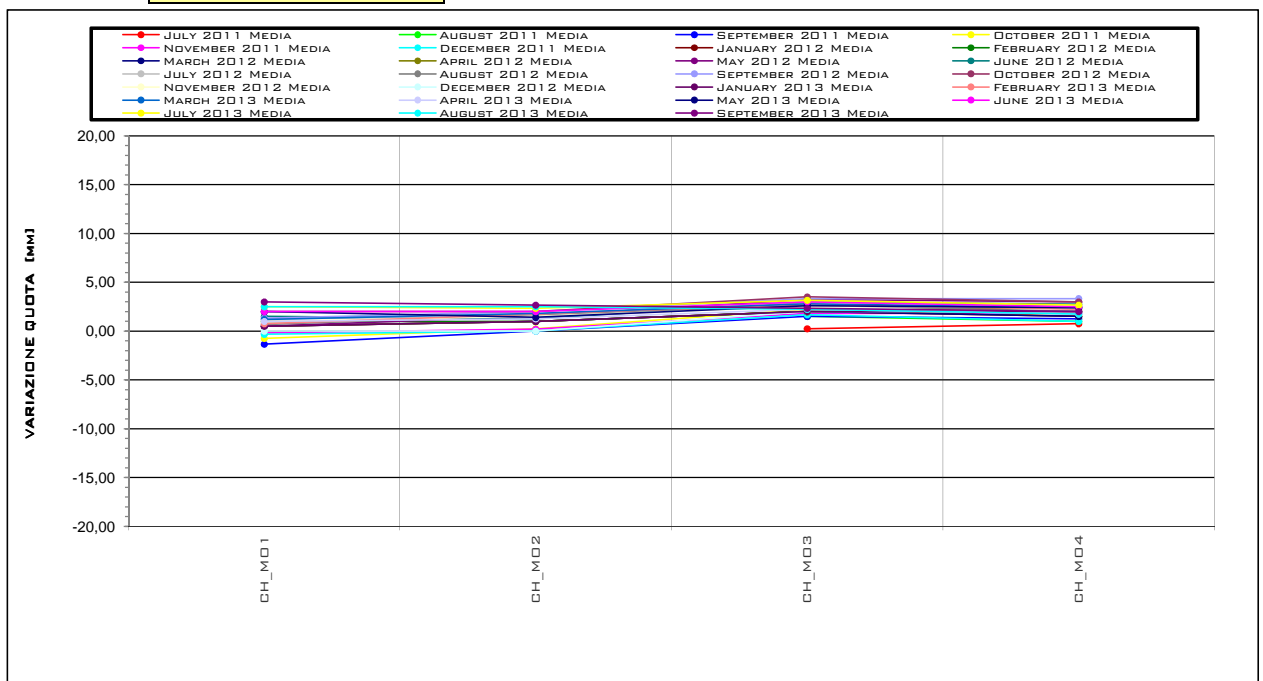
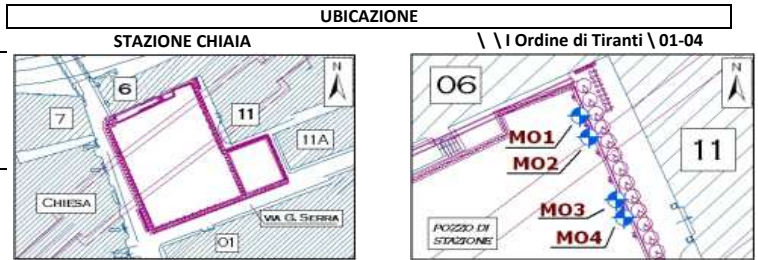


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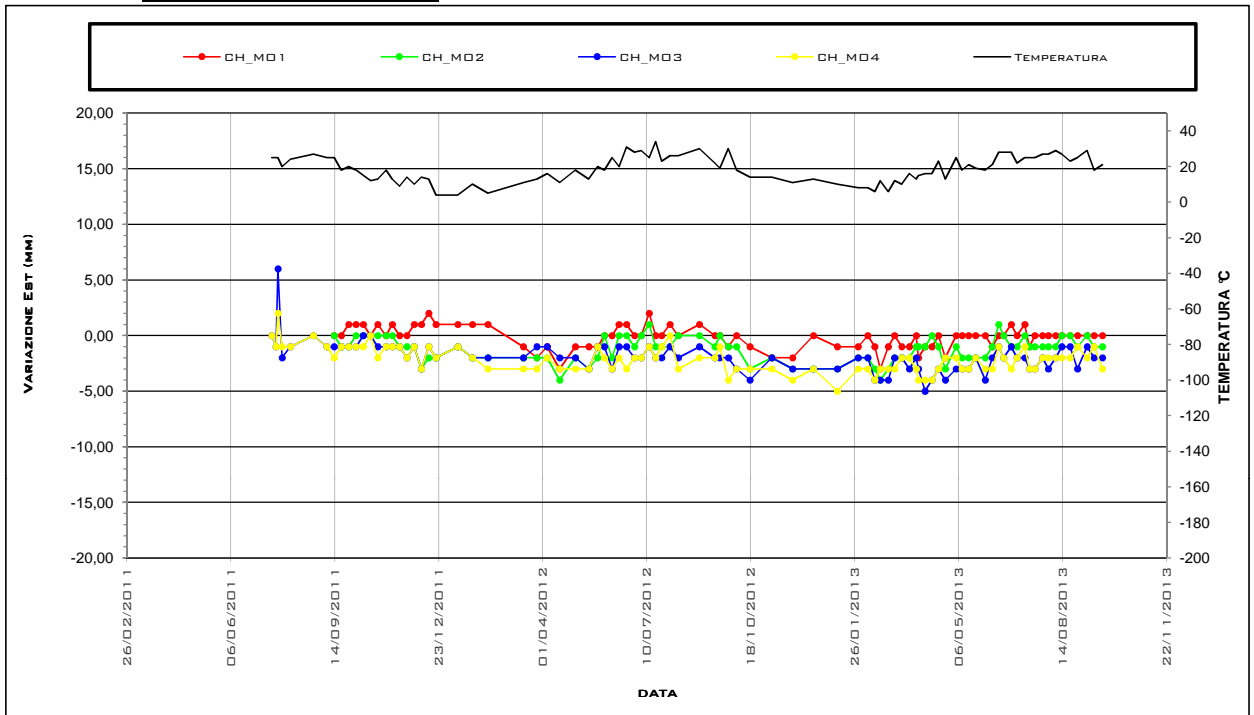




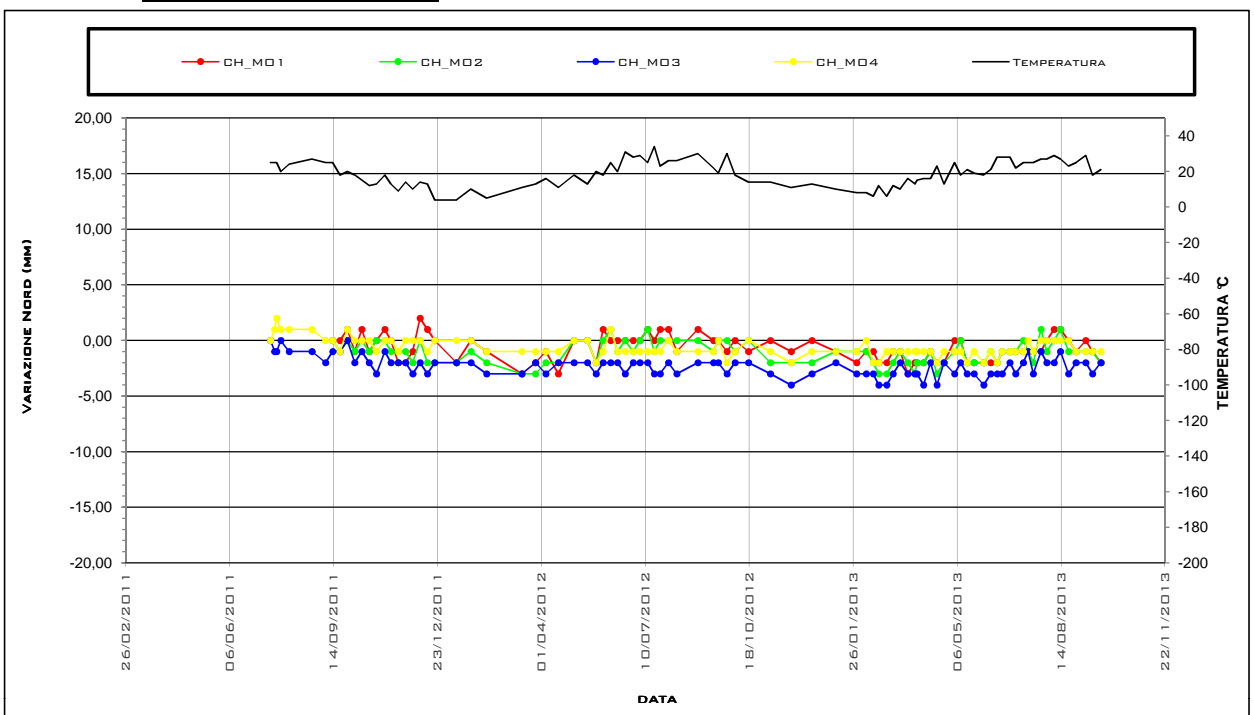
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ 1 Ordine di Tiranti \ 01-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 13/09/2011  
**Data lettura di zero** 13/09/2011



**GRAFICO EST**



**GRAFICO NORD**



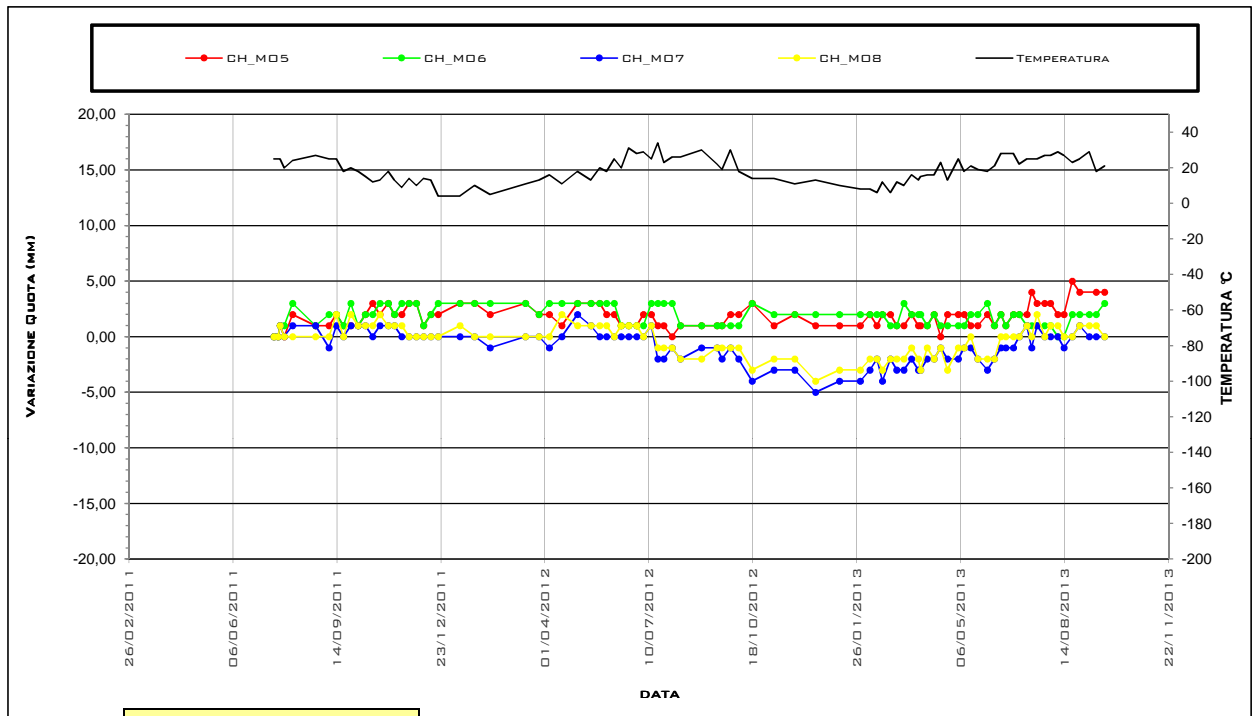
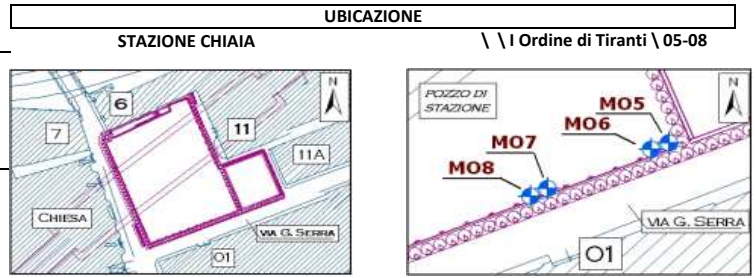




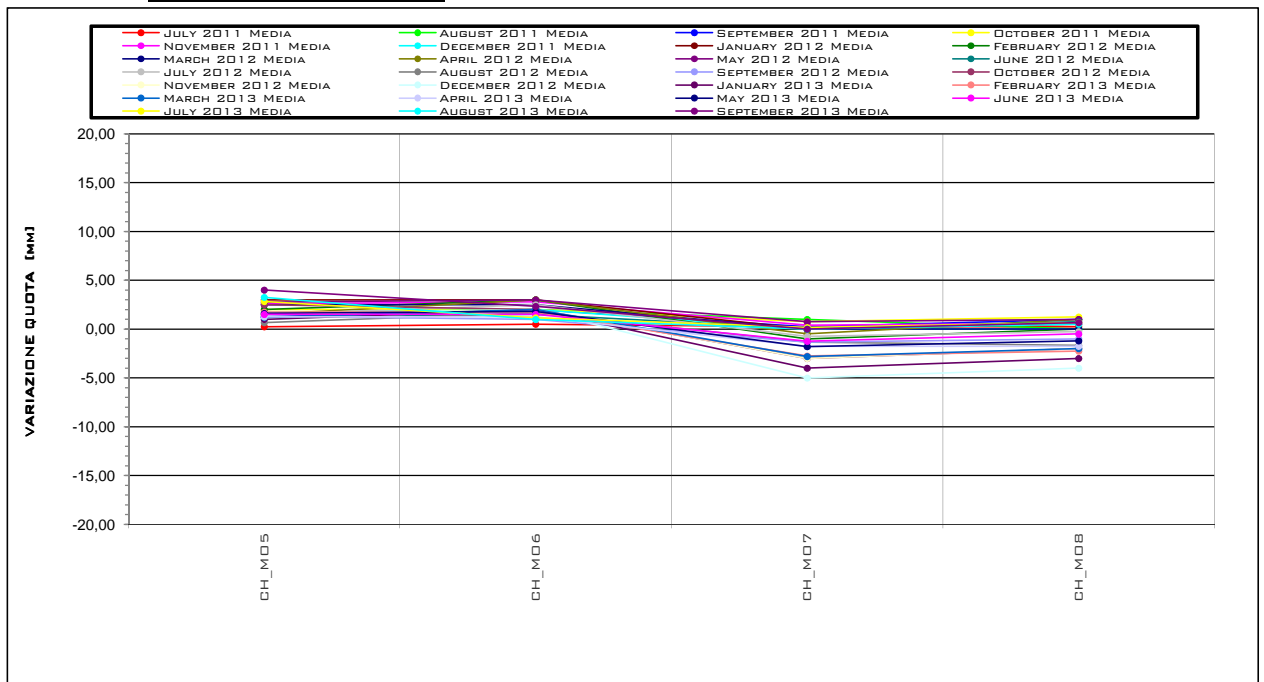


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ I Ordine di Tiranti \ 05-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 15/07/2011  
**Data lettura di zero** 15/07/2011

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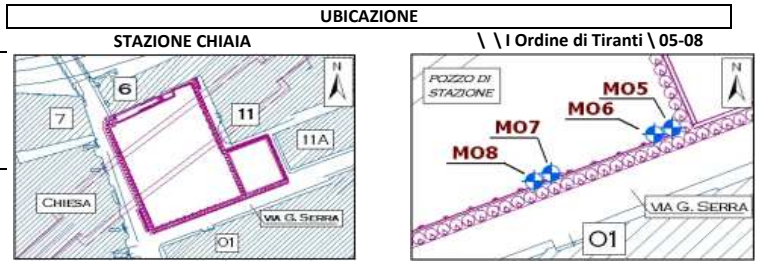


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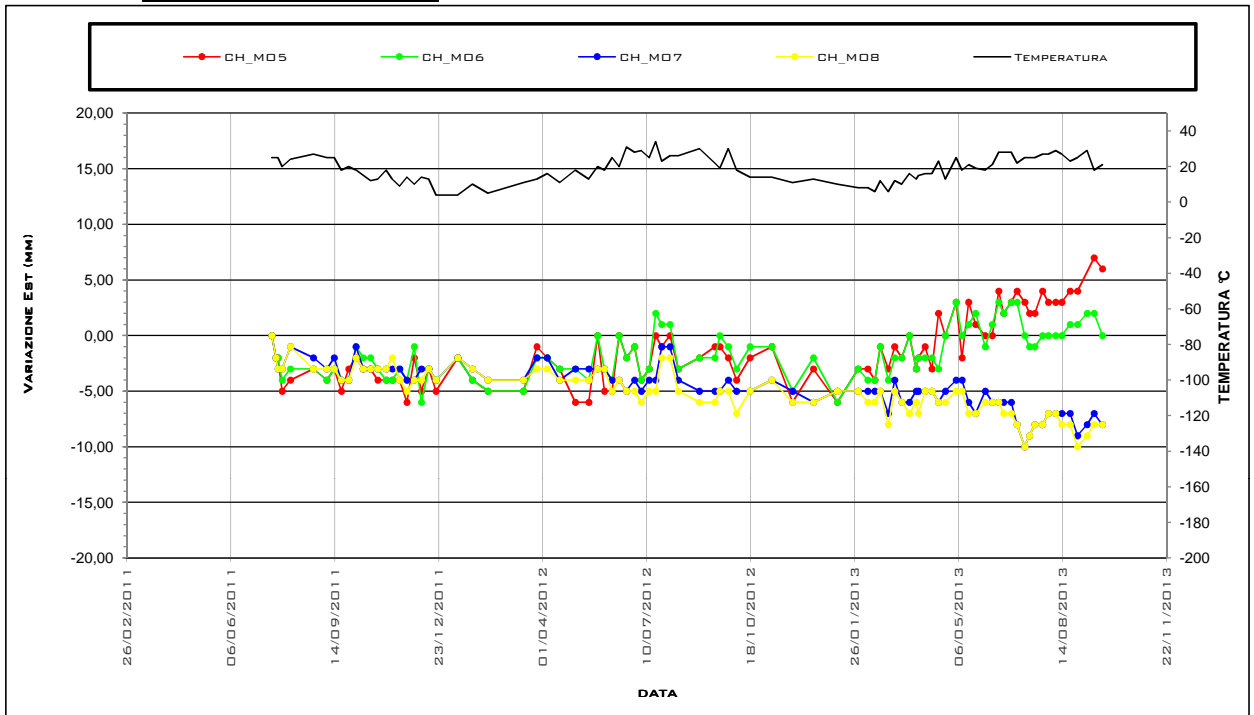




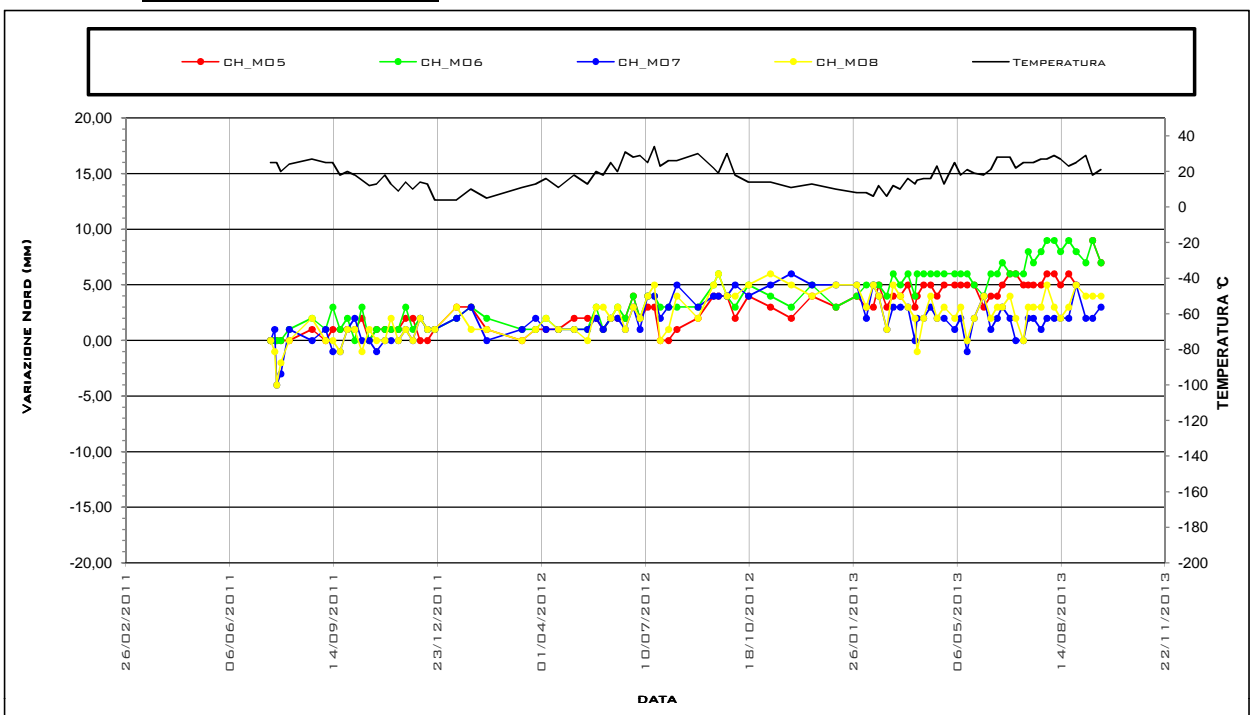
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ 1 Ordine di Tiranti \ 05-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 15/07/2011  
**Data lettura di zero** 15/07/2011



**GRAFICO EST**



**GRAFICO NORD**



Ubicazione STAZIONE CHIAIA

Opera \ \ Ordine di Tiranti \ 09-12

Tipo Strumento Mire Ottiche

Data posa in opera 15/07/2011

Data lettura di zero 15/07/2011

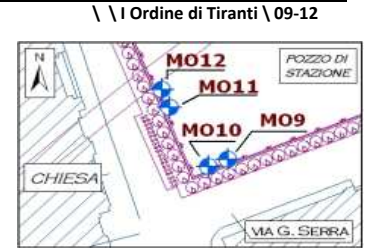
Ultima Misura 89 in data 21/09/2013

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1	15/07/2011 08.01	25.0	34.1	0.0	0.0	0.0	25.0	34.0	0.0	0.0	0.0	25.0	34.0	0.0	0.0	0.0	25.0	34.1	0.0	0.0	0.0
2	19/07/2011 08.00	25.0	34.1	0.0	-1.0	-1.0	25.0	34.0	-1.0	-1.0	1.0	25.0	34.0	0.0	-1.0	-1.0	25.0	34.1	1.0	-2.0	-1.0
3	21/07/2011 08.00	25.0	34.1	1.0	-2.0	-1.0	25.0	34.0	0.0	-2.0	0.0	25.0	34.0	1.0	-2.0	-1.0	25.0	34.1	1.0	-1.0	-2.0
4	25/07/2011 08.00	20.0	34.1	0.0	-2.0	-1.0	20.0	34.0	0.0	-2.0	0.0	20.0	34.0	1.0	-4.0	1.0	20.0	34.1	1.0	-1.0	-2.0
5	02/08/2011 08.00	24.0	34.1	0.0	-1.0	-1.0	24.0	34.0	-1.0	-1.0	1.0	24.0	34.0	0.0	-1.0	1.0	24.0	34.1	1.0	0.0	0.0
6	24/08/2011 08.00	27.0	34.1	-1.0	-3.0	-1.0	27.0	34.0	-1.0	-1.0	2.0	27.0	34.0	1.0	-2.0	1.0	27.0	34.1	1.0	-1.0	1.0
7	06/09/2011 08.00	25.0	34.1	-1.0	-3.0	-1.0	25.0	34.0	-1.0	-1.0	2.0	25.0	34.0	0.0	-2.0	1.0	25.0	34.1	1.0	-1.0	1.0
8	13/09/2011 08.00	25.0	34.1	0.0	-2.0	-1.0	25.0	34.0	-1.0	0.0	1.0	25.0	34.0	2.0	-2.0	1.0	25.0	34.1	2.0	-1.0	-1.0
9	20/09/2011 08.00	18.0	34.1	0.0	-3.0	-2.0	18.0	34.0	-1.0	-2.0	1.0	18.0	34.0	0.0	-2.0	0.0	18.0	34.1	0.0	-1.0	0.0
10	27/09/2011 08.00	20.0	34.1	0.0	-3.0	0.0	20.0	34.0	-1.0	-2.0	2.0	20.0	34.0	0.0	-3.0	2.0	20.0	34.1	1.0	-2.0	1.0
11	04/10/2011 08.00	18.0	34.1	0.0	0.0	-1.0	18.0	34.0	0.0	0.0	1.0	18.0	34.0	0.0	-1.0	2.0	18.0	34.1	1.0	0.0	1.0
12	11/10/2011 08.00	15.0	34.1	0.0	-2.0	0.0	15.0	34.0	0.0	0.0	1.0	15.0	34.0	1.0	-1.0	1.0	15.0	34.1	1.0	0.0	0.0
13	18/10/2011 08.00	12.0	34.1	0.0	-3.0	1.0	12.0	34.0	-1.0	-1.0	2.0	12.0	34.0	0.0	-3.0	2.0	12.0	34.1	1.0	-1.0	1.0
14	25/10/2011 08.00	13.0	34.1	0.0	-2.0	0.0	13.0	34.0	0.0	-1.0	2.0	13.0	34.0	1.0	-3.0	1.0	13.0	34.1	2.0	0.0	0.0
15	02/11/2011 10.00	18.0	34.1	1.0	-2.0	1.0	18.0	34.0	0.0	-1.0	2.0	18.0	34.0	2.0	-2.0	1.0	18.0	34.1	2.0	0.0	1.0
16	08/11/2011 08.00	13.0	34.1	0.0	-2.0	1.0	13.0	34.0	0.0	-1.0	2.0	13.0	34.0	0.0	-2.0	2.0	13.0	34.1	2.0	0.0	1.0
17	15/11/2011 08.00	9.0	34.1	0.0	-3.0	-1.0	9.0	34.0	0.0	-2.0	1.0	9.0	34.0	0.0	-3.0	1.0	9.0	34.1	1.0	0.0	0.0
18	22/11/2011 08.00	14.0	34.1	0.0	-3.0	1.0	14.0	34.0	-2.0	-2.0	3.0	14.0	34.0	0.0	-4.0	2.0	14.0	34.1	0.0	-2.0	1.0
19	29/11/2011 08.00	10.0	34.1	-1.0	-3.0	0.0	10.0	34.0	-2.0	-2.0	2.0	10.0	34.0	0.0	-3.0	2.0	10.0	34.1	-1.0	0.0	1.0
20	06/12/2011 08.00	14.0	34.1	0.0	-2.0	0.0	14.0	34.0	-1.0	-2.0	2.0	14.0	34.0	0.0	-3.0	2.0	14.0	34.1	0.0	-1.0	1.0
21	13/12/2011 08.00	13.0	34.1	0.0	-2.0	0.0	13.0	34.0	-1.0	0.0	2.0	13.0	34.0	0.0	-2.0	2.0	13.0	34.1	0.0	-2.0	1.0
22	20/12/2011 08.00	4.0	34.1	-1.0	-3.0	1.0	4.0	34.0	-1.0	-2.0	2.0	4.0	34.0	0.0	-3.0	2.0	4.0	34.1	1.0	-1.0	1.0
23	10/01/2012 08.00	4.0	34.1	0.0	0.0	2.0	4.0	34.0	0.0	3.0	4.0	34.0	0.0	-2.0	3.0	4.0	34.1	1.0	1.0	3.0	
24	24/01/2012 08.00	10.0	34.1	0.0	-2.0	1.0	10.0	34.0	-1.0	-2.0	2.0	10.0	34.0	0.0	-2.0	3.0	10.0	34.1	0.0	0.0	1.0
25	08/02/2012 08.00	5.0	34.1	-1.0	-3.0	0.0	5.0	34.0	-2.0	-1.0	3.0	5.0	34.0	0.0	-3.0	2.0	5.0	34.1	0.0	-1.0	2.0
26	13/03/2012 08.00	11.0	34.1	0.0	-2.0	0.0	11.0	34.0	-1.0	0.0	1.0	11.0	34.0	0.0	-2.0	1.0	11.0	34.1	0.0	0.0	0.0
27	26/03/2012 08.00	13.0	34.1	0.0	-2.0	1.0	13.0	34.0	-2.0	-1.0	3.0	13.0	34.0	0.0	-1.0	3.0	13.0	34.1	1.0	0.0	0.0
28	05/04/2012 08.00	16.0	34.1	-1.0	-3.0	0.0	16.0	34.0	-2.0	-1.0	2.0	16.0	34.0	0.0	-3.0	2.0	16.0	34.1	1.0	-1.0	1.0
29	17/04/2012 08.00	11.0	34.1	0.0	-3.0	1.0	11.0	34.0	-1.0	-1.0	2.0	11.0	34.0	1.0	-3.0	2.0	11.0	34.1	1.0	-2.0	2.0
30	02/05/2012 10.30	18.0	34.1	1.0	-2.0	0.0	18.0	34.0	0.0	-1.0	2.0	18.0	34.0	2.0	-3.0	2.0	18.0	34.1	2.0	-1.0	1.0
31	15/05/2012 08.30	13.0	34.1	0.0	-4.0	-1.0	13.0	34.0	0.0	-1.0	1.0	13.0	34.0	1.0	-3.0	1.0	13.0	34.1	2.0	0.0	0.0
32	23/05/2012 17.30	20.0	34.1	1.0	-2.0	1.0	20.0	34.0	0.0	-1.0	2.0	20.0	34.0	0.0	-2.0	2.0	20.0	34.1	1.0	-1.0	2.0
33	30/05/2012 08.30	18.0	34.1	0.0	-2.0	0.0	18.0	34.0	0.0	-1.0	2.0	18.0	34.0	0.0	-2.0	2.0	18.0	34.1	2.0	-2.0	1.0
34	06/06/2012 16.30	25.0	34.1	0.0	-4.0	1.0	25.0	34.0	-1.0	-1.0	3.0	25.0	34.0	0.0	-2.0	1.0	25.0	34.1	1.0	-2.0	2.0
35	13/06/2012 08.30	20.0	34.1	0.0	-3.0	1.0	20.0	34.0	0.0	-1.0	2.0	20.0	34.0	0.0	-2.0	2.0	20.0	34.1	1.0	0.0	1.0
36	20/06/2012 16.30	31.0	34.1	0.0	-4.0	-1.0	31.0	34.0	0.0	-1.0	-1.0	31.0	34.0	1.0	-1.0	0.0	31.0	34.1	1.0	-1.0	0.0
37	28/06/2012 08.30	28.0	34.1	0.0	-4.0	1.0	28.0	34.0	1.0	-1.0	1.0	28.0	34.0	1.0	-2.0	3.0	28.0	34.1	1.0	-3.0	3.0
38	04/07/2012 19.30	29.0	34.1	0.0	-6.0	0.0	29.0	34.0	0.0	-2.0	0.0	29.0	34.0	0.0	-3.0	1.0	29.0	34.1	0.0	-3.0	1.0
39	12/07/2012 08.30	25.0	34.1	0.0	-4.0	0.0	25.0	34.0	0.0	-1.0	1.0	25.0	34.0	0.0	-1.0	2.0	25.0	34.1	0.0	-2.0	1.0
40	18/07/2012 16.30	34.0	34.1	-2.0	-4.0	1.0	34.0	34.0	-1.0	-1.0	0.0	34.0	34.0	0.0	-1.0	2.0	34.0	34.1	-1.0	-3.0	2.0
41	24/07/2012 09.00	23.0	34.1	-2.0	-2.0	-3.0	23.0	34.0	-1.0	-1.0	2.0	23.0	34.0	-1.0	0.0	1.0	23.0	34.1	-1.0	-1.0	-2.0
42	01/08/2012 09.00	26.0	34.1	-2.0	-3.0	-2.0	26.0	34.0	-1.0	-2.0	2.0	26.0	34.0	-1.0	0.0	0.0	26.0	34.1	-1.0	-1.0	-1.0
43	09/08/2012 08.30	26.0	34.1	-2.0	-4.0	1.0	26.0	34.0	-1.0	-1.0	1.0	26.0	34.0	-1.0	-1.0	3.0	26.0	34.1	-2.0	-1.0	2.0
44	29/08/2012 16.00	30.0	34.1	-1.0	-5.0	1.0	30.0	34.0	-1.0	-1.0	0.0	30.0	34.0	0.0	-2.0	1.0	30.0	34.1	0.0	-4.0	1.0
45	13/09/2012 15.00	22.0	34.1	-1.0	-4.0	2.0	22.0	34.0	-1.0	-2.0	1.0	22.0	34.0	0.0	-2.0	2.0	22.0	34.1	0.0	-3.0	3.0
46	18/09/2012 08.00	19.0	34.1	-2.0	-4.0	3.0	19.0	34.0	-1.0	-1.0	2.0	19.0	34.0	0.0	-1.0	3.0	19.0	34.1	0.0	-3.0	3.0
47	26/09/2012 15.00	30.0	34.1	-1.0	-4.0	2.0	30.0	34.0	0.0	-1.0	1.0	30.0	34.0	0.0	-1.0	1.0	30.0	34.1	0.0	-3.0	2.0
48	04/10/2012 09.00	18.0	34.1	-2.0	-4.0	2.0	18.0	34.0	-1.0	-2.0	2.0	18.0	34.0	0.0	-2.0	3.0	18.0	34.1	0.0	-4.0	2.0
49	17/10/2012 08.30	14.0	34.1	-3.0	-3.0	2.0	14.0	34.0	-2.0	0.0	2.0	14.0	34.0	-2.0	-1.0	3.0	14.0	34.1	-2.0	-2.0	3.0
50	07/11/2012 08.30	14.0	34.1	-2.0	-3.0	3.0	14.0	34.0	-2.0	0.0	2.0	14.0	34.0	0.0	0.0	3.0	14.0	34.1	-1.0	-2.0	3.0
51	27/11/2012 08.30	11.0	34.1	-2.0	-3.0	3.0	11.0	34.0	-2.0	0.0	3.0	11.0	34.0	-1.0	-1.0	3.0	11.0	34.1	0.0	-2.0	4.0
52	17/12/2012 08.30	13.0	34.1	-3.0	-5.0	3.0	13.0	34.0	-3.0	-1.0	2.0	13.0	34.0	-3.0	-2.0	3.0	13.0	34.1	-3.0	-3.0	5.0
53	09/01/2013 08.30	10.0	34.1	-3.0	-3.0	2.0	10.0	34.0	-2.0	-1.0	2.0	10.0	34.0	-2.0	-2.0	2.0	10.0	34.1	-2.0	-4.0	3.0
54	29/01/2013 08.30	8.0	34.1	-3.0	-3.0	4.0	8.0	34.0	-2.0	-1.0	3.0	8.0	34.0	-2.0	-2.0	3.0	8.0	34.1	-2.0	-3.0	5.0
55	07/02/2013 15.00	8.0	34.1	-1.0	-4.0	2.0	8.0	34.0	-1.0	0.0	2.0	8.0	34.0	-1.0	-1.0	2.0	8.0	34.1	0.0	-3.0	2.0
56	14/02/2013 08.00	6.0	34.1	-1.0	-3.0	4.0	6.0	34.0	-1.0	0.0	3.0	6.0	34.0	-1.0	0.0	5.0	6.0	34.1	0.0	-2.0	4.0
57	19/02/2013 15.30	12.0	34.1	-2.0	-3.0	3.0	12.0	34.0	-2.0	0.0	3.0	12.0	34.0	-2.0	0.0						

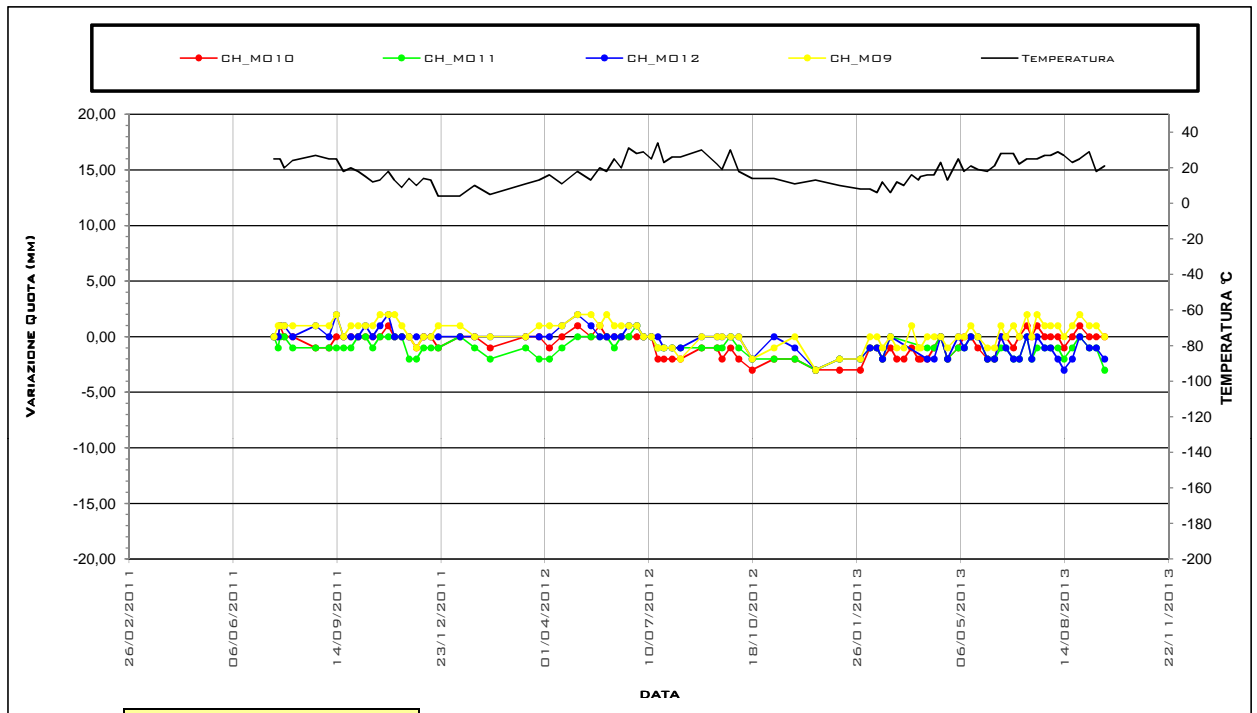


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ I Ordine di Tiranti \ 09-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 15/07/2011  
**Data lettura di zero** 15/07/2011

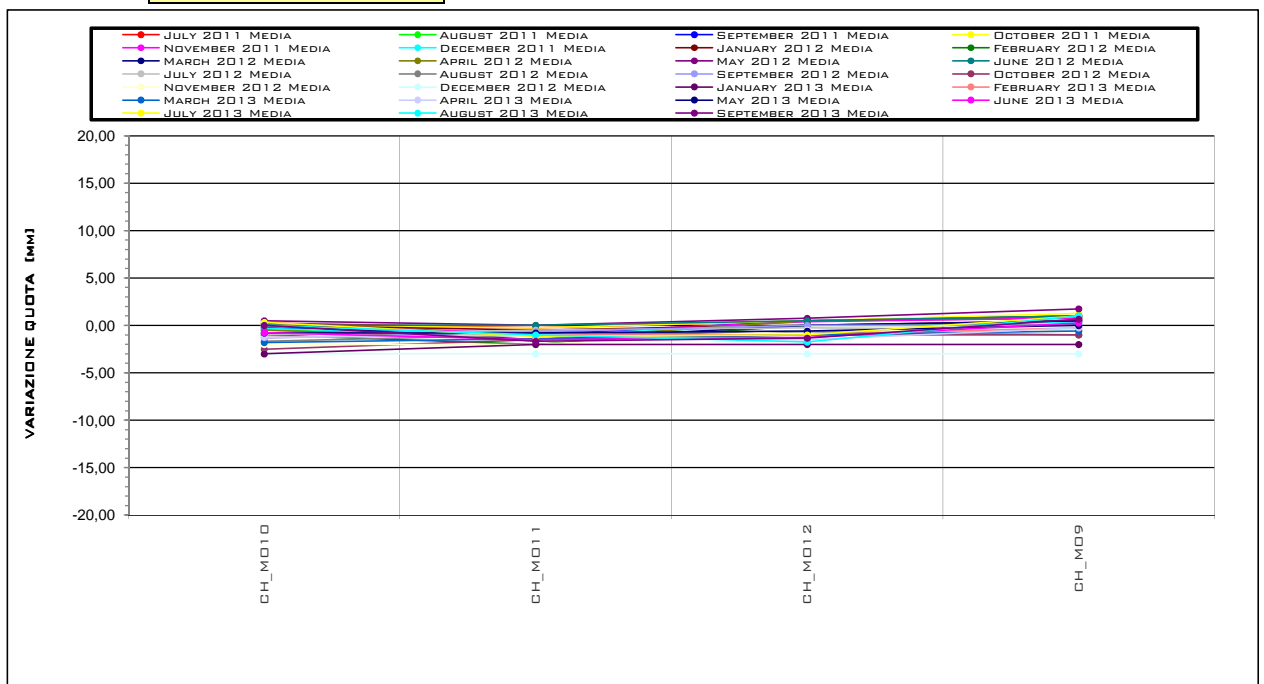
**UBICAZIONE**



**GRAFICO QUOTA**

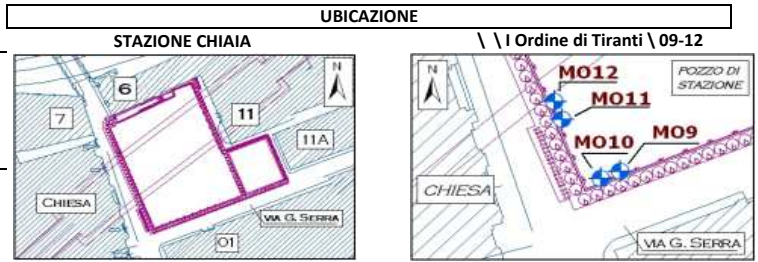


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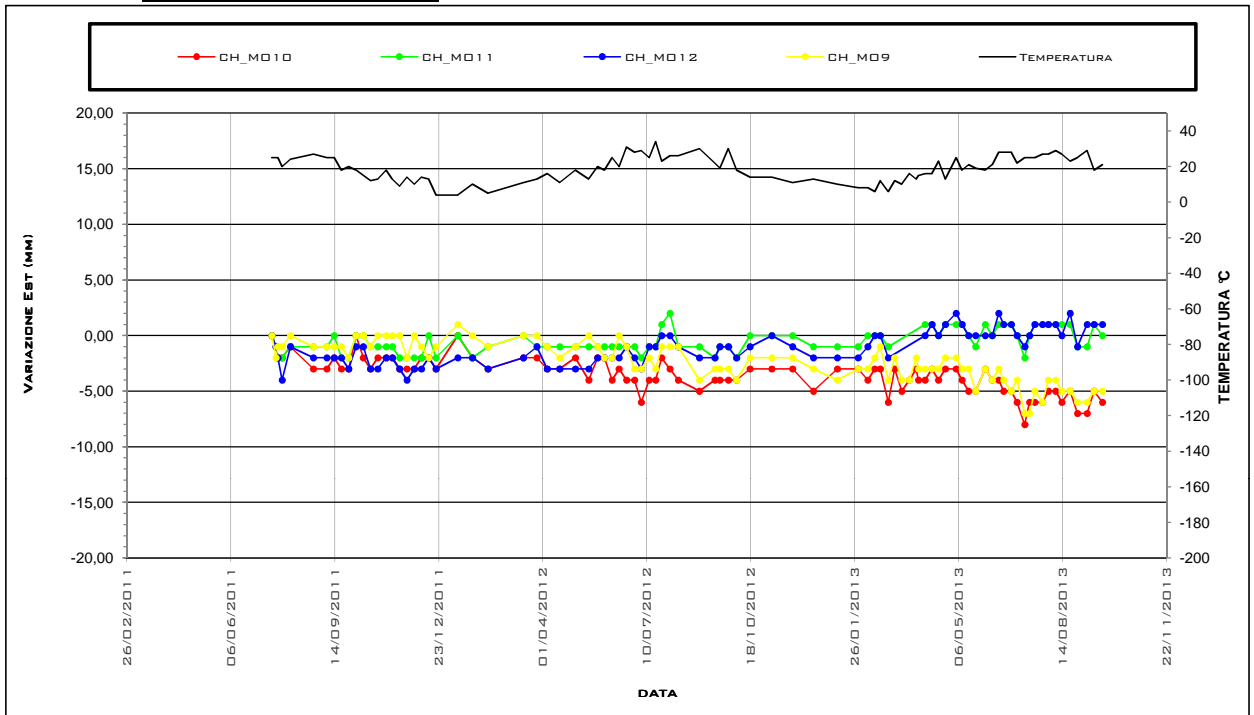




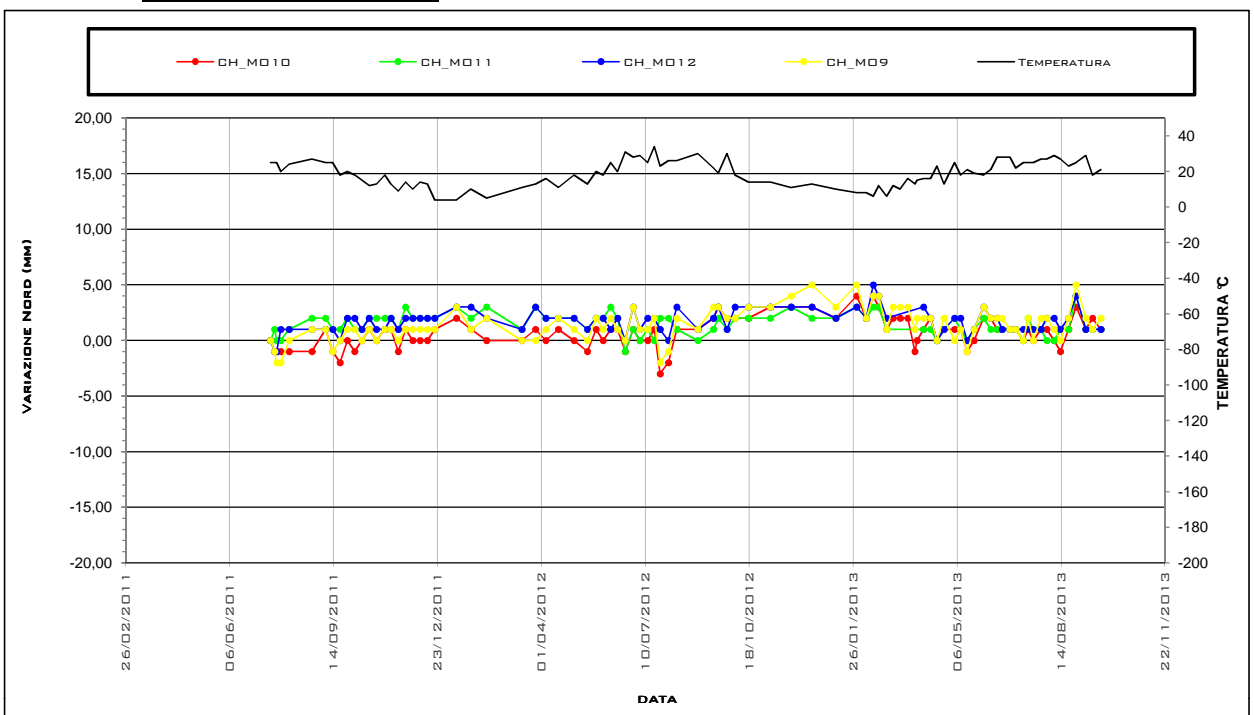
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ | Ordine di Tiranti \ 09-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 15/07/2011  
**Data lettura di zero** 15/07/2011



**GRAFICO EST**



**GRAFICO NORD**





**Ubicazione STAZIONE CHIAIA**

**Opera \ \ Ordine di Tiranti \ 13-16**

**Tipo Strumento Mire Ottiche**

**Data posa in opera 15/07/2011**

**Data lettura di zero 15/07/2011**

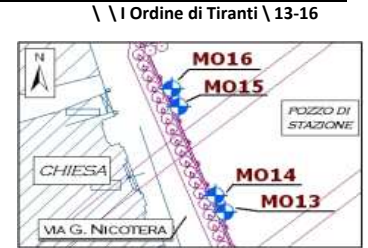
**Ultima Misura** 91 **in data** 27/09/2013

Lett. n°	DATA	CH_M013					CH_M014					CH_M015					CH_M016					
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	
1	15/07/2011 08.01	25,0	34,0	0,0	0,0	0,0																
2	19/07/2011 08.00	25,0	34,0	0,0	0,0	0,0																
3	19/07/2011 08.01						25,0	34,0	0,0	0,0	0,0											
4	21/07/2011 08.00	25,0	34,0	0,0	0,0	-2,0	25,0	34,0	2,0	0,0	0,0											
5	25/07/2011 08.00	20,0	34,0	-1,0	-1,0	-1,0	20,0	34,0	1,0	0,0	0,0											
6	02/08/2011 08.00	24,0	34,0	0,0	0,0	-1,0	24,0	34,0	0,0	0,0	0,0											
7	24/08/2011 08.00	27,0	34,0	0,0	0,0	0,0	27,0	34,0	0,0	0,0	0,0											
8	06/09/2011 08.00	25,0	34,0	-1,0	-1,0	-1,0	25,0	34,0	0,0	0,0	0,0											
9	06/09/2011 08.01											25,0	34,6	0,0	0,0	0,0	25,0	34,6	0,0	0,0	0,0	0,0
10	13/09/2011 08.00	25,0	34,0	1,0	1,0	-1,0	25,0	34,0	2,0	0,0	0,0	25,0	34,6	2,0	2,0	0,0	25,0	34,6	0,0	2,0	1,0	1,0
11	20/09/2011 08.00	18,0	34,0	-1,0	-1,0	-1,0	18,0	34,0	0,0	-1,0	-1,0	18,0	34,6	0,0	1,0	0,0	18,0	34,6	0,0	2,0	1,0	1,0
12	27/09/2011 08.00	20,0	34,0	0,0	0,0	0,0	20,0	34,0	2,0	-1,0	0,0	20,0	34,6	0,0	-1,0	1,0	20,0	34,6	1,0	2,0	2,0	2,0
13	04/10/2011 08.00	18,0	34,0	0,0	0,0	0,0	18,0	34,0	1,0	0,0	-1,0	18,0	34,6	1,0	0,0	0,0	18,0	34,6	0,0	1,0	1,0	1,0
14	11/10/2011 08.00	15,0	34,0	0,0	1,0	0,0	15,0	34,0	2,0	1,0	0,0	15,0	34,6	0,0	0,0	0,0	15,0	34,6	1,0	3,0	1,0	1,0
15	18/10/2011 08.00	12,0	34,0	0,0	0,0	1,0	12,0	34,0	1,0	-1,0	1,0	12,0	34,6	1,0	1,0	1,0	12,0	34,6	0,0	2,0	2,0	2,0
16	25/10/2011 08.00	13,0	34,0	0,0	-1,0	-1,0	13,0	34,0	2,0	0,0	1,0	13,0	34,6	0,0	0,0	2,0	13,0	34,6	0,0	1,0	2,0	2,0
17	02/11/2011 10.00	18,0	34,0	0,0	1,0	1,0	18,0	34,0	1,0	0,0	1,0	18,0	34,6	1,0	1,0	1,0	18,0	34,6	1,0	3,0	1,0	1,0
18	08/11/2011 08.00	13,0	34,0	-1,0	-1,0	0,0	13,0	34,0	1,0	-1,0	-1,0	13,0	34,6	0,0	0,0	1,0	13,0	34,6	1,0	3,0	2,0	2,0
19	15/11/2011 08.00	9,0	34,0	0,0	-1,0	-1,0	9,0	34,0	1,0	-1,0	0,0	9,0	34,6	0,0	1,0	1,0	9,0	34,6	1,0	2,0	1,0	1,0
20	22/11/2011 08.00	14,0	34,0	-1,0	-1,0	1,0	14,0	34,0	0,0	-2,0	1,0	14,0	34,6	-1,0	0,0	2,0	14,0	34,6	-1,0	2,0	2,0	2,0
21	29/11/2011 08.00	10,0	34,0	-1,0	-2,0	0,0	10,0	34,0	1,0	-1,0	1,0	10,0	34,6	0,0	1,0	2,0	10,0	34,6	0,0	2,0	1,0	1,0
22	06/12/2011 08.00	14,0	34,0	-1,0	0,0	0,0	14,0	34,0	1,0	0,0	1,0	14,0	34,6	1,0	2,0	1,0	14,0	34,6	1,0	2,0	1,0	1,0
23	13/12/2011 08.00	13,0	34,0	0,0	0,0	-1,0	13,0	34,0	1,0	0,0	0,0	13,0	34,6	0,0	0,0	0,0	13,0	34,6	1,0	2,0	1,0	1,0
24	20/12/2011 08.00	4,0	34,0	-1,0	-1,0	0,0	4,0	34,0	0,0	-1,0	1,0	4,0	34,6	0,0	0,0	2,0	4,0	34,6	0,0	3,0	0,0	3,0
25	10/01/2012 08.00	4,0	34,0	0,0	1,0	1,0	4,0	34,0	1,0	1,0	2,0	4,0	34,6	1,0	1,0	2,0	4,0	34,6	1,0	3,0	1,0	1,0
26	24/01/2012 08.00	10,0	34,0	-2,0	0,0	0,0	10,0	34,0	0,0	0,0	1,0	10,0	34,6	-1,0	1,0	1,0	10,0	34,6	-1,0	3,0	2,0	2,0
27	08/02/2012 08.00	5,0	34,0	-1,0	-1,0	0,0	5,0	34,0	0,0	-1,0	1,0	5,0	34,6	-1,0	1,0	2,0	5,0	34,6	-1,0	4,0	3,0	3,0
28	13/03/2012 08.00	11,0	34,0	0,0	1,0	-1,0	11,0	34,0	1,0	1,0	-1,0	11,0	34,6	0,0	2,0	1,0	11,0	34,6	1,0	3,0	1,0	1,0
29	26/03/2012 08.00	13,0	34,0	-1,0	1,0	1,0	13,0	34,0	0,0	1,0	0,0	13,0	34,6	0,0	0,0	1,0	13,0	34,6	0,0	3,0	1,0	1,0
30	05/04/2012 08.00	16,0	34,0	-1,0	0,0	0,0	16,0	34,0	0,0	1,0	1,0	16,0	34,6	0,0	0,0	0,0	16,0	34,6	0,0	2,0	0,0	0,0
31	17/04/2012 08.00	11,0	34,0	-1,0	0,0	0,0	11,0	34,0	1,0	0,0	2,0	11,0	34,6	0,0	1,0	2,0	11,0	34,6	1,0	2,0	2,0	2,0
32	02/05/2012 10.30	18,0	34,0	0,0	-1,0	-2,0	18,0	34,0	2,0	0,0	0,0	18,0	34,6	2,0	1,0	0,0	18,0	34,6	1,0	1,0	0,0	0,0
33	15/05/2012 08.30	13,0	34,0	0,0	-1,0	-1,0	13,0	34,0	1,0	-1,0	-1,0	13,0	34,6	1,0	1,0	1,0	13,0	34,6	0,0	1,0	0,0	0,0
34	23/05/2012 17.30	20,0	34,0	-1,0	0,0	-1,0	20,0	34,0	1,0	1,0	1,0	20,0	34,6	1,0	0,0	2,0	20,0	34,6	1,0	1,0	1,0	1,0
35	30/05/2012 08.30	18,0	34,0	0,0	0,0	0,0	18,0	34,0	0,0	0,0	0,0	18,0	34,6	1,0	0,0	1,0	18,0	34,6	2,0	2,0	1,0	1,0
36	06/06/2012 16.30	25,0	34,0	0,0	-1,0	0,0	25,0	34,0	1,0	0,0	0,0	25,0	34,6	2,0	0,0	1,0	25,0	34,6	2,0	2,0	1,0	1,0
37	13/06/2012 08.30	20,0	34,0	0,0	0,0	0,0	20,0	34,0	1,0	0,0	1,0	20,0	34,6	2,0	1,0	2,0	20,0	34,6	2,0	2,0	1,0	1,0
38	20/06/2012 16.30	31,0	34,0	1,0	1,0	-2,0	31,0	34,0	2,0	1,0	-1,0	31,0	34,6	3,0	0,0	0,0	31,0	34,6	2,0	0,0	-1,0	-1,0
39	28/06/2012 08.30	28,0	34,0	1,0	1,0	1,0	28,0	34,0	2,0	2,0	2,0	28,0	34,6	3,0	1,0	1,0	28,0	34,6	2,0	2,0	1,0	1,0
40	04/07/2012 19.30	29,0	34,0	0,0	1,0	0,0	29,0	34,0	0,0	0,0	0,0	29,0	34,6	2,0	0,0	1,0	29,0	34,6	2,0	0,0	0,0	0,0
41	12/07/2012 08.30	25,0	34,0	0,0	1,0	1,0	25,0	34,0	2,0	1,0	1,0	25,0	34,6	3,0	0,0	0,0	25,0	34,6	2,0	2,0	1,0	1,0
42	18/07/2012 16.30	34,0	34,0	0,0	1,0	-1,0	34,0	34,0	0,0	2,0	0,0	34,0	34,6	2,0	0,0	0,0	34,0	34,6	1,0	1,0	0,0	0,0
43	24/07/2012 09.00	23,0	34,0	-1,0	2,0	1,0	23,0	34,0	1,0	3,0	2,0	23,0	34,6	2,0	0,0	1,0	23,0	34,6	1,0	2,0	2,0	2,0
44	01/08/2012 09.00	26,0	34,0	-1,0	2,0	0,0	26,0	34,0	0,0	2,0	1,0	26,0	34,6	1,0	0,0	1,0	26,0	34,6	1,0	1,0	1,0	1,0
45	09/08/2012 08.30	26,0	34,0	-1,0	1,0	-1,0	26,0	34,0	0,0	1,0	1,0	26,0	34,6	2,0	-1,0	0,0	26,0	34,6	1,0	1,0	0,0	0,0
46	29/08/2012 17.30	30,0	34,0	-1,0	2,0	-1,0	30,0	34,0	0,0	1,0	1,0	30,0	34,6	1,0	0,0	0,0	30,0	34,6	1,0	2,0	0,0	0,0
47	13/09/2012 15.00	22,0	34,0	0,0	1,0	1,0	22,0	34,0	1,0	2,0	2,0	22,0	34,6	2,0	-1,0	0,0	22,0	34,6	1,0	1,0	1,0	1,0
48	18/09/2012 08.00	19,0	34,0	-1,0	0,0	1,0	19,0	34,0	0,0	1,0	1,0	19,0	34,6	2,0	-1,0	0,0	19,0	34,6	1,0	1,0	0,0	0,0
49	26/09/2012 15.00	30,0	34,0	0,0	2,0	0,0	30,0	34,0	1,0	1,0	1,0	30,0	34,6	2,0	0,0	0,0	30,0	34,6	2,0	2,0	0,0	0,0
50	04/10/2012 09.00	18,0	34,0	-1,0	1,0	1,0	18,0	34,0	0,0	0,0	1,0	18,0	34,6	2,0	-1,0	1,0	18,0	34,6	2,0	1,0	0,0	0,0
51	17/10/2012 08.30	14,0	34,0	-2,0	2,0	2,0	14,0	34,0	-1,0	1,0	1,0	14,0	34,6	0,0	0,0	2,0	14,0	34,6	0,0	2,0	1,0	1,0
52	07/11/2012 08.30	14,0	34,0	-1,0	2,0	2,0	14,0	34,0	0,0	2,0	2,0	14,0	34,6	1,0	1,0	2,0	14,0	34,6	1,0	3,0	1,0	1,0
53	27/11/2012 08.30	11,0	34,0	-1,0	1,0	1,0	11,0	34,0	0,0	1,0	1,0	11,0	34,6	0,0	0,0	2,0	11,0	34,6	0,0	1,0	2,0	2,0
54	17/12/2012 08.30	13,0	34,0	-3,0	1,0	2,0	13,0	34,0	-3,0	1,0	2,0	13,0	34,6	0,0	1,0	2,0	13,0	34,6	-1,0	2,0	1,0	1,0
55	09/01/2013 08.30	10,0	34,0	-2,0	1,0	1,0	10,0	34,0	-1,0	1,0	2,0	10,0	34,6	1,0	1,0	2,0	10,0	34,6	-1,0	2,0	1,0	1,0
56	29/01/2013 08.30	8,0	34,0	-3,0	1,0	1,0	8,0	34,0	-2,0	1,0	3,0	8,0	34,6	0,0	-1,0	2,0	8,0	34,6	0,0	2,0	2,0	2,0
57	07/02/2013 15.00	8,0	34,0	-2,0	2,0	0,0	8,0	34,0	-1,0	2,0	0,0	8,0	34,6	1,0								

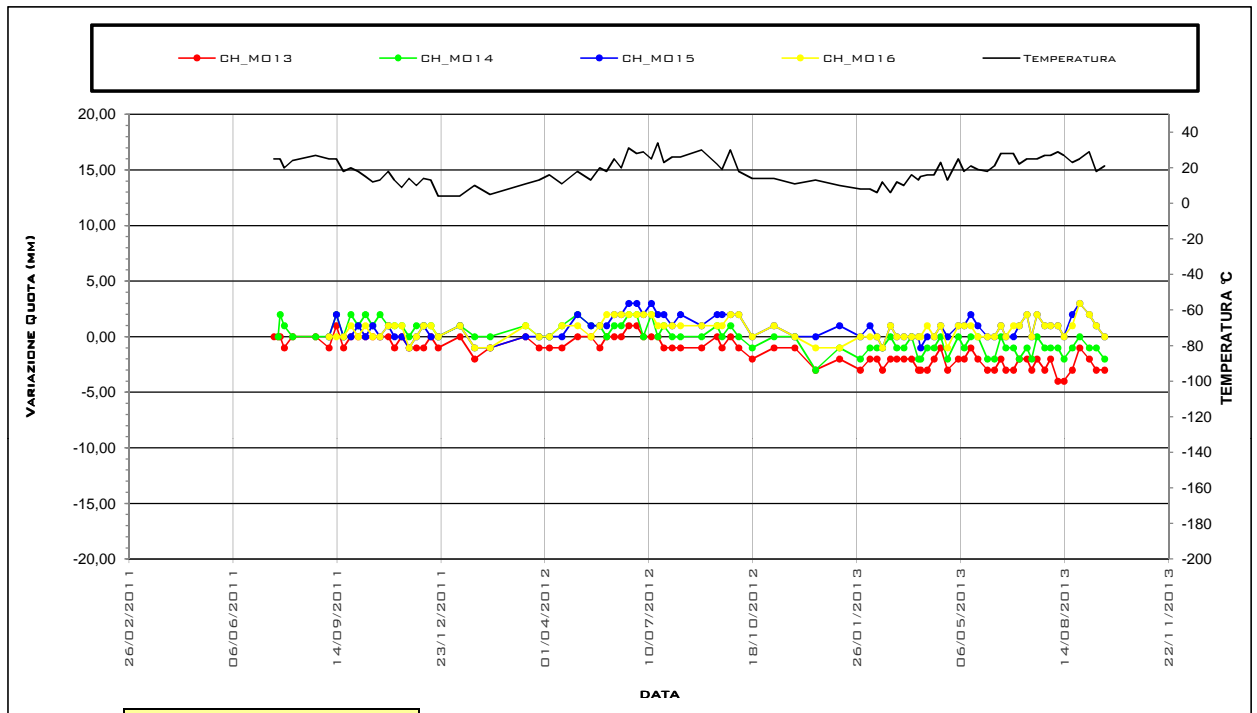


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ I Ordine di Tiranti \ 13-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 15/07/2011  
**Data lettura di zero** 15/07/2011

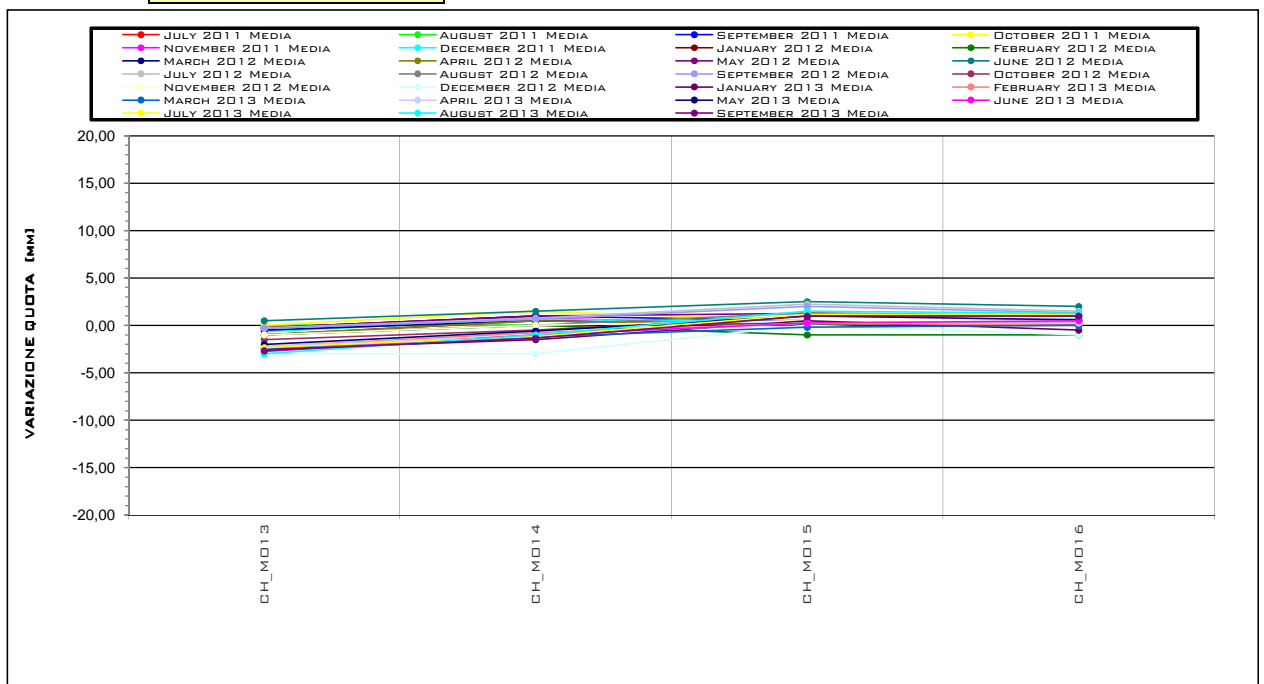
**UBICAZIONE**



**GRAFICO QUOTA**

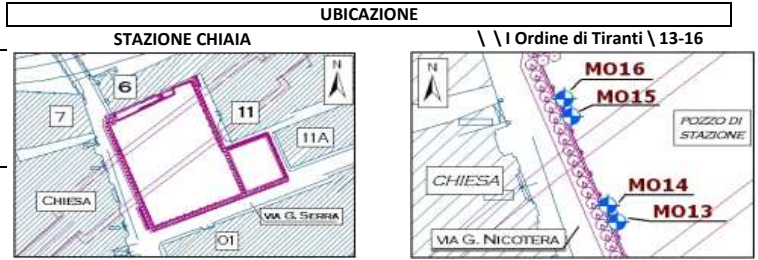


**GRAFICO ISOCRONE**

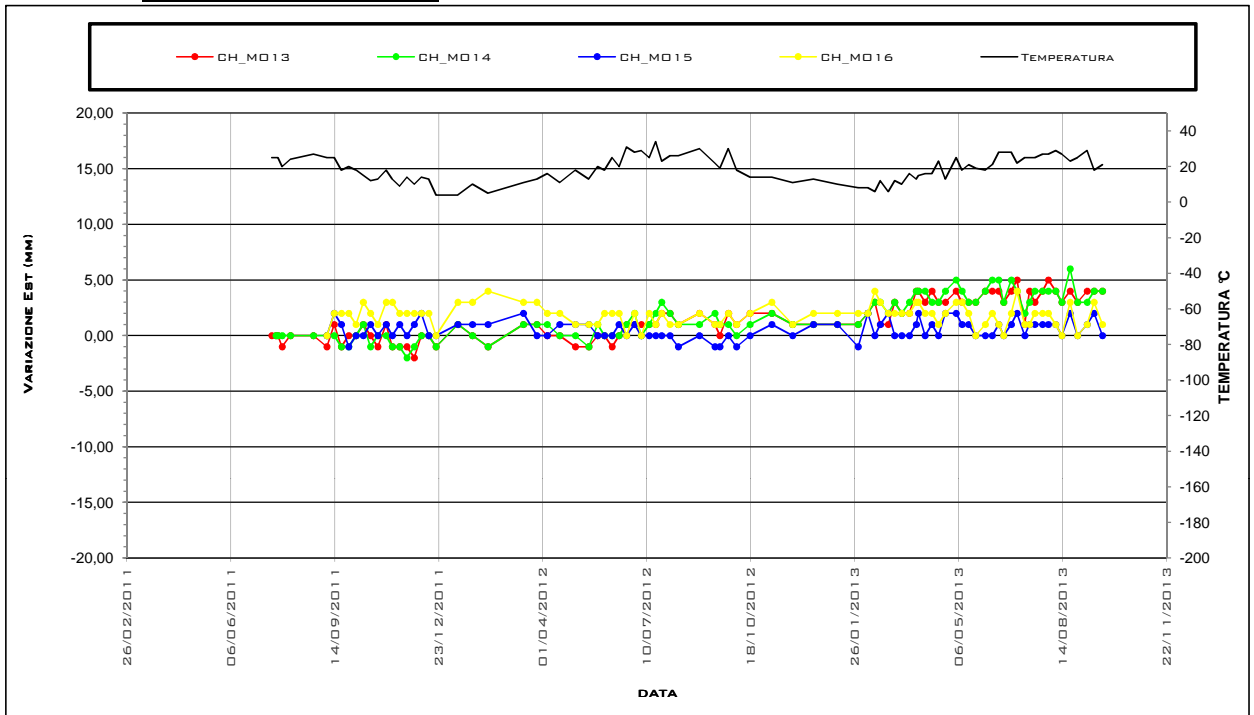




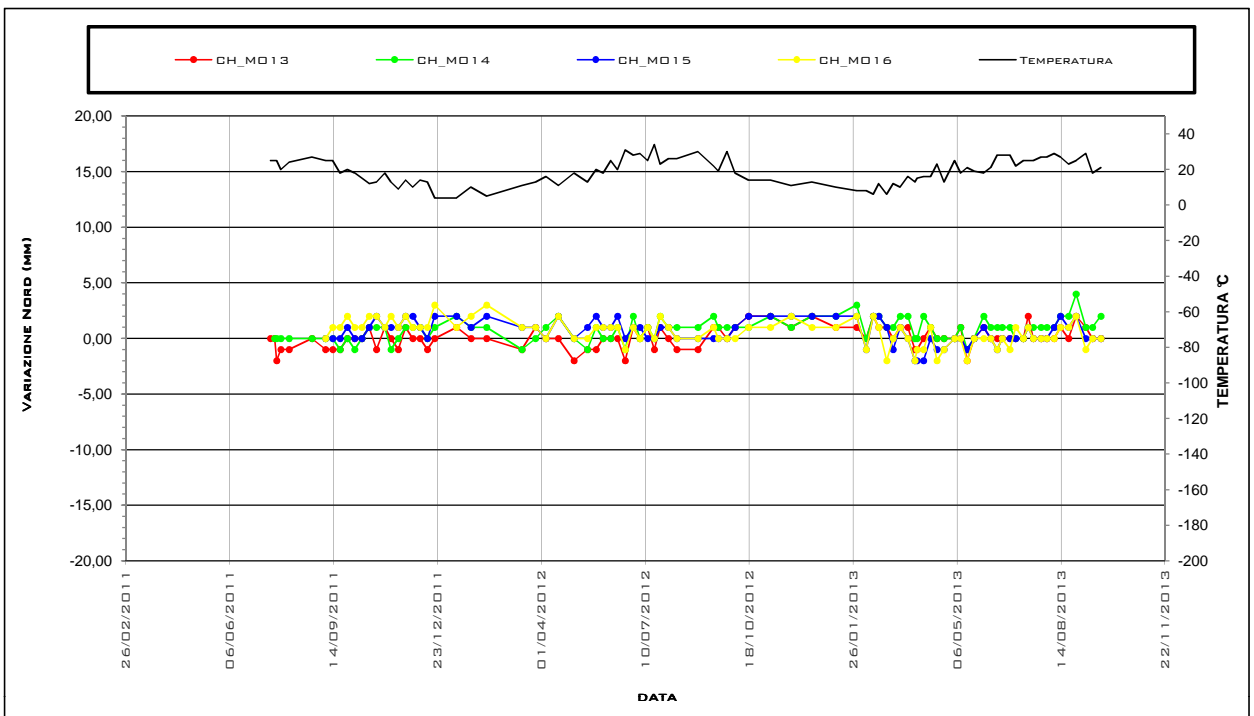
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ I Ordine di Tiranti \ 13-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 15/07/2011  
**Data lettura di zero** 15/07/2011



**GRAFICO EST**



**GRAFICO NORD**







LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO

LM6 7FX 2C I 25
Data: 27/09/13
Metropolitana di Napoli A.T.I. LM6
TreEsse Engineering S.r.l.

OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO
REPORT DELLE MISURE - STAZIONE CHIAIA



Ubicazione STAZIONE CHIAIA

Opera \ \ Il Ordine di Tiranti \ 17-20

Tipo Strumento Mire Ottiche

Data posa in opera 17/04/2012

Data lettura di zero 17/04/2012

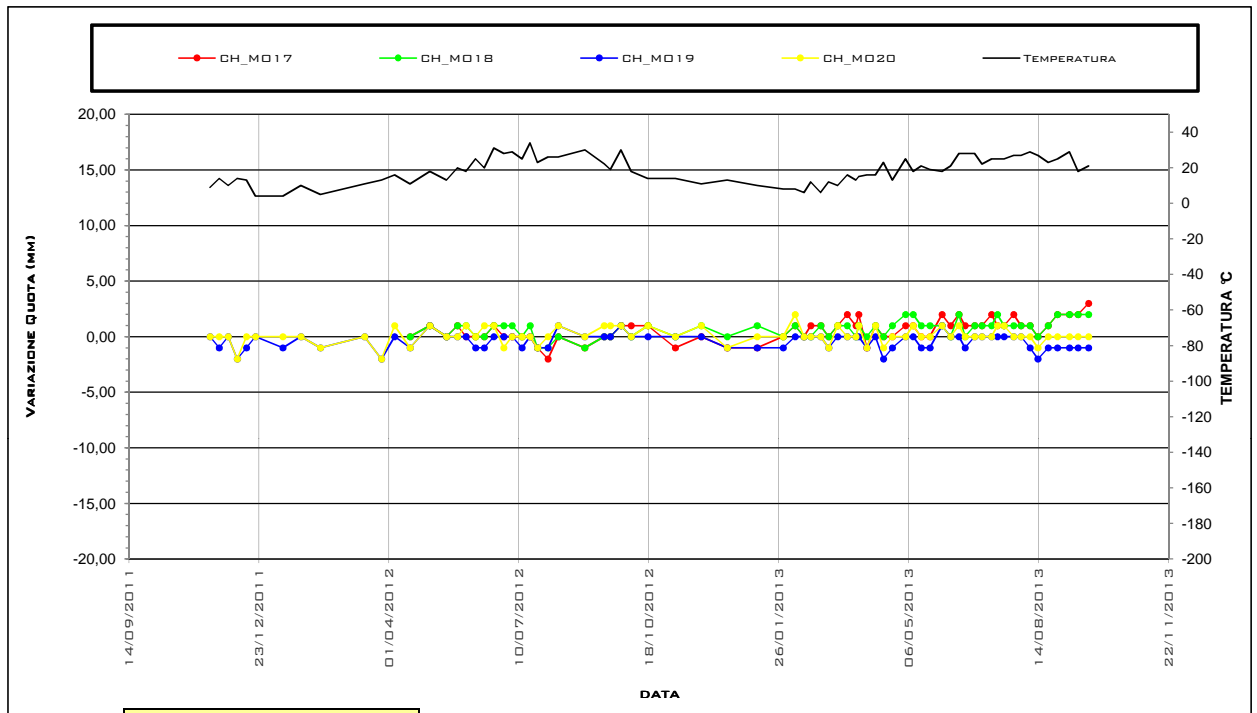
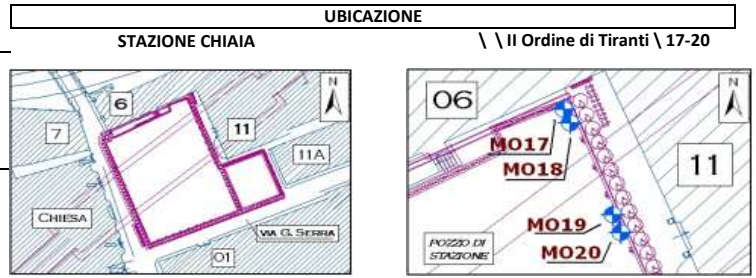
Ultima Misura 74 in data 21/09/2013

Table with 20 columns: Lett. n., DATA, CH\_M017, CH\_M018, CH\_M019, CH\_M020. Each column contains temperature and displacement data for various measurement points over time.

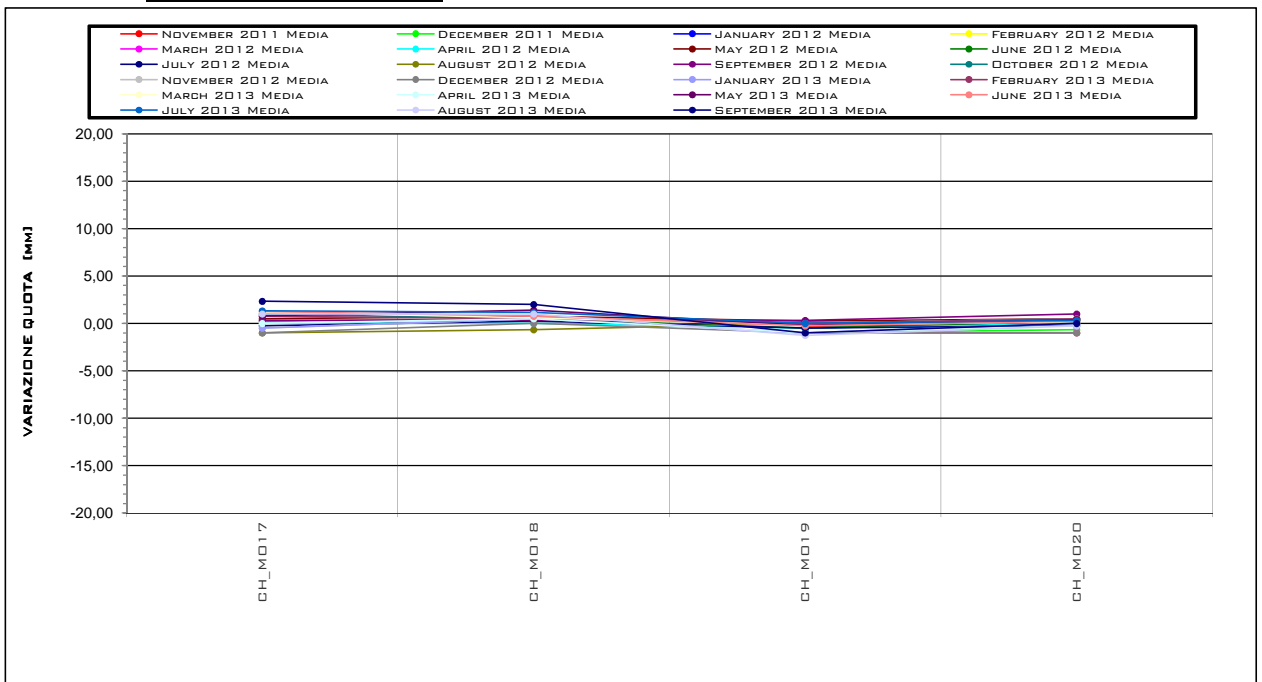


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Il Ordine di Tiranti \ 17-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 17/04/2012  
**Data lettura di zero** 17/04/2012

**GRAFICO QUOTA**

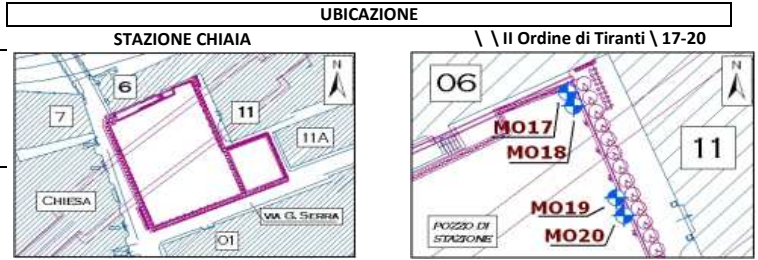


**GRAFICO ISOCRONE**

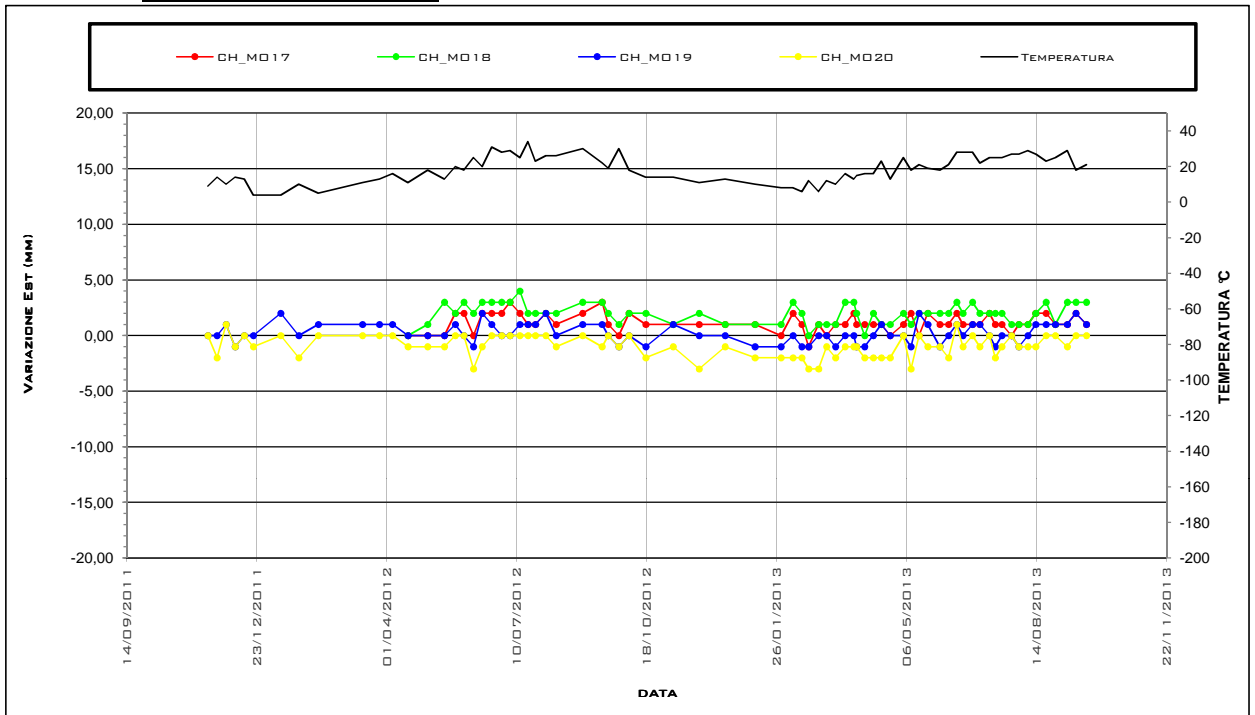




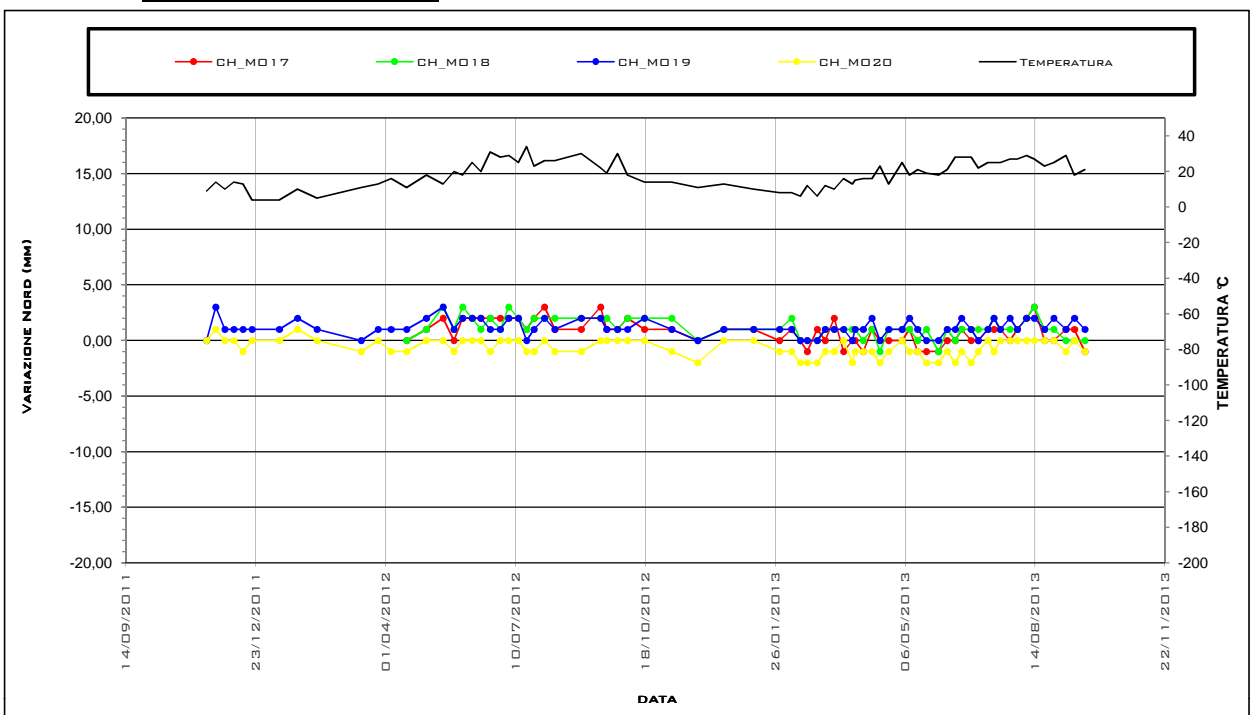
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Il Ordine di Tiranti \ 17-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 17/04/2012  
**Data lettura di zero** 17/04/2012



**GRAFICO EST**



**GRAFICO NORD**





LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO

OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO  
REPORT DELLE MISURE - STAZIONE CHIAIA

LM6 7FX 2C I 25  
Data: 27/09/13  
Metropolitana di Napoli A.T.I. LM6  
TreEsse Engineering S.r.l.



Ubicazione STAZIONE CHIAIA

Opera \ \ II Ordine di Tiranti \ 21-24

Tipo Strumento Mire Ottiche

Data posa in opera 02/08/2011

Data lettura di zero 02/08/2011

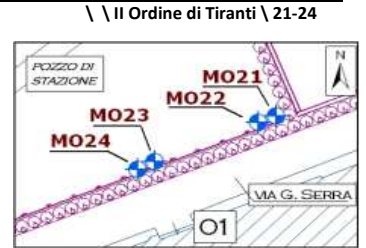
Ultima Misura 85 in data 21/09/2013

Table with columns: Lett. n°, DATA, CH\_M021, CH\_M022, CH\_M023, CH\_M024. Each column contains sub-columns for Temp. Media, Quota, Quota Spost., Est. Spost., and Nord Spost. The table contains 85 rows of measurement data.

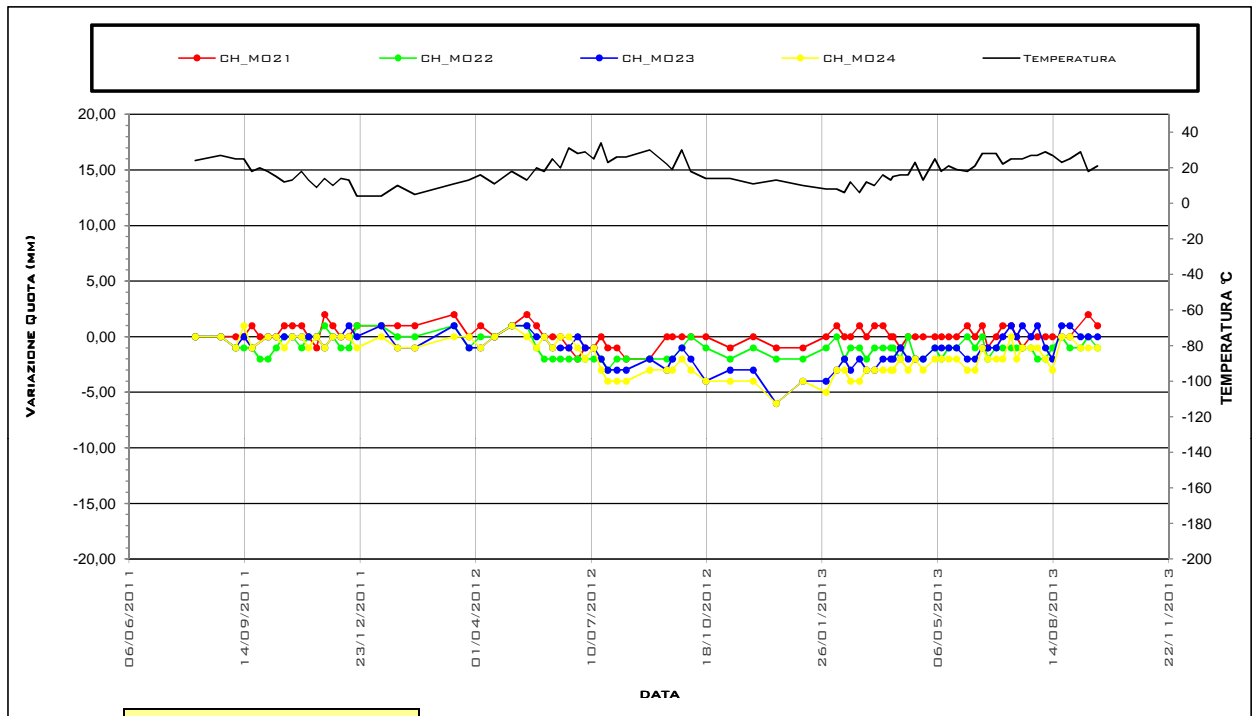


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Il Ordine di Tiranti \ 21-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 02/08/2011  
**Data lettura di zero** 02/08/2011

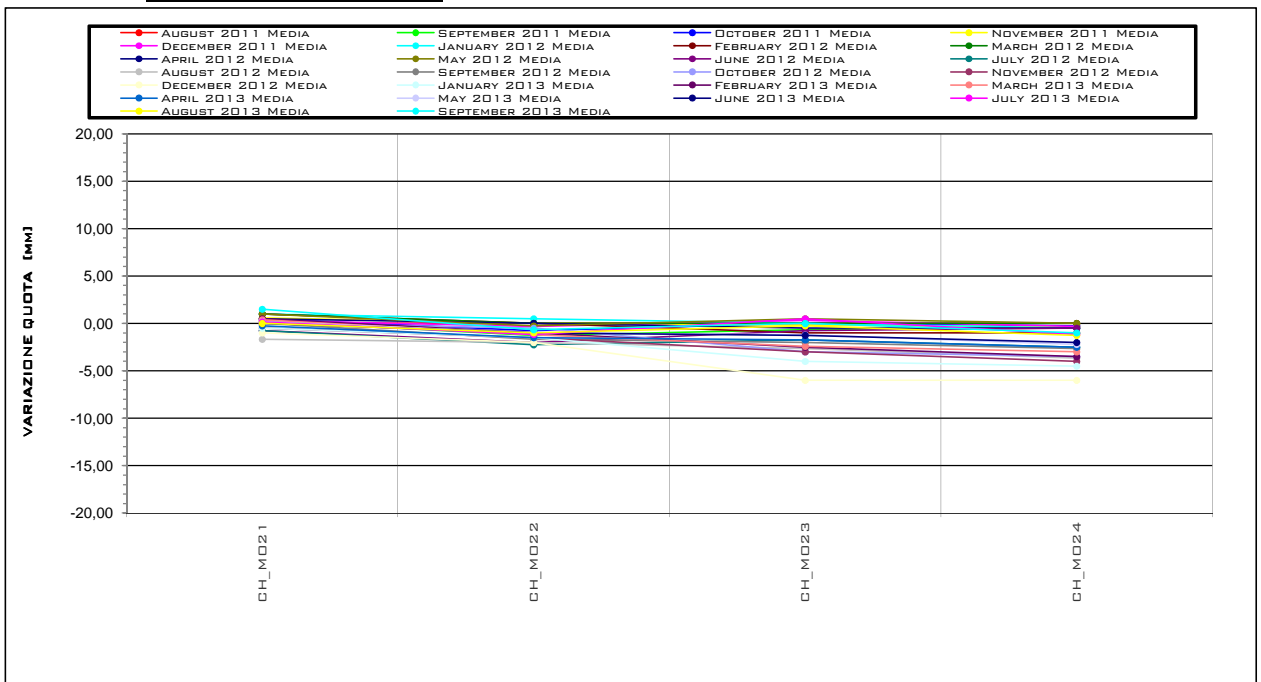
**UBICAZIONE**



**GRAFICO QUOTA**

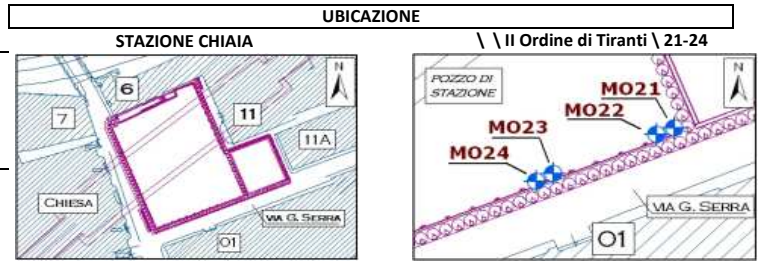


**GRAFICO ISOCRONE**

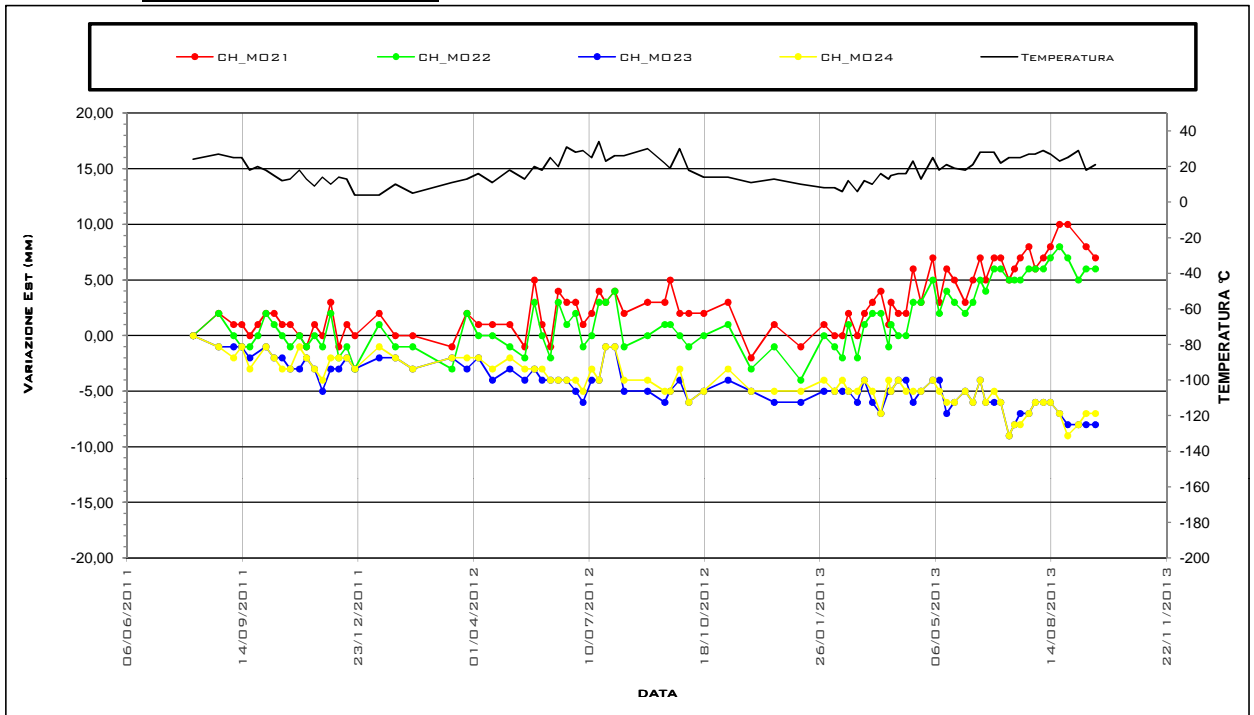




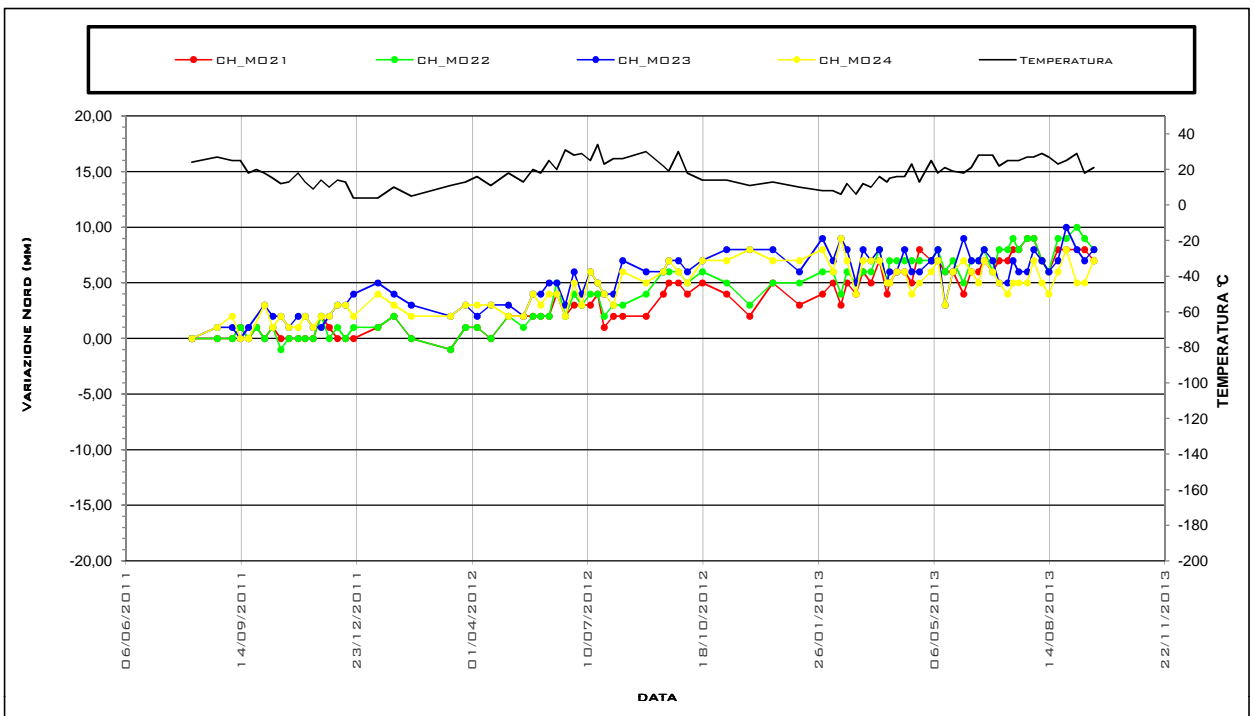
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Il Ordine di Tiranti \ 21-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 02/08/2011  
**Data lettura di zero** 02/08/2011



**GRAFICO EST**



**GRAFICO NORD**



Ubicazione STAZIONE CHIAIA

Opera \ \ II Ordine di Tiranti \ 25-28

Tipo Strumento Mire Ottiche

Data posa in opera 25/07/2011

Data lettura di zero 25/07/2011

Ultima Misura 87 in data

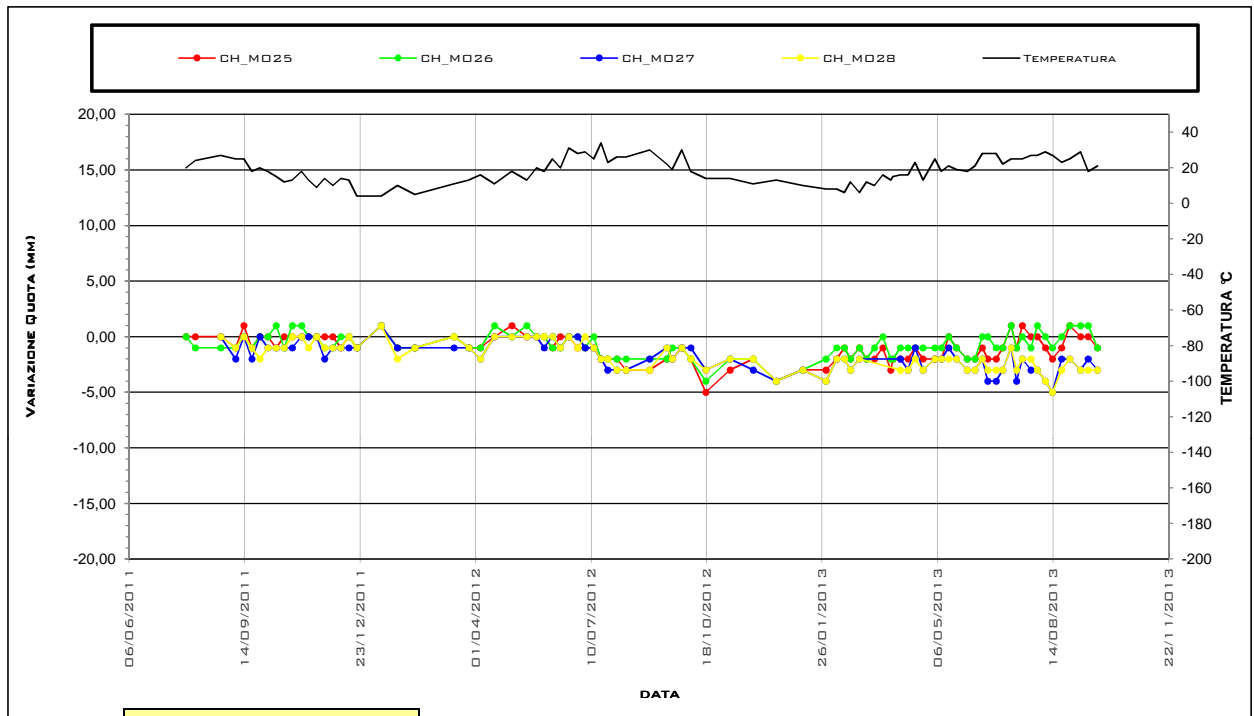
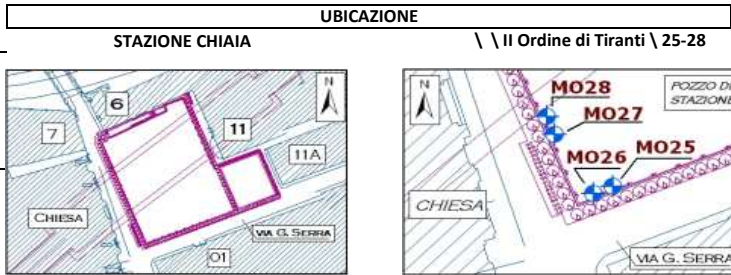
21/09/2013

Lett. n°	DATA	CH_M025					CH_M026					CH_M027					CH_M028						
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est. Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est. Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est. Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est. Spost. [mm]	Nord Spost. [mm]		
1	25/07/2011 08.01	20,0	29,9	0,0	0,0	0,0	30,0	0,0	0,0	0,0													
2	02/08/2011 08.00	24,0	29,9	0,0	2,0	2,0	30,0	-1,0	1,0	2,0													
3	24/08/2011 08.00	27,0	29,9	0,0	1,0	3,0	27,0	30,0	-1,0	0,0	2,0												
4	24/08/2011 08.01																						
5	06/09/2011 08.00	25,0	29,9	-1,0	1,0	3,0	25,0	30,0	-1,0	0,0	2,0	27,0	29,8	0,0	0,0	0,0	27,0	29,8	0,0	0,0	0,0		
6	13/09/2011 08.00	25,0	29,9	1,0	1,0	3,0	25,0	30,0	0,0	0,0	-1,0	25,0	29,8	-2,0	0,0	1,0	25,0	29,8	-1,0	-1,0	0,0		
7	20/09/2011 08.00	18,0	29,9	-1,0	0,0	2,0	18,0	30,0	-1,0	0,0	1,0	18,0	29,8	-2,0	0,0	-1,0	18,0	29,8	-1,0	-1,0	-1,0		
8	27/09/2011 08.00	20,0	29,9	0,0	0,0	4,0	20,0	30,0	0,0	-1,0	2,0	20,0	29,8	0,0	-2,0	1,0	20,0	29,8	-2,0	-2,0	2,0		
9	04/10/2011 08.00	18,0	29,9	0,0	3,0	3,0	18,0	30,0	0,0	1,0	2,0	18,0	29,8	-1,0	1,0	-1,0	18,0	29,8	-1,0	0,0	0,0		
10	11/10/2011 08.00	15,0	29,9	-1,0	1,0	3,0	15,0	30,0	1,0	1,0	2,0	15,0	29,8	-1,0	0,0	0,0	15,0	29,8	-1,0	-1,0	-1,0		
11	18/10/2011 08.00	12,0	29,9	0,0	1,0	3,0	12,0	30,0	-1,0	0,0	2,0	12,0	29,8	-1,0	-2,0	0,0	12,0	29,8	-1,0	-2,0	-1,0		
12	25/10/2011 08.00	13,0	29,9	0,0	1,0	2,0	13,0	30,0	1,0	0,0	2,0	13,0	29,8	-1,0	-2,0	-1,0	13,0	29,8	0,0	-2,0	-1,0		
13	02/11/2011 10.00	18,0	29,9	0,0	2,0	3,0	18,0	30,0	1,0	1,0	2,0	18,0	29,8	0,0	0,0	0,0	18,0	29,8	0,0	0,0	0,0		
14	08/11/2011 08.00	13,0	29,9	0,0	1,0	3,0	13,0	30,0	0,0	1,0	3,0	13,0	29,8	0,0	-1,0	-1,0	13,0	29,8	-1,0	-1,0	-1,0		
15	15/11/2011 08.00	9,0	29,9	0,0	1,0	3,0	9,0	30,0	0,0	0,0	0,0	9,0	29,8	0,0	-2,0	-1,0	9,0	29,8	0,0	-1,0	0,0		
16	22/11/2011 08.00	14,0	29,9	0,0	-1,0	3,0	14,0	30,0	-1,0	0,0	2,0	14,0	29,8	-2,0	-2,0	0,0	14,0	29,8	-1,0	-2,0	2,0		
17	29/11/2011 08.00	10,0	29,9	0,0	1,0	3,0	10,0	30,0	-1,0	0,0	2,0	10,0	29,8	-1,0	-1,0	0,0	10,0	29,8	-1,0	-2,0	0,0		
18	06/12/2011 08.00	14,0	29,9	-1,0	1,0	3,0	14,0	30,0	0,0	0,0	2,0	14,0	29,8	-1,0	-2,0	0,0	14,0	29,8	-1,0	-1,0	0,0		
19	13/12/2011 08.00	13,0	29,9	0,0	1,0	3,0	13,0	30,0	0,0	1,0	2,0	13,0	29,8	-1,0	0,0	1,0	13,0	29,8	0,0	0,0	-1,0		
20	20/12/2011 08.00	4,0	29,9	-1,0	1,0	3,0	4,0	30,0	-1,0	0,0	3,0	4,0	29,8	-1,0	-1,0	0,0	4,0	29,8	-1,0	-3,0	0,0		
21	10/01/2012 08.00	4,0	29,9	1,0	2,0	4,0	4,0	30,0	1,0	2,0	4,0	4,0	29,8	1,0	0,0	3,0	4,0	29,8	1,0	0,0	2,0		
22	24/01/2012 08.00	10,0	29,9	-1,0	1,0	3,0	10,0	30,0	-1,0	1,0	3,0	10,0	29,8	-1,0	-2,0	1,0	10,0	29,8	-2,0	0,0	0,0		
23	08/02/2012 08.00	5,0	29,9	-1,0	1,0	3,0	5,0	30,0	-1,0	-1,0	4,0	5,0	29,8	-1,0	-2,0	1,0	5,0	29,8	-1,0	-1,0	0,0		
24	13/03/2012 08.00	11,0	29,9	0,0	2,0	2,0	11,0	30,0	0,0	1,0	2,0	11,0	29,8	-1,0	0,0	-1,0	11,0	29,8	0,0	-1,0	-1,0		
25	26/03/2012 08.00	13,0	29,9	-1,0	1,0	3,0	13,0	30,0	-1,0	1,0	3,0	13,0	29,8	-1,0	0,0	2,0	13,0	29,8	-1,0	0,0	0,0		
26	05/04/2012 08.00	16,0	29,9	-1,0	1,0	3,0	16,0	30,0	-1,0	1,0	3,0	16,0	29,8	-2,0	-2,0	0,0	16,0	29,8	-2,0	-1,0	0,0		
27	17/04/2012 08.00	11,0	29,9	0,0	1,0	4,0	11,0	30,0	1,0	-1,0	3,0	11,0	29,8	0,0	-2,0	1,0	11,0	29,8	0,0	-2,0	1,0		
28	02/05/2012 10.30	18,0	29,9	1,0	1,0	3,0	18,0	30,0	0,0	0,0	2,0	18,0	29,8	0,0	-1,0	0,0	18,0	29,8	0,0	-1,0	-1,0		
29	15/05/2012 08.30	13,0	29,9	0,0	1,0	4,0	13,0	30,0	1,0	0,0	2,0	13,0	29,8	0,0	-2,0	-1,0	13,0	29,8	0,0	-2,0	-1,0		
30	23/05/2012 17.30	20,0	29,9	0,0	1,0	4,0	20,0	30,0	0,0	0,0	3,0	20,0	29,8	0,0	0,0	0,0	20,0	29,8	0,0	0,0	0,0		
31	30/05/2012 08.30	18,0	29,9	0,0	0,0	4,0	18,0	30,0	0,0	0,0	2,0	18,0	29,8	-1,0	0,0	0,0	18,0	29,8	0,0	0,0	0,0		
32	06/06/2012 16.30	25,0	29,9	-1,0	0,0	5,0	25,0	30,0	-1,0	-1,0	2,0	25,0	29,8	0,0	1,0	1,0	25,0	29,8	0,0	1,0	0,0		
33	13/06/2012 08.30	20,0	29,9	0,0	0,0	5,0	20,0	30,0	-1,0	-1,0	4,0	20,0	29,8	-1,0	0,0	0,0	20,0	29,8	-1,0	0,0	0,0		
34	20/06/2012 16.30	31,0	29,9	0,0	0,0	3,0	31,0	30,0	0,0	-1,0	2,0	31,0	29,8	0,0	1,0	-2,0	31,0	29,8	0,0	1,0	-1,0		
35	28/06/2012 08.30	28,0	29,9	-1,0	0,0	6,0	28,0	30,0	0,0	-1,0	5,0	28,0	29,8	0,0	1,0	1,0	28,0	29,8	-1,0	1,0	1,0		
36	04/07/2012 19.30	29,0	29,9	-1,0	-2,0	4,0	29,0	30,0	-1,0	-4,0	3,0	29,0	29,8	-1,0	-1,0	0,0	29,0	29,8	0,0	0,0	0,0		
37	12/07/2012 08.30	25,0	29,9	-1,0	1,0	6,0	25,0	30,0	0,0	0,0	4,0	25,0	29,8	-1,0	1,0	0,0	25,0	29,8	-1,0	0,0	1,0		
38	18/07/2012 16.30	34,0	29,9	-2,0	0,0	6,0	34,0	30,0	-2,0	-2,0	5,0	34,0	29,8	-2,0	1,0	0,0	34,0	29,8	-2,0	2,0	-1,0		
39	24/07/2012 09.00	23,0	29,9	-2,0	2,0	4,0	23,0	30,0	-2,0	1,0	2,0	23,0	29,8	-3,0	1,0	0,0	23,0	29,8	-2,0	2,0	-1,0		
40	01/08/2012 09.00	26,0	29,9	-2,0	1,0	3,0	26,0	30,0	-2,0	0,0	3,0	26,0	29,8	-3,0	1,0	0,0	26,0	29,8	-3,0	2,0	0,0		
41	09/08/2012 08.30	26,0	29,9	-3,0	-1,0	7,0	26,0	30,0	-2,0	-1,0	5,0	26,0	29,8	-3,0	0,0	1,0	26,0	29,8	-3,0	1,0	1,0		
42	29/08/2012 16.00	30,0	29,9	-3,0	0,0	5,0	30,0	30,0	-2,0	-2,0	4,0	30,0	29,8	-2,0	1,0	0,0	30,0	29,8	-3,0	2,0	0,0		
43	13/09/2012 15.00	22,0	29,9	-2,0	-2,0	7,0	22,0	30,0	-2,0	-2,0	5,0	22,0	29,8	-1,0	1,0	1,0	22,0	29,8	-1,0	0,0	2,0		
44	18/09/2012 08.00	19,0	29,9	-2,0	-1,0	7,0	19,0	30,0	-1,0	-1,0	5,0	19,0	29,8	-2,0	0,0	0,0	19,0	29,8	-2,0	1,0	1,0		
45	26/09/2012 15.00	30,0	29,9	-1,0	0,0	6,0	30,0	30,0	-1,0	-2,0	4,0	30,0	29,8	-1,0	1,0	1,0	30,0	29,8	-1,0	0,0	1,0		
46	04/10/2012 09.00	18,0	29,9	-2,0	-2,0	7,0	18,0	30,0	-2,0	-3,0	5,0	18,0	29,8	-1,0	0,0	2,0	18,0	29,8	-2,0	0,0	1,0		
47	17/10/2012 08.30	14,0	29,9	-5,0	0,0	6,0	14,0	30,0	-4,0	-2,0	6,0	14,0	29,8	-3,0	1,0	2,0	14,0	29,8	-3,0	1,0	1,0		
48	07/11/2012 08.30	14,0	29,9	-3,0	-1,0	7,0	14,0	30,0	-2,0	-1,0	7,0	14,0	29,8	-2,0	2,0	3,0	14,0	29,8	-2,0	1,0	2,0		
49	27/11/2012 08.30	11,0	29,9	-2,0	-1,0	8,0	11,0	30,0	-2,0	-2,0	6,0	11,0	29,8	-3,0	1,0	1,0	11,0	29,8	-2,0	1,0	1,0		
50	17/12/2012 08.30	13,0	29,9	-4,0	-2,0	7,0	13,0	30,0	-4,0	-2,0	6,0	13,0	29,8	-4,0	1,0	2,0	13,0	29,8	-4,0	0,0	1,0		
51	09/01/2013 08.30	10,0	29,9	-3,0	-1,0	8,0	10,0	30,0	-3,0	-2,0	5,0	10,0	29,8	-3,0	1,0	1,0	10,0	29,8	-3,0	0,0	1,0		
52	29/01/2013 08.30	8,0	29,9	-3,0	-1,0	8,0	8,0	30,0	-2,0	-3,0	5,0	8,0	29,8	-4,0	0,0	2,0	8,0	29,8	-4,0	1,0	2,0		
53	07/02/2013 15.00	8,0	29,9	-2,0	0,0	6,0	8,0	30,0	-1,0	-1,0	5,0	8,0	29,8	-2,0	0,0	0,0	8,0	29,8	-2,0	1,0	0,0		
54	14/02/2013 08.30	6,0	29,9	-1,0	-1,0	8,0	6,0	30,0	-1,0	0,0	8,0	6,0	29,8	-2,0	1,0	1,0	6,0	29,8	-2,0	2,0	3,0		
55	19/02/2013 15.30	12,0	29,9	-2,0	0,0	8,0	12,0	30,0	-2,0	-1,0	6,0	12,0	29,8	-3,0	1,0	1,0	12,0	29,8	-3,0	1,0	1,0		
56	27/02/2013 08.30	6,0	29,9	-1																			

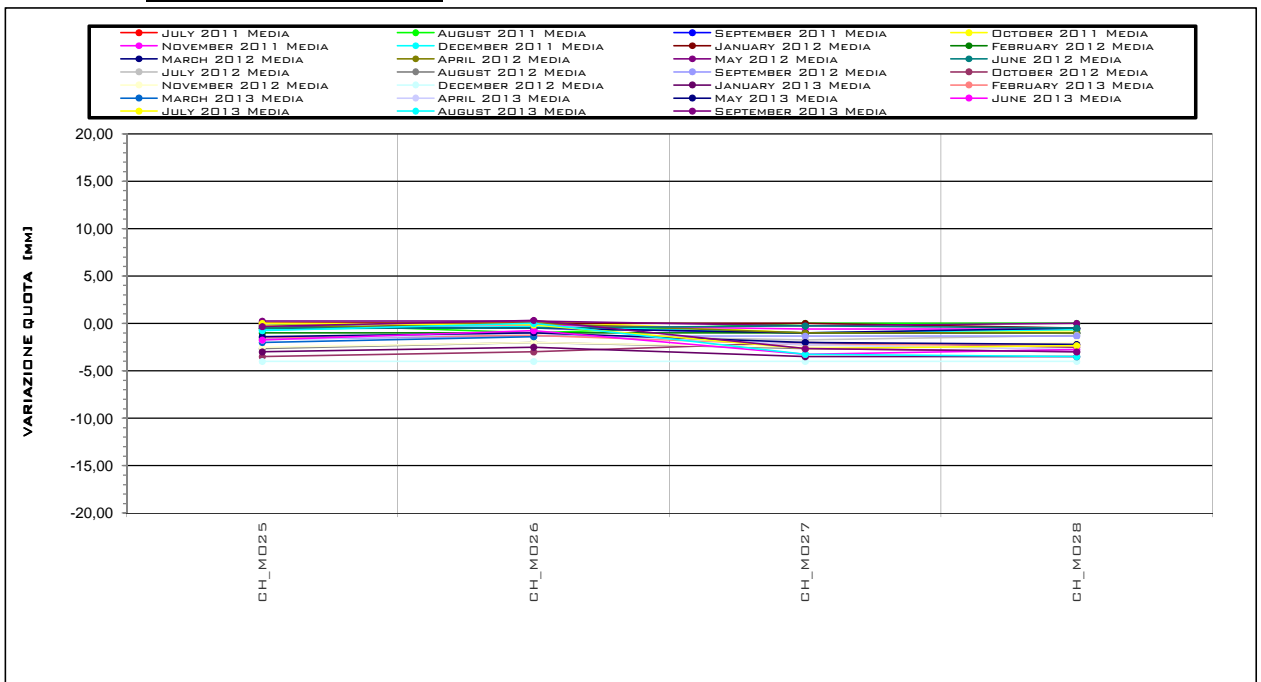


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Il Ordine di Tiranti \ 25-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 25/07/2011  
**Data lettura di zero** 25/07/2011

**GRAFICO QUOTA**



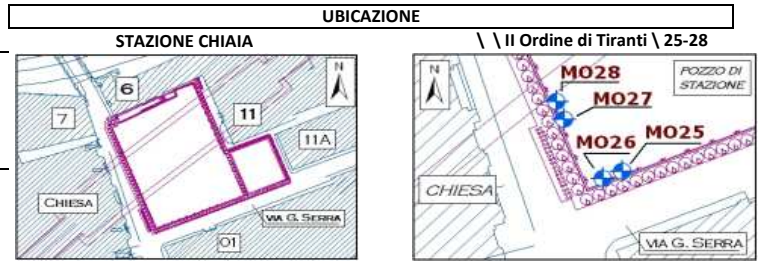
**GRAFICO ISOCRONE**



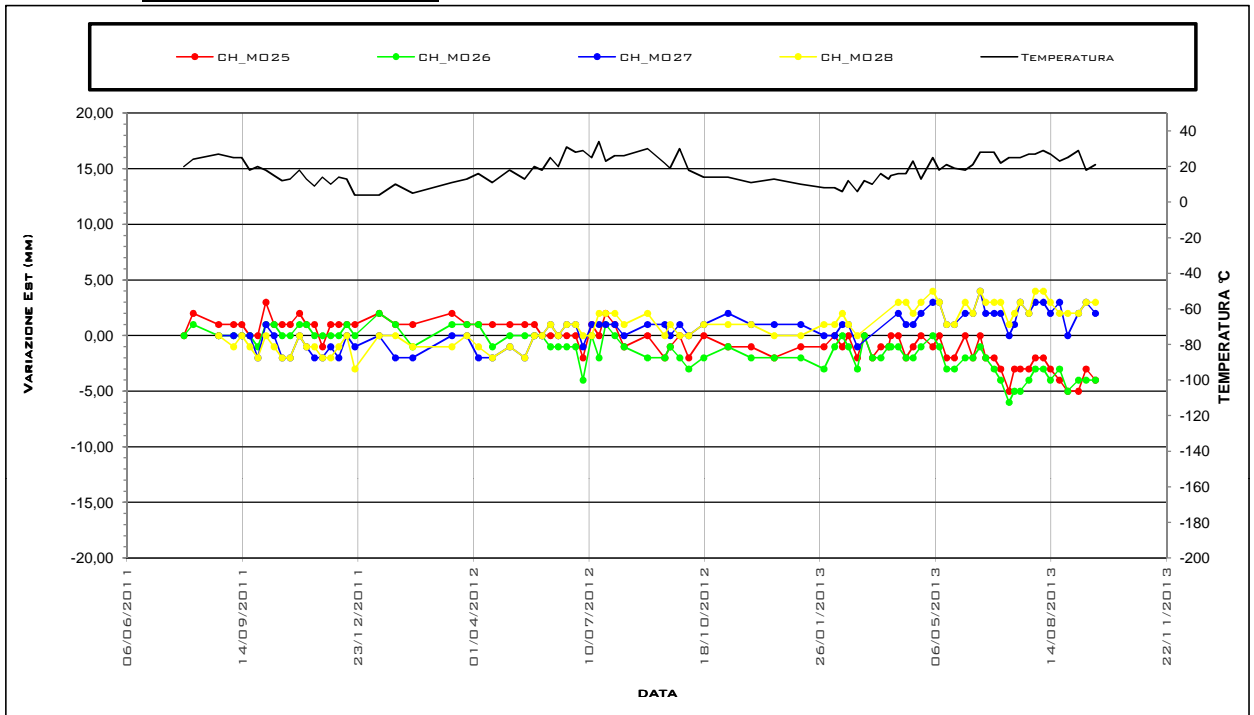




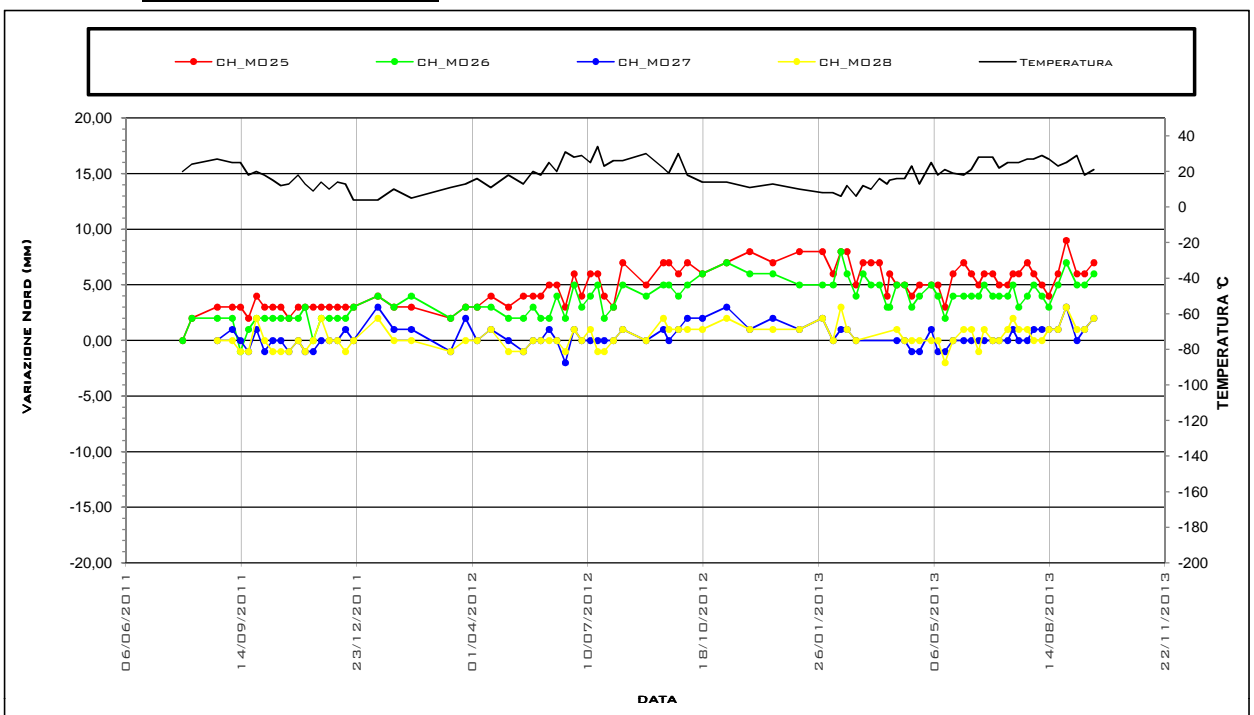
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Il Ordine di Tiranti \ 25-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 25/07/2011  
**Data lettura di zero** 25/07/2011



**GRAFICO EST**



**GRAFICO NORD**





LINEA 6 METROPOLITANA DI NAPOLI - PROGETTO ESECUTIVO

OPERE CIVILI - MONITORAGGIO GEOTECNICO GEOREFERENZIATO  
REPORT DELLE MISURE - STAZIONE CHIAIA

LM6 7FX 2C I 25  
Data: 27/09/13  
Metropolitana di Napoli A.T.I. LM6  
TreEsse Engineering S.r.l.



Ubicazione STAZIONE CHIAIA

Opera \ \ Il Ordine di Tiranti \ 29-32

Tipo Strumento Mire Ottiche

Data posa in opera 24/08/2011

Data lettura di zero 24/08/2011

Ultima Misura 85 in data

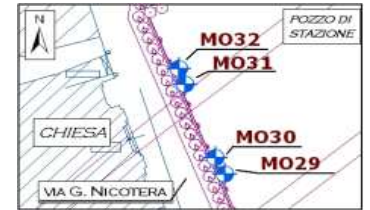
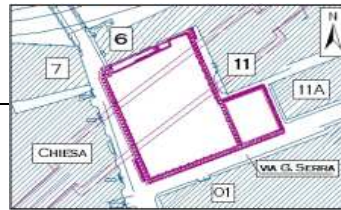
21/09/2013

Letto. n°	DATA	CH_M029					CH_M030					CH_M031					CH_M032							
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1	24/08/2011 08.01	27.0	30,0	0,0	0,0	0,0	27,0	30,0	0,0	0,0	0,0													
2	06/09/2011 08.00	25,0	30,0	-1,0	0,0	0,0	25,0	30,0	-1,0	-1,0	1,0													
3	13/09/2011 08.00	25,0	30,0	0,0	0,0	0,0	25,0	30,0	0,0	0,0	0,0													
4	20/09/2011 08.00	18,0	30,0	-1,0	0,0	0,0	18,0	30,0	-1,0	-1,0	-1,0													
5	27/09/2011 08.00	20,0	30,0	0,0	0,0	1,0	20,0	30,0	0,0	-1,0	1,0													
6	04/10/2011 08.00	18,0	30,0	0,0	0,0	1,0	18,0	30,0	0,0	0,0	0,0													
7	11/10/2011 08.00	15,0	30,0	0,0	0,0	0,0	15,0	30,0	0,0	-1,0	0,0													
8	18/10/2011 08.00	12,0	30,0	0,0	0,0	0,0	12,0	30,0	0,0	0,0	1,0													
9	25/10/2011 08.00	13,0	30,0	0,0	-1,0	-1,0	13,0	30,0	0,0	-1,0	1,0													
10	02/11/2011 10.00	18,0	30,0	1,0	1,0	1,0	18,0	30,0	0,0	1,0	1,0													
11	08/11/2011 08.00	13,0	30,0	-1,0	0,0	0,0	13,0	30,0	-1,0	0,0	1,0													
12	15/11/2011 08.00	9,0	30,0	-1,0	-1,0	-1,0	9,0	30,0	0,0	-1,0	0,0													
13	22/11/2011 08.00	14,0	30,0	-2,0	-2,0	0,0	14,0	30,0	-1,0	-1,0	1,0													
14	29/11/2011 08.00	10,0	30,0	-2,0	0,0	0,0	10,0	30,0	-1,0	-1,0	1,0													
15	29/11/2011 08.01											10,0	27,9	0,0	0,0	0,0	0,0	10,0	28,0	0,0	0,0	0,0	0,0	0,0
16	06/12/2011 08.00	14,0	30,0	-1,0	0,0	1,0	14,0	30,0	0,0	0,0	1,0	14,0	27,9	1,0	0,0	0,0	14,0	28,0	0,0	0,0	0,0	0,0	0,0	0,0
17	13/12/2011 08.00	13,0	30,0	0,0	0,0	0,0	13,0	30,0	0,0	-1,0	-1,0	13,0	27,9	1,0	0,0	0,0	13,0	28,0	0,0	0,0	0,0	0,0	0,0	0,0
18	20/12/2011 08.00	4,0	30,0	0,0	-1,0	0,0	4,0	30,0	0,0	-1,0	2,0	4,0	27,9	1,0	1,0	2,0	4,0	28,0	0,0	-1,0	0,0	-1,0	0,0	0,0
19	10/01/2012 08.00	4,0	30,0	1,0	1,0	1,0	4,0	30,0	1,0	0,0	2,0	4,0	27,9	2,0	1,0	1,0	4,0	28,0	1,0	1,0	0,0	1,0	0,0	1,0
20	24/01/2012 08.00	10,0	30,0	-2,0	1,0	0,0	10,0	30,0	-1,0	0,0	0,0	10,0	27,9	1,0	1,0	2,0	10,0	28,0	-1,0	-1,0	1,0	1,0	1,0	1,0
21	08/02/2012 08.00	5,0	30,0	-1,0	0,0	0,0	5,0	30,0	-1,0	0,0	1,0	5,0	27,9	1,0	1,0	1,0	5,0	28,0	0,0	1,0	1,0	1,0	1,0	1,0
22	13/03/2012 08.00	11,0	30,0	0,0	0,0	0,0	11,0	30,0	0,0	0,0	0,0	11,0	27,9	1,0	3,0	1,0	11,0	28,0	1,0	1,0	1,0	0,0	0,0	0,0
23	26/03/2012 08.00	13,0	30,0	-1,0	1,0	0,0	13,0	30,0	-1,0	0,0	1,0	13,0	27,9	0,0	1,0	1,0	13,0	28,0	-1,0	0,0	0,0	0,0	0,0	0,0
24	05/04/2012 08.00	16,0	30,0	-1,0	0,0	0,0	16,0	30,0	-1,0	0,0	0,0	16,0	27,9	0,0	1,0	0,0	16,0	28,0	0,0	0,0	-1,0	-1,0	-1,0	-1,0
25	17/04/2012 08.00	11,0	30,0	0,0	0,0	1,0	11,0	30,0	0,0	-1,0	1,0	11,0	27,9	2,0	1,0	1,0	11,0	28,0	0,0	1,0	0,0	1,0	0,0	1,0
26	02/05/2012 10.30	18,0	30,0	0,0	0,0	0,0	18,0	30,0	1,0	0,0	0,0	18,0	27,9	2,0	1,0	0,0	18,0	28,0	1,0	0,0	1,0	0,0	1,0	0,0
27	15/05/2012 08.30	13,0	30,0	0,0	-1,0	-1,0	13,0	30,0	0,0	-1,0	-1,0	13,0	27,9	2,0	1,0	-1,0	13,0	28,0	1,0	0,0	0,0	0,0	0,0	0,0
28	23/05/2012 17.30	20,0	30,0	1,0	0,0	1,0	20,0	30,0	0,0	0,0	0,0	20,0	27,9	2,0	1,0	0,0	20,0	28,0	1,0	1,0	1,0	0,0	1,0	0,0
29	30/05/2012 08.30	18,0	30,0	0,0	0,0	0,0	18,0	30,0	0,0	0,0	1,0	18,0	27,9	1,0	1,0	0,0	18,0	28,0	1,0	1,0	1,0	1,0	1,0	0,0
30	06/06/2012 16.30	25,0	30,0	0,0	0,0	1,0	25,0	30,0	0,0	0,0	1,0	25,0	27,9	2,0	1,0	0,0	25,0	28,0	1,0	1,0	1,0	1,0	1,0	0,0
31	13/06/2012 08.30	20,0	30,0	0,0	1,0	1,0	20,0	30,0	0,0	1,0	1,0	20,0	27,9	2,0	2,0	1,0	20,0	28,0	-1,0	1,0	1,0	1,0	1,0	1,0
32	20/06/2012 16.30	31,0	30,0	1,0	1,0	-1,0	31,0	30,0	1,0	1,0	0,0	31,0	27,9	2,0	1,0	-1,0	31,0	28,0	0,0	1,0	1,0	-1,0	-1,0	-1,0
33	28/06/2012 08.30	28,0	30,0	0,0	1,0	1,0	28,0	30,0	1,0	1,0	2,0	28,0	27,9	3,0	2,0	1,0	28,0	28,0	1,0	1,0	1,0	1,0	1,0	1,0
34	04/07/2012 19.30	29,0	30,0	0,0	0,0	0,0	29,0	30,0	0,0	0,0	1,0	29,0	27,9	2,0	2,0	1,0	29,0	28,0	1,0	1,0	1,0	1,0	1,0	1,0
35	12/07/2012 08.30	25,0	30,0	0,0	2,0	2,0	25,0	30,0	1,0	1,0	1,0	25,0	27,9	3,0	1,0	0,0	25,0	28,0	1,0	1,0	-1,0	-1,0	-1,0	-1,0
36	18/07/2012 16.30	34,0	30,0	-1,0	2,0	1,0	34,0	30,0	-1,0	1,0	1,0	34,0	27,9	2,0	1,0	0,0	34,0	28,0	0,0	2,0	-2,0	-2,0	-2,0	-2,0
37	24/07/2012 09.00	23,0	30,0	-1,0	2,0	1,0	23,0	30,0	-1,0	1,0	1,0	23,0	27,9	1,0	-1,0	-1,0	23,0	28,0	0,0	1,0	0,0	1,0	0,0	1,0
38	01/08/2012 09.00	26,0	30,0	-2,0	2,0	0,0	26,0	30,0	-1,0	2,0	2,0	26,0	27,9	1,0	0,0	0,0	26,0	28,0	-1,0	2,0	-1,0	-1,0	-1,0	-1,0
39	09/08/2012 08.30	26,0	30,0	-2,0	2,0	0,0	26,0	30,0	-1,0	0,0	1,0	26,0	27,9	2,0	0,0	0,0	26,0	28,0	0,0	0,0	-1,0	-1,0	-1,0	-1,0
40	29/08/2012 16.00	30,0	30,0	-2,0	2,0	0,0	30,0	30,0	-1,0	1,0	-1,0	30,0	27,9	1,0	2,0	-1,0	30,0	28,0	0,0	0,0	-1,0	-1,0	-1,0	-1,0
41	13/09/2012 15.00	22,0	30,0	0,0	0,0	1,0	22,0	30,0	0,0	0,0	1,0	22,0	27,9	2,0	1,0	0,0	22,0	28,0	2,0	1,0	0,0	0,0	0,0	0,0
42	18/09/2012 17.00	19,0	30,0	-1,0	1,0	1,0	19,0	30,0	-1,0	0,0	1,0	19,0	27,9	1,0	0,0	0,0	19,0	28,0	1,0	0,0	-1,0	-1,0	-1,0	-1,0
43	26/09/2012 15.00	30,0	30,0	-1,0	2,0	0,0	30,0	30,0	0,0	1,0	1,0	30,0	27,9	3,0	3,0	0,0	30,0	28,0	1,0	2,0	0,0	0,0	0,0	0,0
44	04/10/2012 09.00	18,0	30,0	0,0	0,0	2,0	18,0	30,0	-1,0	-1,0	1,0	18,0	27,9	2,0	1,0	1,0	18,0	28,0	1,0	0,0	0,0	0,0	0,0	0,0
45	17/10/2012 08.30	14,0	30,0	-2,0	1,0	1,0	14,0	30,0	-2,0	1,0	1,0	14,0	27,9	1,0	2,0	1,0	14,0	28,0	0,0	1,0	1,0	1,0	1,0	1,0
46	07/11/2012 08.30	14,0	30,0	-1,0	3,0	3,0	14,0	30,0	-2,0	2,0	2,0	14,0	27,9	2,0	4,0	2,0	14,0	28,0	1,0	2,0	1,0	1,0	1,0	1,0
47	27/11/2012 08.30	11,0	30,0	-2,0	2,0	2,0	11,0	30,0	-1,0	1,0	2,0	11,0	27,9	2,0	2,0	1,0	11,0	28,0	1,0	0,0	1,0	1,0	1,0	1,0
48	17/12/2012 08.30	13,0	30,0	-3,0	1,0	1,0	13,0	30,0	-3,0	0,0	1,0	13,0	27,9	0,0	1,0	0,0	13,0	28,0	-1,0	1,0	1,0	1,0	1,0	1,0
49	09/01/2013 08.30	10,0	30,0	-2,0	1,0	1,0	10,0	30,0	-1,0	1,0	1,0	10,0	27,9	0,0	1,0	1,0	10,0	28,0	0,0	0,0	0,0	0,0	0,0	0,0
50	29/01/2013 08.30	8,0	30,0	-3,0	2,0	2,0	8,0	30,0	-3,0	0,0	2,0	8,0	27,9	1,0	2,0	2,0	8,0	28,0	-1,0	1,0	1,0	1,0	1,0	1,0
51	07/02/2013 15.00	8,0	30,0	-1,0	2,0	1,0	8,0	30,0	-1,0	2,0	1,0	8,0	27,9	1,0	2,0	-1,0	8,0	28,0	0,0	1,0	-1,0	-1,0	-1,0	-1,0
52	14/02/2013 08.30	6,0	30,0	-2,0	2,0	2,0	6,0	30,0	-2,0	2,0	2,0	6,0	27,9	1,0	2,0	1,0	6,0	28,0	1,0	3,0	1,0	1,0	1,0	1,0
53	19/02/2013 15.30	12,0	30,0	-2,0	3,0	2,0	12,0	30,0	-2,0	4,0	3,0	12,0	27,9	0,0	3,0	1,0	12,0	28,0	-1,0	2,0	1,0	1,0	1,0	1,0
54	27/02/2013 08.30	6,0	30,0	-2,0	2,0	1,0	6,0	30,0	-1,0	1,0	2,0	6,0	27,9	1,0	2,0	1,0	6,0	28,0	1,0	3,0	1,0	1,0	1,0	1,0
55	05/03/2013 10.30	12,0	30,0	-2,0	4,0	2,0	12,0	30,0	-2,0															

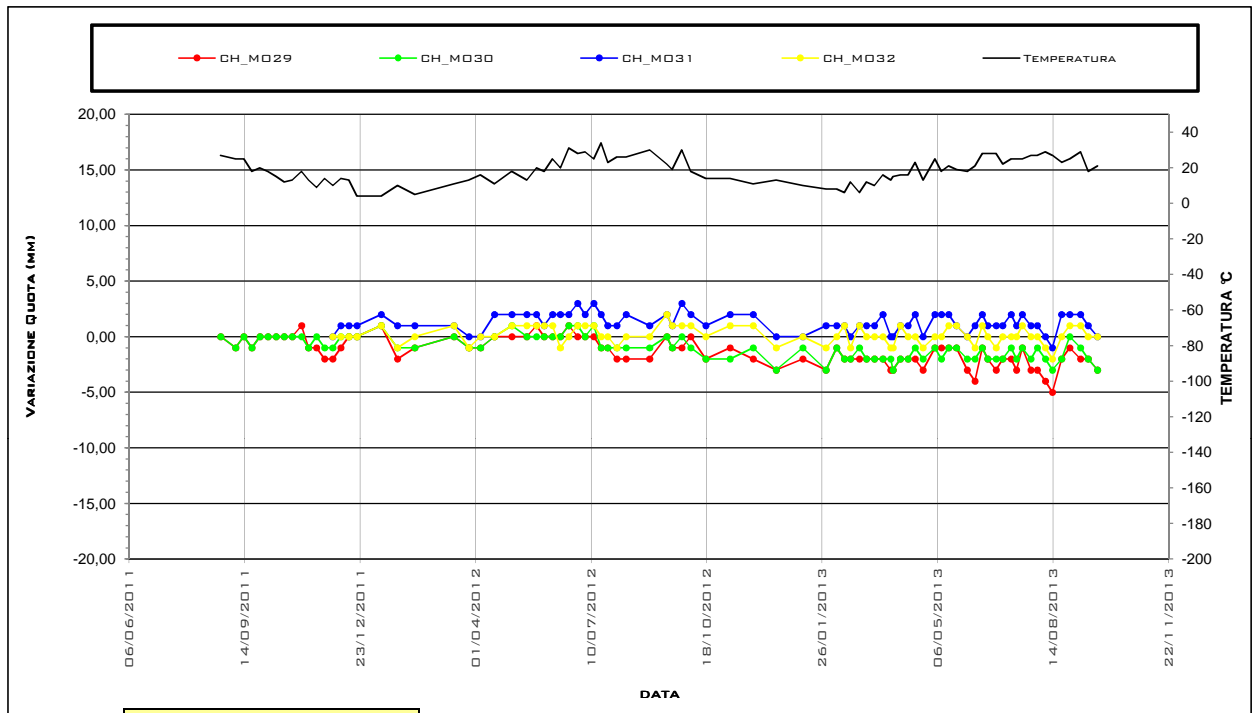


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Il Ordine di Tiranti \ 29-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 24/08/2011  
**Data lettura di zero** 24/08/2011

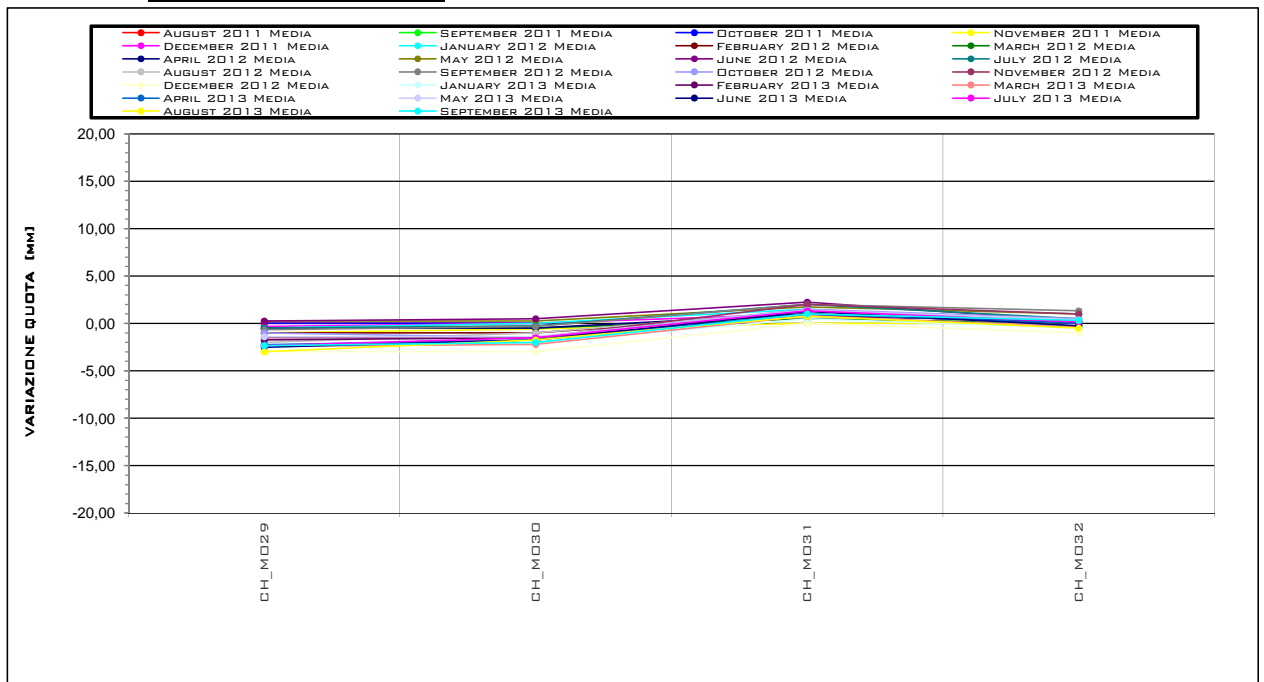
**UBICAZIONE**  
STAZIONE CHIAIA \ \ Il Ordine di Tiranti \ 29-32



**GRAFICO QUOTA**

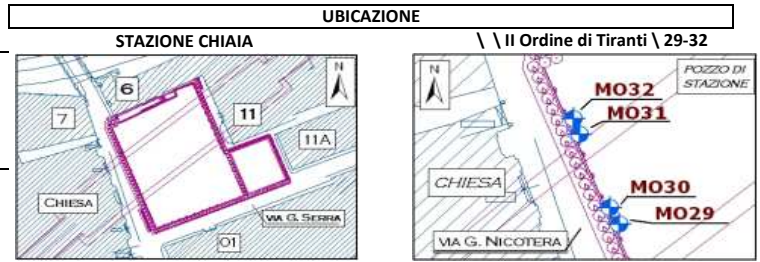


**GRAFICO ISOCRONE**

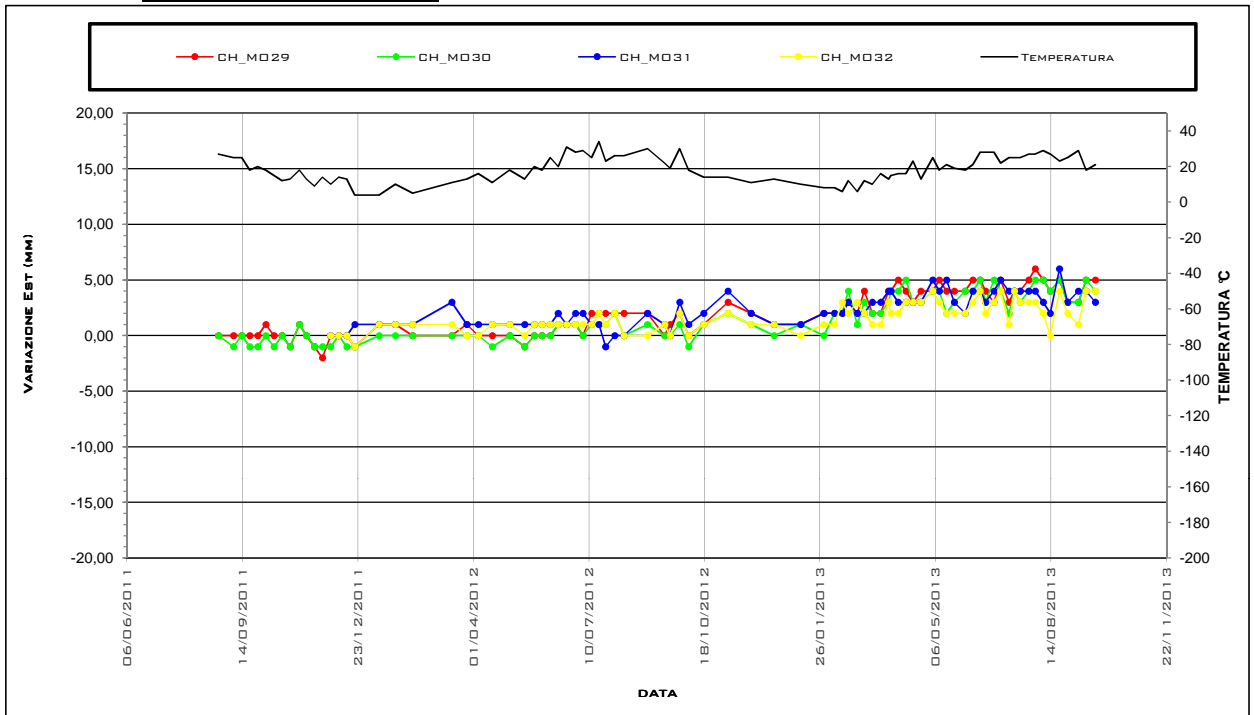




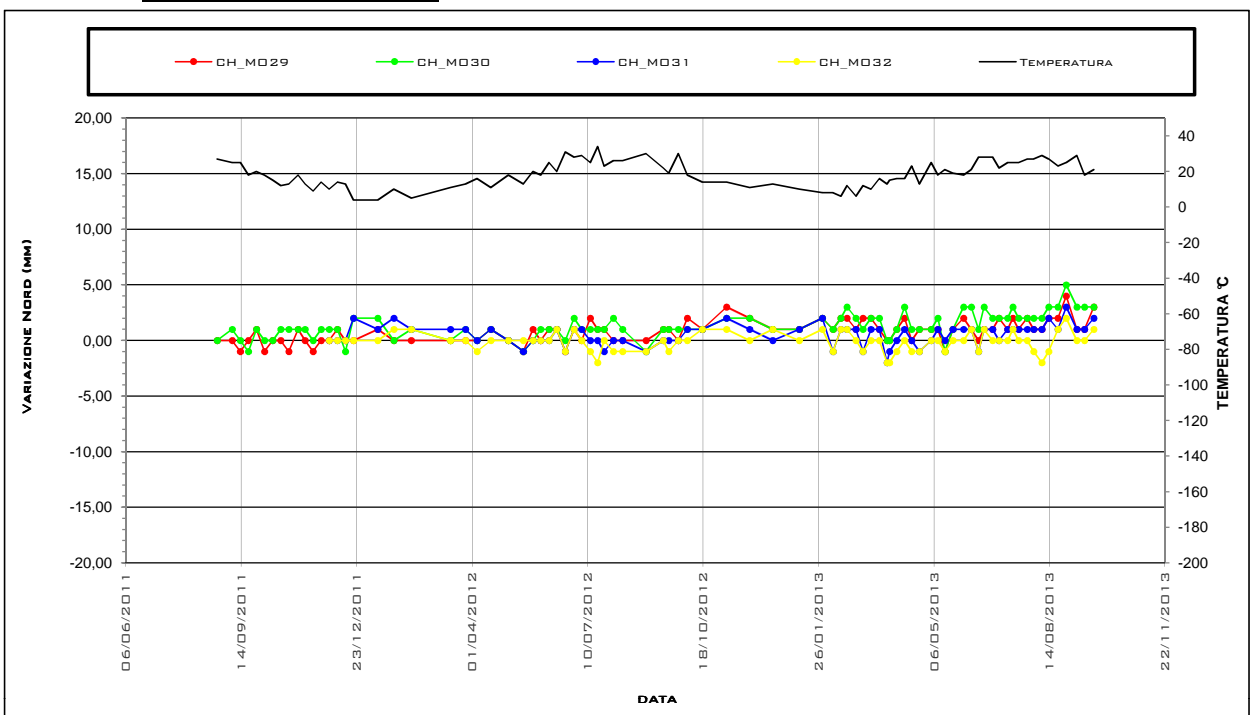
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Il Ordine di Tiranti \ 29-  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 24/08/2011  
**Data lettura di zero** 24/08/2011



**GRAFICO EST**



**GRAFICO NORD**





Ubicazione STAZIONE CHIAIA

Opera \ \ III Ordine - Tufo \ 33-37

Tipo Strumento Mire Ottiche

Data posa in opera 12/07/2012

Data lettura di zero 12/07/2012

Ultima Misura 51 in data 21/09/2013

Letto. n°	DATA	CH_M033					CH_M034					CH_M035					CH_M037A				
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]
1	12/07/2012 08.30	25,0	14,4	0,0	0,0	0,0															
2	18/07/2012 16.30	34,0	14,4	-1,0	-1,0	-1,0	34,0	11,6	0,0	0,0	0,0										
3	24/07/2012 09.00	23,0	14,4	-1,0	1,0	-2,0	23,0	11,6	-2,0	1,0	-1,0										
4	01/08/2012 09.00	26,0	14,4	-2,0	1,0	-3,0	26,0	11,6	-3,0	1,0	-2,0										
5	09/08/2012 08.30	26,0	14,4	-2,0	-1,0	0,0	26,0	11,6	-1,0	0,0	1,0										
6	29/08/2012 16.00	30,0	14,4	-2,0	-1,0	-1,0	30,0	11,6	-3,0	0,0	0,0										
7	13/09/2012 15.00	22,0	14,4	-2,0	-1,0	-2,0	22,0	11,6	0,0	0,0	3,0	22,0	11,8	0,0	0,0	0,0					
8	18/09/2012 08.00	19,0	14,4	0,0	0,0	0,0	19,0	11,6	0,0	-1,0	2,0	19,0	11,8	0,0	0,0	0,0					
9	26/09/2012 15.00	30,0	14,4	-1,0	-1,0	0,0	30,0	11,6	0,0	-1,0	2,0	30,0	11,8	-1,0	0,0	0,0					
10	04/10/2012 09.00	18,0	14,4	-2,0	-3,0	-1,0	18,0	11,6	1,0	-1,0	3,0	18,0	11,8	0,0	-2,0	-1,0					
11	17/10/2012 08.30	14,0	14,4	-1,0	-1,0	-1,0	14,0	11,6	-1,0	-1,0	2,0	14,0	11,8	0,0	0,0	0,0					
12	07/11/2012 08.30	14,0	14,4	0,0	-1,0	0,0	14,0	11,6	-1,0	1,0	3,0	14,0	11,8	-1,0	1,0	0,0					
13	27/11/2012 08.30	11,0	14,4	0,0	-2,0	0,0	11,0	11,6	0,0	0,0	3,0	11,0	11,8	-1,0	-3,0	-2,0					
14	17/12/2012 08.30	13,0	14,4	-2,0	-1,0	0,0	13,0	11,6	-3,0	-1,0	3,0	13,0	11,8	-1,0	0,0	0,0					
15	09/01/2013 08.30	10,0	14,4	-1,0	-2,0	-1,0	10,0	11,6	-1,0	-2,0	3,0	10,0	11,8	-1,0	-3,0	-1,0					
16	29/01/2013 08.30	8,0	14,4	-1,0	-1,0	-1,0	8,0	11,6	-1,0	0,0	1,0	8,0	11,8	0,0	0,0	0,0					
17	07/02/2013 15.00	8,0	14,4	0,0	-1,0	-2,0	8,0	11,6	0,0	-1,0	-1,0	8,0	11,8	1,0	-1,0	1,0					
18	14/02/2013 08.30	6,0	14,4	-1,0	0,0	-1,0	6,0	11,6	0,0	-1,0	0,0	6,0	11,8	-1,0	-1,0	0,0					
19	19/02/2013 15.30	12,0	14,4	-2,0	-1,0	-1,0	12,0	11,6	-1,0	-1,0	1,0	12,0	11,8	0,0	1,0	0,0					
20	27/02/2013 08.30	6,0	14,4	-1,0	-4,0	-4,0	6,0	11,6	0,0	-2,0	0,0	6,0	11,8	-1,0	-1,0	0,0					
21	05/03/2013 10.30	12,0	14,4	-1,0	-2,0	-1,0	12,0	11,6	1,0	-2,0	2,0	12,0	11,8	-1,0	0,0	0,0					
22	12/03/2013 08.30	10,0	14,4	0,0	-1,0	-2,0	10,0	11,6	1,0	-1,0	2,0	10,0	11,8	2,0	0,0	1,0					
23	19/03/2013 16.00	16,0	14,4	0,0	-3,0	-3,0	16,0	11,6	1,0	-2,0	1,0	16,0	11,8	0,0	3,0	1,0					
24	26/03/2013 08.30	13,0	14,4	-1,0	0,0	-4,0	13,0	11,6	0,0	0,0	-1,0	13,0	11,8	0,0	0,0	0,0					
25	28/03/2013 11.00	15,0	14,4	-2,0	-1,0	-4,0	15,0	11,6	-1,0	0,0	-1,0	15,0	11,8	1,0	1,0	1,0					
26	03/04/2013 17.30	16,0	14,4	1,0	1,0	-3,0	16,0	11,6	0,0	0,0	-1,0	16,0	11,8	-1,0	1,0	2,0					
27	10/04/2013 10.30	16,0	14,4	0,0	0,0	-2,0	16,0	11,6	0,0	0,0	1,0	16,0	11,8	0,0	0,0	1,0					
28	16/04/2013 15.00	23,0	14,4	0,0	-2,0	-3,0	23,0	11,6	1,0	-2,0	-1,0	23,0	11,8	0,0	3,0	0,0					
29	23/04/2013 08.30	13,0	14,4	-1,0	0,0	-2,0	13,0	11,6	0,0	0,0	-1,0	13,0	11,8	0,0	2,0	2,0					
30	03/05/2013 14.30	25,0	14,4	1,0	1,0	-3,0	25,0	11,6	1,0	1,0	1,0	25,0	11,8	0,0	4,0	3,0					
31	09/05/2013 08.30	18,0	14,4	1,0	1,0	-2,0	18,0	11,6	1,0	0,0	1,0	18,0	11,8	-1,0	2,0	2,0					
32	15/05/2013 14.30	21,0	14,4	2,0	-2,0	-3,0	21,0	11,6	1,0	-1,0	-2,0	21,0	11,8	-1,0	4,0	1,0					
33	22/05/2013 08.30	19,0	14,4	1,0	-1,0	-2,0	19,0	11,6	0,0	-1,0	0,0	19,0	11,8	-1,0	3,0	1,0					
34	31/05/2013 15.30	18,0	14,4	-1,0	1,0	0,0	18,0	11,6	0,0	1,0	1,0	18,0	11,8	1,0	1,0	0,0					
35	07/06/2013 08.30	21,0	14,4	0,0	-2,0	-2,0	21,0	11,6	0,0	-1,0	1,0	21,0	11,8	-1,0	2,0	2,0					
36	13/06/2013 14.30	28,0	14,4	1,0	0,0	-3,0	28,0	11,6	2,0	2,0	0,0	28,0	11,8	1,0	3,0	1,0					
37	18/06/2013 09.00	28,0	14,4	1,0	-1,0	-1,0	28,0	11,6	1,0	-1,0	1,0	28,0	11,8	0,0	1,0	2,0					
38	25/06/2013 18.00	28,0	14,4	1,0	-1,0	-1,0	28,0	11,6	0,0	-2,0	0,0										
39	01/07/2013 07.30	22,0	14,4	0,0	-2,0	-1,0	22,0	11,6	0,0	-2,0	1,0	22,0	11,8	1,0	4,0	3,0	22,0	10,6	0,0	0,0	0,0
40	08/07/2013 17.30	25,0	14,4	0,0	-5,0	-2,0	25,0	11,6	1,0	-5,0	-1,0	25,0	11,8	2,0	4,0	4,0	25,0	10,6	-1,0	-2,0	0,0
41	13/07/2013 07.30	25,0	14,4	-1,0	-3,0	-1,0	25,0	11,6	0,0	-4,0	2,0	25,0	11,8	0,0	4,0	3,0	25,0	10,6	-1,0	0,0	2,0
42	18/07/2013 07.30	25,0	14,4	1,0	-3,0	-1,0	25,0	11,6	1,0	-3,0	0,0	25,0	11,8	0,0	4,0	3,0	25,0	10,6	-1,0	-1,0	1,0
43	25/07/2013 18.00	27,0	14,4	0,0	-2,0	-1,0	27,0	11,6	0,0	-3,0	-1,0	27,0	11,8	1,0	5,0	4,0	27,0	10,6	-1,0	1,0	2,0
44	31/07/2013 09.00	27,0	14,4	0,0	0,0	-1,0	27,0	11,6	1,0	-1,0	0,0	27,0	11,8	-1,0	4,0	5,0	27,0	10,6	-2,0	-1,0	2,0
45	07/08/2013 09.00	29,0	14,4	-1,0	0,0	-2,0	29,0	11,6	0,0	-1,0	-1,0	29,0	11,8	-1,0	4,0	3,0	29,0	10,6	-3,0	1,0	0,0
46	13/08/2013 09.00	27,0	14,4	-2,0	-1,0	-3,0	27,0	11,6	-1,0	-2,0	-2,0	27,0	11,8	0,0	5,0	2,0	27,0	10,6	-3,0	2,0	-1,0
47	21/08/2013 07.30	23,0	14,4	1,0	-2,0	0,0	23,0	11,6	1,0	-1,0	2,0	23,0	11,8	1,0	7,0	3,0	23,0	10,6	-1,0	2,0	2,0
48	28/08/2013 10.30	25,0	14,4	1,0	-3,0	1,0	25,0	11,6	2,0	-4,0	4,0	25,0	11,8	1,0	6,0	4,0	25,0	10,6	-1,0	3,0	3,0
49	06/09/2013 17.30	29,0	14,4	1,0	-3,0	-1,0	29,0	11,6	0,0	-3,0	1,0	29,0	11,8	2,0	6,0	3,0					
50	13/09/2013 07.30	18,0	14,4	0,0	-2,0	-2,0	18,0	11,6	0,0	-2,0	0,0	18,0	11,8	1,0	6,0	4,0	18,0	10,6	1,0	-1,0	2,0
51	21/09/2013 09.30	21,0	14,4	-1,0	-2,0	0,0	21,0	11,6	1,0	-2,0	2,0	21,0	11,8	2,0	7,0	3,0	21,0	10,6	-1,0	2,0	0,0

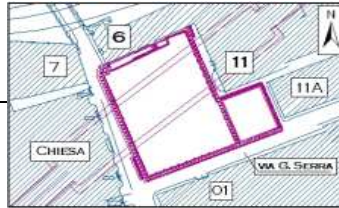


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ III Ordine - Tufo \ 33-37  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 12/07/2012  
**Data lettura di zero** 12/07/2012

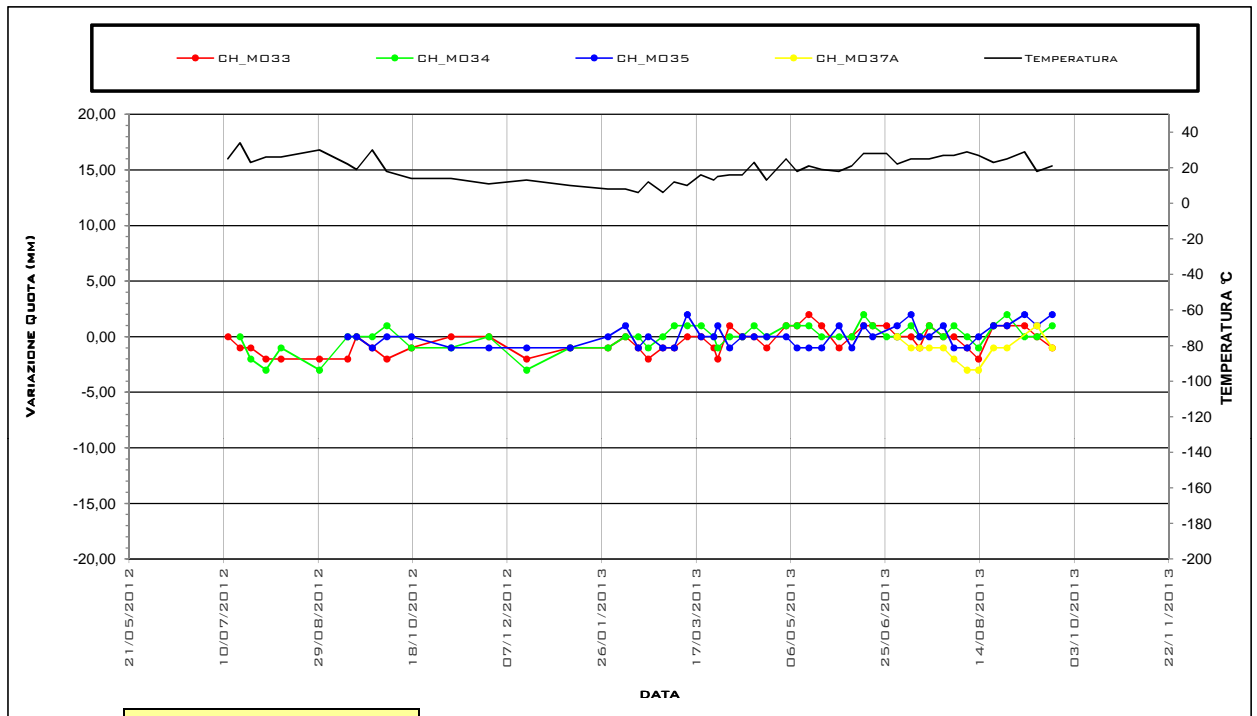
**UBICAZIONE**

**STAZIONE CHIAIA**

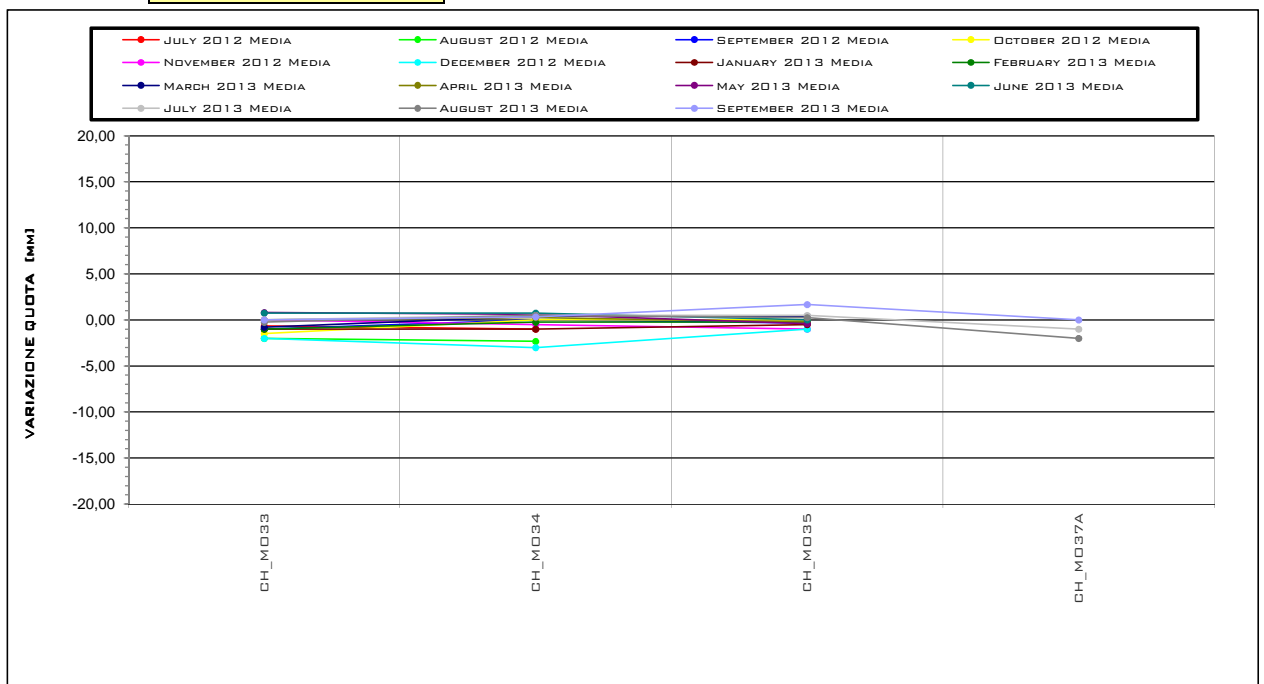
\ \ III Ordine - Tufo \ 33-37



**GRAFICO QUOTA**

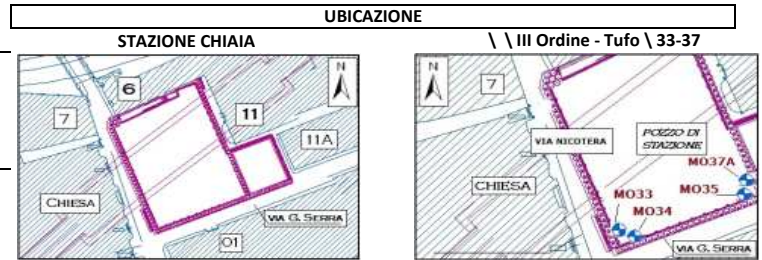


**GRAFICO ISOCRONE**

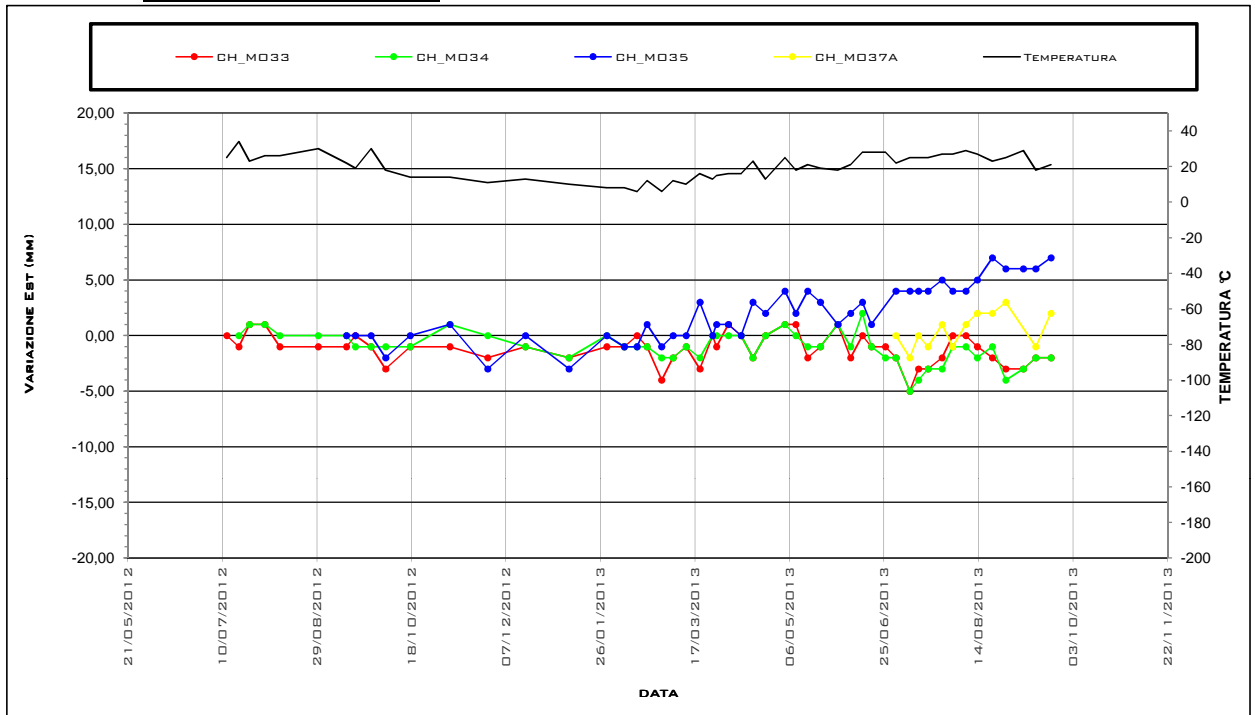




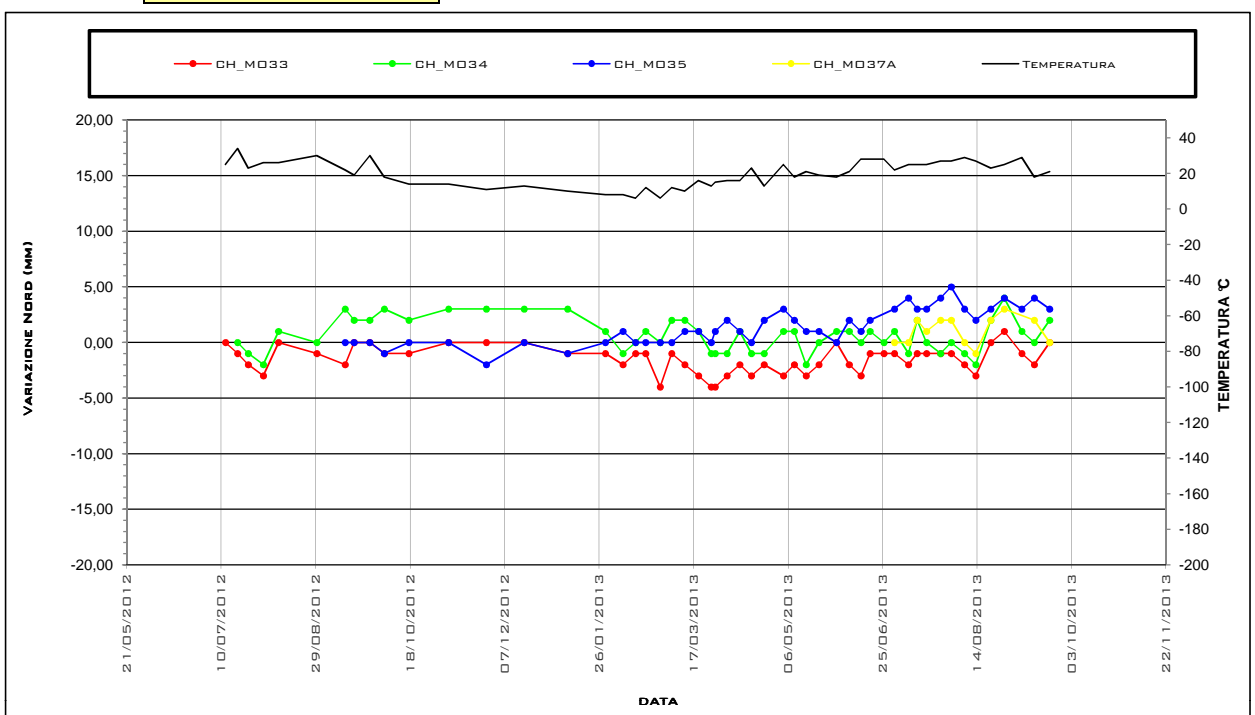
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ III Ordine - Tufo \ 33-37  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 12/07/2012  
**Data lettura di zero** 12/07/2012



**GRAFICO EST**



**GRAFICO NORD**





**Ubicazione** STAZIONE CHIAIA

**Opera** \ \ IV Ordine - Tufo \ 36A

**Tipo Strumento** Mire Ottiche

**Data posa in opera** 13/09/2012

**Data lettura di zero** 13/09/2012

**Ultima** 40 **in**  
**Misura** data **21/09/2013**

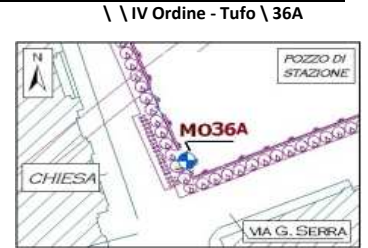
Letto. n°	DATA	CH_M036					CH_M036A				
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]
1	13/09/2012 15.00	22,0	7,6	0,0	0,0	0,0					
2	18/09/2012 08.00	19,0	7,6	-1,0	0,0	0,0					
3	26/09/2012 15.00	30,0	7,6	0,0	1,0	2,0					
4	04/10/2012 09.00	18,0	7,6	-1,0	-2,0	0,0					
5	17/10/2012 08.30	14,0	7,6	-2,0	0,0	1,0					
6	07/11/2012 08.30	14,0	7,6	-1,0	1,0	2,0					
7	27/11/2012 08.30	11,0	7,6	0,0	1,0	1,0					
8	17/12/2012 08.30	13,0	7,6	-2,0	0,0	2,0					
9	09/01/2013 08.30	10,0	7,6	-1,0	-1,0	0,0					
10	29/01/2013 08.30	8,0	7,6	-2,0	0,0	0,0					
11	07/02/2013 15.00	8,0	7,6	0,0	-1,0	-1,0					
12	14/02/2013 08.30	6,0	7,6	-1,0	0,0	1,0					
13	19/02/2013 15.30	12,0	7,6	-1,0	0,0	1,0					
14	28/03/2013 11.00						15,0	9,3	0,0	0,0	0,0
15	03/04/2013 17.30						16,0	9,3	0,0	3,0	-1,0
16	10/04/2013 10.30						16,0	9,3	0,0	1,0	1,0
17	16/04/2013 15.00						23,0	9,3	0,0	2,0	-1,0
18	23/04/2013 08.30						13,0	9,3	-1,0	3,0	-1,0
19	03/05/2013 14.30						25,0	9,3	-1,0	5,0	0,0
20	09/05/2013 08.30						18,0	9,3	-2,0	4,0	-1,0
21	15/05/2013 14.30						21,0	9,3	-1,0	2,0	-2,0
22	22/05/2013 08.30						19,0	9,3	-1,0	1,0	-1,0
23	31/05/2013 15.30						18,0	9,3	-2,0	3,0	0,0
24	07/06/2013 08.30						21,0	9,3	-2,0	2,0	-1,0
25	13/06/2013 14.30						28,0	9,3	-1,0	4,0	-2,0
26	18/06/2013 09.00						28,0	9,3	0,0	2,0	0,0
27	25/06/2013 18.00						28,0	9,3	-2,0	3,0	-1,0
28	01/07/2013 07.30						22,0	9,3	-1,0	2,0	-1,0
29	08/07/2013 17.30						25,0	9,3	-1,0	-1,0	-1,0
30	13/07/2013 07.30						25,0	9,3	-2,0	-1,0	2,0
31	18/07/2013 07.30						25,0	9,3	-1,0	0,0	1,0
32	25/07/2013 18.00						27,0	9,3	-1,0	0,0	1,0
33	31/07/2013 09.00						27,0	9,3	-1,0	3,0	2,0
34	07/08/2013 09.00						29,0	9,2	-3,0	2,0	0,0
35	13/08/2013 09.00						27,0	9,2	-4,0	1,0	-1,0
36	21/08/2013 07.30						23,0	9,3	-1,0	1,0	2,0
37	28/08/2013 10.30						25,0	9,3	1,0	0,0	4,0
38	06/09/2013 17.30						29,0	9,3	-1,0	0,0	0,0
39	13/09/2013 07.30						18,0	9,3	-1,0	0,0	1,0
40	21/09/2013 09.30						21,0	9,3	-2,0	1,0	2,0



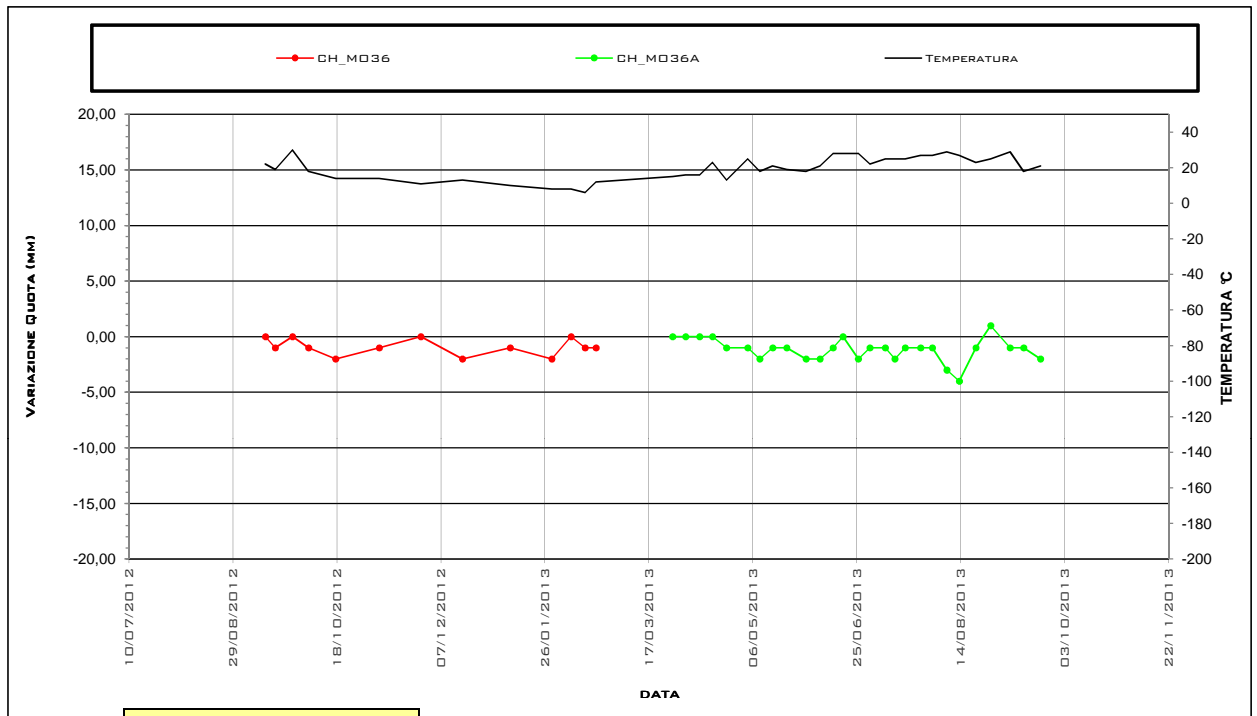


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ IV Ordine - Tufo \ 36A  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 13/09/2012  
**Data lettura di zero** 13/09/2012

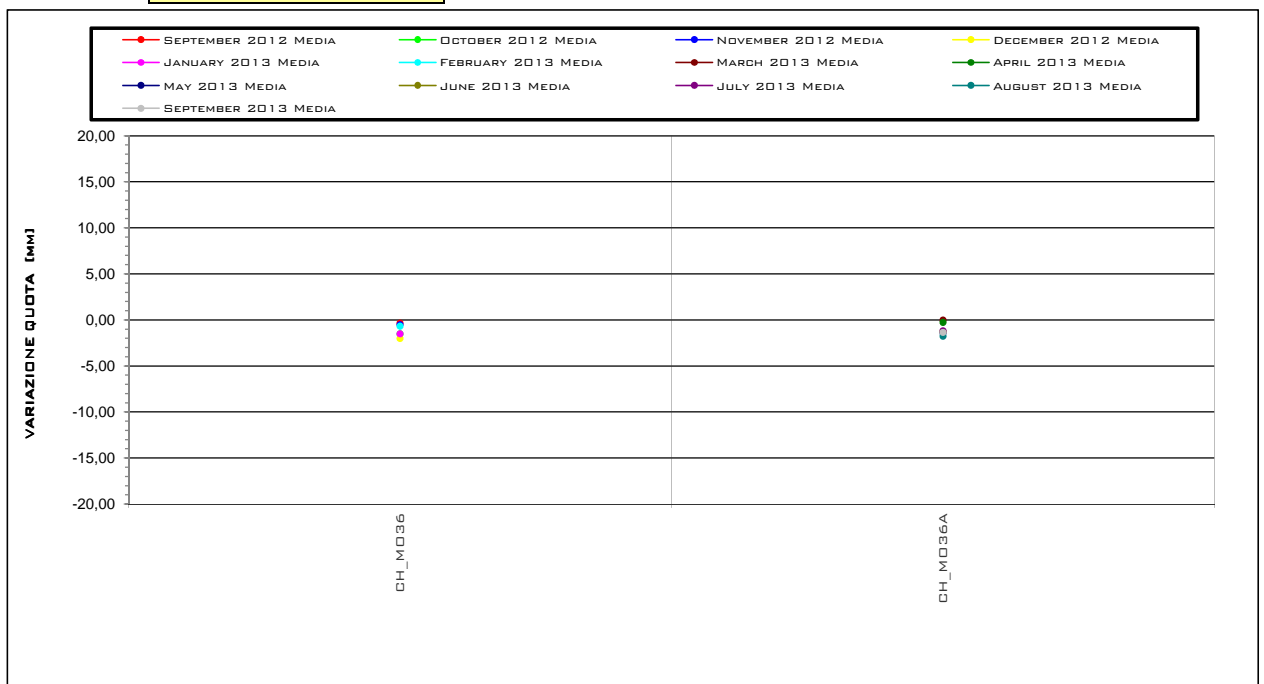
**UBICAZIONE**



**GRAFICO QUOTA**

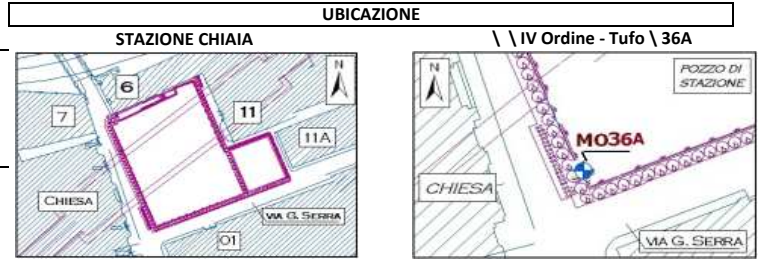


**GRAFICO ISOCRONE**

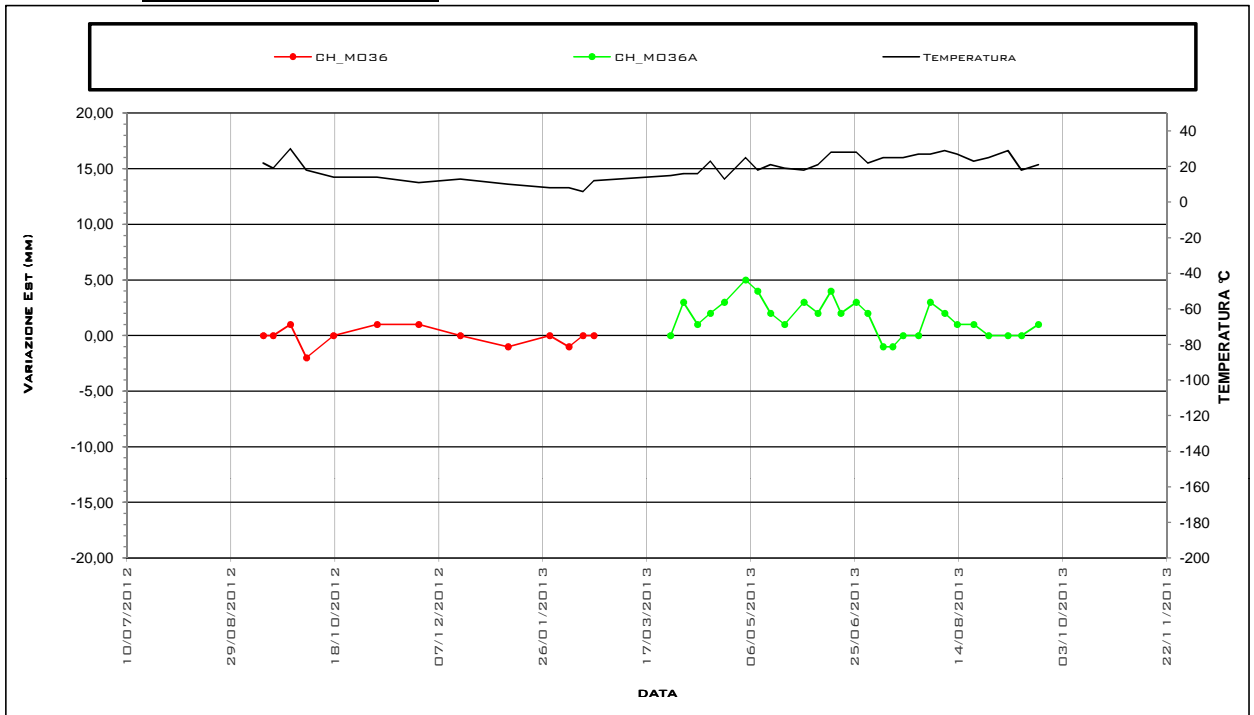




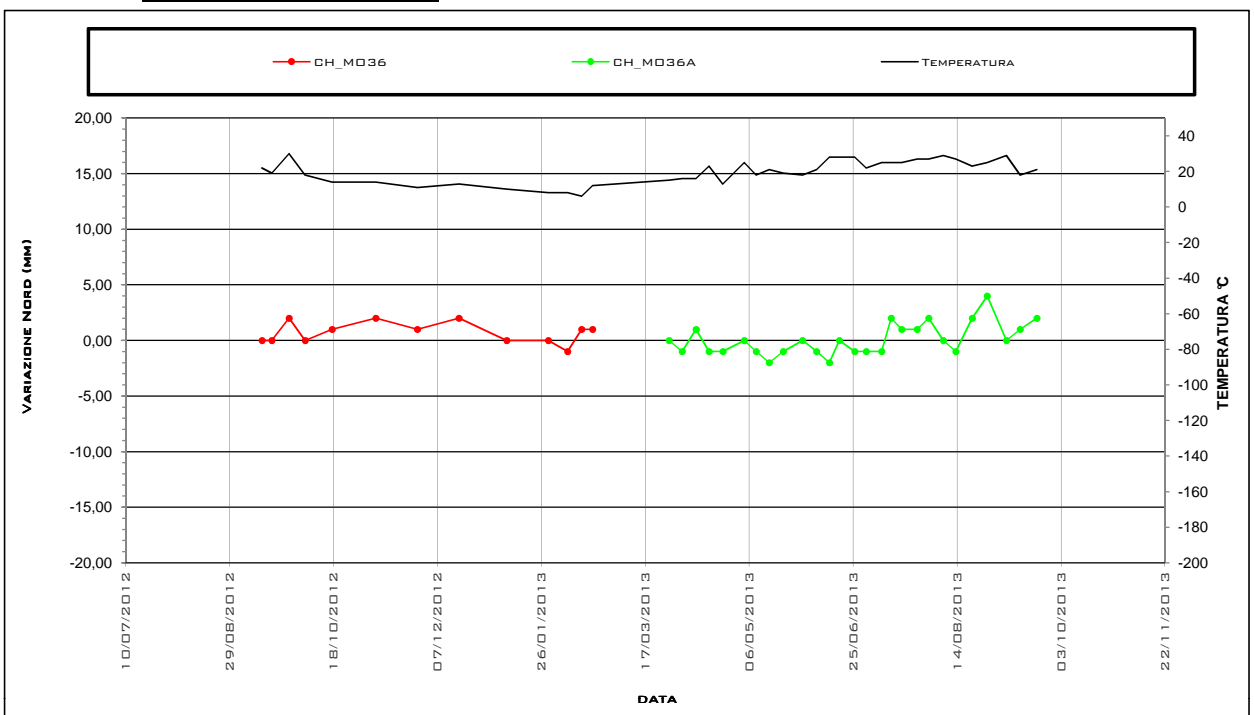
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ IV Ordine - Tufo \ 36A  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 13/09/2012  
**Data lettura di zero** 13/09/2012



**GRAFICO EST**



**GRAFICO NORD**





Ubicazione STAZIONE CHIAIA

Opera \ \ III Ordine - Tufo \ 38-40

Tipo Strumento Mire Ottiche

Data posa in opera 07/02/2013

Data lettura di zero 07/02/2013

Ultima  
Misura

36

in  
data

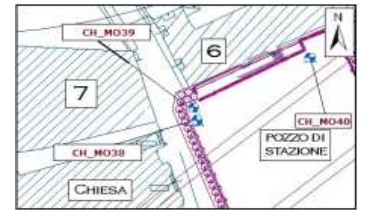
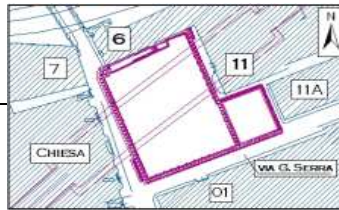
21/09/2013

Letto. n°	DATA	CH_M038					CH_M039					CH_M040				
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]
1	07/02/2013 15.01	8,0	14,7				8,0	14,6	0,0	0,0	0,0					
2	14/02/2013 08.30	6,0	14,7	1,0	0,0	3,0	6,0	14,6	0,0	0,0	3,0					
3	14/02/2013 08.31											6,0	14,8	0,0	0,0	0,0
4	19/02/2013 15.30	12,0	14,7	-2,0	0,0	2,0	12,0	14,6	0,0	1,0	4,0	12,0	14,8	2,0	-1,0	-1,0
5	27/02/2013 08.30	6,0	14,7	0,0	-1,0	2,0	6,0	14,6	1,0	0,0	1,0	6,0	14,8	1,0	0,0	-1,0
6	05/03/2013 10.30	12,0	14,7	0,0	-1,0	3,0	12,0	14,6	0,0	-1,0	3,0	12,0	14,8	1,0	1,0	0,0
7	12/03/2013 08.30	10,0	14,7	-1,0	-1,0	3,0	10,0	14,6	-1,0	-1,0	3,0	10,0	14,8	2,0	1,0	-1,0
8	19/03/2013 16.00	16,0	14,7	0,0	-1,0	2,0	16,0	14,6	2,0	-1,0	3,0	16,0	14,8	3,0	2,0	-1,0
9	26/03/2013 08.30	13,0	14,7	-1,0	0,0	0,0	13,0	14,6	0,0	0,0	-1,0	13,0	14,8	3,0	1,0	-1,0
10	28/03/2013 11.00	15,0	14,7	-2,0	0,0	0,0	15,0	14,6	-1,0	0,0	0,0	15,0	14,8	3,0	1,0	-1,0
11	03/04/2013 17.30	16,0	14,7	0,0	-1,0	0,0	16,0	14,6	2,0	-1,0	1,0	16,0	14,8	2,0	0,0	-2,0
12	10/04/2013 10.30	16,0	14,7	-1,0	-1,0	1,0	16,0	14,6	1,0	-1,0	2,0	16,0	14,8	2,0	1,0	1,0
13	16/04/2013 15.00	23,0	14,7	0,0	-2,0	2,0	23,0	14,6	2,0	-1,0	0,0	23,0	14,8	2,0	1,0	-2,0
14	23/04/2013 08.30	13,0	14,7	-2,0	-2,0	1,0	13,0	14,6	-1,0	-1,0	0,0	13,0	14,8	2,0	-1,0	-1,0
15	03/05/2013 14.30	25,0	14,7	1,0	2,0	2,0	25,0	14,6	2,0	1,0	1,0	25,0	14,8	4,0	3,0	1,0
16	09/05/2013 08.30	18,0	14,7	0,0	-1,0	2,0	18,0	14,6	1,0	-1,0	1,0	18,0	14,8	5,0	2,0	2,0
17	15/05/2013 14.30	21,0	14,7	1,0	0,0	1,0	21,0	14,6	2,0	-1,0	0,0	21,0	14,8	4,0	3,0	0,0
18	22/05/2013 08.30	19,0	14,7	0,0	-2,0	2,0	19,0	14,6	1,0	-4,0	1,0	19,0	14,8	4,0	3,0	1,0
19	31/05/2013 15.30	18,0	14,7	-2,0	-2,0	3,0	18,0	14,6	0,0	-3,0	2,0	18,0	14,8	5,0	2,0	0,0
20	07/06/2013 08.30	21,0	14,7	-1,0	-1,0	3,0	21,0	14,6	0,0	-1,0	1,0	21,0	14,8	5,0	3,0	0,0
21	13/06/2013 14.30	28,0	14,7	0,0	0,0	1,0	28,0	14,6	2,0	0,0	-1,0	28,0	14,8	6,0	4,0	-1,0
22	18/06/2013 09.00	28,0	14,7	-1,0	-2,0	3,0	28,0	14,6	2,0	-2,0	1,0	28,0	14,8	4,0	2,0	1,0
23	25/06/2013 18.00	28,0	14,7	0,0	-1,0	2,0	28,0	14,6	2,0	-1,0	1,0	28,0	14,8	4,0	4,0	0,0
24	01/07/2013 07.30	22,0	14,7	0,0	0,0	3,0	22,0	14,6	2,0	-1,0	2,0	22,0	14,8	3,0	3,0	-1,0
25	08/07/2013 17.30	25,0	14,7	0,0	-1,0	2,0	25,0	14,6	3,0	-2,0	0,0	25,0	14,8	4,0	4,0	1,0
26	13/07/2013 07.30	25,0	14,7	0,0	0,0	2,0	25,0	14,6	1,0	-2,0	2,0	25,0	14,8	4,0	2,0	1,0
27	18/07/2013 07.30	25,0	14,7	-1,0	-2,0	2,0	25,0	14,6	2,0	-3,0	1,0	25,0	14,8	4,0	2,0	0,0
28	25/07/2013 18.00	27,0	14,7	0,0	-1,0	2,0	27,0	14,6	2,0	-1,0	1,0	27,0	14,8	5,0	2,0	0,0
29	31/07/2013 09.00	27,0	14,7	0,0	-1,0	2,0	27,0	14,6	2,0	-1,0	0,0	27,0	14,8	5,0	3,0	-1,0
30	07/08/2013 09.00	29,0	14,7	-2,0	-2,0	3,0	29,0	14,6	1,0	-3,0	1,0	29,0	14,8	4,0	4,0	1,0
31	13/08/2013 09.00	27,0	14,7	-3,0	-3,0	4,0	27,0	14,6	0,0	-4,0	2,0	27,0	14,8	3,0	4,0	2,0
32	21/08/2013 07.30	23,0	14,7	1,0	2,0	4,0	23,0	14,6	2,0	0,0	2,0	23,0	14,8	4,0	4,0	0,0
33	28/08/2013 10.30	25,0	14,7	1,0	-1,0	4,0	25,0	14,6	3,0	-2,0	4,0	25,0	14,8	6,0	3,0	-1,0
34	06/09/2013 17.30	29,0	14,7	0,0	-2,0	2,0	29,0	14,6	3,0	-3,0	0,0	29,0	14,8	7,0	1,0	-2,0
35	13/09/2013 07.30	18,0	14,7	-1,0	-1,0	3,0	18,0	14,6	1,0	-2,0	0,0	18,0	14,8	7,0	1,0	-2,0
36	21/09/2013 09.30	21,0	14,7	-1,0	-2,0	2,0	21,0	14,6	2,0	-2,0	2,0	21,0	14,8	8,0	0,0	-3,0

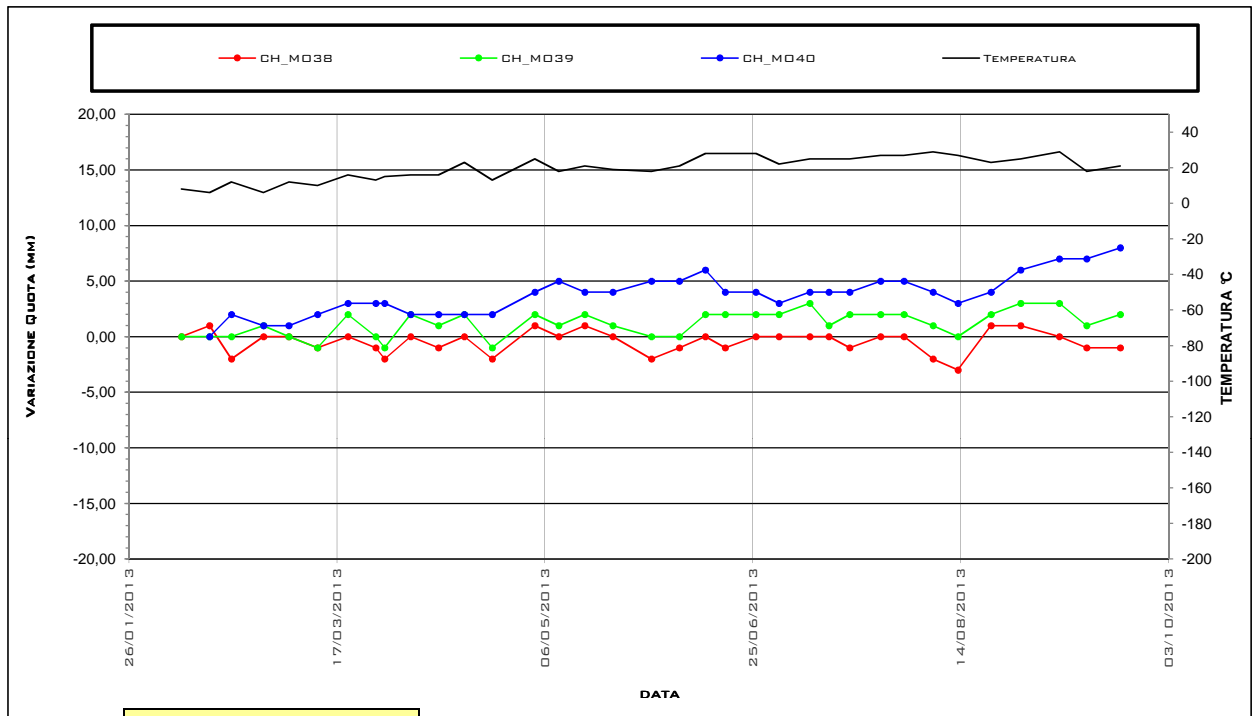


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ III Ordine - Tufo \ 38-40  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 07/02/2013  
**Data lettura di zero** 07/02/2013

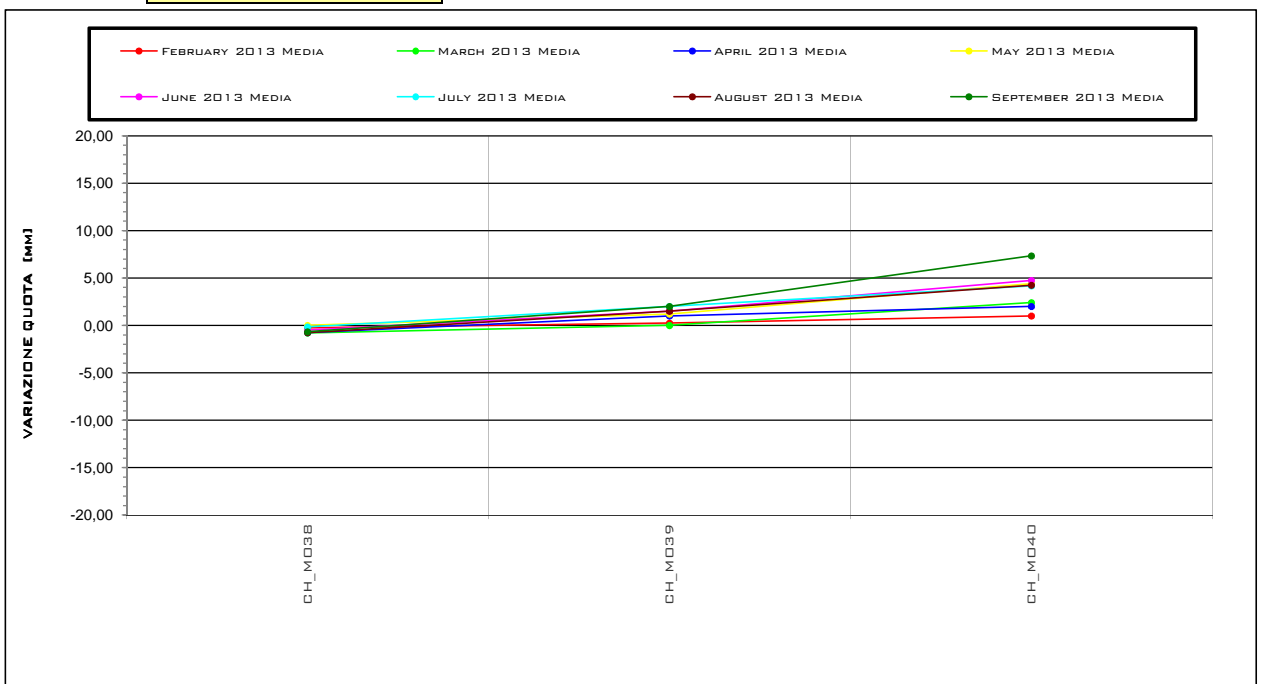
**UBICAZIONE**  
STAZIONE CHIAIA \ \ III Ordine - Tufo \ 38-40



**GRAFICO QUOTA**

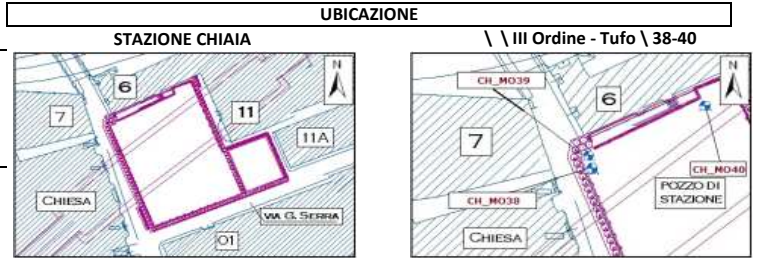


**GRAFICO ISOCRONE**

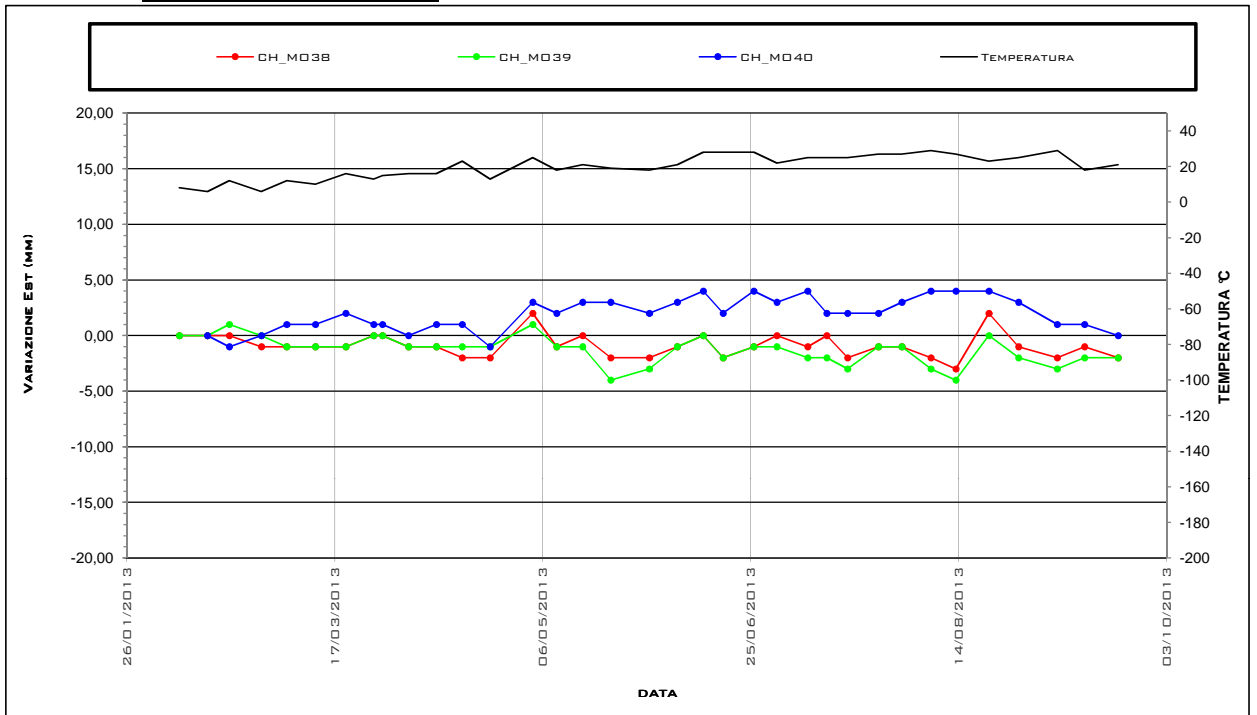




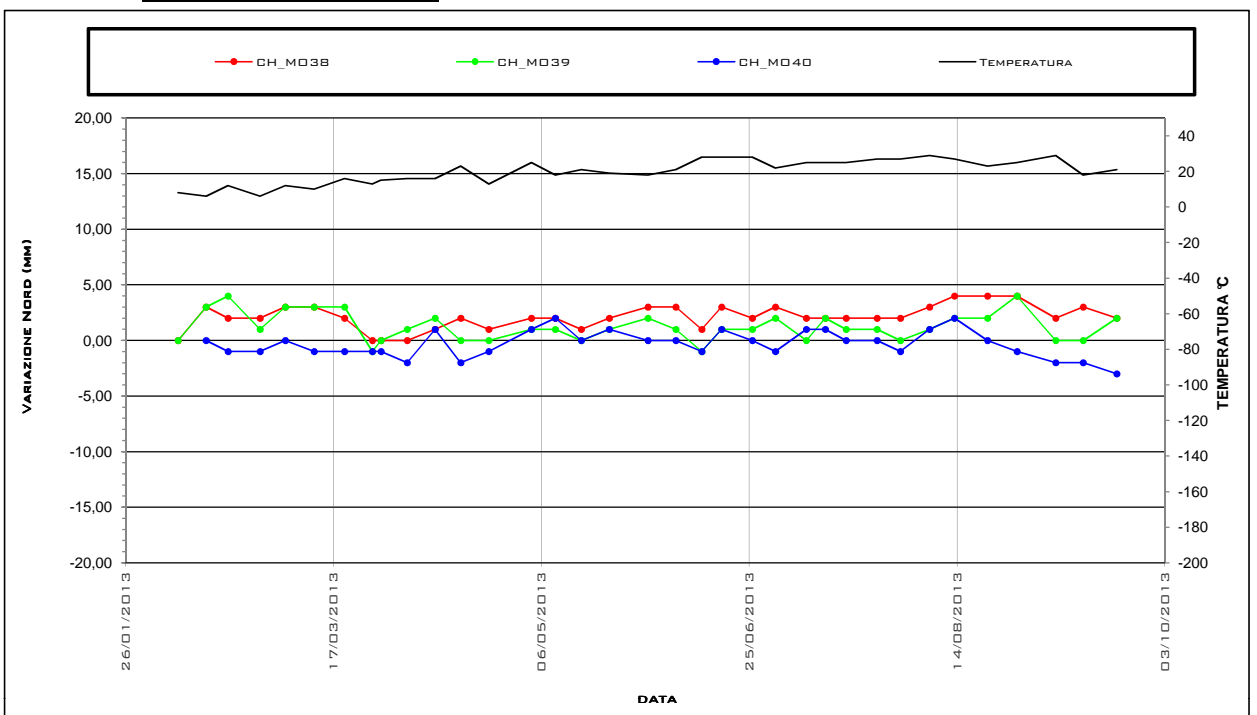
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ III Ordine - Tufo \ 38-40  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 07/02/2013  
**Data lettura di zero** 07/02/2013



**GRAFICO EST**



**GRAFICO NORD**





Ubicazione STAZIONE CHIAIA

Opera \ \ IV Ordine - Tufo \ 41-44

Tipo Strumento Mire Ottiche

Data posa in opera 05/03/2013

Data lettura di zero 05/03/2013

Ultima Misura 31 in data 27/09/2013

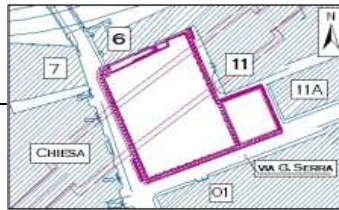
Lett. n°	DATA	CH_M041					CH_M042					CH_M043					CH_M044				
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]
1	05/03/2013 10.30	12,0	9,5	0,0	0,0	0,0	12,0	9,4	0,0	0,0	0,0	12,0	9,7	0,0	0,0	0,0	12,0	10,2	0,0	0,0	0,0
2	12/03/2013 08.30	10,0	9,5	1,0	1,0	3,0	10,0	9,4	-1,0	-1,0	2,0	10,0	9,7	1,0	1,0	-2,0	10,0	10,2	0,0	-1,0	-2,0
3	19/03/2013 16.00	16,0	9,5	0,0	0,0	4,0	16,0	9,4	1,0	-1,0	2,0	16,0	9,7	1,0	2,0	-2,0	16,0	10,2	1,0	0,0	-2,0
4	26/03/2013 08.30	13,0	9,5	0,0	2,0	0,0	13,0	9,4	0,0	2,0	-2,0	13,0	9,7	0,0	1,0	-2,0	13,0	10,2	0,0	0,0	-3,0
5	28/03/2013 11.00	15,0	9,5	-2,0	0,0	1,0	15,0	9,4	0,0	0,0	0,0	15,0	9,7	1,0	1,0	-2,0	15,0	10,2	0,0	0,0	-2,0
6	03/04/2013 17.30	16,0	9,5	-3,0	0,0	2,0	16,0	9,4	1,0	0,0	0,0	16,0	9,7	-1,0	1,0	-4,0	16,0	10,2	-2,0	-1,0	-3,0
7	10/04/2013 10.30	16,0	9,5	-1,0	-1,0	2,0	16,0	9,4	0,0	0,0	2,0	16,0	9,7	1,0	1,0	-2,0	16,0	10,2	1,0	0,0	-1,0
8	16/04/2013 15.00	23,0	9,5	0,0	0,0	1,0	23,0	9,4	2,0	0,0	0,0	23,0	9,7	1,0	1,0	-4,0	23,0	10,2	-2,0	-1,0	-3,0
9	23/04/2013 08.30	13,0	9,5	0,0	0,0	0,0	13,0	9,4	0,0	0,0	0,0	13,0	9,7	0,0	0,0	-2,0	13,0	10,2	-1,0	-1,0	-1,0
10	03/05/2013 14.30	25,0	9,5	0,0	1,0	1,0	25,0	9,4	0,0	1,0	0,0	25,0	9,7	0,0	5,0	-3,0	25,0	10,2	-2,0	1,0	-2,0
11	09/05/2013 08.30	18,0	9,5	-1,0	-1,0	2,0	18,0	9,4	1,0	-1,0	1,0	18,0	9,7	0,0	3,0	-2,0	18,0	10,2	-1,0	-2,0	-2,0
12	15/05/2013 14.30	21,0	9,5	-1,0	0,0	2,0	21,0	9,4	1,0	1,0	0,0	21,0	9,7	1,0	4,0	-4,0	21,0	10,2	-1,0	0,0	-4,0
13	22/05/2013 08.30	19,0	9,5	0,0	-1,0	3,0	19,0	9,4	0,0	-1,0	0,0	19,0	9,7	1,0	4,0	-5,0	19,0	10,2	-1,0	0,0	-3,0
14	31/05/2013 15.30	18,0	9,5	-1,0	-1,0	3,0	18,0	9,4	-1,0	-2,0	1,0	18,0	9,7	1,0	4,0	-4,0	18,0	10,2	0,0	-1,0	-3,0
15	07/06/2013 08.30	21,0	9,5	-1,0	-1,0	2,0	21,0	9,4	-1,0	-1,0	2,0	21,0	9,7	1,0	4,0	-5,0	21,0	10,2	1,0	0,0	-4,0
16	13/06/2013 14.30	28,0	9,5	0,0	0,0	0,0	28,0	9,4	1,0	-1,0	0,0	28,0	9,7	2,0	5,0	-5,0	28,0	10,2	1,0	1,0	-4,0
17	18/06/2013 09.00	28,0	9,5	0,0	0,0	2,0	28,0	9,4	0,0	-2,0	1,0	28,0	9,7	1,0	3,0	-4,0	28,0	10,2	-1,0	0,0	-2,0
18	25/06/2013 18.00	28,0	9,5	0,0	0,0	2,0	28,0	9,4	0,0	0,0	1,0					28,0	10,2	0,0	0,0	-4,0	
19	01/07/2013 07.30	22,0	9,5	1,0	0,0	2,0	22,0	9,4	0,0	-1,0	1,0	22,0	9,7	1,0	4,0	-5,0	22,0	10,2	0,0	0,0	-3,0
20	08/07/2013 17.30	25,0	9,5	1,0	0,0	3,0	25,0	9,4	3,0	-1,0	0,0	25,0	9,7	2,0	5,0	-3,0	25,0	10,2	0,0	1,0	-1,0
21	13/07/2013 07.30	25,0	9,5	0,0	0,0	3,0	25,0	9,4	1,0	-2,0	0,0	25,0	9,7	2,0	3,0	-3,0	25,0	10,2	0,0	0,0	-3,0
22	18/07/2013 07.30	25,0	9,5	-1,0	-1,0	2,0	25,0	9,4	2,0	-2,0	0,0	25,0	9,7	1,0	3,0	-4,0	25,0	10,2	-1,0	-1,0	-2,0
23	25/07/2013 18.00	27,0	9,5	1,0	1,0	2,0	27,0	9,4	1,0	-1,0	1,0	27,0	9,7	2,0	4,0	-4,0	27,0	10,2	0,0	-1,0	-2,0
24	31/07/2013 09.00	27,0	9,5	1,0	-1,0	2,0	27,0	9,4	2,0	-2,0	0,0	27,0	9,7	2,0	3,0	-4,0	27,0	10,2	0,0	-1,0	-1,0
25	07/08/2013 09.00	29,0	9,5	0,0	-1,0	3,0	29,0	9,4	0,0	-4,0	1,0	29,0	9,7	1,0	4,0	-3,0	29,0	10,2	-1,0	-3,0	-1,0
26	13/08/2013 09.00	27,0	9,5	-1,0	-2,0	4,0	27,0	9,4	-1,0	-5,0	2,0	27,0	9,7	0,0	5,0	-2,0	27,0	10,2	-1,0	-2,0	-1,0
27	21/08/2013 07.30	23,0	9,5	1,0	1,0	3,0	23,0	9,4	2,0	0,0	1,0	23,0	9,7	2,0	5,0	-5,0	23,0	10,2	-1,0	1,0	-2,0
28	28/08/2013 10.30	25,0	9,5	2,0	-2,0	4,0	25,0	9,4	5,0	-1,0	2,0	25,0	9,7	3,0	4,0	-5,0	25,0	10,2	-1,0	1,0	-1,0
29	06/09/2013 17.30	29,0	9,5	1,0	-2,0	2,0	29,0	9,4	3,0	-1,0	0,0										
30	13/09/2013 07.30	18,0	9,5	0,0	0,0	2,0	18,0	9,4	3,0	0,0	0,0										
31	21/09/2013 09.30						21,0	9,4	3,0	-1,0	1,0										



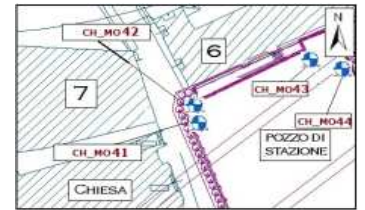
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ IV Ordine - Tufo \ 41-44  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 05/03/2013  
**Data lettura di zero** 05/03/2013

**UBICAZIONE**

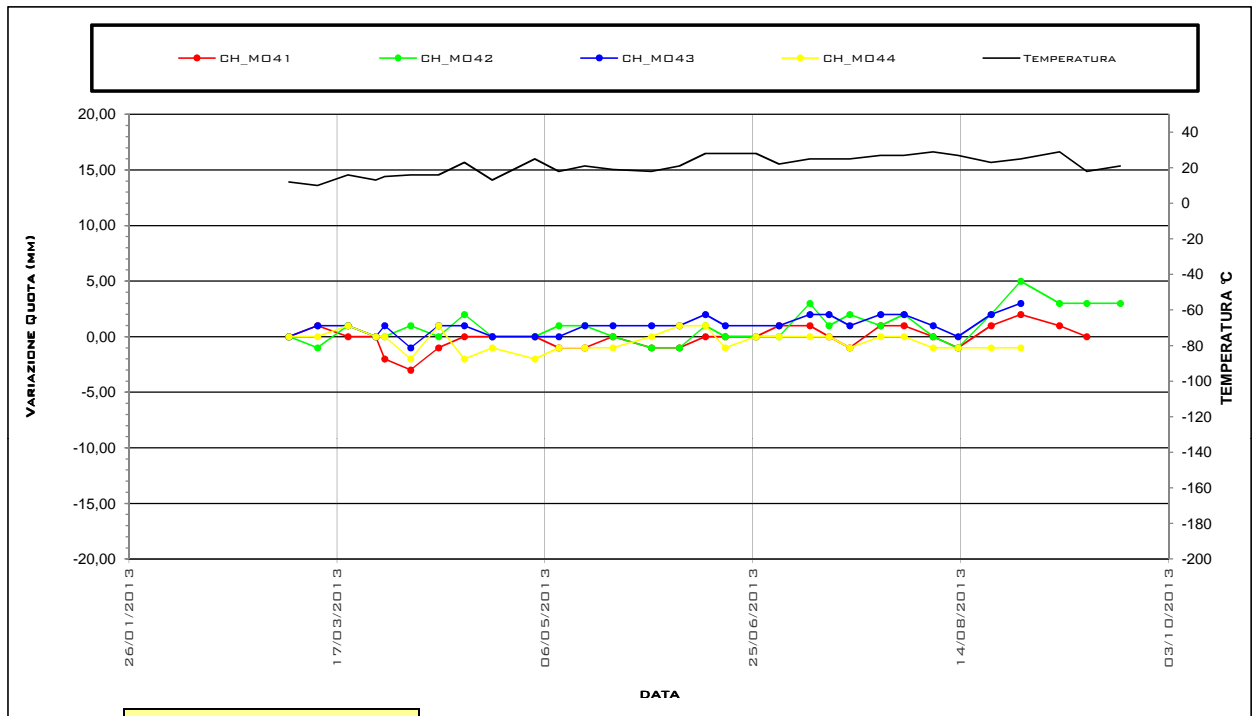
**STAZIONE CHIAIA**



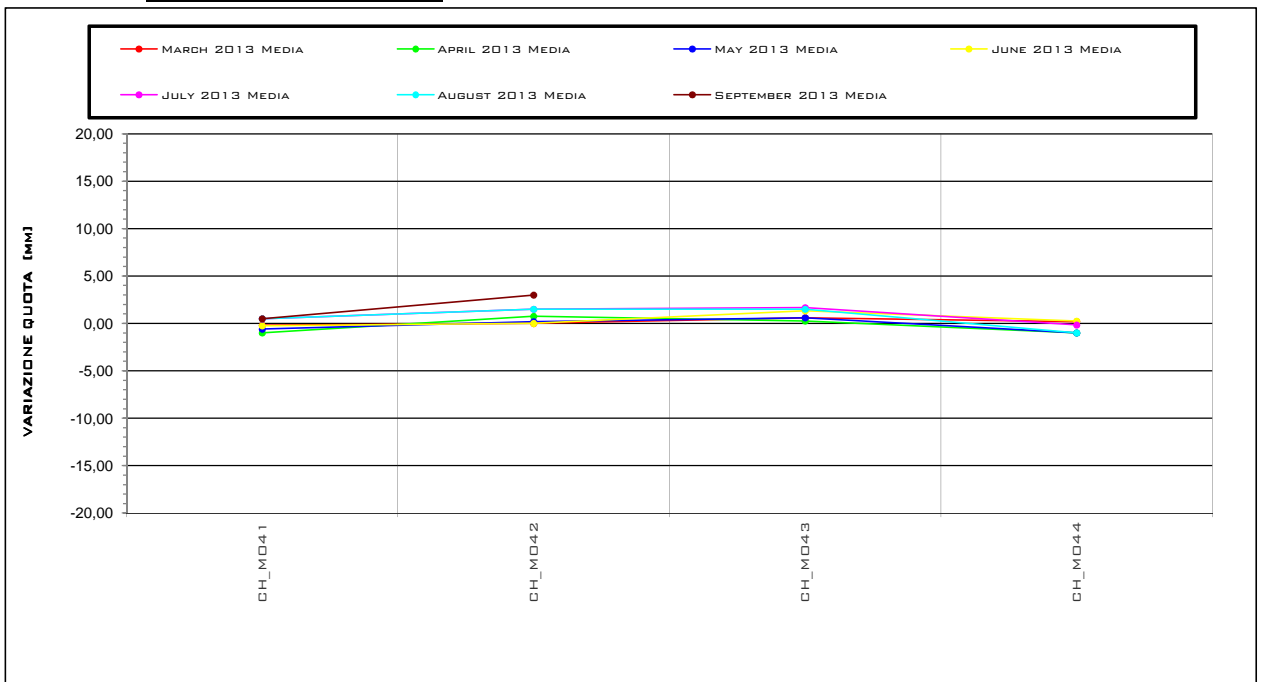
**\ \ IV Ordine - Tufo \ 41-44**



**GRAFICO QUOTA**

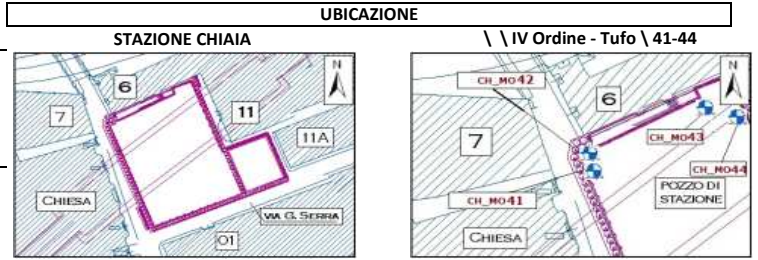


**GRAFICO ISOCRONE**

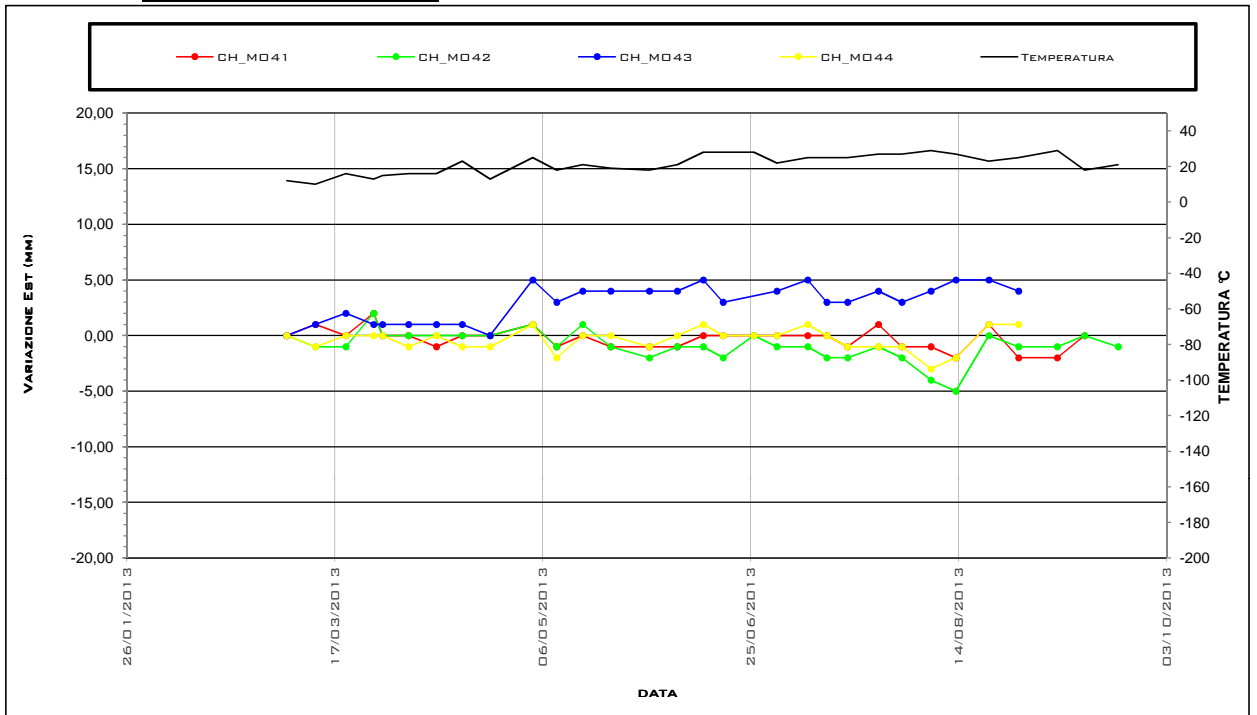




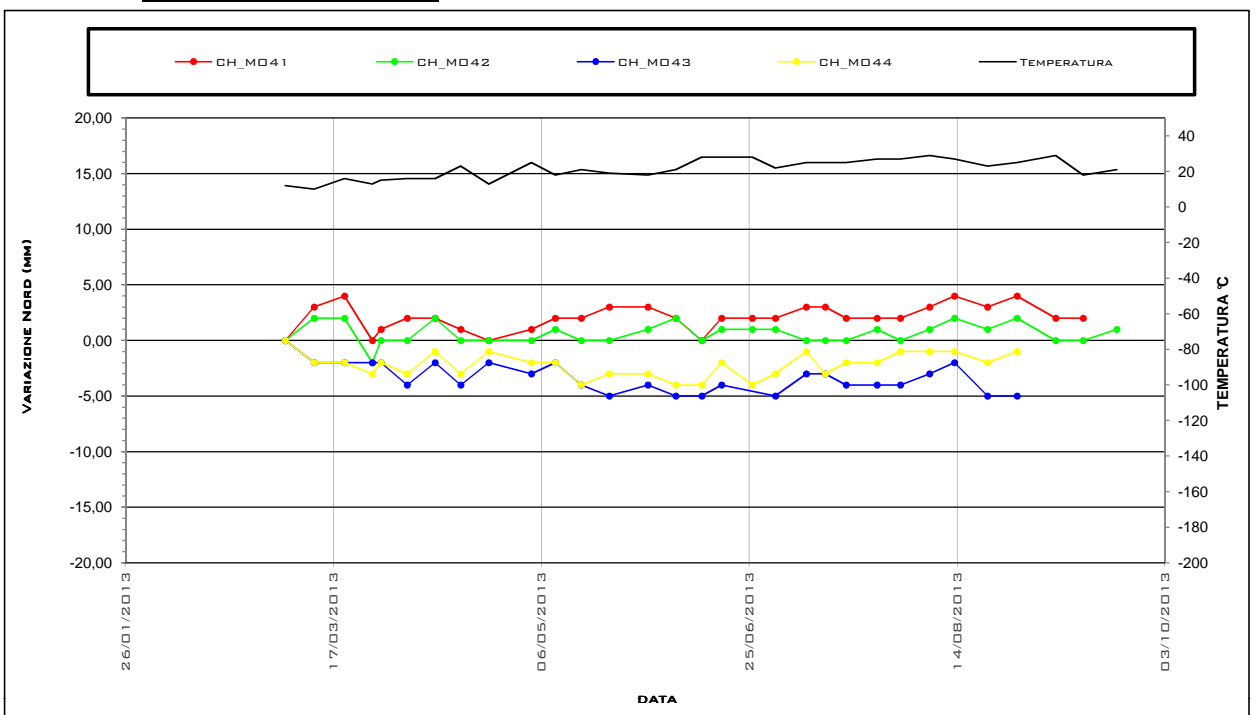
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ IV Ordine - Tufo \ 41-44  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 05/03/2013  
**Data lettura di zero** 05/03/2013



**GRAFICO EST**



**GRAFICO NORD**







Ubicazione STAZIONE CHIAIA

Opera \ \ Supplementari \ 45-47

Tipo Strumento Mire Ottiche

Data posa in opera 28/03/2013

Data lettura di zero 28/03/2013

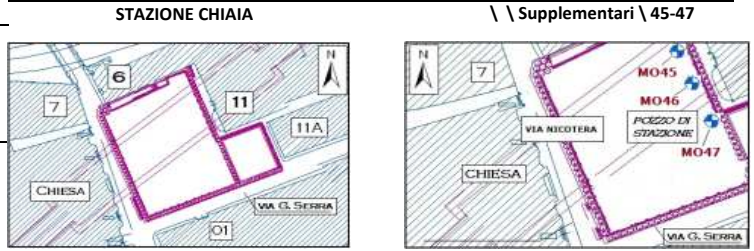
Ultima Misura 27 in data 21/09/2013

Letto. n°	DATA	CH_M045					CH_M046					CH_M047				
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]
1	28/03/2013 11.00	15,0	14,8	0,0	0,0	0,0	15,1	15,1	0,0	0,0	0,0	15,0	15,3	0,0	0,0	0,0
2	03/04/2013 17.30	16,0	14,8	1,0	0,0	-1,0	16,0	15,1	0,0	-1,0	0,0	16,0	15,3	-1,0	-1,0	0,0
3	10/04/2013 10.30	16,0	14,8	1,0	2,0	2,0	16,0	15,1	0,0	0,0	2,0	16,0	15,3	-1,0	-1,0	2,0
4	16/04/2013 15.00	23,0	14,8	1,0	0,0	0,0	23,0	15,1	-1,0	0,0	0,0	23,0	15,3	0,0	0,0	1,0
5	23/04/2013 08.30	13,0	14,8	0,0	-2,0	2,0	13,0	15,1	0,0	-1,0	2,0	13,0	15,3	0,0	0,0	2,0
6	03/05/2013 14.30	25,0	14,8	2,0	0,0	1,0	25,0	15,1	0,0	1,0	0,0	25,0	15,3	-1,0	1,0	2,0
7	09/05/2013 08.30	18,0	14,8	2,0	-1,0	2,0	18,0	15,1	0,0	0,0	1,0	18,0	15,3	0,0	-1,0	3,0
8	15/05/2013 14.30	21,0	14,8	1,0	0,0	0,0	21,0	15,1	0,0	1,0	0,0	21,0	15,3	0,0	2,0	2,0
9	22/05/2013 08.30	19,0	14,8	1,0	0,0	0,0	19,0	15,1	0,0	1,0	0,0	19,0	15,3	0,0	1,0	2,0
10	31/05/2013 15.30	18,0	14,8	1,0	1,0	0,0	18,0	15,1	0,0	0,0	0,0	18,0	15,3	0,0	1,0	1,0
11	07/06/2013 08.30	21,0	14,8	2,0	0,0	-1,0	21,0	15,1	-1,0	1,0	1,0	21,0	15,3	-1,0	2,0	1,0
12	13/06/2013 14.30	28,0	14,8	3,0	3,0	0,0	28,0	15,1	1,0	3,0	-1,0	28,0	15,3	0,0	3,0	1,0
13	18/06/2013 09.00	28,0	14,8	2,0	0,0	1,0	28,0	15,1	0,0	1,0	1,0	28,0	15,3	-1,0	1,0	2,0
14	25/06/2013 18.00	28,0	14,8	2,0	1,0	1,0	28,0	15,1	0,0	1,0	0,0	28,0	15,3	-1,0	1,0	1,0
15	01/07/2013 07.30	22,0	14,8	1,0	0,0	0,0	22,0	15,1	-1,0	1,0	0,0	22,0	15,3	-1,0	1,0	2,0
16	08/07/2013 17.30	25,0	14,8	2,0	2,0	1,0	25,0	15,1	-2,0	2,0	1,0	25,0	15,3	-1,0	2,0	2,0
17	13/07/2013 07.30	25,0	14,8	1,0	1,0	1,0	25,0	15,1	0,0	0,0	0,0	25,0	15,3	-1,0	1,0	3,0
18	18/07/2013 07.30	25,0	14,8	1,0	1,0	1,0	25,0	15,1	-2,0	2,0	1,0	25,0	15,3	-2,0	3,0	3,0
19	25/07/2013 18.00	27,0	14,8	1,0	1,0	1,0	27,0	15,1	-1,0	2,0	1,0	27,0	15,3	-2,0	3,0	3,0
20	31/07/2013 09.00	27,0	14,8	1,0	0,0	1,0	27,0	15,1	-1,0	1,0	1,0	27,0	15,3	-2,0	1,0	4,0
21	07/08/2013 09.00	29,0	14,8	0,0	2,0	2,0	29,0	15,1	-2,0	2,0	1,0	29,0	15,2	-4,0	2,0	3,0
22	13/08/2013 09.00	27,0	14,8	-1,0	3,0	3,0	27,0	15,1	-3,0	2,0	0,0	27,0	15,2	-5,0	3,0	2,0
23	21/08/2013 07.30	23,0	14,8	1,0	1,0	1,0	23,0	15,1	-2,0	3,0	1,0	23,0	15,3	-1,0	3,0	3,0
24	28/08/2013 10.30	25,0	14,8	0,0	2,0	1,0	25,0	15,1	-2,0	3,0	1,0	25,0	15,3	-2,0	3,0	4,0
25	06/09/2013 17.30	29,0	14,8	2,0	2,0	1,0	29,0	15,1	-1,0	2,0	1,0	29,0	15,3	-2,0	2,0	2,0
26	13/09/2013 07.30	18,0	14,8	1,0	2,0	1,0	18,0	15,1	-2,0	2,0	1,0	18,0	15,3	-1,0	1,0	2,0
27	21/09/2013 09.30	21,0	14,8	1,0	2,0	0,0	21,0	15,1	-2,0	2,0	1,0	21,0	15,3	-1,0	2,0	2,0

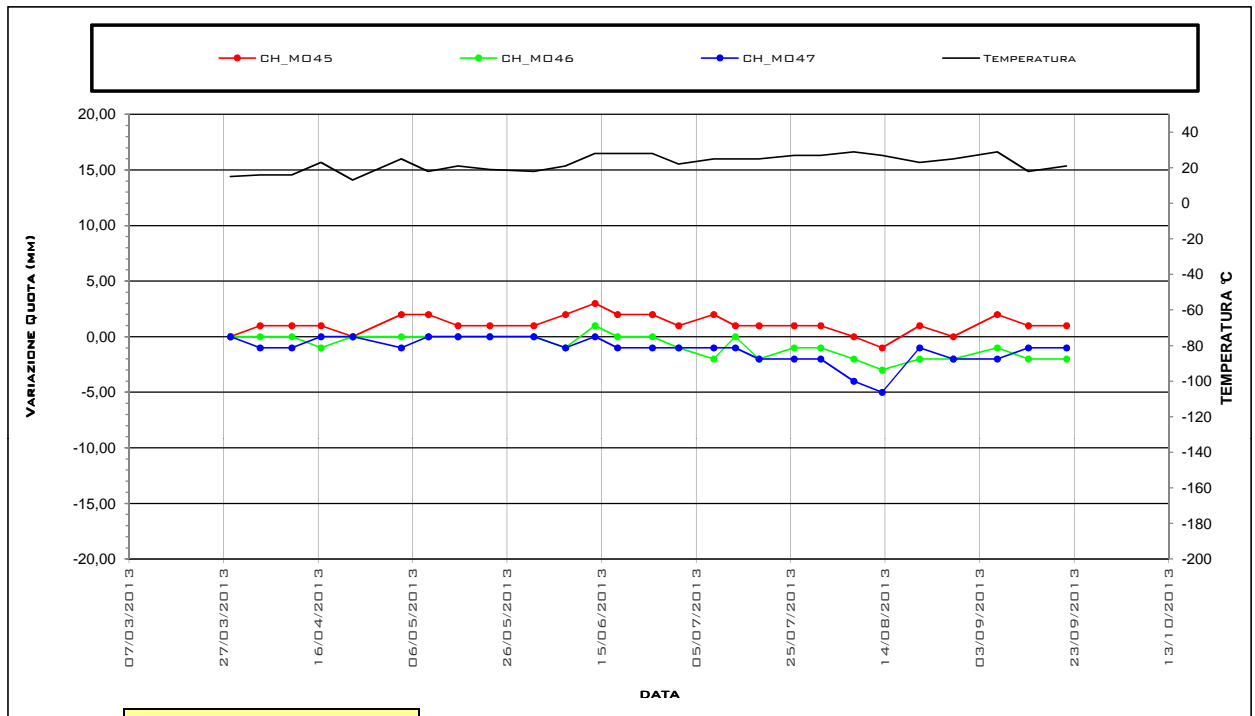


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 45-47  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013

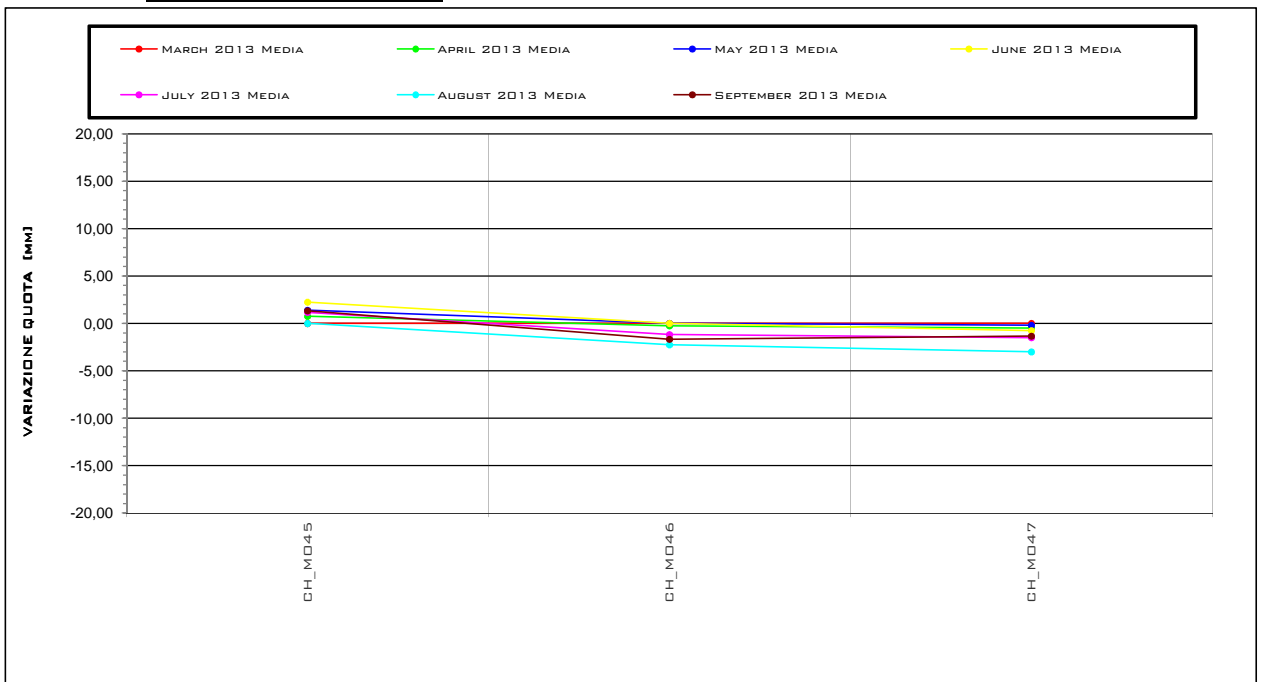
**UBICAZIONE**



**GRAFICO QUOTA**

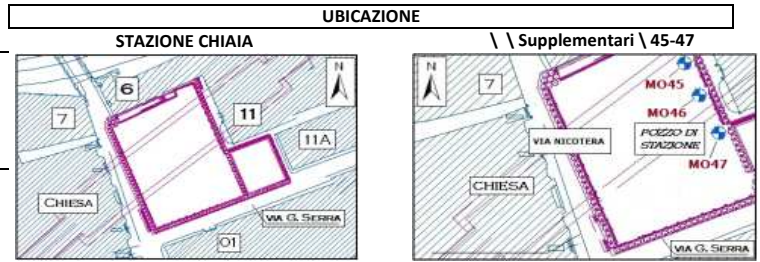


**GRAFICO ISOCRONE**

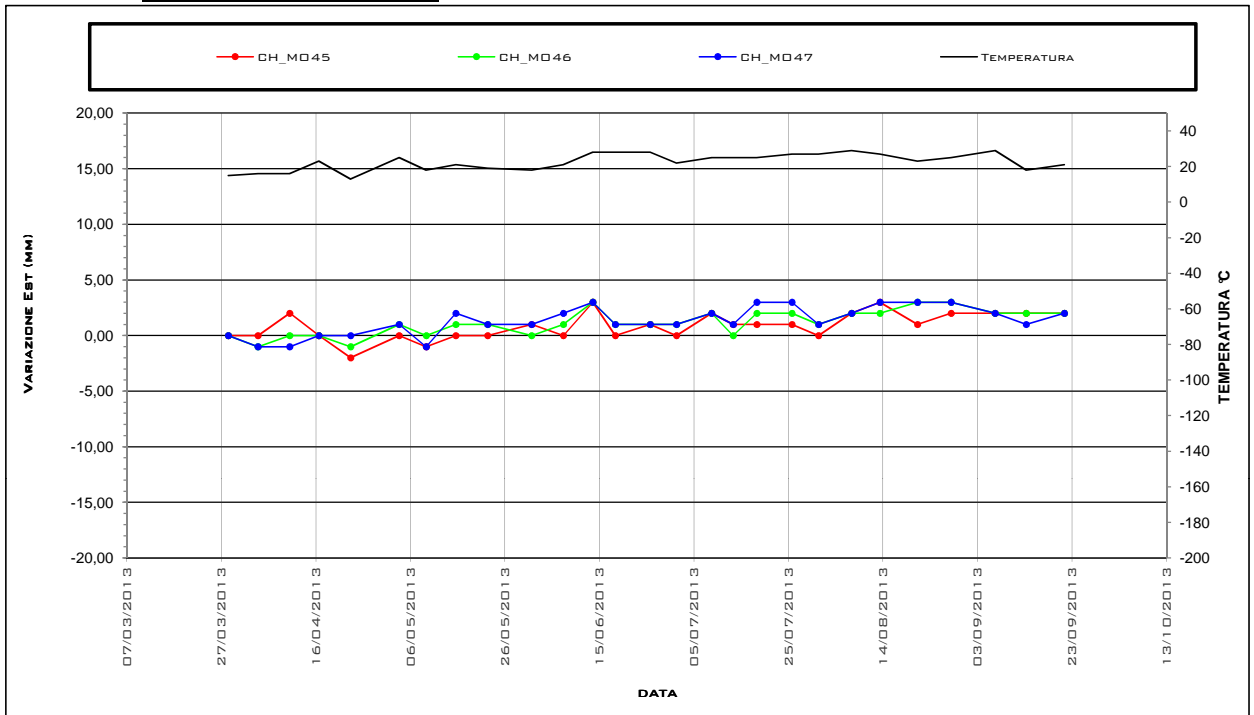




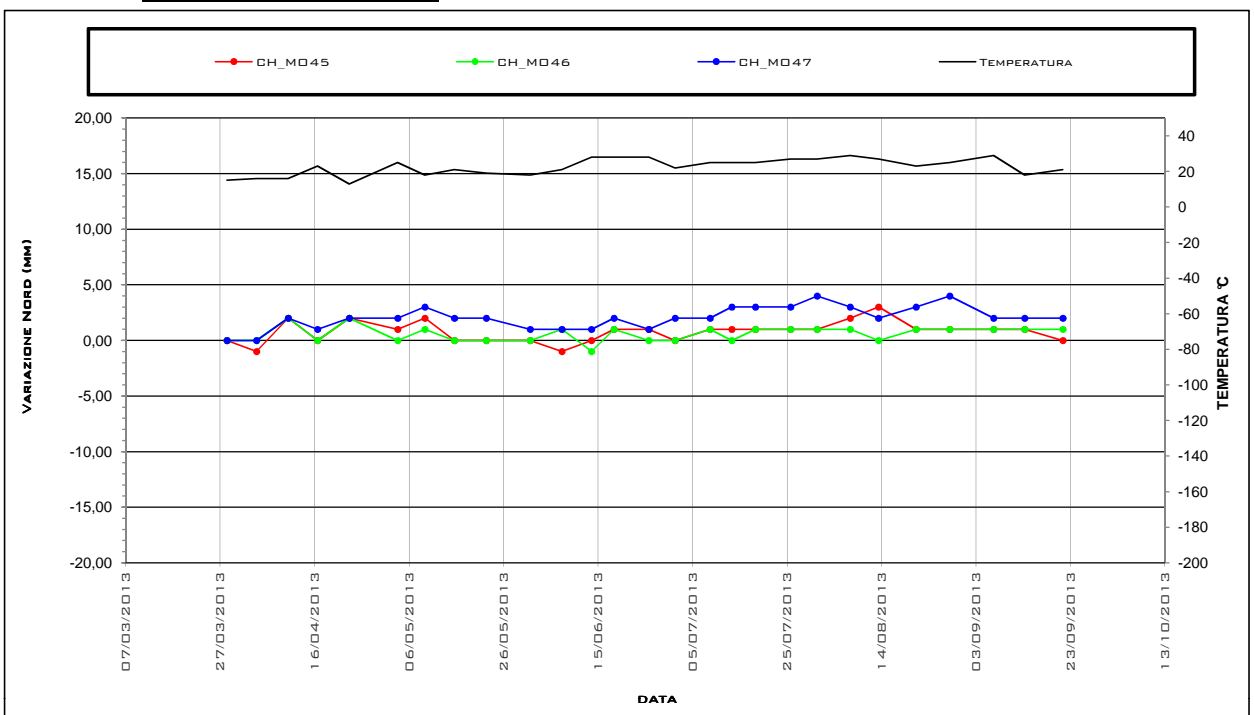
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 45-47  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013



**GRAFICO EST**



**GRAFICO NORD**





Ubicazione STAZIONE CHIAIA

Opera \ \ Supplementari \ 48-50

Tipo Strumento Mire Ottiche

Data posa in opera 28/03/2013

Data lettura di zero 28/03/2013

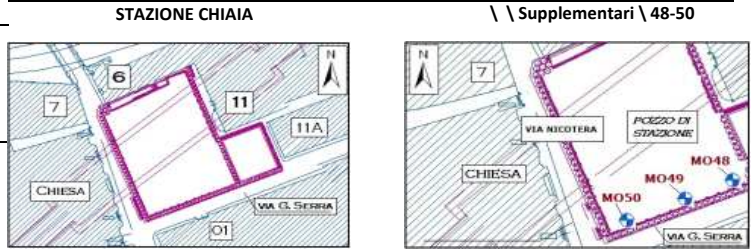
Ultima Misura 27 in data 21/09/2013

Letto. n°	DATA	CH_M048					CH_M049					CH_M050				
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]
1	28/03/2013 11.00	15,0	16,1	0,0	0,0	0,0	17,4	17,4	0,0	0,0	0,0	15,0	20,6	0,0	0,0	0,0
2	03/04/2013 17.30	16,0	16,1	-1,0	-1,0	0,0	16,0	17,4	0,0	-3,0	1,0	16,0	20,6	-1,0	1,0	0,0
3	10/04/2013 10.30	16,0	16,1	0,0	0,0	0,0	16,0	17,4	-2,0	1,0	2,0	16,0	20,6	-2,0	2,0	0,0
4	16/04/2013 15.00	23,0	16,1	0,0	2,0	0,0	23,0	17,4	-1,0	0,0	-1,0	23,0	20,6	0,0	1,0	-1,0
5	23/04/2013 08.30	13,0	16,1	1,0	1,0	2,0	13,0	17,4	-2,0	1,0	-1,0	13,0	20,6	-2,0	2,0	0,0
6	03/05/2013 14.30	25,0	16,1	0,0	4,0	1,0	25,0	17,4	-2,0	2,0	-1,0	25,0	20,6	-2,0	3,0	-1,0
7	09/05/2013 08.30	18,0	16,1	1,0	1,0	2,0	18,0	17,4	-2,0	1,0	1,0	18,0	20,6	-1,0	3,0	-1,0
8	15/05/2013 14.30	21,0	16,1	0,0	3,0	0,0	21,0	17,4	0,0	-1,0	-2,0	21,0	20,6	-1,0	0,0	-2,0
9	22/05/2013 08.30	19,0	16,1	0,0	3,0	-1,0	19,0	17,4	0,0	0,0	-1,0	19,0	20,6	-1,0	0,0	-1,0
10	31/05/2013 15.30	18,0	16,1	1,0	1,0	-1,0	18,0	17,4	-2,0	0,0	2,0	18,0	20,6	-2,0	2,0	1,0
11	07/06/2013 08.30	21,0	16,1	1,0	2,0	0,0	21,0	17,4	-2,0	0,0	0,0	21,0	20,6	-1,0	1,0	0,0
12	13/06/2013 14.30	28,0	16,1	1,0	3,0	-1,0	28,0	17,4	0,0	2,0	0,0	28,0	20,6	0,0	4,0	-1,0
13	18/06/2013 09.00	28,0	16,1	-1,0	2,0	2,0	28,0	17,4	-1,0	-1,0	1,0	28,0	20,6	-1,0	1,0	0,0
14	25/06/2013 18.00	28,0	16,1	0,0	4,0	0,0	28,0	17,4	0,0	0,0	0,0	28,0	20,6	-1,0	1,0	1,0
15	01/07/2013 07.30	22,0	16,1	-1,0	4,0	1,0	22,0	17,4	0,0	-1,0	1,0	22,0	20,6	-1,0	0,0	0,0
16	08/07/2013 17.30	25,0	16,1	2,0	3,0	2,0	25,0	17,4	0,0	-3,0	-1,0	25,0	20,6	0,0	-3,0	0,0
17	13/07/2013 07.30	25,0	16,1	0,0	4,0	3,0	25,0	17,4	0,0	-2,0	0,0	25,0	20,6	-2,0	-1,0	1,0
18	18/07/2013 07.30	25,0	16,1	-1,0	3,0	2,0	25,0	17,4	1,0	-2,0	0,0	25,0	20,6	0,0	0,0	0,0
19	25/07/2013 18.00	27,0	16,1	-1,0	4,0	3,0	27,0	17,4	1,0	-1,0	1,0	27,0	20,6	-1,0	0,0	0,0
20	31/07/2013 09.00	27,0	16,1	-1,0	4,0	4,0	27,0	17,4	0,0	0,0	1,0	27,0	20,6	0,0	2,0	1,0
21	07/08/2013 09.00	29,0	16,1	-1,0	4,0	4,0	29,0	17,4	0,0	0,0	1,0	29,0	20,6	-2,0	2,0	-1,0
22	13/08/2013 09.00	27,0	16,1	-1,0	3,0	3,0	27,0	17,4	-1,0	-1,0	1,0	27,0	20,6	-3,0	1,0	-2,0
23	21/08/2013 07.30	23,0	16,1	0,0	7,0	2,0	23,0	17,4	0,0	-1,0	1,0	23,0	20,6	-1,0	-1,0	0,0
24	28/08/2013 10.30	25,0	16,1	0,0	5,0	3,0	25,0	17,4	2,0	-3,0	3,0	25,0	20,6	0,0	-2,0	3,0
25	06/09/2013 17.30	29,0	16,1	1,0	5,0	1,0	29,0	17,4	0,0	-2,0	1,0	29,0	20,6	-1,0	-1,0	0,0
26	13/09/2013 07.30	18,0	16,1	1,0	5,0	2,0	18,0	17,4	-1,0	-3,0	0,0	18,0	20,6	0,0	0,0	0,0
27	21/09/2013 09.30	21,0	16,1	2,0	4,0	1,0	21,0	17,4	0,0	-2,0	0,0	21,0	20,6	-1,0	-1,0	1,0

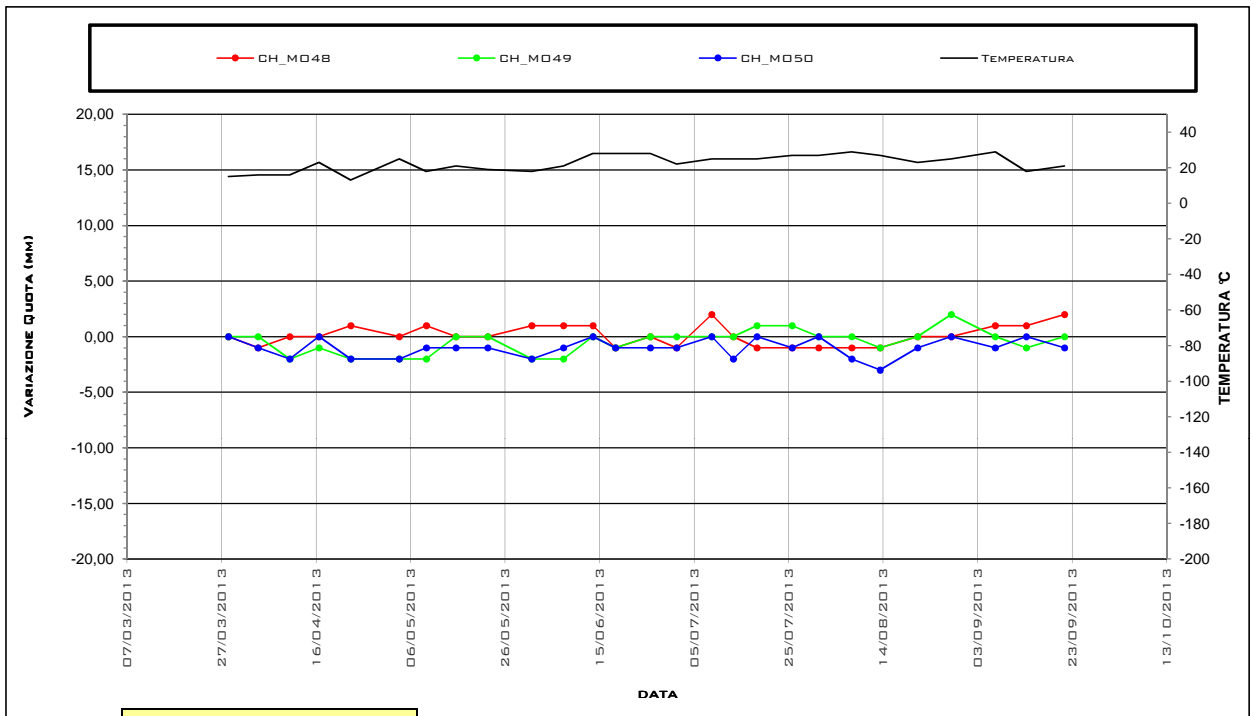


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 48-50  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013

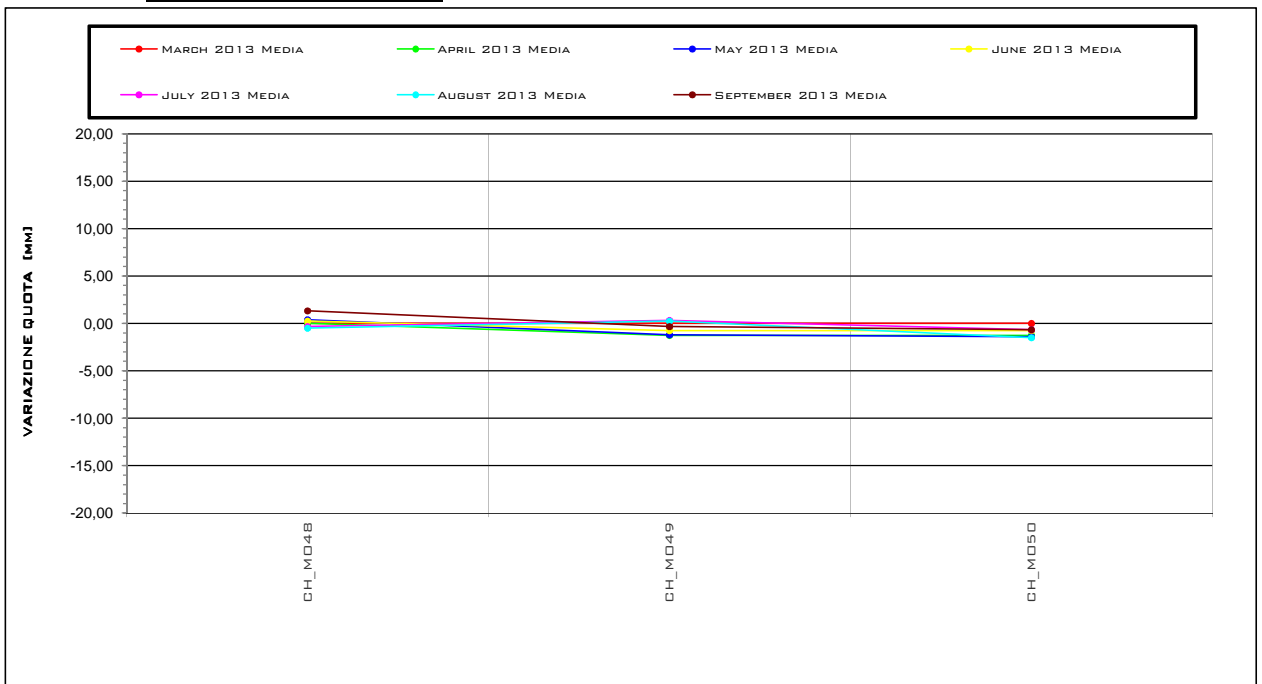
**UBICAZIONE**



**GRAFICO QUOTA**

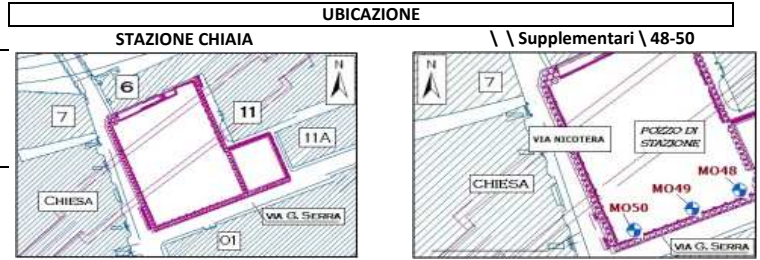


**GRAFICO ISOCRONE**

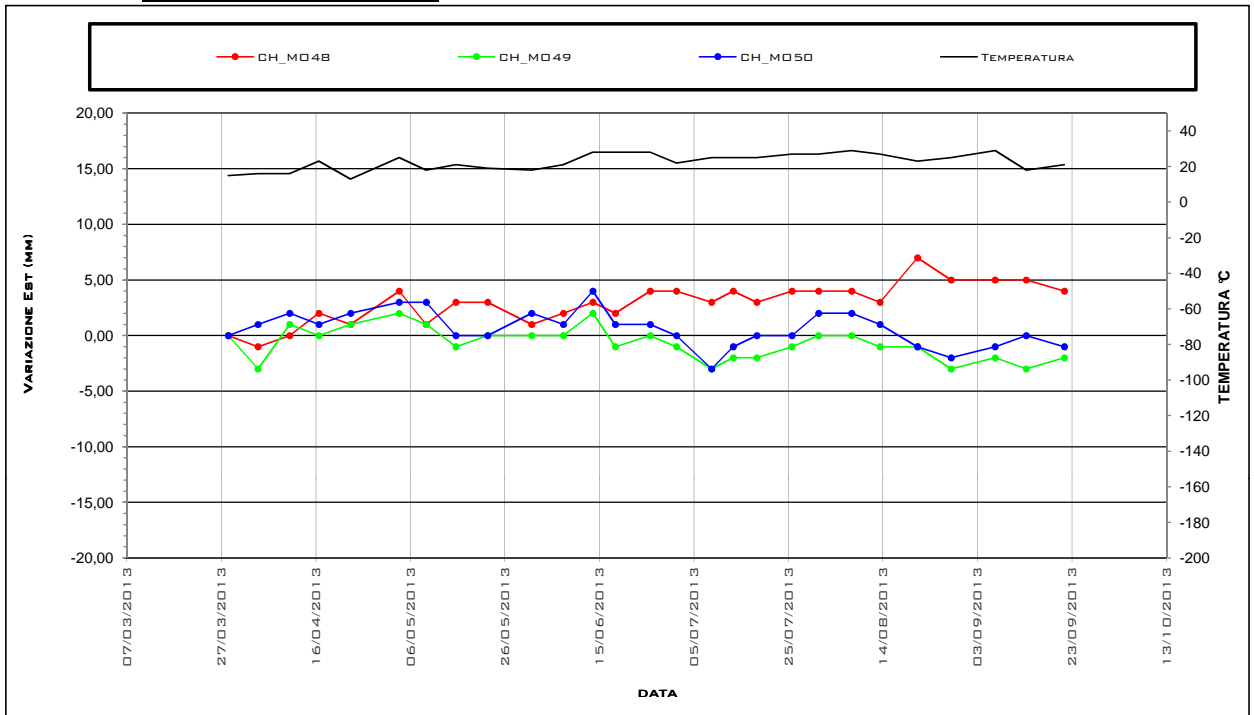




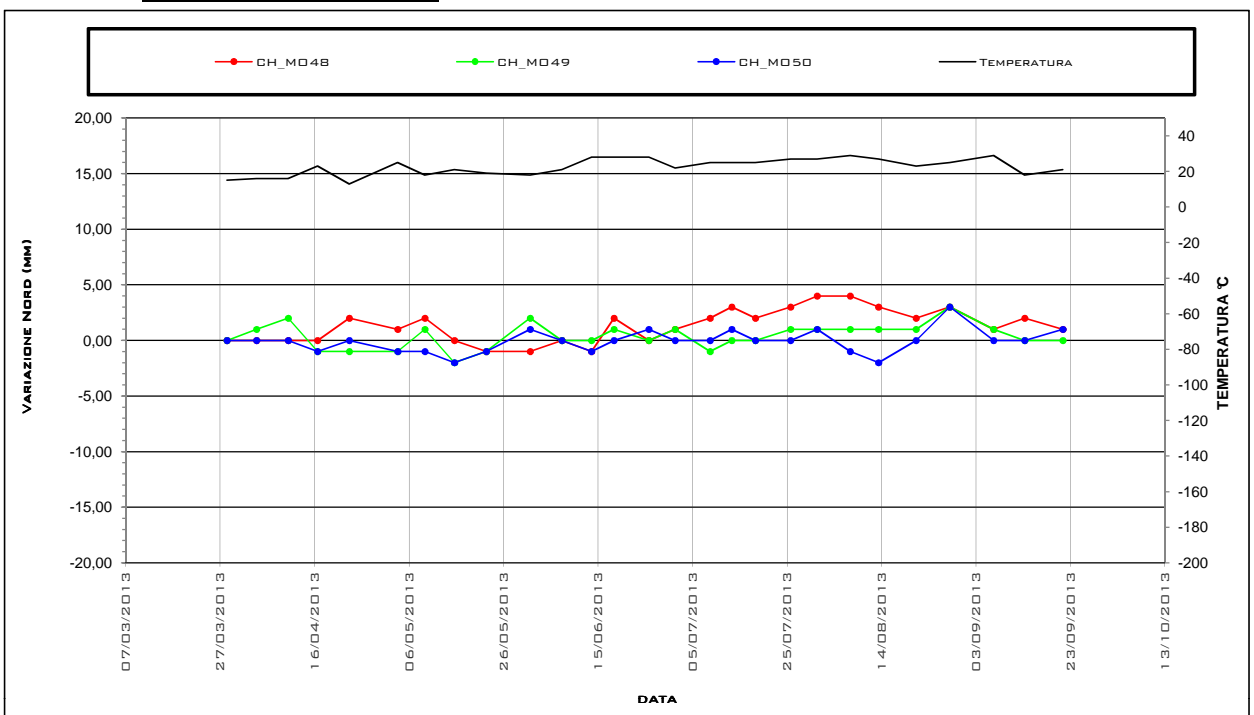
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 48-50  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013



**GRAFICO EST**



**GRAFICO NORD**





Ubicazione STAZIONE CHIAIA

Opera \ \ Supplementari \ 51-53

Tipo Strumento Mire Ottiche

Data posa in opera 03/04/2013

Data lettura di zero 03/04/2013

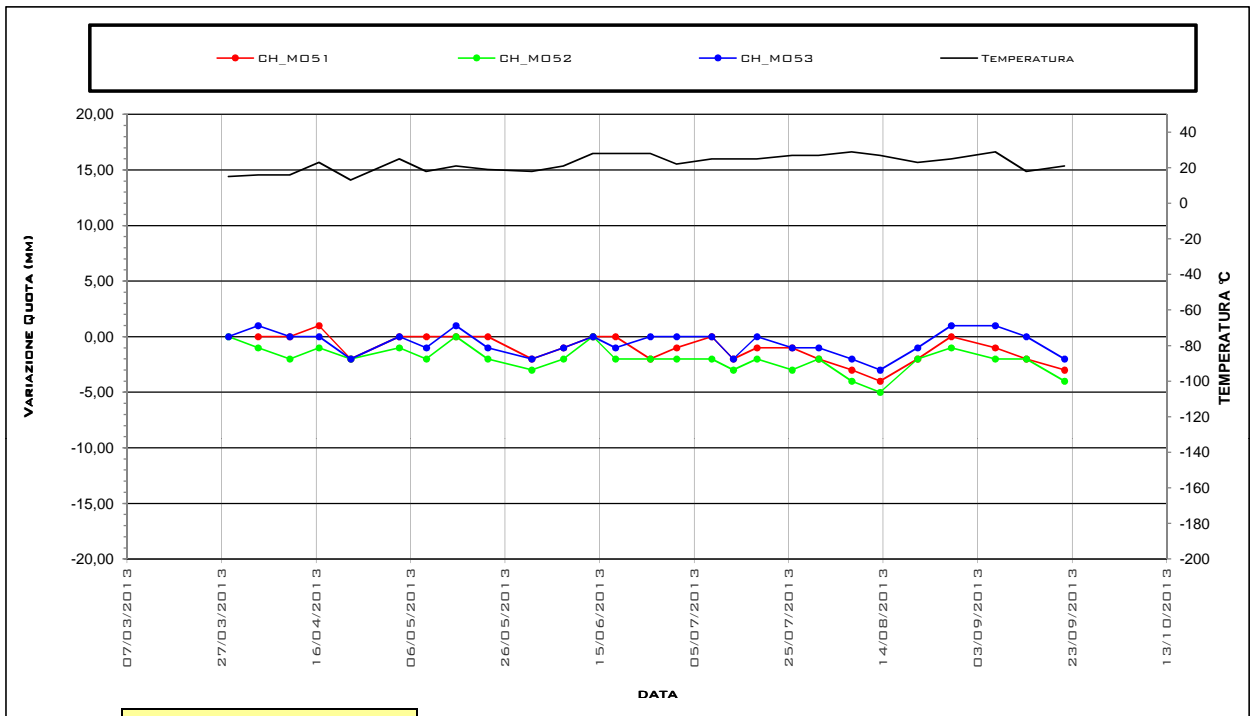
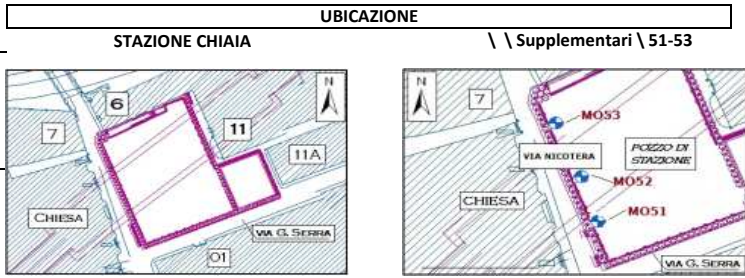
Ultima Misura 27 in data 21/09/2013

Letto. n°	DATA	CH_M051					CH_M052					CH_M053				
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]
1	28/03/2013 11.00						15,0	21,9	0,0	0,0	0,0	15,0	22,3	0,0	0,0	0,0
2	03/04/2013 17.30	16,0	21,6	0,0	0,0	0,0	16,0	21,9	-1,0	1,0	0,0	16,0	22,3	1,0	0,0	-1,0
3	10/04/2013 10.30	16,0	21,6	0,0	1,0	0,0	16,0	21,9	-2,0	1,0	1,0	16,0	22,3	0,0	-1,0	0,0
4	16/04/2013 15.00	23,0	21,6	1,0	0,0	0,0	23,0	21,9	-1,0	1,0	0,0	23,0	22,3	0,0	0,0	-1,0
5	23/04/2013 08.30	13,0	21,6	-2,0	0,0	0,0	13,0	21,9	-2,0	2,0	0,0	13,0	22,3	-2,0	0,0	-2,0
6	03/05/2013 14.30	25,0	21,6	0,0	2,0	0,0	25,0	21,9	-1,0	3,0	0,0	25,0	22,3	0,0	1,0	-1,0
7	09/05/2013 08.30	18,0	21,6	0,0	2,0	0,0	18,0	21,9	-2,0	2,0	0,0	18,0	22,3	-1,0	-1,0	0,0
8	15/05/2013 14.30	21,0	21,6	0,0	1,0	-1,0	21,0	21,9	0,0	2,0	0,0	21,0	22,3	1,0	1,0	-2,0
9	22/05/2013 08.30	19,0	21,6	0,0	0,0	0,0	19,0	21,9	-2,0	1,0	0,0	19,0	22,3	-1,0	-1,0	0,0
10	31/05/2013 15.30	18,0	21,6	-2,0	1,0	1,0	18,0	21,9	-3,0	2,0	1,0	18,0	22,3	-2,0	0,0	0,0
11	07/06/2013 08.30	21,0	21,6	-1,0	1,0	1,0	21,0	21,9	-2,0	1,0	1,0	21,0	22,3	-1,0	0,0	0,0
12	13/06/2013 14.30	28,0	21,6	0,0	4,0	-1,0	28,0	21,9	0,0	4,0	-1,0	28,0	22,3	0,0	1,0	-2,0
13	18/06/2013 09.00	28,0	21,6	0,0	2,0	1,0	28,0	21,9	-2,0	2,0	2,0	28,0	22,3	-1,0	-1,0	0,0
14	25/06/2013 18.00	28,0	21,6	-2,0	1,0	2,0	28,0	21,9	-2,0	2,0	2,0	28,0	22,3	0,0	0,0	0,0
15	01/07/2013 07.30	22,0	21,6	-1,0	2,0	2,0	22,0	21,9	-2,0	3,0	2,0	22,0	22,3	0,0	2,0	0,0
16	08/07/2013 17.30	25,0	21,6	0,0	-1,0	1,0	25,0	21,9	-2,0	-1,0	0,0	25,0	22,3	0,0	0,0	0,0
17	13/07/2013 07.30	25,0	21,6	-2,0	1,0	3,0	25,0	21,9	-3,0	2,0	1,0	25,0	22,3	-2,0	0,0	0,0
18	18/07/2013 07.30	25,0	21,6	-1,0	1,0	1,0	25,0	21,9	-2,0	1,0	1,0	25,0	22,3	0,0	0,0	0,0
19	25/07/2013 18.00	27,0	21,6	-1,0	1,0	1,0	27,0	21,9	-3,0	2,0	1,0	27,0	22,3	-1,0	1,0	0,0
20	31/07/2013 09.00	27,0	21,6	-2,0	1,0	1,0	27,0	21,9	-2,0	2,0	1,0	27,0	22,3	-1,0	0,0	0,0
21	07/08/2013 09.00	29,0	21,6	-3,0	1,0	1,0	29,0	21,9	-4,0	1,0	1,0	29,0	22,3	-2,0	0,0	0,0
22	13/08/2013 09.00	27,0	21,6	-4,0	0,0	1,0	27,0	21,9	-5,0	0,0	1,0	27,0	22,3	-3,0	-1,0	1,0
23	21/08/2013 07.30	23,0	21,6	-2,0	1,0	1,0	23,0	21,9	-2,0	3,0	2,0	23,0	22,3	-1,0	2,0	0,0
24	28/08/2013 10.30	25,0	21,6	0,0	0,0	4,0	25,0	21,9	-1,0	1,0	3,0	25,0	22,3	1,0	1,0	3,0
25	06/09/2013 17.30	29,0	21,6	-1,0	0,0	0,0	29,0	21,9	-2,0	1,0	2,0	29,0	22,3	1,0	0,0	0,0
26	13/09/2013 07.30	18,0	21,6	-2,0	1,0	1,0	18,0	21,9	-2,0	1,0	1,0	18,0	22,3	0,0	0,0	0,0
27	21/09/2013 09.30	21,0	21,6	-3,0	0,0	2,0	21,0	21,9	-4,0	2,0	1,0	21,0	22,3	-2,0	0,0	1,0

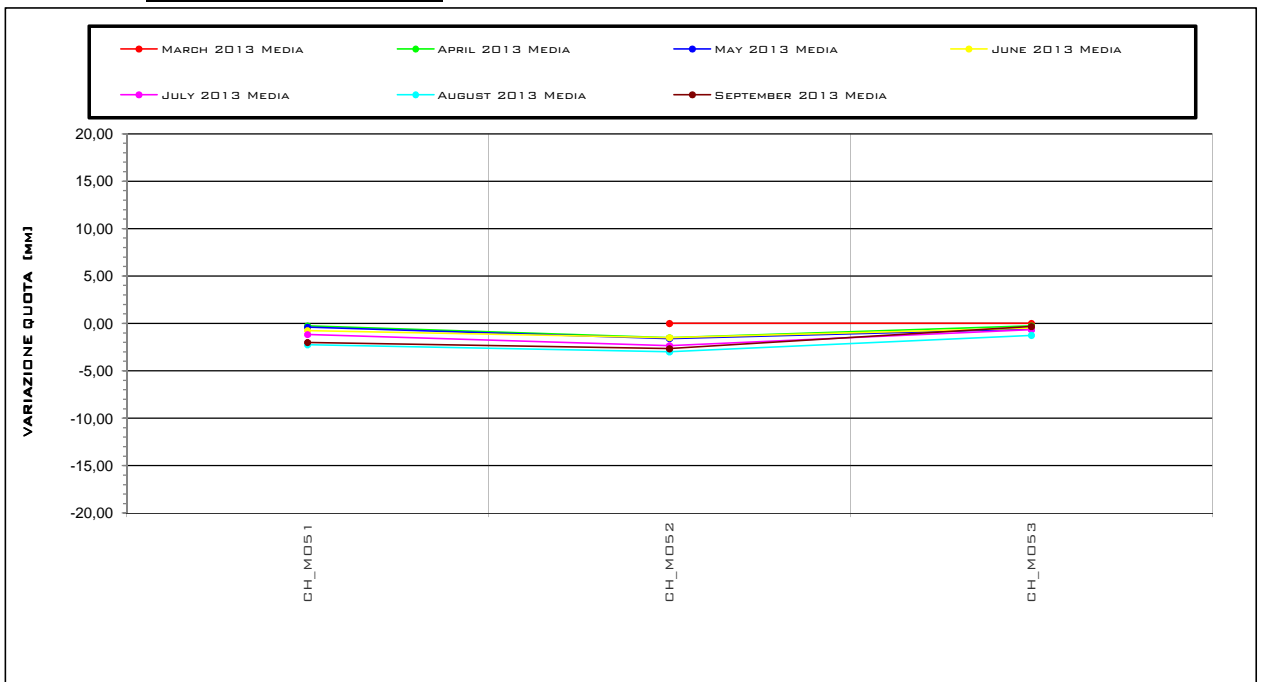


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 51-53  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 03/04/2013  
**Data lettura di zero** 03/04/2013

**GRAFICO QUOTA**



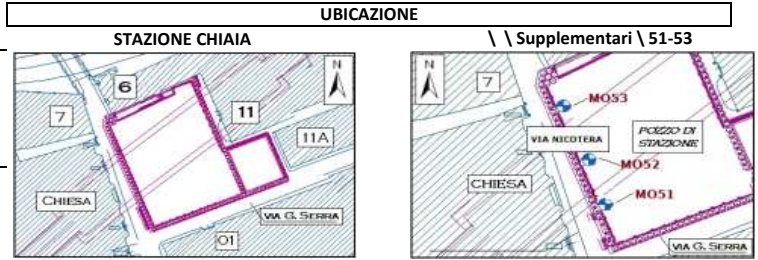
**GRAFICO ISOCRONE**



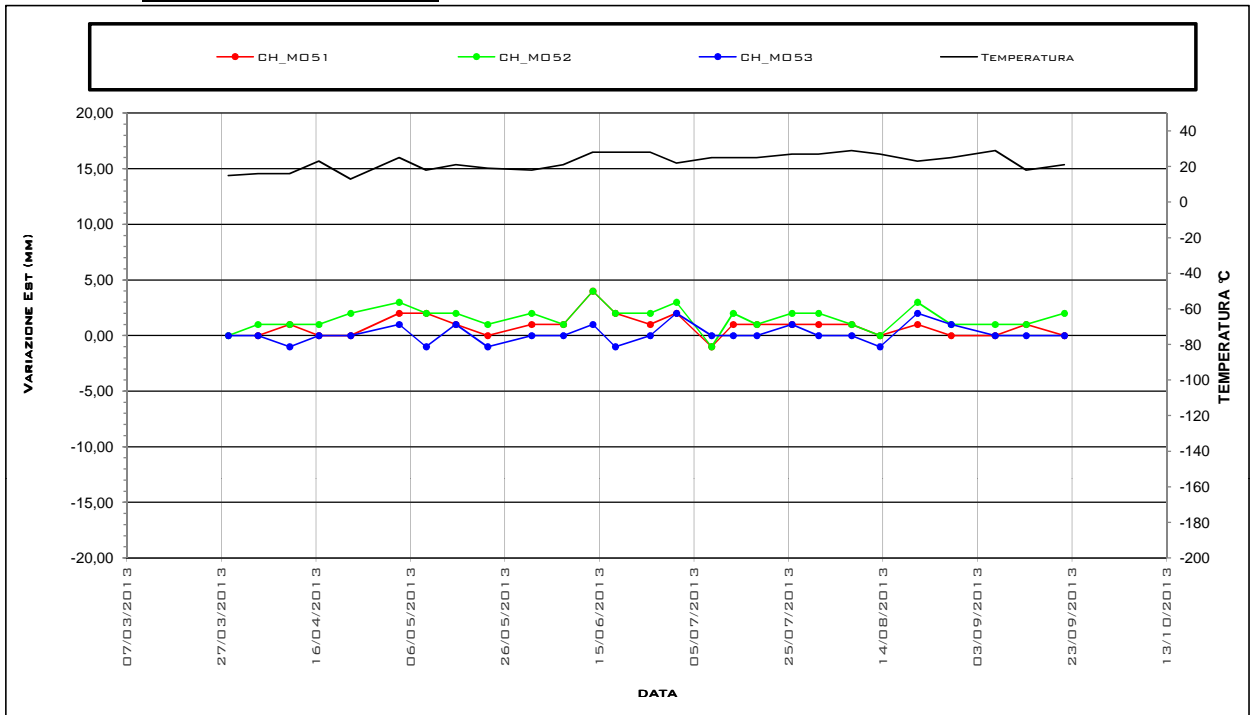




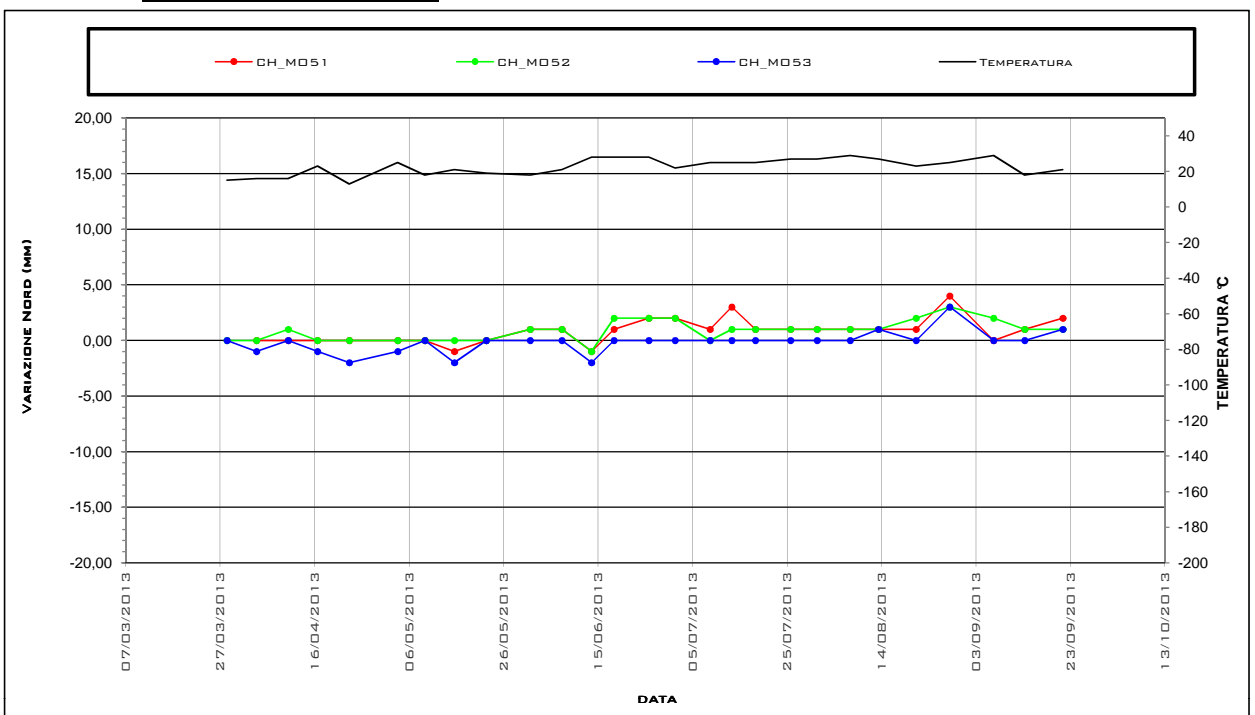
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 51-53  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 03/04/2013  
**Data lettura di zero** 03/04/2013



**GRAFICO EST**



**GRAFICO NORD**





**Ubicazione STAZIONE CHIAIA**

**Opera \ \ Supplementari \ 54-55**

**Tipo Strumento Mire Ottiche**

**Data posa in opera 28/03/2013**

**Data lettura di zero 28/03/2013**

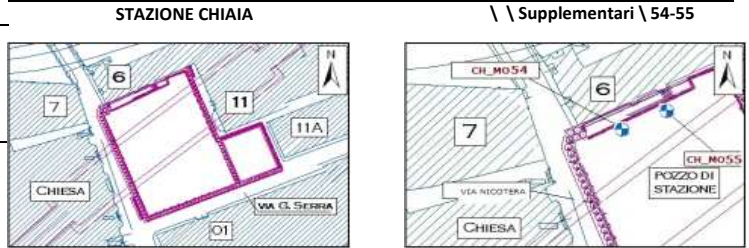
**Ultima Misura** 27 **in data** 21/09/2013

Letto. n°	DATA	CH_M054					CH_M055				
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1	28/03/2013 11.00	15,0	14,4	0,0	0,0	0,0	15,0	14,5	0,0	0,0	0,0
2	03/04/2013 17.30	16,0	14,4	-2,0	-2,0	0,0	16,0	14,5	0,0	0,0	0,0
3	10/04/2013 10.30	16,0	14,4	-2,0	-2,0	0,0	16,0	14,5	0,0	1,0	2,0
4	16/04/2013 15.00	23,0	14,4	-1,0	-1,0	-1,0	23,0	14,5	0,0	1,0	-1,0
5	23/04/2013 08.30	13,0	14,4	-2,0	-2,0	-1,0	13,0	14,5	-1,0	0,0	1,0
6	03/05/2013 14.30	25,0	14,4	0,0	-1,0	-1,0	25,0	14,5	0,0	2,0	1,0
7	09/05/2013 08.30	18,0	14,4	-1,0	-3,0	-1,0	18,0	14,5	0,0	1,0	3,0
8	15/05/2013 14.30	21,0	14,4	0,0	0,0	-2,0	21,0	14,5	0,0	2,0	0,0
9	22/05/2013 08.30	19,0	14,4	-1,0	-3,0	-1,0	19,0	14,5	0,0	2,0	0,0
10	31/05/2013 15.30	18,0	14,4	-2,0	-3,0	0,0	18,0	14,5	1,0	1,0	0,0
11	07/06/2013 08.30	21,0	14,4	-2,0	-2,0	-1,0	21,0	14,5	1,0	2,0	1,0
12	13/06/2013 14.30	28,0	14,4	0,0	-2,0	-3,0	28,0	14,5	2,0	4,0	-1,0
13	18/06/2013 09.00	28,0	14,4	-2,0	-3,0	0,0	28,0	14,5	1,0	1,0	0,0
14	25/06/2013 18.00	28,0	14,4	-1,0	-2,0	0,0	28,0	14,5	1,0	3,0	0,0
15	01/07/2013 07.30	22,0	14,4	0,0	-2,0	-1,0	22,0	14,5	1,0	2,0	0,0
16	08/07/2013 17.30	25,0	14,4	1,0	-3,0	-1,0	25,0	14,5	0,0	2,0	1,0
17	13/07/2013 07.30	25,0	14,4	0,0	-2,0	0,0	25,0	14,5	0,0	1,0	0,0
18	18/07/2013 07.30	25,0	14,4	1,0	-3,0	0,0	25,0	14,5	0,0	2,0	-1,0
19	25/07/2013 18.00	27,0	14,4	0,0	-2,0	-1,0	27,0	14,5	0,0	2,0	-1,0
20	31/07/2013 09.00	27,0	14,4	0,0	-4,0	-1,0	27,0	14,5	2,0	2,0	-1,0
21	07/08/2013 09.00	29,0	14,4	-2,0	-4,0	0,0	29,0	14,5	2,0	2,0	-1,0
22	13/08/2013 09.00	27,0	14,4	-3,0	-5,0	1,0	27,0	14,5	2,0	1,0	-1,0
23	21/08/2013 07.30	23,0	14,4	0,0	-1,0	-1,0	23,0	14,5	1,0	3,0	-1,0
24	28/08/2013 10.30	25,0	14,4	1,0	-3,0	1,0	25,0	14,5	2,0	3,0	0,0
25	06/09/2013 17.30	29,0	14,4	0,0	-4,0	-1,0	29,0	14,5	3,0	3,0	0,0
26	13/09/2013 07.30	18,0	14,4	0,0	-3,0	-2,0	18,0	14,5	2,0	3,0	-2,0
27	21/09/2013 09.30	21,0	14,4	-1,0	-4,0	-1,0	21,0	14,5	3,0	3,0	-1,0

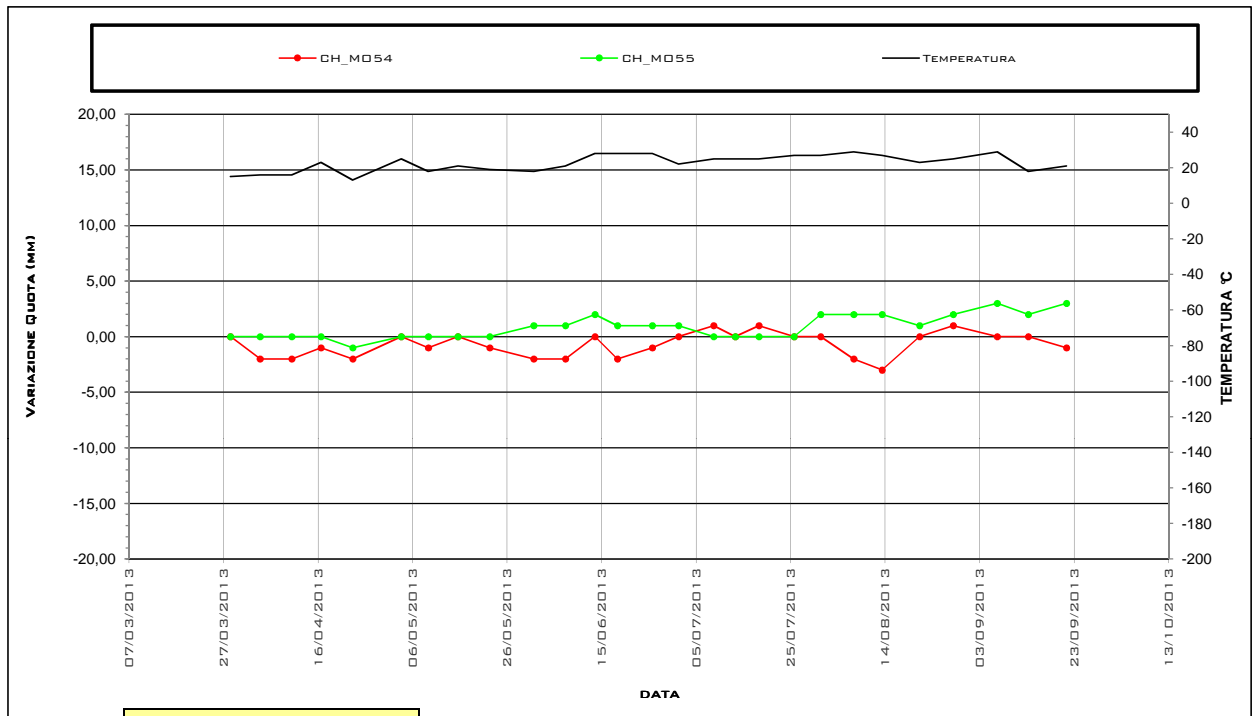


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 54-55  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013

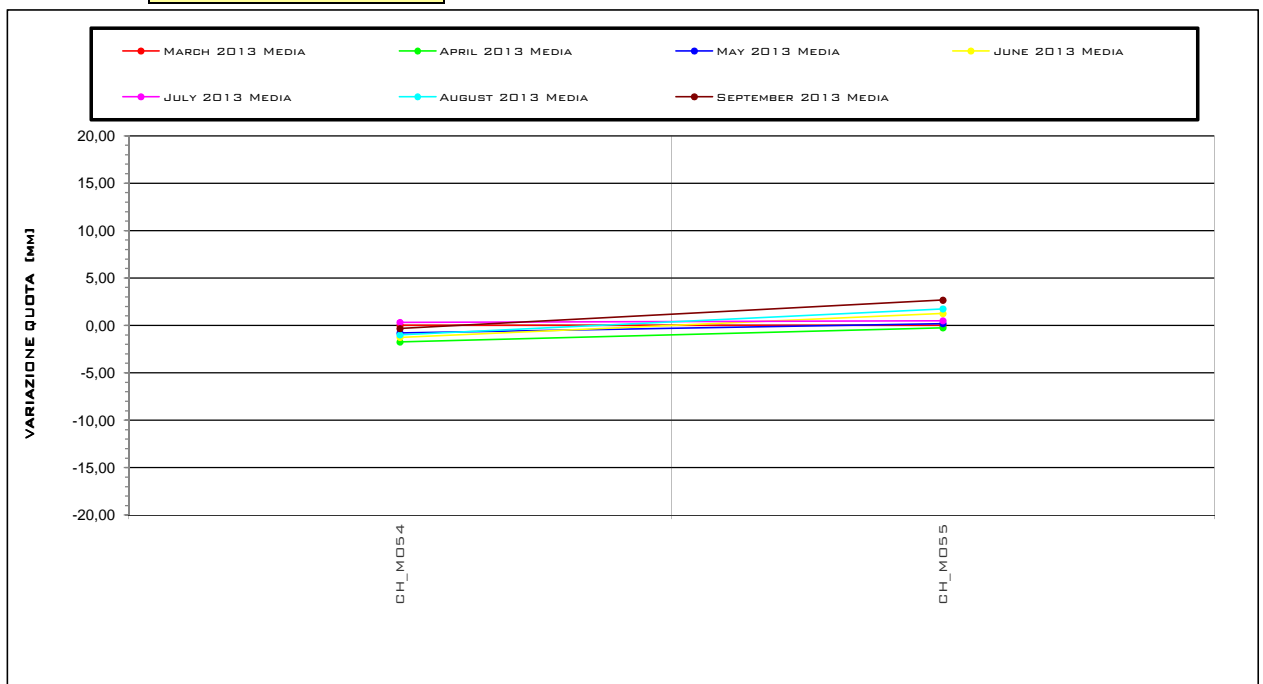
**UBICAZIONE**



**GRAFICO QUOTA**

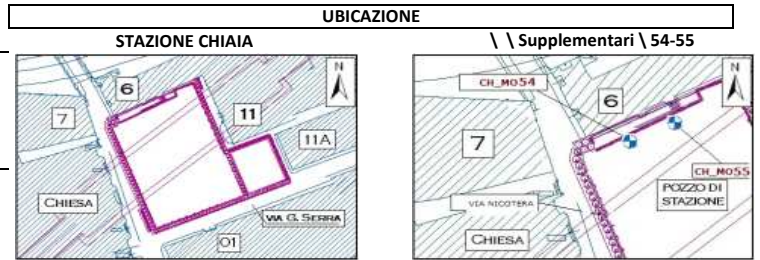


**GRAFICO ISOCRONE**

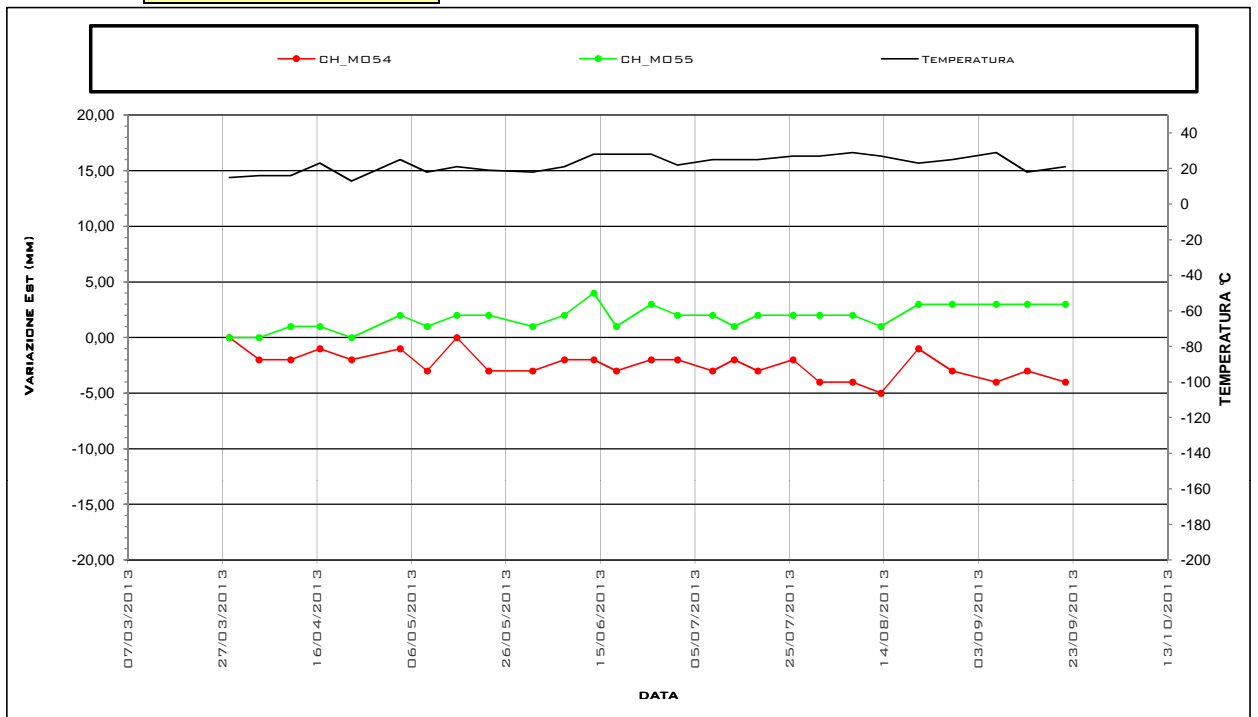




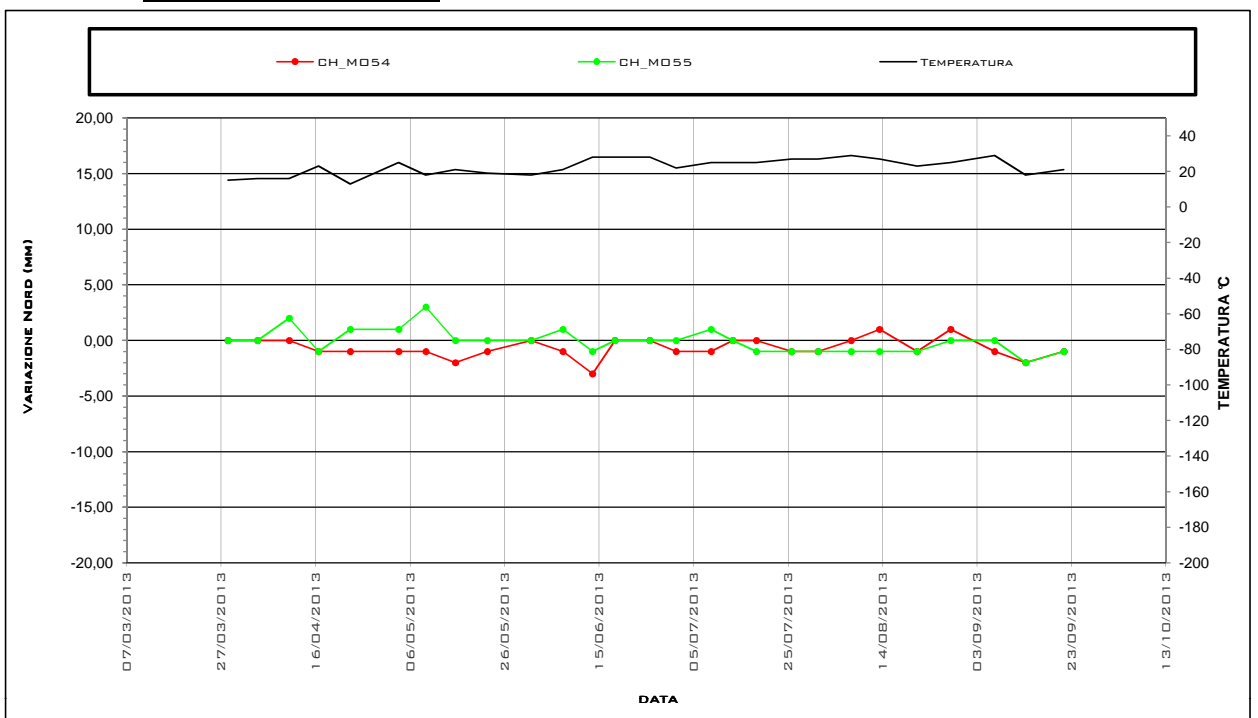
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 54-55  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013



**GRAFICO EST**



**GRAFICO NORD**





Ubicazione STAZIONE CHIAIA

Opera \ \ Supplementari \ 56-59

Tipo Strumento Mire Ottiche

Data posa in opera 28/03/2013

Data lettura di zero 28/03/2013

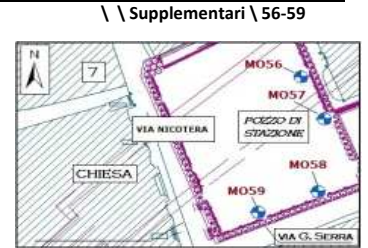
Ultima Misura 27 in data 21/09/2013

Letto. n°	DATA	CH_M056					CH_M057					CH_M058					CH_M059				
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]
1	28/03/2013 11.00	15,0	9,4	0,0	0,0	0,0	15,0	9,6	0,0	0,0	0,0	15,0	11,3	0,0	0,0	0,0	15,0	11,3	0,0	0,0	0,0
2	03/04/2013 17.30	16,0	9,4	-2,0	0,0	0,0	16,0	9,6	0,0	-2,0	0,0	16,0	11,3	0,0	-3,0	2,0	16,0	11,3	-1,0	1,0	2,0
3	10/04/2013 10.30	16,0	9,4	-2,0	1,0	0,0	16,0	9,6	1,0	-1,0	1,0	16,0	11,3	-1,0	-2,0	1,0	16,0	11,3	-1,0	1,0	3,0
4	16/04/2013 15.00	23,0	9,4	-3,0	2,0	0,0	23,0	9,6	0,0	1,0	0,0	23,0	11,3	-1,0	3,0	0,0	23,0	11,3	0,0	0,0	1,0
5	23/04/2013 08.30	13,0	9,4	-2,0	2,0	1,0	13,0	9,6	0,0	-1,0	1,0	13,0	11,3	0,0	1,0	2,0	13,0	11,3	-2,0	2,0	2,0
6	03/05/2013 14.30	25,0	9,4	-2,0	3,0	0,0	25,0	9,6	0,0	1,0	1,0	25,0	11,3	-1,0	4,0	1,0	25,0	11,3	0,0	2,0	2,0
7	09/05/2013 08.30	18,0	9,4	-1,0	1,0	2,0	18,0	9,6	-1,0	1,0	3,0	18,0	11,3	0,0	2,0	3,0	18,0	11,3	-1,0	2,0	2,0
8	15/05/2013 14.30	21,0	9,4	-2,0	3,0	0,0	21,0	9,6	0,0	2,0	1,0	21,0	11,3	-1,0	3,0	1,0	21,0	11,3	1,0	0,0	0,0
9	22/05/2013 08.30	19,0	9,4	-2,0	1,0	-1,0	19,0	9,6	0,0	0,0	0,0	19,0	11,3	-1,0	3,0	2,0	19,0	11,3	0,0	0,0	1,0
10	31/05/2013 15.30	18,0	9,4	-2,0	2,0	-1,0	18,0	9,6	0,0	0,0	0,0	18,0	11,3	0,0	0,0	0,0	18,0	11,3	-3,0	1,0	3,0
11	07/06/2013 08.30	21,0	9,4	0,0	1,0	-1,0	21,0	9,6	-1,0	1,0	0,0	21,0	11,3	0,0	2,0	1,0	21,0	11,3	-2,0	1,0	2,0
12	13/06/2013 14.30	28,0	9,4	-1,0	3,0	-2,0	28,0	9,6	1,0	3,0	-1,0	28,0	11,3	1,0	3,0	2,0	28,0	11,3	0,0	3,0	2,0
13	18/06/2013 09.00	28,0	9,4	-2,0	1,0	1,0	28,0	9,6	-1,0	1,0	1,0	28,0	11,3	-1,0	2,0	3,0	28,0	11,3	0,0	1,0	2,0
14	25/06/2013 18.00	28,0	9,4	-1,0	2,0	-1,0	28,0	9,6	0,0	2,0	0,0	28,0	11,3	0,0	4,0	2,0	28,0	11,3	0,0	1,0	3,0
15	01/07/2013 07.30	22,0	9,4	-2,0	3,0	-1,0	22,0	9,6	-1,0	1,0	0,0	22,0	11,3	0,0	5,0	2,0	22,0	11,3	0,0	0,0	1,0
16	08/07/2013 17.30	25,0	9,4	-3,0	3,0	1,0	25,0	9,6	-1,0	2,0	1,0	25,0	11,3	0,0	3,0	2,0	25,0	11,3	1,0	-2,0	2,0
17	13/07/2013 07.30	25,0	9,4	-2,0	1,0	0,0	25,0	9,6	-1,0	1,0	2,0	25,0	11,3	-2,0	4,0	3,0	25,0	11,3	0,0	-1,0	2,0
18	18/07/2013 07.30	25,0	9,4	-2,0	1,0	1,0	25,0	9,6	-1,0	1,0	2,0	25,0	11,3	-1,0	4,0	3,0	25,0	11,3	1,0	0,0	3,0
19	25/07/2013 18.00	27,0	9,4	-2,0	2,0	1,0	27,0	9,6	-1,0	1,0	3,0	27,0	11,3	-1,0	6,0	4,0	27,0	11,3	1,0	0,0	1,0
20	31/07/2013 09.00	27,0	9,4	-2,0	0,0	0,0	27,0	9,6	-1,0	1,0	3,0	27,0	11,3	-2,0	5,0	5,0	27,0	11,3	1,0	1,0	3,0
21	07/08/2013 09.00	29,0	9,4	-3,0	2,0	0,0	29,0	9,6	-1,0	2,0	2,0	29,0	11,3	-2,0	5,0	5,0	29,0	11,3	-1,0	1,0	1,0
22	13/08/2013 09.00	27,0	9,4	-4,0	3,0	1,0	27,0	9,6	-2,0	3,0	1,0	27,0	11,3	-1,0	4,0	5,0	27,0	11,3	-2,0	1,0	2,0
23	21/08/2013 07.30	23,0	9,4	-2,0	3,0	1,0	23,0	9,6	-2,0	3,0	2,0	23,0	11,3	-1,0	8,0	4,0	23,0	11,3	1,0	0,0	2,0
24	28/08/2013 10.30	25,0	9,4	-3,0	3,0	1,0	25,0	9,6	-2,0	2,0	3,0	25,0	11,3	0,0	6,0	4,0	25,0	11,3	2,0	-3,0	5,0
25	06/09/2013 17.30	29,0	9,4	-2,0	3,0	1,0	29,0	9,6	-1,0	2,0	2,0	29,0	11,3	1,0	6,0	3,0	29,0	11,3	0,0	-2,0	1,0
26	13/09/2013 07.30	18,0	9,4	-2,0	2,0	1,0	18,0	9,6	-1,0	2,0	1,0	18,0	11,3	1,0	5,0	3,0	18,0	11,3	1,0	0,0	1,0
27	21/09/2013 09.30	21,0	9,4	-3,0	3,0	-1,0	21,0	9,6	-1,0	2,0	1,0	21,0	11,3	1,0	5,0	2,0	21,0	11,3	1,0	0,0	3,0

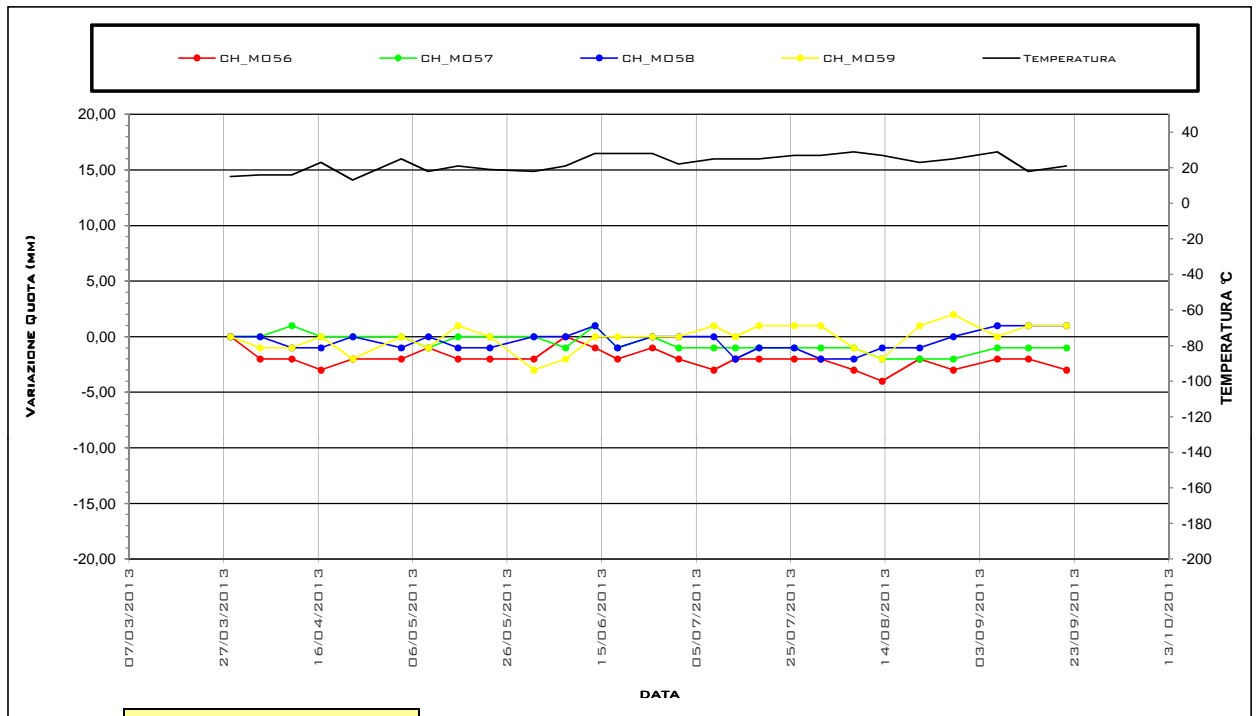


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 56-59  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013

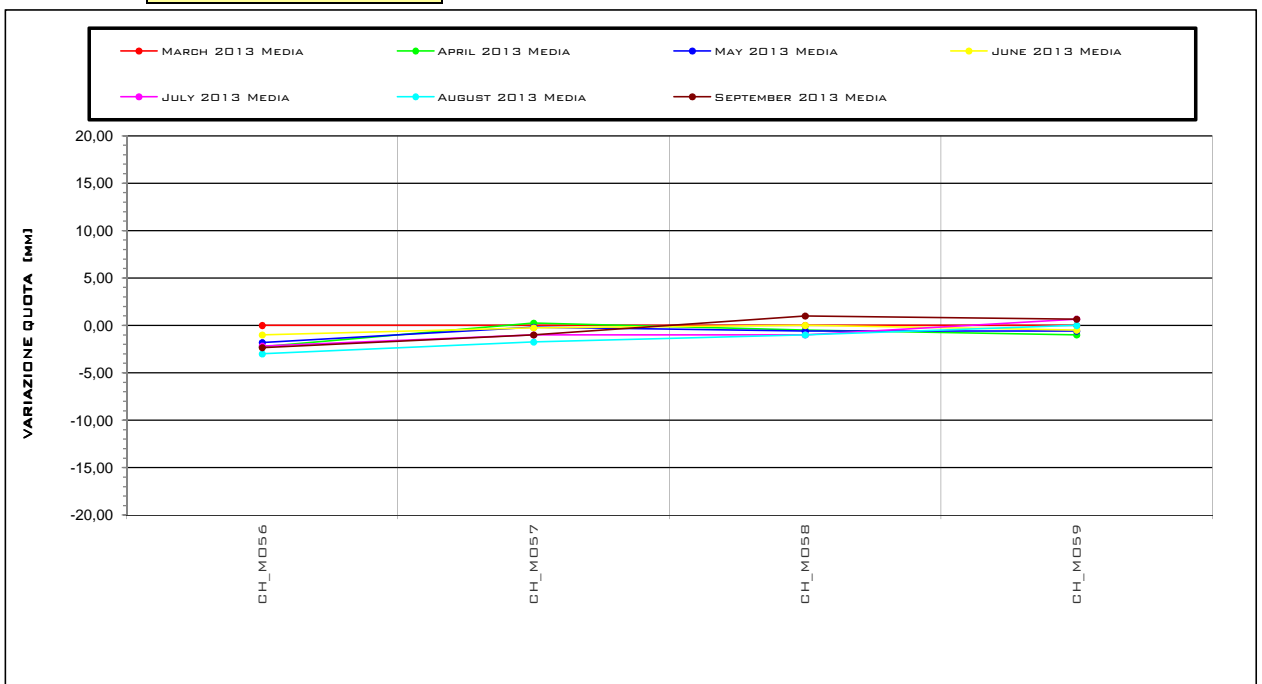
**UBICAZIONE**



**GRAFICO QUOTA**

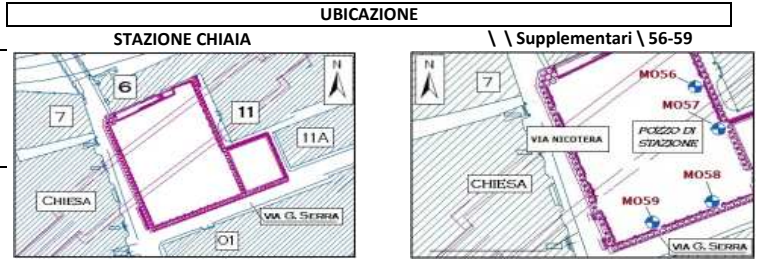


**GRAFICO ISOCRONE**

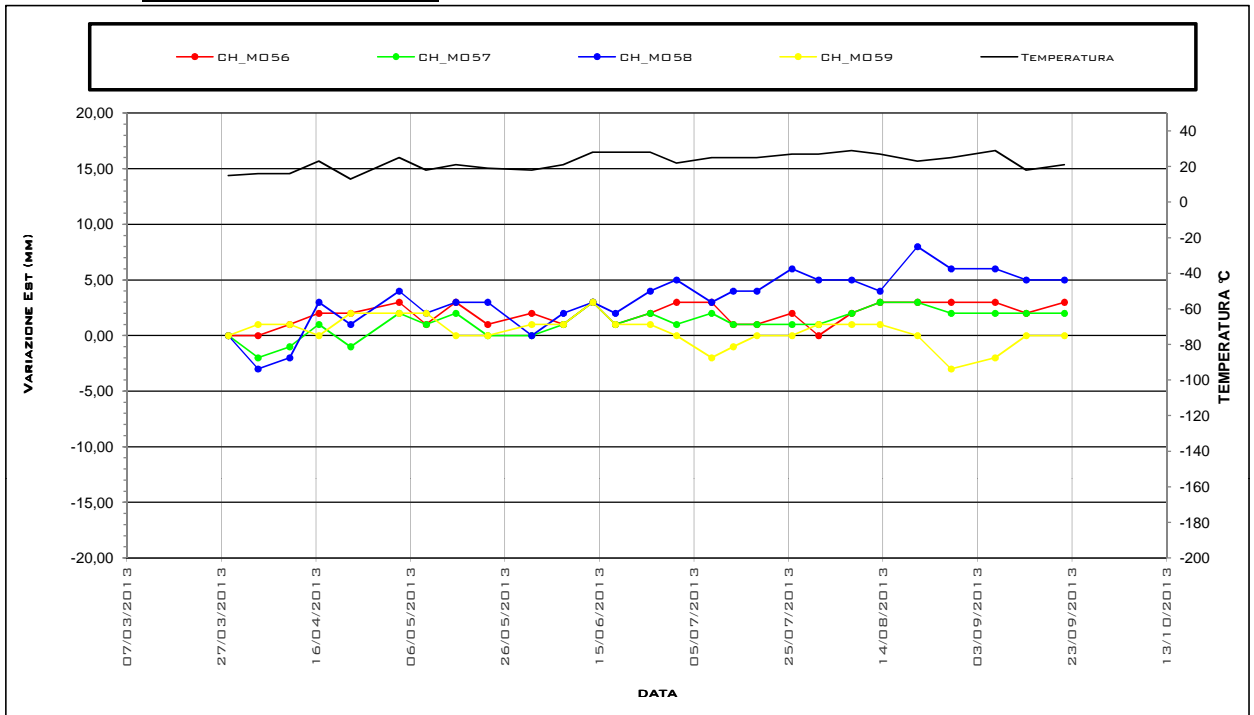




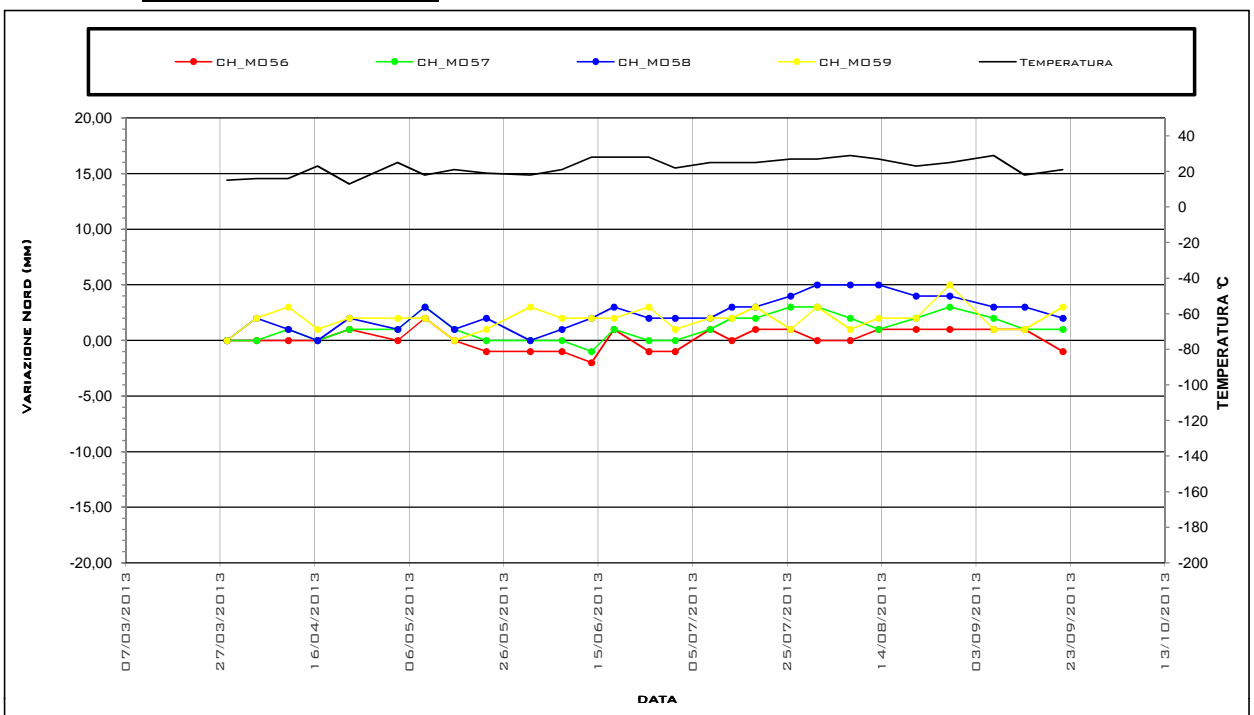
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 56-59  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013



**GRAFICO EST**



**GRAFICO NORD**





Ubicazione STAZIONE CHIAIA

Opera \ \ Supplementari \ 60-61

Tipo Strumento Mire Ottiche

Data posa in opera 28/03/2013

Data lettura di zero 28/03/2013

Ultima Misura 27 in data 21/09/2013

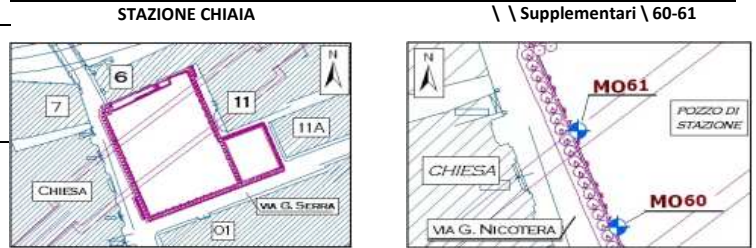
Letto. n°	DATA	CH_M060					CH_M061				
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]
1	28/03/2013 11.00	15,0	14,3	0,0	0,0	0,0	15,0	14,5	0,0	0,0	0,0
2	03/04/2013 17.30	16,0	14,3	-1,0	0,0	0,0	16,0	14,5	0,0	0,0	0,0
3	10/04/2013 10.30	16,0	14,3	0,0	1,0	1,0	16,0	14,5	0,0	-1,0	1,0
4	16/04/2013 15.00	23,0	14,3	-1,0	-1,0	0,0	23,0	14,5	1,0	-1,0	0,0
5	23/04/2013 08.30	13,0	14,3	-2,0	1,0	1,0	13,0	14,5	-1,0	0,0	0,0
6	03/05/2013 14.30	25,0	14,3	-1,0	2,0	-1,0	25,0	14,5	1,0	0,0	0,0
7	09/05/2013 08.30	18,0	14,3	-2,0	1,0	1,0	18,0	14,5	-1,0	-1,0	-1,0
8	15/05/2013 14.30	21,0	14,3	0,0	0,0	0,0	21,0	14,5	0,0	0,0	0,0
9	22/05/2013 08.30	19,0	14,3	-2,0	0,0	0,0	19,0	14,5	0,0	-1,0	1,0
10	31/05/2013 15.30	18,0	14,3	-2,0	1,0	1,0	18,0	14,5	0,0	-1,0	1,0
11	07/06/2013 08.30	21,0	14,3	-2,0	1,0	1,0	21,0	14,5	-1,0	1,0	2,0
12	13/06/2013 14.30	28,0	14,3	-1,0	4,0	-1,0	28,0	14,5	0,0	2,0	-1,0
13	18/06/2013 09.00	28,0	14,3	-2,0	2,0	2,0	28,0	14,5	-1,0	0,0	2,0
14	25/06/2013 18.00	28,0	14,3	-3,0	1,0	1,0	28,0	14,5	-2,0	0,0	1,0
15	01/07/2013 07.30	22,0	14,3	-4,0	0,0	1,0	22,0	14,5	-1,0	0,0	1,0
16	08/07/2013 17.30	25,0	14,3	-2,0	-2,0	0,0	25,0	14,5	-1,0	-1,0	1,0
17	13/07/2013 07.30	25,0	14,3	-3,0	0,0	2,0	25,0	14,5	-2,0	0,0	2,0
18	18/07/2013 07.30	25,0	14,3	-3,0	1,0	1,0	25,0	14,5	-1,0	-1,0	1,0
19	25/07/2013 18.00	27,0	14,3	-3,0	0,0	2,0	27,0	14,5	-2,0	0,0	1,0
20	31/07/2013 09.00	27,0	14,3	-2,0	1,0	1,0	27,0	14,5	0,0	0,0	2,0
21	07/08/2013 09.00	29,0	14,3	-4,0	0,0	1,0	29,0	14,5	-2,0	-2,0	2,0
22	13/08/2013 09.00	27,0	14,3	-5,0	-1,0	1,0	27,0	14,5	-3,0	-3,0	2,0
23	21/08/2013 07.30	23,0	14,3	-3,0	0,0	2,0	23,0	14,5	-2,0	0,0	2,0
24	28/08/2013 10.30	25,0	14,3	-2,0	-1,0	5,0	25,0	14,5	1,0	-2,0	4,0
25	06/09/2013 17.30	29,0	14,3	-2,0	0,0	2,0	29,0	14,5	0,0	-1,0	2,0
26	13/09/2013 07.30	18,0	14,3	-3,0	0,0	0,0	18,0	14,5	-1,0	0,0	0,0
27	21/09/2013 09.30	21,0	14,3	-4,0	-1,0	3,0	21,0	14,5	-1,0	-1,0	2,0



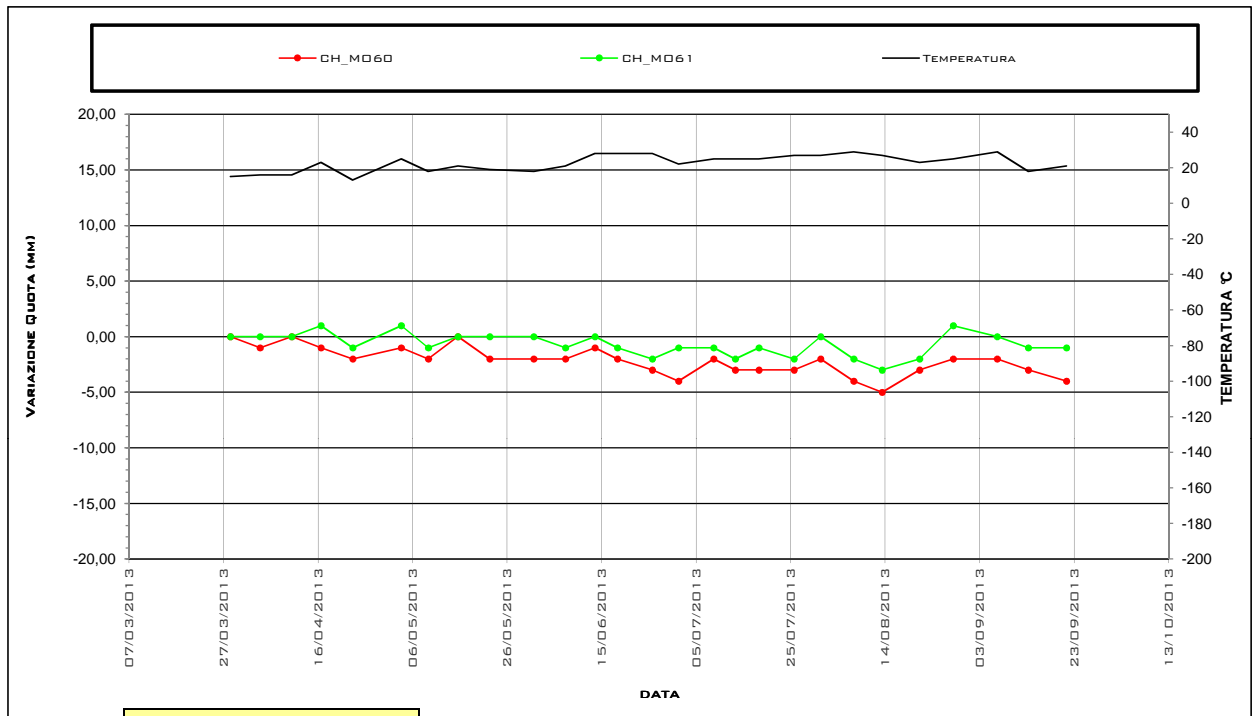


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 60-61  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013

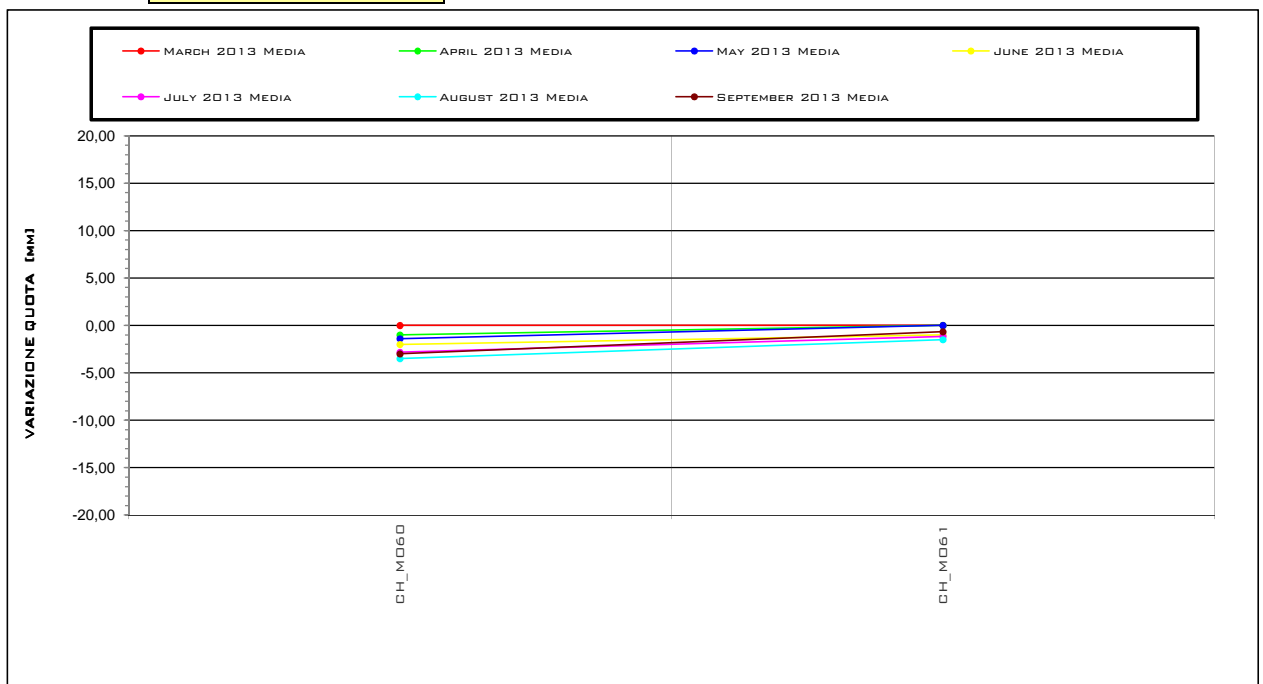
**UBICAZIONE**



**GRAFICO QUOTA**

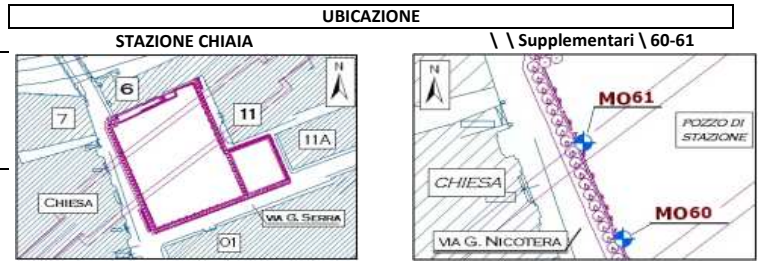


**GRAFICO ISOCRONE**

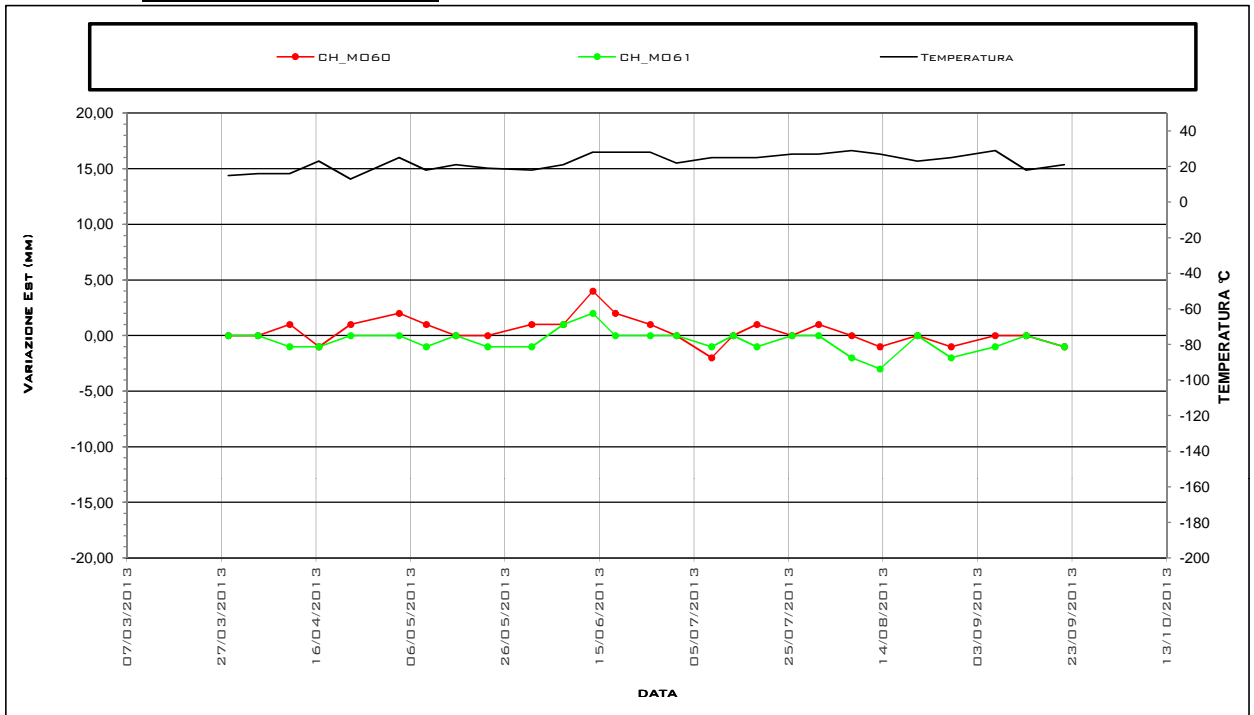




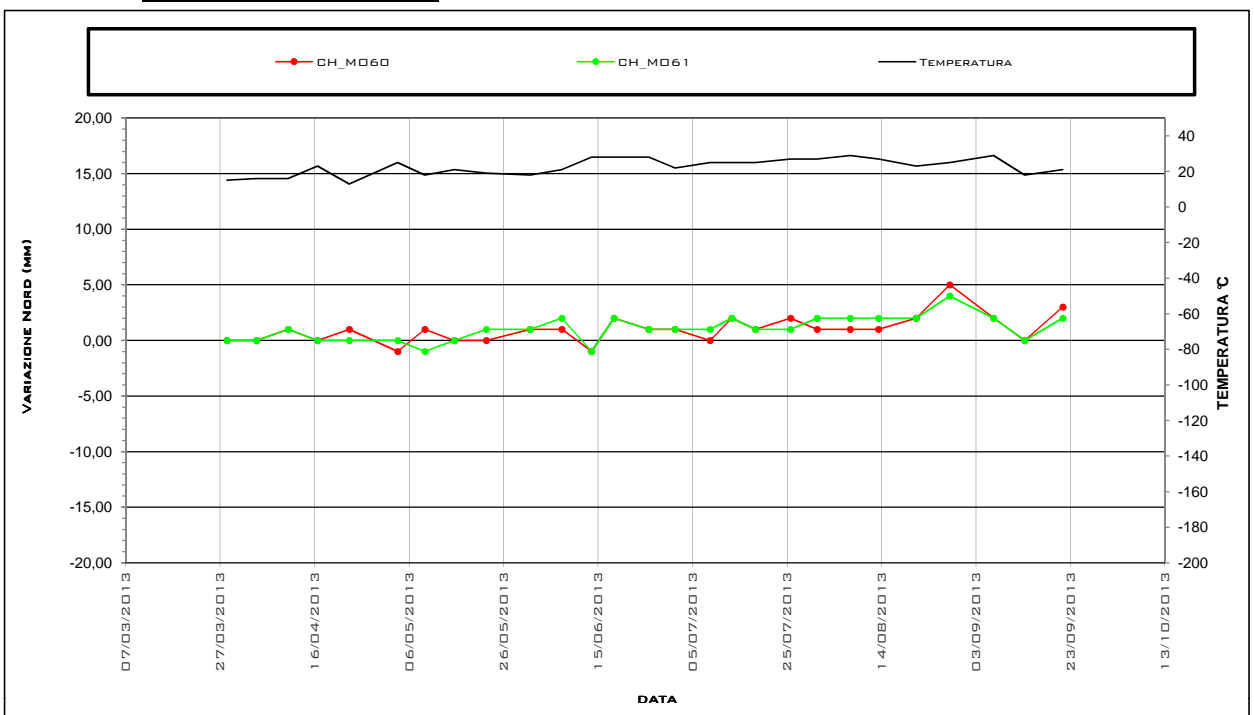
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 60-61  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013



**GRAFICO EST**



**GRAFICO NORD**





Ubicazione STAZIONE CHIAIA

Opera \ \ Supplementari \ 62-64

Tipo Strumento Mire Ottiche

Data posa in opera 28/03/2013

Data lettura di zero 28/03/2013

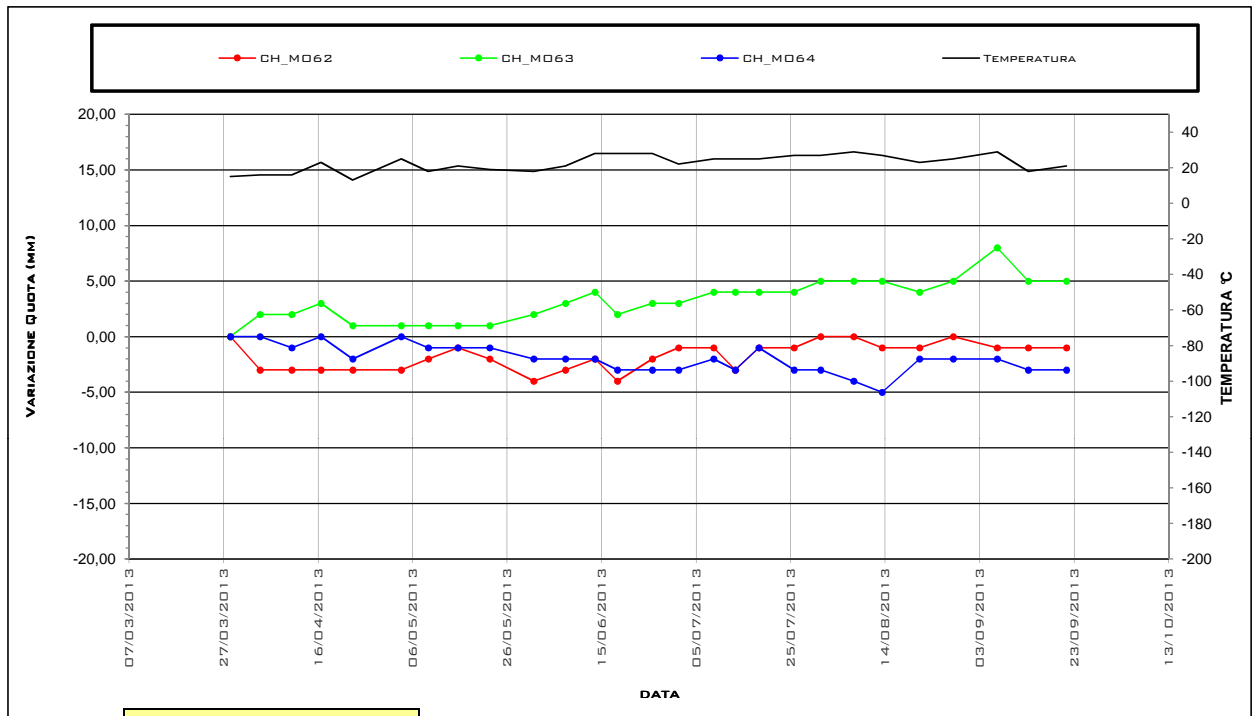
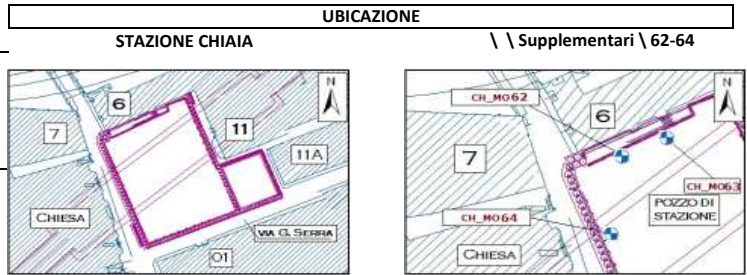
Ultima Misura 27 in data 21/09/2013

Letto. n°	DATA	CH_M062					CH_M063					CH_M064				
		Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]	Temp. Media [°C]	Quota [m]	Quota Spost. [mm]	Est Spost. [mm]	Nord Spost. [mm]
1	28/03/2013 11.00	15,0	9,4	0,0	0,0	0,0	15,0	9,4	0,0	0,0	0,0	15,0	9,0	0,0	0,0	0,0
2	03/04/2013 17.30	16,0	9,4	-3,0	-2,0	0,0	16,0	9,4	2,0	-1,0	-1,0	16,0	9,0	0,0	-1,0	1,0
3	10/04/2013 10.30	16,0	9,4	-3,0	-2,0	0,0	16,0	9,4	2,0	0,0	1,0	16,0	9,0	-1,0	-1,0	2,0
4	16/04/2013 15.00	23,0	9,4	-3,0	0,0	-1,0	23,0	9,4	3,0	0,0	-3,0	23,0	9,0	0,0	-1,0	1,0
5	23/04/2013 08.30	13,0	9,4	-3,0	-2,0	0,0	13,0	9,4	1,0	0,0	-1,0	13,0	9,0	-2,0	1,0	1,0
6	03/05/2013 14.30	25,0	9,4	-3,0	-1,0	-2,0	25,0	9,4	1,0	1,0	-2,0	25,0	9,0	0,0	0,0	0,0
7	09/05/2013 08.30	18,0	9,4	-2,0	-2,0	-1,0	18,0	9,4	1,0	0,0	0,0	18,0	9,0	-1,0	0,0	2,0
8	15/05/2013 14.30	21,0	9,4	-1,0	0,0	-1,0	21,0	9,4	1,0	1,0	-2,0	21,0	9,0	-1,0	0,0	0,0
9	22/05/2013 08.30	19,0	9,4	-2,0	-3,0	0,0	19,0	9,4	1,0	0,0	-2,0	19,0	9,0	-1,0	-1,0	1,0
10	31/05/2013 15.30	18,0	9,4	-4,0	-3,0	0,0	18,0	9,4	2,0	1,0	-1,0	18,0	9,0	-2,0	-1,0	2,0
11	07/06/2013 08.30	21,0	9,4	-3,0	-2,0	0,0	21,0	9,4	3,0	0,0	-2,0	21,0	9,0	-2,0	0,0	2,0
12	13/06/2013 14.30	28,0	9,4	-2,0	-2,0	-1,0	28,0	9,4	4,0	3,0	-2,0	28,0	9,0	-2,0	3,0	0,0
13	18/06/2013 09.00	28,0	9,4	-4,0	-3,0	0,0	28,0	9,4	2,0	1,0	0,0	28,0	9,0	-3,0	0,0	2,0
14	25/06/2013 18.00	28,0	9,4	-2,0	-3,0	0,0	28,0	9,4	3,0	2,0	-3,0	28,0	9,0	-3,0	0,0	2,0
15	01/07/2013 07.30	22,0	9,4	-1,0	-2,0	-1,0	22,0	9,4	3,0	1,0	-2,0	22,0	9,0	-3,0	1,0	0,0
16	08/07/2013 17.30	25,0	9,4	-1,0	-3,0	-1,0	25,0	9,4	4,0	1,0	-2,0	25,0	9,0	-2,0	-3,0	2,0
17	13/07/2013 07.30	25,0	9,4	-3,0	-2,0	0,0	25,0	9,4	4,0	-1,0	-2,0	25,0	9,0	-3,0	-1,0	3,0
18	18/07/2013 07.30	25,0	9,4	-1,0	-3,0	-1,0	25,0	9,4	4,0	-1,0	-2,0	25,0	9,0	-1,0	-1,0	3,0
19	25/07/2013 18.00	27,0	9,4	-1,0	-1,0	-1,0	27,0	9,4	4,0	0,0	-3,0	27,0	9,0	-3,0	0,0	2,0
20	31/07/2013 09.00	27,0	9,4	0,0	-3,0	-2,0	27,0	9,4	5,0	0,0	-3,0	27,0	9,0	-3,0	0,0	3,0
21	07/08/2013 09.00	29,0	9,4	0,0	-3,0	-2,0	29,0	9,4	5,0	0,0	-3,0	29,0	9,0	-4,0	-1,0	3,0
22	13/08/2013 09.00	27,0	9,4	-1,0	-3,0	-3,0	27,0	9,4	5,0	-1,0	-3,0	27,0	9,0	-5,0	-2,0	3,0
23	21/08/2013 07.30	23,0	9,4	-1,0	-2,0	0,0	23,0	9,4	4,0	2,0	-5,0	23,0	9,0	-2,0	1,0	3,0
24	28/08/2013 10.30	25,0	9,4	0,0	-3,0	0,0	25,0	9,4	5,0	1,0	-5,0	25,0	9,0	-2,0	-2,0	4,0
25	06/09/2013 17.30	29,0	9,4	-1,0	-4,0	-1,0	29,0	9,4	8,0	0,0	-5,0	29,0	9,0	-2,0	-2,0	3,0
26	13/09/2013 07.30	18,0	9,4	-1,0	-3,0	-2,0	18,0	9,4	5,0	3,0	-2,0	18,0	9,0	-3,0	-1,0	2,0
27	21/09/2013 09.30	21,0	9,4	-1,0	-2,0	0,0	21,0	9,4	5,0	1,0	-4,0	21,0	9,0	-3,0	0,0	4,0

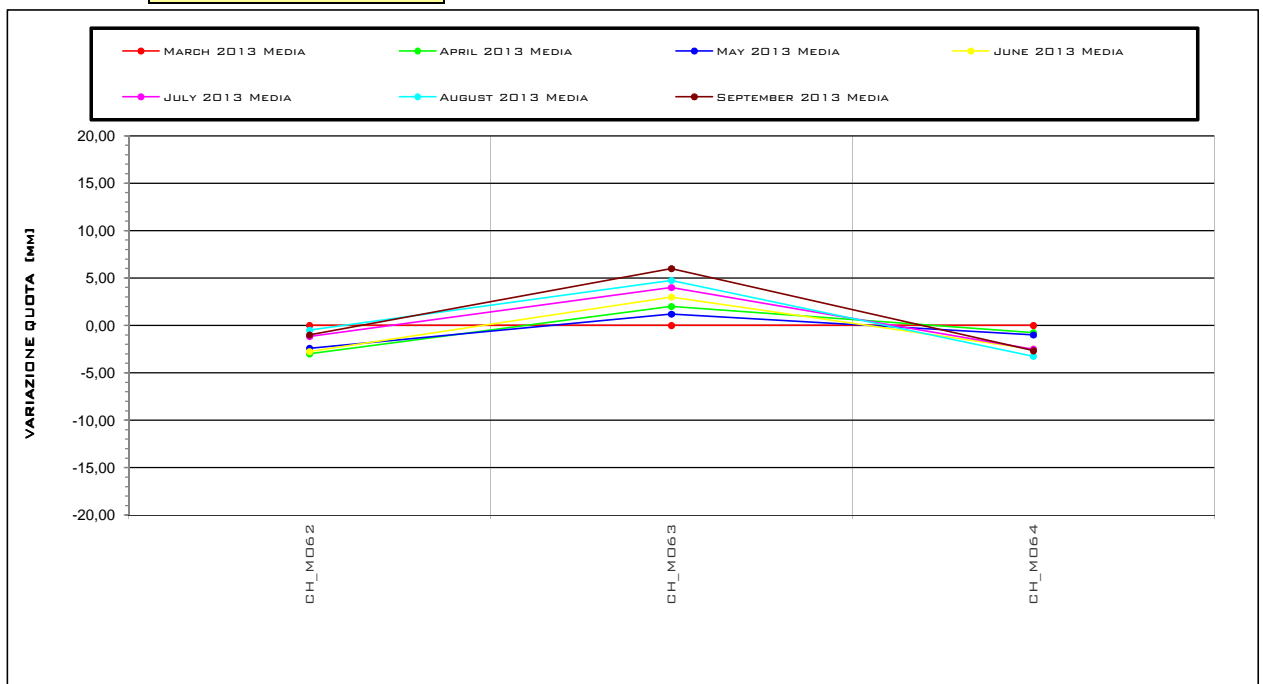


**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 62-64  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013

**GRAFICO QUOTA**

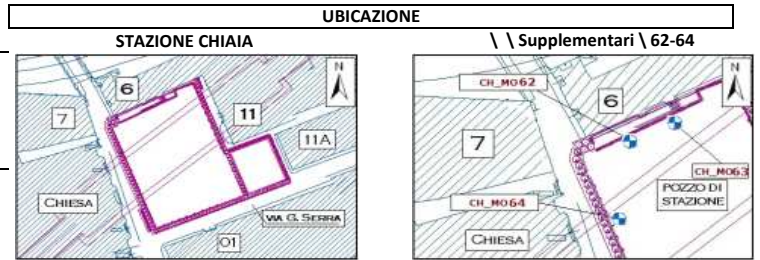


**GRAFICO ISOCRONE**

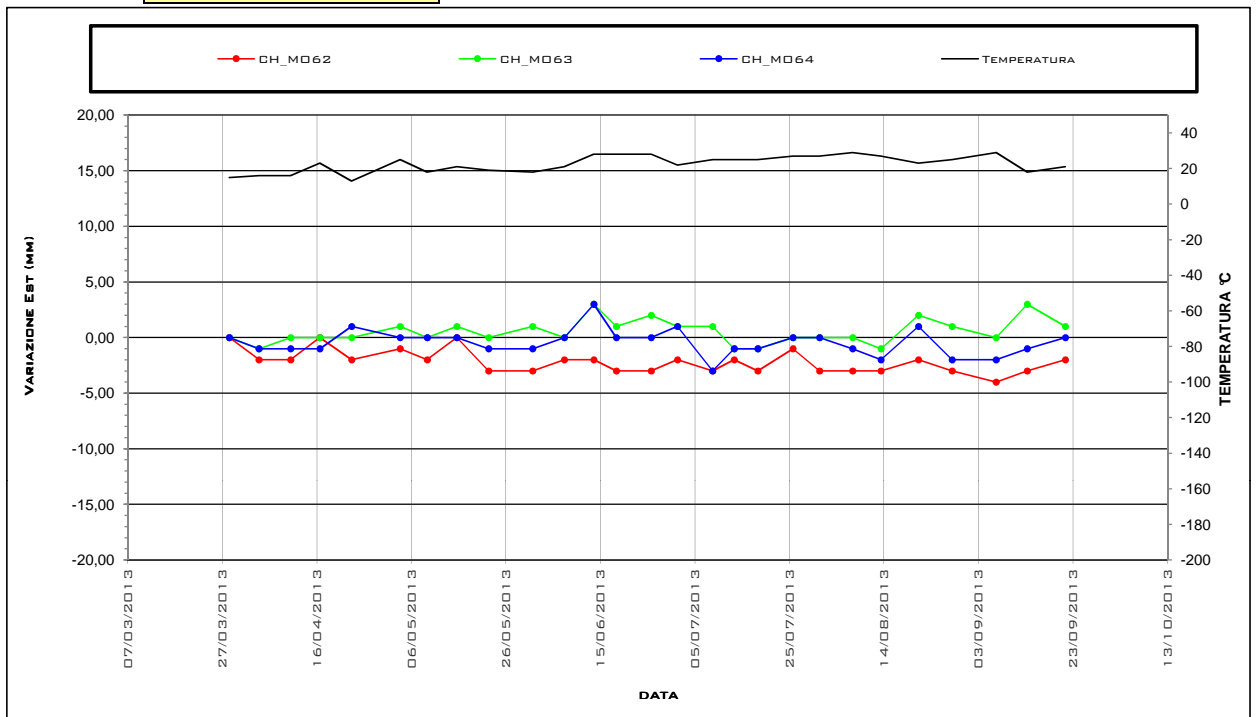




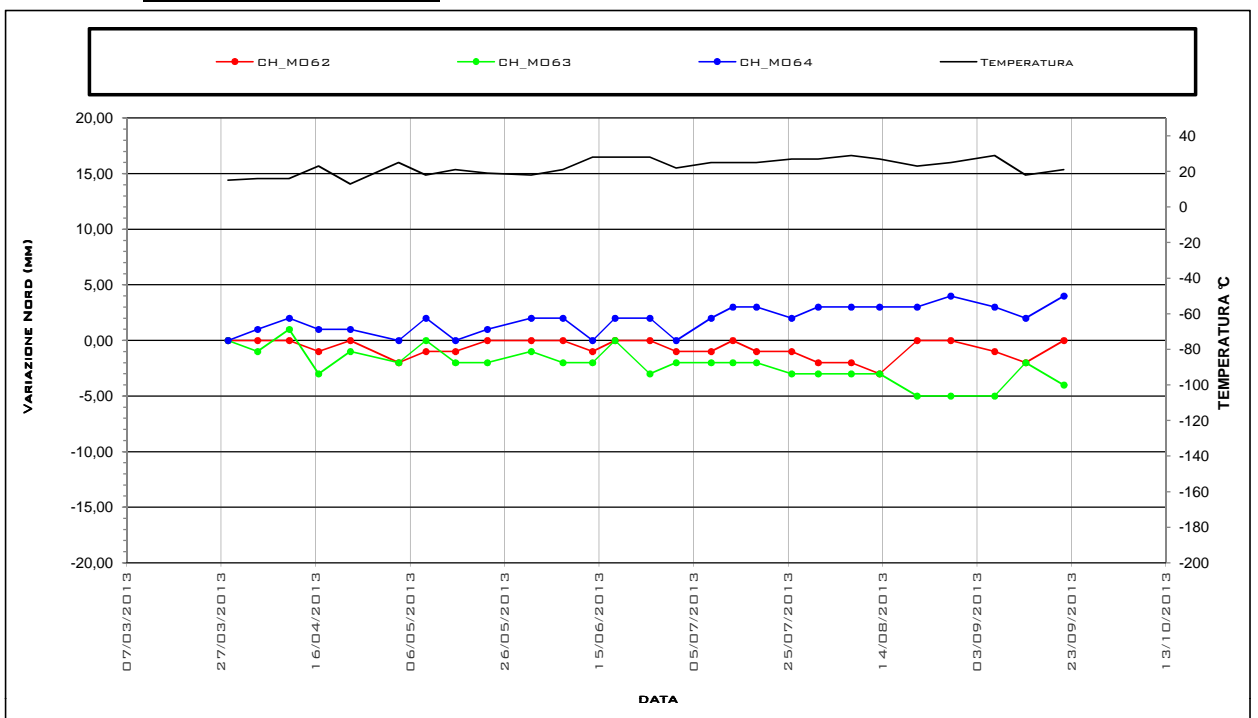
**Ubicazione** STAZIONE CHIAIA  
**Opera** \ \ Supplementari \ 62-64  
**Tipo Strumento** Mire Ottiche  
**Data posa in opera** 28/03/2013  
**Data lettura di zero** 28/03/2013



**GRAFICO EST**



**GRAFICO NORD**



METROPOLITANA LINEA 6 - RESOCONTO MANUTENZIONE TRESSE ENGINEERING S.R.L.



mag-13

SAN PASQUALE

COD.STAZIONE	COD. STRUM.	TIPOLOGIA STRUM.	METRI da p.c.	6/5	7/5	8/5	9/5	10/5	Esito	TOT MESE	TOTALE
SP	SP_PZ1_S	PIEZ. CASAGRANDE	15							0	2
	SP_PZ1_P	PIEZ. CASAGRANDE	30							0	1
SP (nuova installazione)	SP_PZ1_S	PIEZ. CASAGRANDE	15				1		N	1	3
	SP_PZ1_P	PIEZ. CASAGRANDE	30				1		N	1	3
SP	SP_PZ2_S	PIEZ. CASAGRANDE	15							0	5
	SP_PZ2_P	PIEZ. CASAGRANDE	30							0	5
SP	SP_PZ3_S	PIEZ. CASAGRANDE	15							0	6
	SP_PZ3_P	PIEZ. CASAGRANDE	30							0	6
SP	SP_PZ4_S	PIEZ. CASAGRANDE	15							0	4
	SP_PZ4_P	PIEZ. CASAGRANDE	30							0	4
SP	SP_PZ5_S	PIEZ. CASAGRANDE	15				1		P	1	4
	SP_PZ5_P	PIEZ. CASAGRANDE	30				1		P	1	4
SP	SP_PZ6_S	PIEZ. CASAGRANDE	15							0	3
	SP_PZ6_P	PIEZ. CASAGRANDE	30							0	3
SP	SP_PZ7_S	PIEZ. CASAGRANDE	15							0	2
	SP_PZ7_P	PIEZ. CASAGRANDE	30							0	2
SP	SP_PZ8_S	PIEZ. CASAGRANDE	40							0	2
	SP_PZ8_P	PIEZ. CASAGRANDE	43							0	2
SP	SP_PZ9_S	PIEZ. CASAGRANDE	15							0	2
	SP_PZ9_P	PIEZ. CASAGRANDE	30							0	2
SP	SP_PZ10_S	PIEZ. CASAGRANDE	40							0	2
	SP_PZ10_P	PIEZ. CASAGRANDE	43							0	2
SP	SP_PZ11_S	PIEZ. CASAGRANDE	40							0	2
	SP_PZ11_P	PIEZ. CASAGRANDE	43							0	2
SP	SP_PZ12_S	PIEZ. CASAGRANDE	15							0	2
	SP_PZ12_P	PIEZ. CASAGRANDE	30							0	2
SP	SP_PZ13_S	PIEZ. CASAGRANDE	15							0	2
	SP_PZ13_P	PIEZ. CASAGRANDE	30							0	2
SP	SP_PZ14_S	PIEZ. CASAGRANDE	40							0	2
	SP_PZ14_P	PIEZ. CASAGRANDE	43							0	2
SP	SP_PZ15_S	PIEZ. CASAGRANDE	22,5	1					P	1	1
	SP_PZ15_P	PIEZ. CASAGRANDE	45,5	1					P	1	1
SP	SP_PZ16_S	PIEZ. CASAGRANDE	22	1					P	1	1
	SP_PZ16_P	PIEZ. CASAGRANDE	39,5	1					P	1	1
SP	SP_IN1	INCLINOMETRO	20/54							0	2
SP	SP_IN1_1	INCLINOMETRO	44/44				1		P	1	4
SP	SP_EI2/ES2	ESTENSO-INCLINOMETRO	54/54							0	4
SP	SP_IN3	INCLINOMETRO	45/45							0	5
SP	SP_IN4	INCLINOMETRO	0/54							0	0
SP	SP_IN4_1	INCLINOMETRO	50/50							0	3
SP	SP_EI5/ES5	ESTENSO-INCLINOMETRO	54/54							0	2
SP	SP_IN6	INCLINOMETRO	35/54							0	2
SP	SP_IN6_1	INCLINOMETRO	48/48							0	3
SP	SP_IN_P3	INCLINOMETRO	0/43							0	0
SP	SP_IN_P3_1	INCLINOMETRO	16/33				1		N	1	5
SP	SP_IN_P5	INCLINOMETRO	48/48				1		P	1	6
SP	SP_IN_P12	INCLINOMETRO	37/45							0	1
SP	SP_IN_P12_1	INCLINOMETRO	43/43							0	2
SP	SP_IN_P13	INCLINOMETRO	49/49							0	6
SP	SP_IN_P25	INCLINOMETRO	0/51							0	0
SP	SP_IN_P26	INCLINOMETRO	45/45							0	9
SP	SP_IN_P61	INCLINOMETRO	0/51							0	0
SP	SP_IN_P64	INCLINOMETRO	28/46							0	6
SP	SP_IN_P74	INCLINOMETRO	42/42							0	5
SP	SP_IN_P75	INCLINOMETRO	47/47							0	5
SP	SP_IN_P83	INCLINOMETRO	47/47				1		P	1	5
SP	SP_IN_P84	INCLINOMETRO	35/51							0	1
SP	SP_IN_P84_1	INCLINOMETRO	47/47				1		P	1	4












**LEGENDA**

	IN ROSSO STRUMENTO FUORI USO (per il quale è inutile programmare attività di manutenzione e monitoraggio)
	IN GIALLO STRUMENTO A FUNZIONALITA' RIDOTTA
	IN VERDE STRUMENTO SOSTITUITO
<b>P</b>	ESITO POSITIVO
<b>N</b>	ESITO NEGATIVO
<b>Video</b>	VIDEOISPEZIONE ESEGUITA

**NOTE**

Gli strumenti sottoposti a manutenzione nel periodo indicato, dopo il trattamento di spurgo, lavaggio a pressione, verifica dell' accessibilità tubi di misura, hanno migliorato la loro funzionalità. Superando le prove con esito positivo.

Per i piezometri tipo Casagrande sotto riportati, si evince la scarsa comunicazione fra i tubi di misura, che indica un ridotto ricircolo dell'acqua all'interno della cella. Dalla risposta strumentale ottenuta durante le fasi di manutenzione, si suppone un funzionamento assimilabile più a piezometri tubo aperto che non a celle tipo Casagrande, ciò potrebbe comportare tempi di risposta più lunghi. Tuttavia questi strumenti continuano a fornire misure correlabili con gli altri strumenti funzionanti, continueranno ad essere regolarmente inseriti nel programma di monitoraggio e di manutenzione.

Cantiere San Pasquale

SP\_PZ1\_P SP\_PZ1\_S

Cantiere Arco Mirelli

AM\_PZ6\_S

Tratta Mergellina-Arco Mirelli

GL\_MA\_PZ4