



DEPARTMENT OF CIVIL ENGINEERING
FACULTY OF ENGINEERING, KING MONGKUT'S INSTITUTE OF TECHNOLOGY

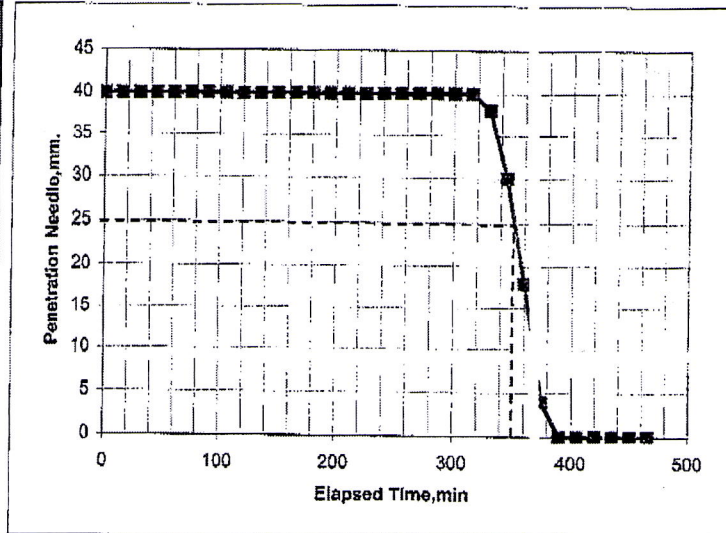
LADKRABANG BANGKOK THAILAND. TEL. 0 - 2326 - 4216

TIME OF SETTING OF CEMENT PLATE BY VICAT NEEDLE (ASTM C 191- 09)

PROJECT : Test on Properties of " Watergrout HES"
 SAMPLE FROM : Waterstop Product Co., Ltd.
 TEST SPECIMEN : Watergrout HES . W/(C+X)=0.17
 Watergrout HES 300 g. / Water 51 cc.
 TEST APPARATUS : Vicat Apparatus

Req. No. 51-443
 Date of Request 2/4/2008
 Date of Test 23/4/2008

Elapsed Time (min)	Penetration of Needle (mm.)
0	40
15 ✓	40
30 ✓	40
45	40
60	40
75	40
90	40
105	40
120	40
135	40
150	40
165	40
180	40
195	40
210	40
225	40
240	40
255	40
270	40
285	40
300	40
315	40
330	38
345	30
360	18
375	4
390	0
405	0
420	0
435	0
450	0
465	0



Initial Setting Time = 350 min
 Final Setting Time = 390 min

Note: 1) CERTIFICATION APPLIES TO TEST SAMPLES ONLY.
 2) NO ERASURE OR ALTERATIONS.

TESTED BY: 
 Natesawan

 CERTIFIED BY: 
 อภิชาติ อภิชาติ



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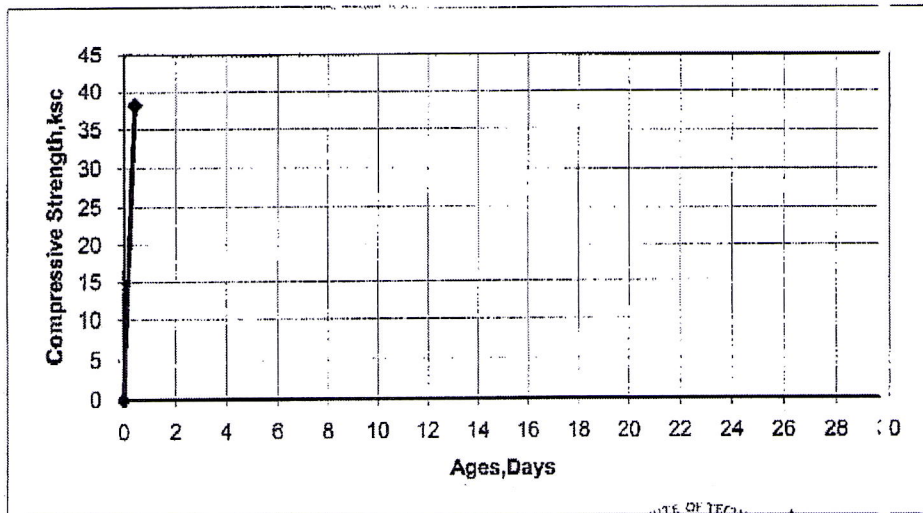
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COMPRESSIVE STRENGTH OF MORTAR (ASTM C 109-95)

PROJECT : Test on Properties of "Watergrout HES"
SAMPLE FROM : Waterstop Product Co., Ltd.
TEST SPECIMEN : Watergrout HES , W/(C+X)=0.17
Watergrout HES 6000 g. / Water 1020 cc.

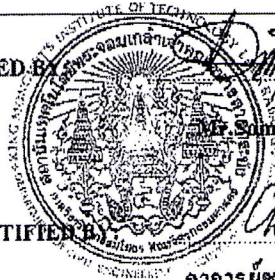
Req. No. 51-443
Date of Request 2/4/2008
Date of Test 6/5/2008

Table with 3 main columns: Spec. No., Compressive Strength of 50-mm. Mortar Cubes at different ages (ksc.), and Remark. It contains data for three specimens and an average value.



note: 1) CERTIFICATION APPLIES TO TEST SAMPLES ONLY. TESTED BY

2) NO ERASURE OR ALTERATIONS.



Mr. Sombat Patesawang

CERTIFIED BY

อาจารย์ชลิศา อัคระเกา



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FLOW OF GROUT (JSCE - F531 - 1993)

PROJECT : Test on Properties of "Watergrout HES" Req. No. 51-443
SAMPLE FROM : Waterstop Product Co., Ltd. Date of Request 2/4/2008
TEST SPECIMEN : Watergrout HES . W/(C+X)=0.17 Date of Test 14/5/2008
Watergrout HES 10000 g. / Water 1700 cc.
TEST APPARATUS : The Flow of Grout Apparatus : The Flow Cone of size 69.5 mm. in diameter x 38: mm
in height and the discharge tube of size 16 mm. in diameter , Ring Stand and
Stop Watch are used for testing

Test No.	W/C Ratio	Observed Time (minutes)	J14-Funnel Flow Time (second)	Remark
1	0.17	0	5.34	
2	0.17	10	5.69	
3	0.17	20	6.19	
4	0.17	30	7.31	
5	0.17	40	8.82	

Note: 1) CERTIFICATION APPLIES TO TEST SAMPLES ONLY.

2) NO ERASURE OR ALTERATIONS.

TESTED BY 
Mr. Sombat Nitesawang
CERTIFIED BY 
อาจารย์ชัชคิด ชู่ตะเคา