

REPORT NO GTL0812-454

DATE DECEMBER 31, 2008

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## TEST REPORT

### STRENGTH OF INDIVIDUAL STONE ANCHORAGES IN DIMENSION STONE

#### Customer's Information

Customer and Address Sunway Metal Manufactory Limited  
Flat C, G/F., Hung Cheung Ind. Centre, Phase 2, 10 Tsing Yeung Circuit,  
Tuen Mun, N.T., Hong Kong.

Project and Address ---

Stone information Stone type and name Granite – Black Granite  
Quarry source China  
Finish Not provided  
Supplier Zui Loong Company Limited  
Nominal specimen size 300 mm x 300 mm x 30 mm

Anchorage information Type of anchorage Back anchorage  
(Test load perpendicular to surface/outward)  
Manufacturer/Supplier Sunway Metal Manufactory Limited  
Nominal anchorage size S.S. Stone Back Anchor [SW-BA M8 x 40]  
Material and finish Stainless steel  
Infil material No infil

#### Test information

Test Performed Strength of Individual Stone Anchorages in Dimension Stone to ASTM  
C1354-96(2004).

Test Procedure As described in Technical Manual TM9 of Facadetech Laboratory Limited that is  
complied with Strength of Individual Stone Anchorages in Dimension Stone to  
ASTM C1354-96(2004).

Sample Received on December 23, 2008

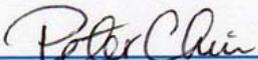
Equipment I.D. Loading Machine S/N – FTL/PT/162

Date of Test December 29, 2008

Tested by Dr. Peter Chui

TESTED BY :

APPROVED SIGNATORY :

  
Dr. Chui Pui-Tak, Peter

  
Mr. H.H. Yu

## TEST RESULTS

### Conditioning of specimen

Sample

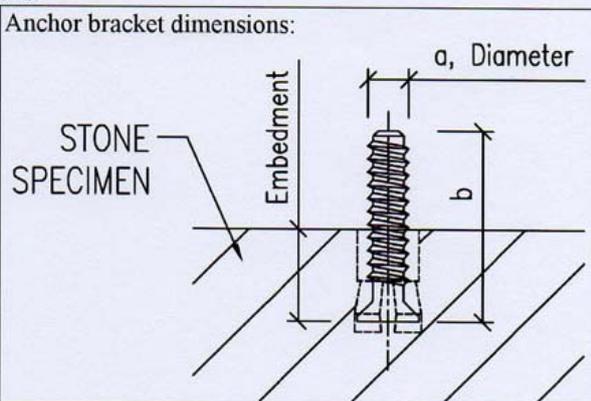
(GTL0812-454/01  
 to GTL0812-454/05)

Wet conditioning - the tested specimens were soaked in water tank at  $22 \pm 2^\circ\text{C}$  for 48 hours.

### Test Results

Sample Mark (GTL0812-454)	/01	/02	/03	/04	/05
Sample Size					
Length, mm	300	300	300	300	299
Width, mm	300	300	300	300	301
Thickness, mm	30.7	30.7	30.7	30.4	30.6
Anchor bracket dimensions:					
Dim a, mm	7.8	7.8	7.8	7.8	7.8
Dim b, mm	41	41	41	41	41
Embedment, mm	19	20	20	21	20

Diagram for slot, notch, hole and anchor bracket dimensions:

Slot notch or hole dimensions:	Anchor bracket dimensions:
N/A	

## TEST RESULTS

### Test Condition

Ambient temperature 22 °C  
 Load rate 100 N/s

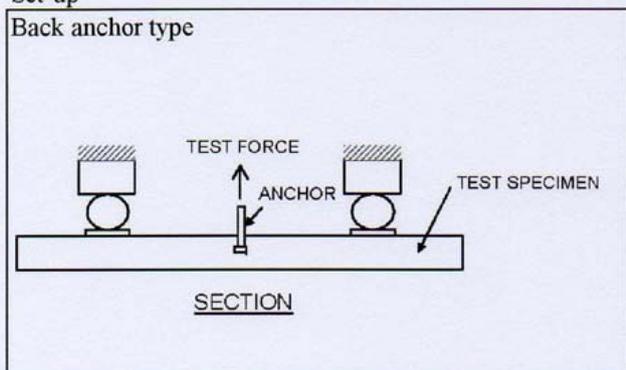
Sample Mark (GTL0812-454)	/01	/02	/03	/04	/05
Conditioning of Sample	<b>Wet</b>				
Cut Orientation <sup>Note (1)</sup>	---				
Load Direction	<b>Perpendicular to specimen surface / outward</b>				
Maximum Failure Load $F_T$ , kN	14.13	12.18	13.32	12.92	9.97
Failure Mode <sup>Note (2)</sup>	Pb	Pb	Pb	Pb	An pull
Stone dimensions for stone failure mode, mm	Length	---	---	---	---
	Width	---	---	---	---
	Depth	---	---	---	---
Anchorage System Load, kN <sup>Note (3)</sup>	14.13	12.18	13.32	12.92	9.97
Mean Anchorage System Load, kN	<b>12.50</b>				
Standard Deviation	<b>1.58</b>				

Note (1) Cut orientation of the tested specimen was informed and marked in the specimens by the customer.

Note (2) Failure mode:  
 Gr represents stone failure.  
 An represents anchor material failure.  
 An push/pull represents anchor push/pull out from slot.  
 Pb represents test specimen broke.

Note (3) Anchorage System Load,  $N = F_T$

### Set-up



### Remark:

- i) The maximum expanded uncertainty of the measured anchorage system load is +/- 283 N.
- ii) The expanded uncertainty is based on a standard uncertainty by a coverage factor of  $K=2$ , providing a level of confidence of approximately 95%.
- iii) The results given in this report only relate to the sample tested at the time of the test.

## Photo Record



Title Anchor Test  
Sample 01  
Photo by P. Chui  
Date 2008/12/29

Sample tested after wet conditioning

Test load direction Outward



Title Anchor Test  
Sample 02  
Photo by P. Chui  
Date 2008/12/29

Sample tested after wet conditioning

Test load direction Outward

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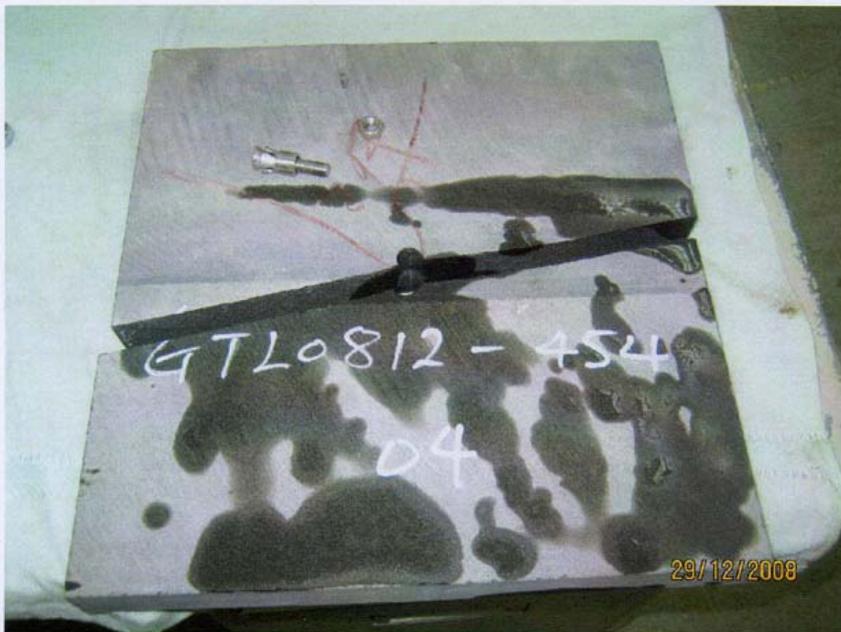
## Photo Record



Title Anchor Test  
Sample 03  
Photo by P. Chui  
Date 2008/12/29

Sample tested after wet conditioning

Test load direction Outward



Title Anchor Test  
Sample 04  
Photo by P. Chui  
Date 2008/12/29

Sample tested after wet conditioning

Test load direction Outward

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## Photo Record



Title Anchor Test  
Sample 05  
Photo by P. Chui  
Date 2008/12/29

Sample tested after wet  
conditioning

Test load direction Outward

- The End -