

**GLOCKNER
ENGINEERING &
MINING
SERVICES**



Management System

Trimble S6/S8 Prism Monitoring

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1 PURPOSE

This procedure describes the method to complete automated prism monitoring with the Trimble S6 or S8 Total Station.

2 SCOPE

This document applies to all mine sites using the Trimble S6 or S8 Total Station in conjunction with Softrock Quikslope software.



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3 PROCEDURE

This procedure is split in four sections beginning with instructions for creating a rounds csv file and finishes with the importation of monitoring data into Quikslope. Users should have prior knowledge in the use of MS Excel and Quikslope software as these areas will not be covered in detail.

3.1 Creating a Rounds File:

- (1) Obtain the coordinates for the prisms to be monitored. For existing prisms (ie those already in the Quikslope database): Export prism coordinates from Quikslope using Create Target Coordinate File (Surpac String) function or create a string file in Surpac with the coordinates of all prisms. For new prisms: obtain the coordinates of the new prisms by measuring with the S6/S8. Export the coordinates from TCU as a Surpac String File. Note: If the mining software being used is not Surpac export the coordinates from the TCU as a comma delimited (csv) file (under Export Fixed File Format).
- (2) Open the string file or csv in Excel. Tip: for a Surpac string file rename the .str extension to .csv and open in Excel.
- (3) Delete the header row(s) and footer row leaving only the coordinates of the prisms and the prism name (Prism ID, Northing, Easting and RL).
- (4) The file must then be modified to suit the format as shown below (Excel Column and Rows numbers are shown):

	ID	N	E	RL	Code	D1	D2	HT	PC	TM
	A	B	C	D	E	F	G	H	I	J
1										
2										

Note: ID is prism name (this must be exactly the same as what is in Quikslope); D1 and D2 are descriptions or comments; HT is height of target (usually 0.000 for monitoring); PC is prism constant and TM is target mode (AutolockOn).

TM: The Target Mode field may contain one of the following:

- DR: DR on
- AutolockOff: Autolock is off
- AutolockOn: Autolock is on, Target ID is off
- A number between [1] and [8]: Autolock is on always using the specified Target ID
- FineLock: FineLock is on (S8 only)

Below is an example csv rounds file.

MPREF1	435.771	1831.936	95.847	1	1018	MPREF1	0.000	-0.033	AutolockOn
MP1005	207.905	2103.415	6.825	1	1018	MP1005	0.000	-0.033	AutolockOn
MP1006	221.527	2092.684	1.821	1	1018	MP1006	0.000	-0.033	AutolockOn
MP1007	208.219	2081.722	6.509	1	1018	MP1007	0.000	-0.033	AutolockOn
MP1009	207.222	2058.905	6.759	1	1018	MP1009	0.000	-0.033	AutolockOn
MP1010	221.344	2043.556	1.355	1	1018	MP1010	0.000	-0.033	AutolockOn

- (5) Save file as *****.csv**
- (6) Copy file onto the S6/S8 TCU via ActiveSync into the Trimble Data directory.

3.2 Setting up the S6/S8 for Monitoring:

- (1) Setup the S6/S8 on the monitoring station or pillar and attach the TCU.
- (2) Turn on the S6/S8, execute Survey Controller and level the instrument.
- (3) Create a new job (if first monitoring round for the day) by going to Files New Job. Ensure the new job is linked to the control file.
- (4) Go to Survey → Station Setup then define occupied station and instrument height.
- (5) Define the backsight, then point to the backsight, tap Measure and then Store.

3.3 Monitoring with the S6/S8:

- (1) Go to Survey → Measure Rounds
- (2) Tap Exclude to leave out the backsight from the monitoring round.
- (3) Tap Load and choose the Rounds file to monitor (eg if monitoring from 1018 choose Prisms1018). Note: the load csv option is only available if the Trimble Controller has the Engineering option enabled.
- (4) Tap Accept and the S6/S8 will turn to the first prism (Reference Prism)
- (5) Tap Measure and the round will begin. Note: ensure that Skip Obstructed Foresights is checked under the round options. This means if a prism cannot be found by the S6/S8 on Face 1 it will wait exactly one minute before moving to the next prism. That prism will then be skipped on Face 2.

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- (6) Upon completion a list of standard deviations for each prism of the round. Check the residuals, delete bad observations (if necessary) and if acceptable tap Close and Yes to save.

3.4 Exporting Monitoring Data from TCU into Quikslope:

- (1) Connect the TCU to the docking station in the survey office.
- (2) Turn on TCU and execute Survey Controller.
- (3) Go to File → Open Job and open the job that contains the monitoring information (eg Mono1512).
- (4) Go to File → Import/Export → Export Custom Files, use GDM Job and check NO for export as coordinates.
- (5) Use ActiveSync to copy the exported file (eg Mono1512.raw) from the Trimble Data\Export folder on the TCU to the C:\ of the survey computer. Rename the extension of the file from .raw to .inp.
- (6) Open Quikslope and import as Geodimeter data by selecting Data Import → Geodimeter Data and selecting the .inp file (eg Mono1512.inp). Note: To successfully import Geodimeter format data into Quikslope you must use Quikslope version 4.656 or later. If multiple rounds have been measured into one job, the time, date and reference prism will need to be selected for all rounds except the first one. Be mindful of this when calculating coordinates in Quikslope.

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4 REFERENCES

Trimble Survey Controller Manual v12.21

http://trl.trimble.com/docushare/dsweb/Get/Document-398641/TSCv1221_Help_English.pdf

Softrock Quikslope Manual

<http://www.softrock.com.au/Uploads/Downloads/Module%201%20-%20Quikslope%20Manual%20-%20v2.11.pdf>

5 DOCUMENT REVISION HISTORY

Revision Events				
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0	Greg Valli Date: 2/04/09	Issue for Use	Kye Chambers 2/04/09	Oliver Glockner 2/04/09
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