



RELEASE NOTES

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Release Notes 2023.02

This document contains the descriptions of new commands and improvements that are included in the **2023.02** version of Promine. These are valid from the release of the version the **March 01, 2023**.

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New Feature

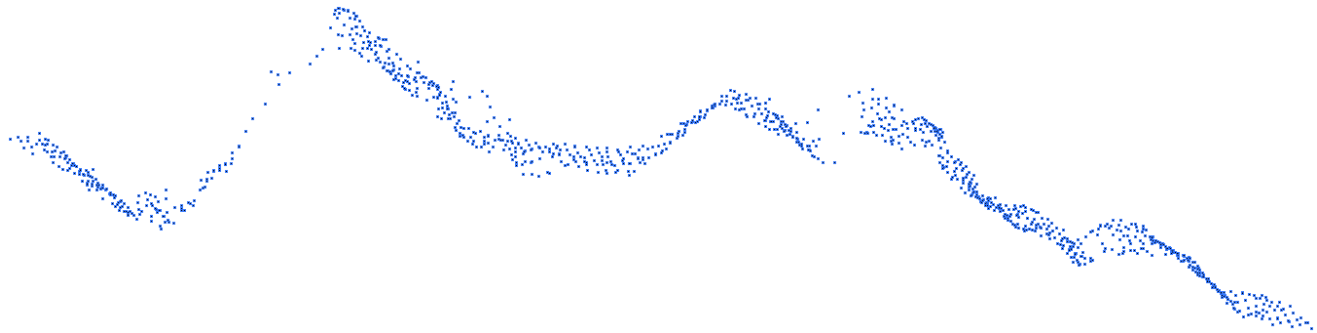
Module: Point Cloud

PCLP – Create Polyline

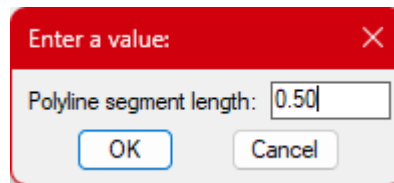
This new command will draw a polyline which approximates the result if a section was cut through a 3D model of a point cloud. This allows to create a 3D model of the point cloud through sections faster.

Steps to follow:

1. Cut a section through the point cloud with clips large enough to get a good idea of the shape of the point cloud and that there are no big gaps between the points:

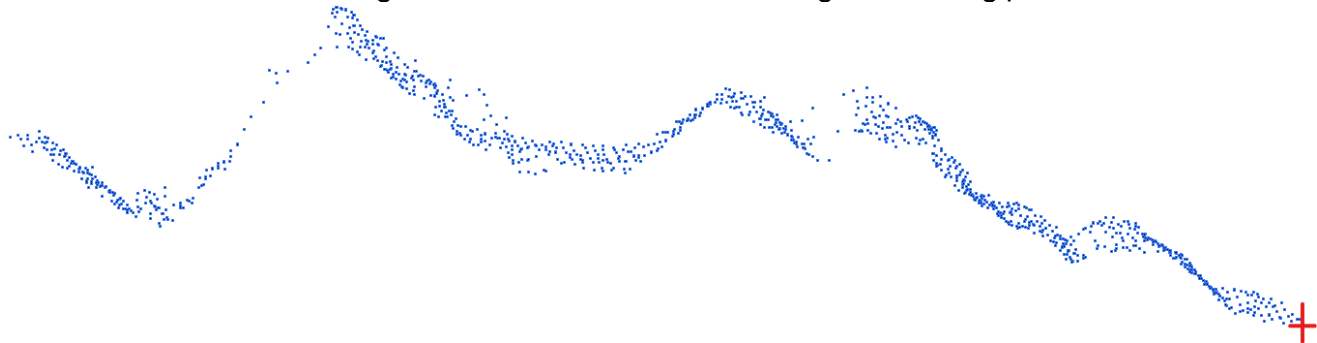


2. Start the PCLP command and choose the polyline segment length:

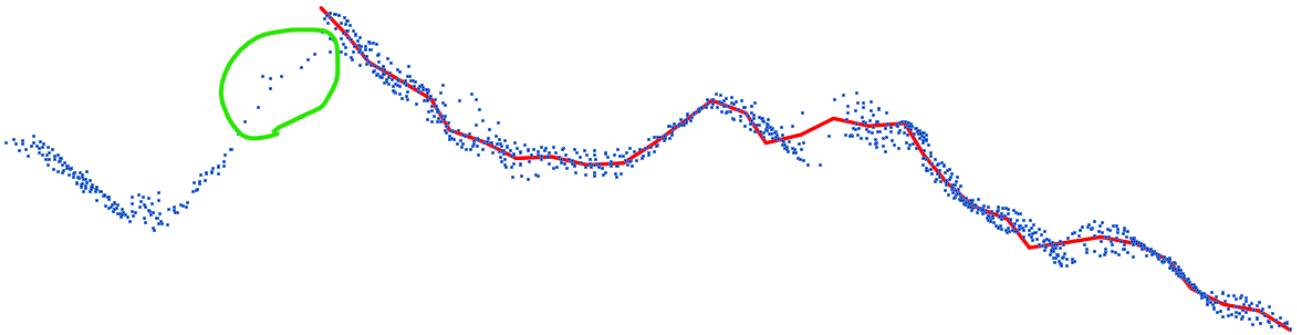


Hint: This value must be large enough to fill the gap between most of the points but small enough to represent the point cloud profile with enough fidelity. A given value may work well in some areas but not in others.

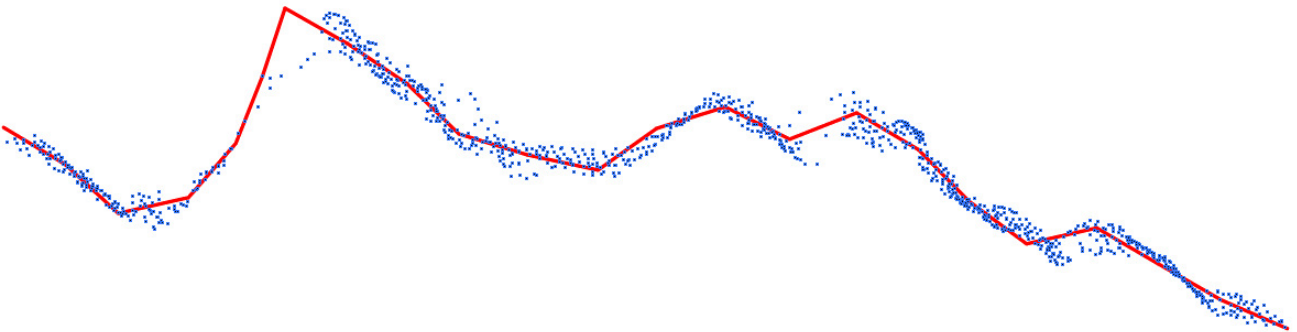
3. Select all the points to use and then the starting point for the polyline. The starting point should be at an extremity of the point cloud part. This helps the program figure out the direction in which to start. In the image below, the red cross shows a good starting point selection:



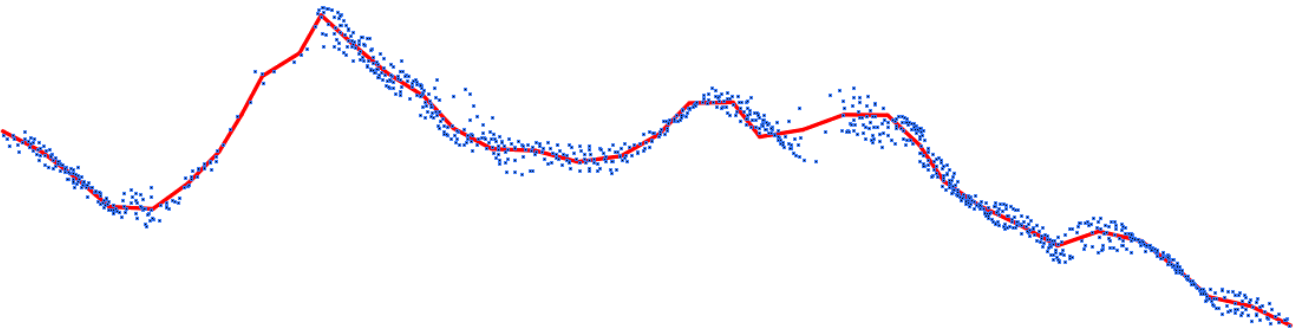
The following images show different results, depending on the segment length:
Result of the process with a segment length a bit too small to fill the gap on the left (in green):



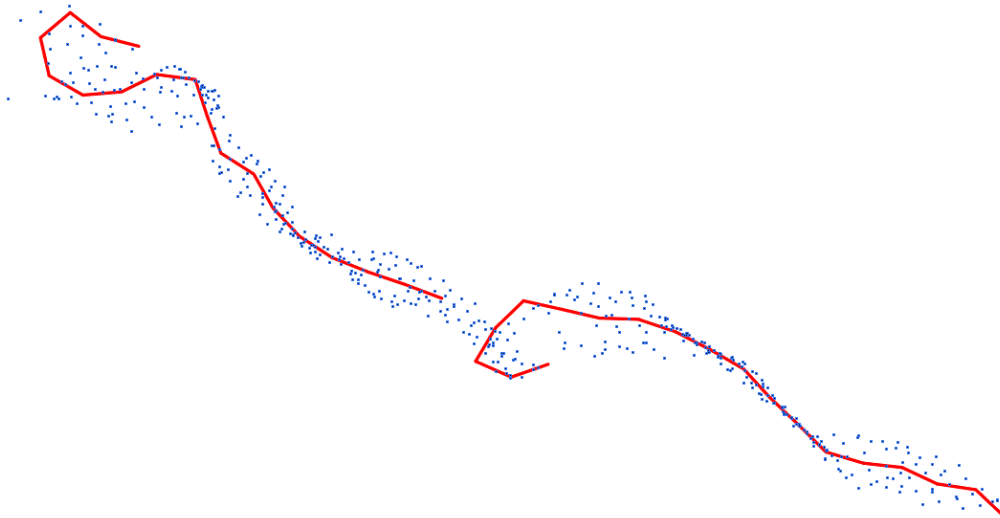
Result with a longer segment length, it does not follow as closely the point cloud, but the gap is closed:



Something in between those 2 previous length trials seems to be the best result in this case:



As can be seen in the image below, a smaller value may create polylines which are coming back on themselves (red polylines):



Of course, the section clips can be changed to have more or less points and refine the result.

Module – Stope Design



STDSO – Stope shape optimization

A new command was added to create whole stope shapes that are optimized on a section-by-section basis. The algorithm uses a combination of mining cost and ore revenue to establish the general shape of the most profitable ore stope. An ore limit can be used to direct the initial shape of the stope.

Block Model: Select the blocks that should be used for the optimization.

Ore Limit: Select an ore limit to guide the initial shape of the stope.

Start point: The optimization will start with a section at this point.

Azimuth: The direction in which the stope will develop. Should be selected in plan view.

Length: The minimum and maximum length of the total stope.

Width: The minimum and maximum width allowed for the stope.

Minimum wall angle: The minimum angle needed in the walls for the rock to fall.

Maximum deviation angle: The maximum allowed angle between 2 different sections.

Initial top elevation: The start top elevation for the optimization – End elevation differs if a slope is used.

Initial bottom elevation: The start bottom elevation for the optimization – End elevation differs if a slope is used.

Slope: The difference between starting and end elevation over the length.

Minimum bottom opening: The minimum opening size needed for the ore.

Spacing between optimizations: Distance between sections, each section gets optimized.

Number of wall points: Each wall polyline on each section will get this number of points.


Main grade: Grade that is used for the initial stope shape.

Density: The density of the rock to calculate tonnage.

Ore processing cost: Cost per tonnage for the mined ore.

Revenue from minded grades: \$ per Grade unit for the revenue. Will show all values in block.

Layer: Destination layer for the optimized stope mesh.


Stope shape optimization

Block model

1650 Blocks

Select blocks

Clear


Ore limit

No limit

Select ore limit

Clear

Stope

Start point: 

Azimuth:

Length: Min: 5.00 Max: 10.00

Width: Min: 2.00 Max: 10.00

Minimum wall angle: 45.00 °

Maximum deviation angle: 45.00 °

Initial top elevation: 1172.50

Initial bottom elevation: 1122.50

Slope: 0.00 %

Minimum bottom opening: 5.00

Spacing between optimizations: 5.00

Number of wall points: 6

Grades

Main grade: Au





Density: 2.80

Ore processing cost: 150.00 \$/t

Revenue from mined grades

| Grade | Revenue | Unit |
|-------|---------|--------|
| Au | 40 | \$/g/t |
| Cu | 20 | \$/Cu% |

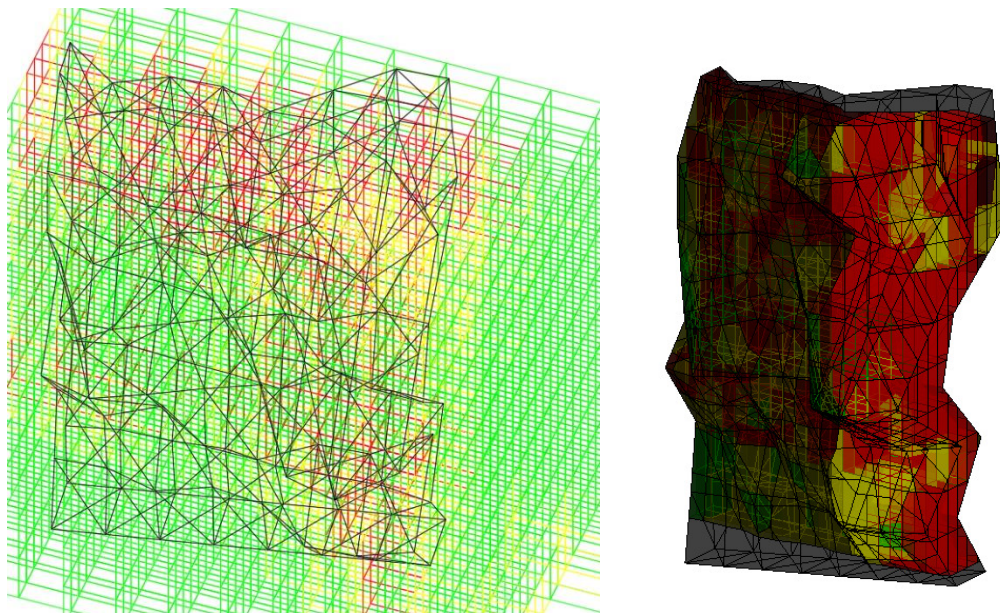
Layer:

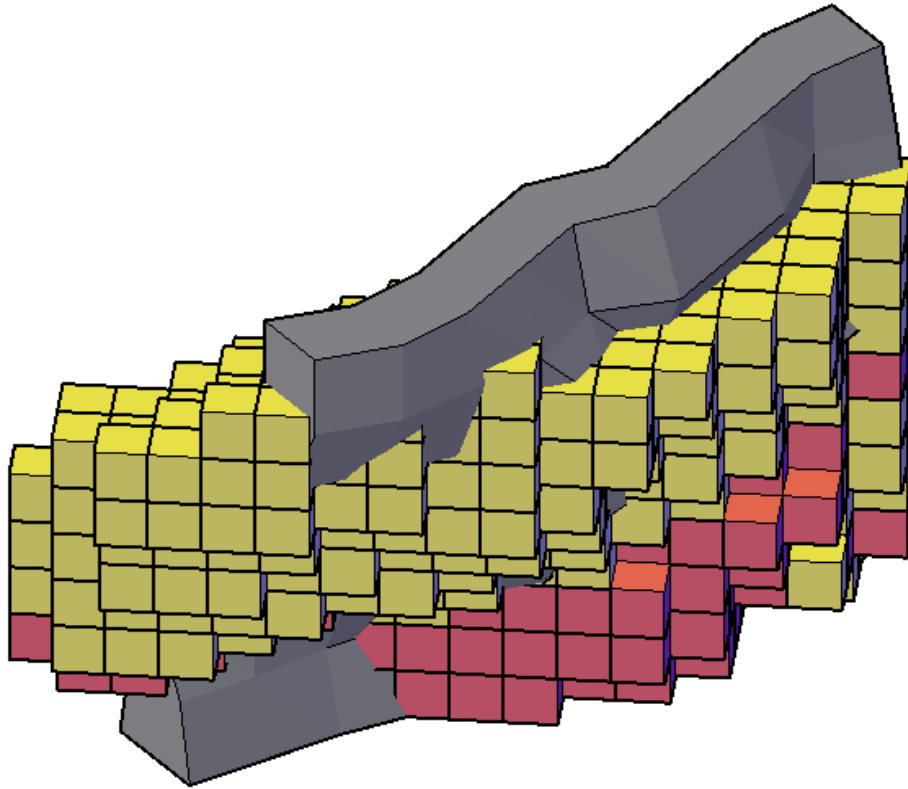



 Composite

OK

Cancel

Results can look like the following examples:





Module: Rock Mechanics



RKMQE – Edit Q-values

It is now possible to edit the parameters entered in RKMQ with a new command called RKMQE. It works the same way as RKMRE.

When only one block is selected, all the parameters are already filled in the form and ready to be edited. Blocks, hatches, and surfaces in the drawing are modified based on the new parameters entered.

If multiple blocks are selected all fields are empty and have to be filled in again. All blocks, hatches and surfaces will be changed to the same value or color based on the new parameters entered.

Improvements

Module: Tools

PROMDEF – Options

A new option was added when working with borrowed licenses. It is now supported to be able to return a borrowed config folder to the server. The functionality needs to be activated through Promine options and will require a password to be able to replace the server config with the local one. The password is set in Promine Options. If an admin email is set, that person will receive an email that the server config folder was replaced.

General Parameters

Language: English

License:

License server:

License server port: 7070

☐ Disable automatic license activation

☒ Return borrowed config

Password: *****

Date:

Date format: DDMMYY

☒ Metric units

☒ Invert imperial density

☐ Force CUIX load with AutoCAD

☒ Produce logbook of commands

☐ Notify administrator of changes

Admin email:

Density (t/m3): 2.750

Density (ft3/t): 11.000

Density (t/ft3): 0.909

Azimuth difference: 0.00000

Admin password...

System variables

Variables

HPSCALE 0.25000

UCSDETECT 0

ANGDIR 1

ANGBASE 1.5707

GRIDMODE 0

MENUECHO 1

EXPERT 4

PROXYNOTICE 0

PLINETYPE 0

CMDECHO 0

CMDDIA 1

FILEDIA 1

DIMZIN 0

UCSVP 1

Add

Edit

Remove

Undefine AutoCAD

Commands:

Add

Edit

Remove

Undefine Promine

Commands:

Add

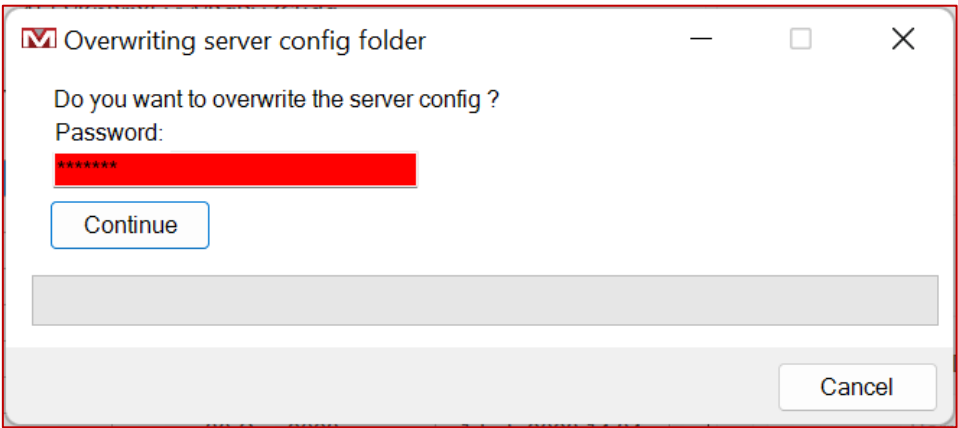
Edit

Remove

OK

Cancel

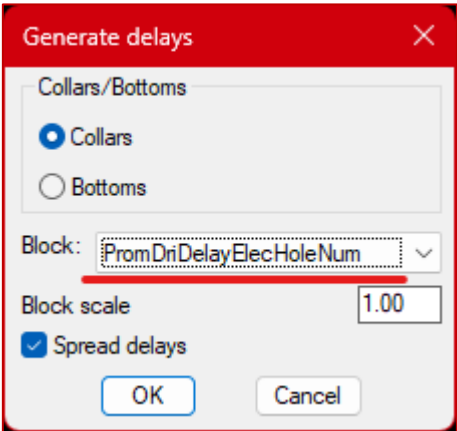
If the option is selected, when returning a license, the following window will appear. Clicking cancel here will return the license without overwriting the server config folder.



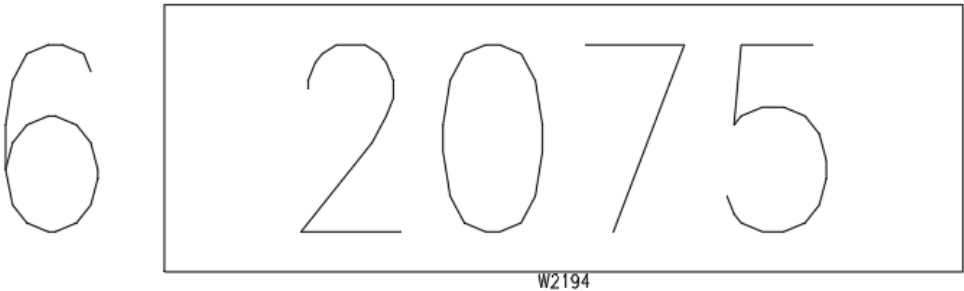
Module: Drill and Blast Underground

DRIDEL – Delays

A new electronic delay block was added that shows the hole number and the section name on which the hole can be found.



After insertion and loading it show as in the image below:



DRIDWL – Weight vs Load

To improve the output and make a better design quickly, a weight column was added to each load: Before that the program was displaying the time interval and weight of explosive firing up. It included the hole number, layer and load number of each charge already. The new format can be seen below:

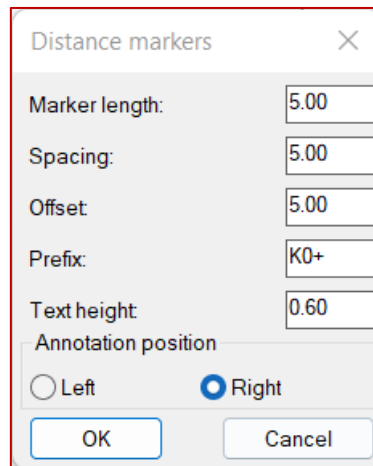
| FROM | TO | WEIGHT | HOLE | WEIGHT | LOAD# | LAYER | HOLE | WEIGHT | LOAD# | LAYER | H |
|------|------|--------|------|-------------|-------|-------|------|-------------|-------|-------|---|
| 2000 | 2050 | 130 | 8 | 59.8 | 1 | W2194 | 7 | 70 | 1 | W2194 | |
| 2050 | 2100 | 125 | 6 | 70.7 | 1 | W2194 | 9 | 27.7 | 2 | W2194 | |
| 2100 | 2150 | 132 | 10 | 59.9 | 1 | W2194 | 5 | 71.8 | 1 | W2194 | |
| 2150 | 2200 | 97 | 11 | 70 | 1 | W2194 | 4 | 27.2 | 1 | W2194 | |
| 2200 | 2250 | 92 | 3 | 14.5 | 1 | W2194 | C | 77.3 | 1 | W2192 | |
| 2250 | 2300 | 84 | 2 | 6.8 | 1 | W2194 | D | 77 | 1 | W2192 | |
| 2300 | 2350 | 98 | 1 | 6.3 | 1 | W2194 | B | 91.7 | 1 | W2192 | |
| 2350 | 2400 | 168 | E | 90.5 | 1 | W2192 | C | 77.3 | 1 | W2190 | |

The first weight column is the total weight during the interval.

Module: Drift Design

PLAM – Annotate Markers

The markers made by PLAM are now set to be placed at fixed intervals and can now have prefixes

A screenshot of a software dialog box titled "Distance markers" with a close button (X) in the top right corner. The dialog contains several input fields and a radio button group. The fields are: "Marker length:" with a value of 5.00, "Spacing:" with a value of 5.00, "Offset:" with a value of 5.00, "Prefix:" with a value of K0+, and "Text height:" with a value of 0.60. Below these fields is a section labeled "Annotation position" with two radio buttons: "Left" (unselected) and "Right" (selected). At the bottom of the dialog are two buttons: "OK" and "Cancel".

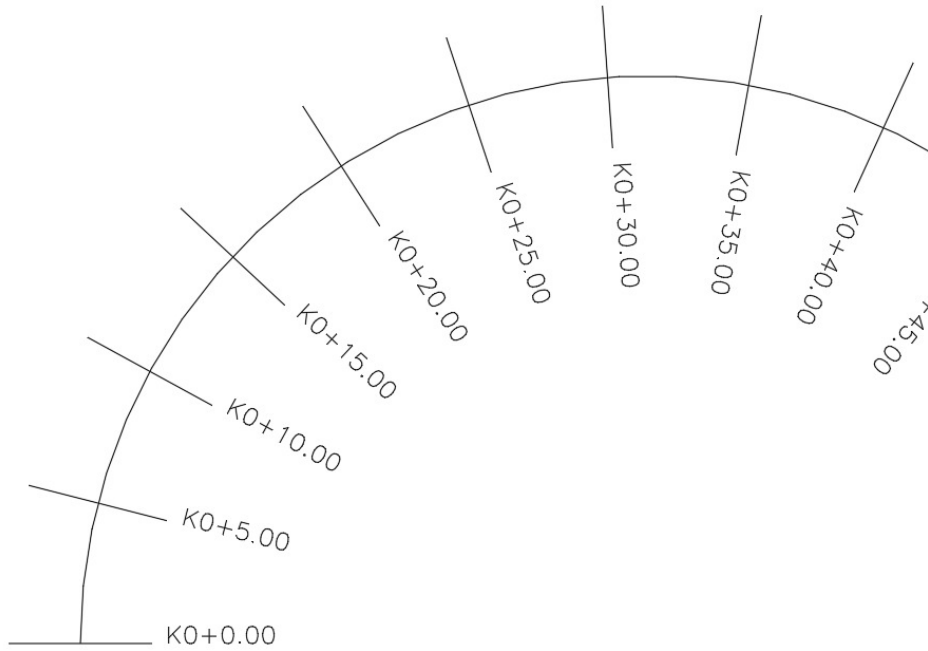
Marker length: Represents the length of the marker line

Spacing: The distance between markers

Offset: The distance between the marker text and the centerline

Prefix: The start of the annotation text before the distance

Text height: The character size of the annotation, in text height.



A result can be seen above.

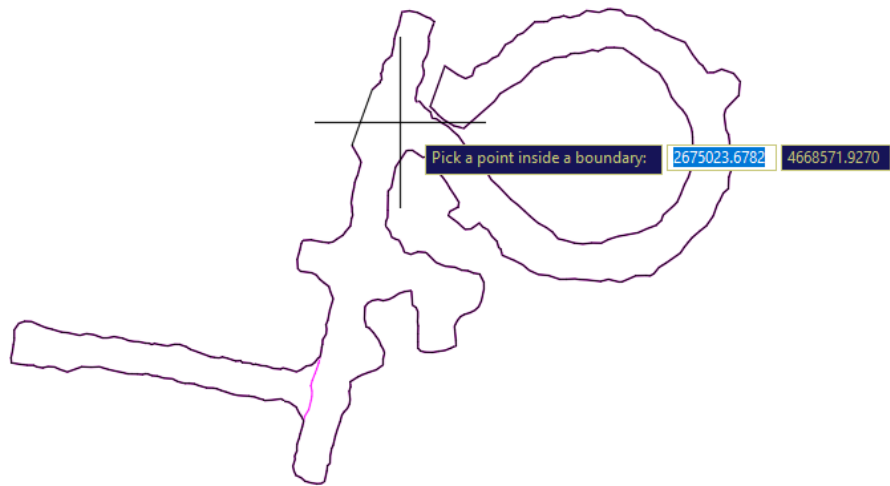
When making batch annotations, the settings from the annotation options will be used.

Module: Rock Mechanics

RKMQ / RKMRRM – Insert RMR or Q value

For this improvement, to enable the capability to hatch non closed zones, we now allow the user to pick secondary polylines on which the primary outline polyline will join on and then the final outline is closed. With this it is possible to hatch or surface any enclosed area.







A second improvement to the commands has been done.

It is now possible to directly enter a value for RMR and Q. A new text box has been added in both forms to do so and the elements in the drawing are created correctly based on the value. The form is also updated each time the user is typing in the text box. If there is a value in the text box, all the check boxes in the form are disabled.

Rock Mass Rating (RMR)



Rock resistance value Modified Recovery Index Values Joints Spacing Fracture Condition Groundwater condition Criteria for fracturing

| 1* Rock resistance values | | | |
|-------------------------------------|------------------------------|-----------|----------------------------------|
| Uniaxial compressive strength (Mpa) | Index of punctual test (Mpa) | Factor A1 | |
| > 250 | > 10 | 15 | <input checked="" type="radio"/> |
| 100 - 250 | 4 - 10 | 12 | <input type="radio"/> |
| 50 - 100 | 2 - 4 | 7 | <input type="radio"/> |
| 25 - 50 | 1 - 2 | 4 | <input type="radio"/> |
| 5 - 25 | n/a | 2 | <input type="radio"/> |
| 1 - 5 | n/a | 1 | <input type="radio"/> |

| FACTOR | RANGE |
|--------|-------|
| A1 | N.A. |

Block location

Select

X 0.000

Y 0.000

Z 0.000

Enter value directly

54

☐ Create hatch

☐ Create surface

☐ Insert class table

Ok

Cancel