

Mining with Precision, Drafting with Excellence

AMINE

Release Notes

Amine 2.6



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Overview

The most advanced CAD-based underground mining platform, Amine is designed specifically for Mine Engineers and Surveyors.

Seamlessly combining powerful CAD functionalities with industry-specific tools, Amine revolutionizes the way you survey, design, and execute mining operations. It provides an intuitive and versatile environment that empowers Mine Engineers to bring their visions to life. With its AutoCAD foundation, you have access to a familiar interface and robust drafting tools, allowing you to effortlessly create precise and detailed mining designs, 3D models, and technical drawings.

Amine offers a comprehensive suite of underground surveying tools including a laser offset function, automated CMS slicing and underground monthly reporting summary. It simplifies and streamlines daily survey tasks whilst providing a more efficient and time-saving EOM reporting process. Seamlessly integrate with your surveying equipment and leverage advanced surveying features to optimize your workflows and increase productivity.

Further Information

This document includes cumulative release notes for Amine 2.6.

Release notes for other versions of Amine are available via the Support Portal <https://www.dataminesoftware.com/support/>.



Amine 2.6.28 Patch Release

New Features

Object Measure

- Object Measure is a new tool that allows users to select an object and view all general the general information regarding the chosen object.
 - Amine_Query

Enhancements

Block Model

- Export a block model to a CSV format with the option of XYZ and the percentage of volumes.
- Annotation a block model using the C, R, L option for both the full and sub blocks.

Survey

- Merge all surveyed strings to the existing strings with a single selection.

DB Config

- Scripts can be generated for all Amine databases for the years 2015 and newer.
- Users have the ability to configure a Datamine color index for specific layers so the layers are recognized in Studio products.



Compliance

- The design compliance results can be uploaded to the database and a report can be generated.
 - VS_ComplianceReport

Text

- Refresh text using different alignment options: by horizontal view, by a picked curve or by the nearest closed curve.
- All text objects, including mtext and block references, can be searched when using the find text feature.

Manager

- A filter has been added to filter out layers that are empty, only showing layers that contain data and exist.

Paths

- Default paths can be created if a path is missing the path settings dialogue.

Rapid Digitize

- Any point on any string can be selected to rapidly digitize.
- Object snap is turned on by default.

VS_Mesh

- The dialogue has been updated with the elimination of some buttons and reorganization of other buttons.



Booking Meters

- The booking meters application can track cumulative advances on selected headings and a report can be generated to show the meters booked by date and drive name.

Importing Datamine File

- Amine can recognize the drive name in a Datamine file when importing, if configured through the Amine settings, and automatically stores the drive name in the appropriate database.



Defect Fixes

- When tagging a block model, some blocks were not showing in random places inside the selected polyline. A new method was developed to include all blocks inside the boundary.
- The end of month template was pulling the break type instead of the density for calculations. This has been corrected and a new template has been included in this updater.
- The density field was not being auto populated when running the stope record. This has been resolved.
- When opening Amine and running a command from the DDH Import module, an error displays when the users were prompted to connect to the geology database regardless if the settings was properly updated. This has been corrected.
- The drill and blast configuration file was being used for the cabling configuration file. This has been corrected.
- The section names on the drive compliance report were found to be upside down. New coding was implemented to make sure the text rotation is always upwards.
- When running the import surpac command, a small error window displays. This has been resolved.
- When escaping the boolean command, an error displays. This has been resolved.
- A better handling was created when a value in an ID column is not correct when importing a solid from a DM file.



Amine 2.6.27 Patch Release

Enhancements

Linetype

- A new linetype has been created with directional arrows on a line, primarily used for escape routes or ventilation direction.

[Line Style \(Escape Route\)](#)



Mesh and Solids

- When using the Amine_MeshNPolys command, slicing is possible vertically and horizontally for mesh and solids.
- When create a mesh, Amine ignores all objects other than 3D polylines and points.
- Users can delete unwanted individual triangles from a mesh and solid to repair unwanted features.

Contouring

- Contouring is possible for multiple objects at a time.

Drill Holes

- It is possible to show the drill hole name at the collar and toe when annotating a Datamine drill hole file.

Point Import

- Users have the ability to visualize data values by color gradient.
 - DDH_HImport_Points

Defect Fixes

- It was found that updating to patch 2.6.26, there was a change in which Amine required a connection to the geology database upon start-up. This caused issues and unknown command errors. This has been resolved.
- It was reported that floor lines were not being synced to the foot wall when using the sync floor command. This was due to an error in regen3 and has been resolved.
- Improvements have been made in the stope record dialogue due to improper text placements and wording cutoff.
- The UCS was changing when a drawing was opened directly in paperspace and layers were added without moving to model space first. This has been corrected to keep the original UCS.
- The cabling module was reading settings from the blasting module, creating errors when placing a drill. This has been resolved.
- When plotting pegs, an error message was shown when applying a filter to find a group or specific pegs. The schema validation has been consolidated into one method, simplifying the filtering process.



Amine 2.6.26 Patch Release

Enhancements

Station Database

- A window has been added at the bottom of the dialogue which contains the selected stations the users wishes to import into the 3D viewer.
- **Get Station** is changed to **Apply Filter**
- **Add Station** has been added to confirm the station selection.

Defect Fixes

- The clipping tool was not transparent and not working with block reference objects. This has been resolved.



Amine 2.6.25 Patch Release

Enhancements

Station Database

- The filter to find stations is no longer case sensitive.
- Add a floor elevation when inserting a new station and a column is added to the station database with the floor elevation information.

Sections

- Section lines are extended based on the saved view of the section itself.

End of Month

- The end of month dialog prompts users to save a record if the record has not been saved prior to exiting.
- Retrieve centerline attributes during a stope end of month recording.
- Label stripping information with a date, design volume and measured volume.

Meshing

- Union multiple mesh and solids.

Defect Fixes

- An unexpected error was shown when saving to the end of month database. This has been resolved.
- Station points were not plotting when expected. An error message was created to handle this fix.
- When insert a centroid block, an error was shown. This has been resolved.
- The default slicing on the end of month was asking for a slice interval. A default slice interval inputted based on the length of the end of month drive was supposed to happen. This has been resolved.
- Block reference text was unable to be rotated. This has been resolved.
- The peg calculations PDF report template has been re-sized to properly fit on pages.
- Peg calculation exports were not being saved to the database. This has been resolved.



Amine 2.6.24 Patch Release

Enhancements

DM Files

- Datamine files can be automatically sorted by mine name or grouped all in a single DM Files folder.

Hidden Dialogues

- If tools in the dialogues VS_Mesh and AM_Shotcrete are being used, the form temporarily hides until users complete or escape the tool.

Production

- The mined values can be included in the stope reports.

Drill and Blast

- The size of the table found in the drill and blast and cabling letters has the ability to be re-sized in the appropriate settings.

End of Month

- The Process and Create Cut Outlines buttons have been swapped.
- Users have the ability to create pillar solids with a custom extension below and above the pillar extents.
- A tool has been created to validate vertices, detect short strings, detect duplicate points, detect cross points and detect sharp angles.
 - Users can equalize the distance between the vertices on a string.
 - Users can clean the short segments, or close points, in a dataset.
 - Users can close pillar strings.

DXF Export

- Users can export select strings to a DXF file to easily import into a survey instrument.

Defect Fixes

- Amine was generating incorrect peg coordinate calculations. It was found that there was an issue with the formula being used. This has been resolved.
- The actual stripping volume was not recording when prompted. Certain objects were not coded to be used for this tool. This has been resolved.
- When running the end of month, the slice wireframe function was generating inconsistent results and not slicing all wireframes with a cut line. The draw order for the cut lines were not properly set. This has been resolved.
- It was found that stations were not able to be deleted from the database. This has been resolved.
- Slicing planes were remaining when the end of month sectioning was done. This was due to an error in the Server coding. This has been resolved.



Amine 2.6.23 Patch Release

New Features

DM Files

- Users have the choice to sort saved Datamine files by mine group in the source folder for better organization.

Hole Warning

- Logged drill holes can be searched in specific areas with specific distances for development warnings.
 - VS_MemoHoles

Survey Memos

- Users can place a marker on the 3D viewer when generating a PDF memo, which includes a hyperlink to the directory of the PDF memo.
 - VS_PlotPDF
 - PDFLink.dwg



Enhancements

Drill & Blast

- Improvements are done in the configuration dialogue for the drill & blast and cabling modules.
- More flexibility has been added to users when inserting a hole name. The name can be placed in the left, center or right end of the hole with a specified percentage, based on the length of the hole, distance from the toe of the hole.

Databases

- Users can create single or multiple databases instead of being required to create all of them in the DB Config tool.

Stope Report

- The accumulation of tonnages are shown at the bottom of a stope report.
- The mineral grades are averaged by weight and shown at the bottom of the stope report.

Defect Fixes

- Layers were not being saved to the database due to a false claim of the layer not existing in the database. This was due to an error in matching the code in all the database code tables. This has been resolved.
- When using the vent wall tool, Amine would prompt users to select a file location to save. If user select cancel, Amine would display a pop-up indicating something was saved. This has been corrected.



Amine 2.6.22 Patch Release

Defect Fixes

- An error was generated when trying to create a mesh with pillars. The mesh building was not able to handle 0 length polylines, therefor creating an error. This has been resolved.



Amine 2.6.20 Patch Release

Enhancements

Shotcrete

- The shotcrete dialogue user interface has been improved for better user experience.

Defect Fixes

- When creating a centerline, then a curve, an error would generate at specific points on the curve not allowing the curve to be drawn. Parameters handling the curved line were failing. This has been resolved.
- An error would generate when using the refresh text command. This has been resolved.



Amine 2.6.19 Patch Release

Enhancements

Lock Files

- When a user wants to do modifications on a locked layer, users are warned that the layer is locked by another user and the action cannot be performed until the layer is unlocked.
- If the layer is unlocked, Amine checks the database upon first time modification done to see if there is a new version of the layer available. If there is, users are asked to update the layer prior to continuing modifications.

Drill and Blast

- When placing a drill, the reference line has the option to remain visible or be hidden.
- A custom increment value box has been added in the powder moving dialogue for users to set at which increment users wish to move the powder.

Defect Fixes

- An error message was displayed when creating a secondary mine grid. This was caused by missing characters in front of the name. This has been resolved.
- Certain layers existing in the database were not being recognized therefore not being saved. This was caused by improper decoding of the layer topic. This has been resolved.
- When trying to process the end of month stope report, an error was generated. This was due to remaining surfaces after the tool was complete. The surfaces are removed when done to resolve the issue.
- When using the shotcrete tool, the solid would be completely out of boundary. A better handling for the shotcrete string mesh was created.



Amine 2.6.18 Patch Release

New Features

Deleting Multiple Vertexes

- Delete multiple vertexes by selecting one or multiple points either by lasso pick or manual pick.
 - SRV_Remove3PVertex

Survey Memo PDF Tool

- A survey note index tool has been created to keep track of existing PDF's in the memo folder. When a memo is created, the PDF name increments by one for order.
 - VS_MemoRPT

Enhancements

CHM

- An updated CHM version has been included in this patch updater.

Corelog

- An option to import only the latest holes instead of importing the entire hole database has been added in this latest Corelog release.

Refresh Text

- Block reference text is able to be rotated as part of the refresh text tool.

Survey Memo

- The laser during a survey memo creation can be extended by clicking the furthest wall feature or by entering a distance.
 - Amine_ExtendCurve

Temporary Plot Coloring

- Temporarily color the loaded objects on a plot with preset colors in the DB configuration tool. This assists in differentiating multiple objects are loaded on the layout with the same color.
 - AMGR_ApplyPlotColor

Meshing

- Meshing between two 3D polylines with the option to cap the ends is possible.

Drill and Blast

- When moving the powder either through the interactive window or on the 3D viewer, the stem moves with the powder to its new location.
- users select the powder when required to choose which hole and powder to modify instead of selecting only the hole string, which may be behind the powder and hard to select.

End of Month

- users can select the design solid if the design solid contains attribute data to be used for the end of month process.



Defect Fixes

- The stope recoding window was able to be opened multiple times. This was a result of improper handling of the opening and closing of the dialogue. This has been resolved.
- The drill and blast and cabling settings kept changing or returning to default at random times. There were ties in the settings between both modules. This has been corrected.



Amine 2.6.17 Patch Release

New Features

Patch Roll-Back

- From patch release 2.6.17, users can roll-back the updater. Download any updater above 2.6.17 and install as per usual to roll-back to any previous version above 2.6.17.

Super Merge

- Select a group of newly surveyed strings and automatically merge them to their corresponding strings on the same layer. This can be done with multiple strings simultaneously.
 - SRV_JoinPoly

Enhancements

DM File Export

- The warning message when a user fails to select a directory for the exported file has been changed to be more user friendly.

DB Config

- In the Database SQL Configuration tool, all databases have been included to be created in the databases creation tool.



Drill & Blast

- On a drill letter, configure the **Section Looking** to an abbreviated version or a long-form version. For example, users can choose between NW or North-West.
- The increments when placing a drill has been increased from 0.1 units to 0.001 units.

Log File

- Copy the log file path when an error is presented with a log file, as well as a hyperlink to open to log file directly from the error dialogue.

D Field Configuration

- The D Field configuration is improved to reflect the value changes across most columns and tabs in Amine.



Defect Fixes

- When trying to export a vent wall report and **To Table** is selected, an error was shown. This was caused by an improper handling of the table tool for plotting. This has been resolved and a table is visible at the corner of the viewport.
- The Date was reported to be too spaced out on the vent wall reporting tool, blocking part of the date from view behind the dialogue. The spacing has been fixed.
- When escaping the vent wall reporting tool after creating a mesh, an error was generated. This was caused by improper handling of the mesh building tool. This has been resolved.
- When creating a drill letter with remote drilling warnings, the warning distance was not shown on the drill letter. This has been resolved.
- The iBlast path dialogue was reported to be able to open multiple times. This was due to an improper catch of when the window was opened or closed. This has been resolved.



Amine 2.6.16 Patch Release

Enhancements

Corelog

- A new **Quick Fusion Import** option is available in the Corelog application to conveniently import various data across different databases.

Drill & Blast

- The stemming line is corrected to show before the powder versus on the beginning of the powder.

Tagging

- Options to Rename the original tagged object or Untag the object is available.

Stope Reports

- Stope Reports can be filtered by date range much like the Drive Reports.
- Wording has been changed during the selection process for surveyed and planned wireframes.

Stope Reports (Production)

- When creating a Stope Report in the production tab, columns can be toggled to be included or excluded when creating the excel report.

End-of-Month

- The slicing intervals are automatically done depending on the length and user input. users can still choose the amount of slices to be done for estimation, however default values are suggested based on the length of the drive:
 - If the advance is equal or less than 3 meters, slicing occurs at the mid-point.
 - If the advance is between 3 and 8 meters, slicing occurs at every 1 meter.
 - If the advance is between 8 and 20 meters, then the slicing occurs at every 2 meters.
 - If the advance is over 20 meters, then the slicing occurs at every 3 meters.

SmartData Tool

- Multiple attributes can be displayed with selectable toggles in the attributes list.

Plotting

- Sections names can be added to their respective plots by toggling the option on or off in the section-creation window.
 - A new template has been included **SecName.DWG**
- The text, font size and color can be altered during the plotting phase of the users work.

Shotcrete

- Shotcrete volume measurements can be done using the lower-limit string as an absolute base for calculations.

User Rights

- SRVSET (Survey Settings) is controlled by users rights in the configuration tool.



Defect Fixes

- The trim hole function in the Drill & Blast module was not extending or trimming the hole to the chosen blast outline. This has been corrected.
- The drill and blast letter view ports were not available when they were created. This was due to the view ports being configured originally to not show. This has been corrected with the addition of toggling the viewport on and off in the settings.
- When adjusting the toespacing when creating drill holes, often the toespacing box would add user-inputted values increasing the size of the box, providing a false size and distance of toe spacing. Older code was handling this function and has been updated.
- An error was produced when a user would isolate an object. This function was found to have a bug inside the code. This has been resolved.
- A modeling failure was generating when running the stope monthly recording process. The boolean process was not functioning correctly to complete the process. This has been resolved.
- During the annotation process, the Mined-in/out selections were not working. This was due to older coding that was not taking in account color changes. This has been resolved by allowing to add a 0 or negative value for mined-out blocks.
- The Surpac importer was generating an error when importing Surpac files. This has been resolved.
- When a user queries a smartdata block, an error message was displaying. This was due to attributes being limited to 10 when more were in the xdata of the block. This limit was increased.
- An area of an outline was not being produced in the outline measurement tool. This was caused by having different point elevations creating 3D faces and not on a 2D plane. This problem was resolved by pressing the 3D faces and polyline onto a 2D plane and capturing the area.



Amine 2.6.13 Patch Release

Enhancements

Corelog

- The Azimuth and Dip always populates the appropriate value boxes as long as there data when importing into corelog.

Sections

- When cutting sections, users can choose to display the section names in the 3D viewer for section clarity in plan view.

Blockmodel

- Amine has the option to import a blockmodel using a centroid or corner coordinate.

Contouring

- Contour multiple solids as once.

Boolean

- When using any option as part of the boolean command, Amine confirms with users to keep or modify the original solid. If the original solid is kept, the modified solid transfers to a separate layer.

Project Curve

- The additional method of clicking points on a drawing that would define the plane along which the solid slices is possible.



End-of-Month

- The centroid coordinates have been removed from the monthly actual details in the end-of-month dialog.
- The **Save to Database** button is deactivated until all information required is collected.

Shotcrete

- The additional method of calculating shotcrete thickness between two point cloud scans is possible. This method also applies to thickness, area and volume calculations.



Defect Fixes

- The date plots during the end-of-month process were plotting at an unapproved angle. The advance line is always perpendicular to the advance line moving forward.
- When clipping a solid in certain datasets, the clipping box would either stop clipping properly or disappear after adjusting the width and height. The object filter was failing to recognize a clipping box. This has been resolved.
- When opening the Survey Stop Database dialog, a void error was showing. An old version of an Amine component was included in the installer. The newer version is included to resolve this problem.



Amine 2.6.12 Patch Release

New Features

Vent Wall Reporting

- A Vent Wall reporting tool has been created to provide survey measurements regarding the build of a vent wall.
 - VS_VentWall
 - VS_VenWallRPT
 - VentWallReport.DWT
 - VentWall.DWG

Enhancements

End-of-Month

- The End-of-Month dialog automatically hides when certain actions are being done which require users to input in the 3D viewer.
- The cut lines selected during the end-of-month process saves as part of the end-of-month dataset. This ensures that the users are constrained to the previous cut lines.
- The average height can be toggled to show or not show when the end-of-month process is complete on the selected drift. This setting can be done in the survey settings.

Geology Utility

- Critical updates have been done to the Geology Utility tool.

Survey Import

- If a file users want to import is already open, a warning message displays information for users that the file they are trying to import is currently by another application.

Clipping Box

- The transparency for the clipping box has been increased to the maximum in case users decide to use any view-style other than 2D Wireframe.

Shotcrete

- The shotcrete report includes a location to input a Contractor.

SmartData Import

- The option to import SmartData with or without points has been implemented.

Data Export

- The X and Y values can be swapped when exporting select data.

Point Clouds

- The **Select Points by Layer** option has users select layers from the active layers list rather than selecting points from the 3D viewer to choose the layer.



Defect Fixes

- When evaluating a stope block, the volume was found to be off compared to other versions of Amine. The other versions of Amine was calculating volume with a cubical approach versus a true water-tight volumetric approach. Amine OEM calculates volumes with a true volumetric value.
- When creating a stope report, the tonnage was missing. Different calculation methods are being used to resolve this issue.
- An object reference error was appearing when running the survey memo tools. A bug was found in the code and a null check was added. This has been corrected.
- An object reference error was appearing when tagging block model objects. There was a volume limit of 3 million blocks. This has been increased to handle bigger datasets when tagging.
- The new command **SRV_REMOVE_BETWEEN_PTS** was deleting the entire string instead of select points as intended. If the point selected is not a vertex on the polyline, the entire string is deleted. An exception error appears instead.



Amine 2.6.11 Patch Release

Enhancements

Login Credentials

- A **Forget Me** option has been added onto the Login screen to remove the saved credentials.

AcadBlock

- New Drills and Updated Templates have been added in the AcadBlock folder.

Shotcrete

- Wording was changed in the Shotcrete dialog by removing "only" from certain tabs.

Stope Record

- Certain buttons and drop-down menus were rearranged for consistency.



Amine 2.6.10 Patch Release

New Features

Automatic 3D Polyline

- Select a group of points and automatically join them to create a 3D polyline.
 - SRV_CONNECT_POINTS

Cross-over Removal Tool

- Remove any points between 2 selected points then join those two points together automatically.
 - SRV_REMOVE_BETWEEN_PTS

Enhancements

Stope Record

- A new stope recording tool has been developed to better structure the information required to build a detailed report. The tool includes:
 - Project Curve functionality
 - Customizable Height & Width
 - Outline Creation
 - Boolean commands
 - Geology Information
 - Block Model Evaluation
 - Stope Outlining

Slogan Change

- Amine OEM has a new slogan that is distributed to all marketing content: Mine With Precision, Drafting With Excellence.

Database Settings

- Amine saves the information entered in the database connection fields for all modules.

Block Model

- The block model boundary generate as a mesh object instead of a 3D polyline.
- Multiple objects can be selected for annotation.

Corelog

- Corelog utilizes the Datamine License Manager to check if there is a valid Amine OEM license instead of utilizing its own license.

Drill & Blast

- Two commands have been added allowing a closed polyline create a boundary around the holes (IBS_Hole_Outline) and around the powder (IBS_Powder_Outline).

Centroid Block

- Users can customize the end of month centroid block. They are located in the ACADBLOCK folder as EOMCentroid.dwg.



DDH Import

- When importing drill holes, then creating a section, the points came in as single dots and would be hard to see. The sections contain cross-hair symbols instead of points which is easier to see for users.

Survey Memo

- Custom reasons for stops in the survey memo is possible by selecting Other in the drop down then typing out the stop reason in the text box.

Layer Manager

- Toggle boxes at the top of the Layer Manager menu have been reorganized.

Stockpile

- The results of a stockpile measurement record is stored to the database table for record keeping.

Clipping Box

- A user-defined elevation can be entered when creating a clipping box.

Shotcrete

- The drive name is populated automatically by recognizing the drive name in the selected design centerline. If no name is part of the design centerline, then no name appears.

Defect Fixes

- When using the SmartData import tool, users were getting the header of the columns showing as part of the displayed information in the 3D viewer. Amine was recognizing the column headers. This was managed by ignoring the column headers and recognizing where the data begins and only show the correct data.



Amine 2.6.8 Patch Release

Enhancements

Production Modeling

- It is possible to annotate any temporary object without tagging it first.
- It is possible to utilize Mesh objects for temporary annotation.

End of Month Records

- The option to save and export the end of mine date text in a Datamine format is possible. The text can be saved and exported as part of the outline.

Point Clouds

- The Zoom to Extents function is no longer automatically applied when the construction of a solid from point cloud is complete.
- The last-used point cloud to solid reconstruction method is the default method the next time the reconstruction tool is reused.

Datamine File

- The Amine layer name has been added as a column to an exported Datamine file for strings and wireframe triangles, points and strings.

Point Import

- The option to import points and automatically connect them as a string based on the point order is possible.

Laser Offset

- Custom options have been added to define a laser offsets. users can chose either of these options and a calculated distance appears in the survey memo table:
 - Peg to Face Distance
 - Left Wall Offset
 - Right Wall Offset
 - Laser to Centerline Offset
 - Back Offset
 - Floor Offset



Defect Fixes

- It was found that the width was not automatically populating when sections were being cut in the stoping process, and the section numbering were being inconsistent when deleting sections. Coding issues were determined to be the cause. This has been resolved.
- When producing an end of month report, it was found that the dialog to input a file name or auto name the file was not appearing. Additionally, users were able to produce a report without any records being recorded which was prompting an error. The dialog appearance issue has been resolved.
- It was found that when installing Amine where a different Amine DWG version exists, Amine is recognizing older lock files and not allowing users to utilize the data. Amine was changed to recognize and allow these older DWG versions and it is possible to use older DWG data in Amine OEM.
- Some sliced surfaces were not being generated when using the end of month tool. It was determined that a function was not working properly. This has been corrected.



Amine 2.6.7 Patch Release

New Features

Remove Between Points

- A new command has been added allowing users to remove points and segments between two points.
 - SRV_REMOVE_BETWEEN_PTS

Enhancements

Manager

- Older AutoCAD versions can be imported and exported to and from Amine up until drawing version 2004. Users can configure the save year in the AMGR_CONFIG window by toggling the XData Backward Compatible and changing the Save As year.

EOM Reports

- The values entered into the Mine, Level, SubLevel and D Fields get posted into the DriveMonthly table.

Shotcrete

- The results generated from a shotcreted face utilize multiple mesh-generating methods to create a more clean and accurate result.

Tape Ties

- The print generated when connecting tape ties indicates the degree of deviation from the intended position.

Booking Meters Tool

- An option to input an area measurement for the Booking Meters tool has been added to cater for room and pillar mines that mine partial cuts.

Defect Fixes

- It was observed when generating compliance plots with hatching, a number of hatches would fail. This was caused to too big surfaces. The surface has been reduced enabling for better hatching during plotting.
- An error was generated when initiating a monthly advance slicing procedure. This was caused by a loose condition for slice validation for meshes. Only solids can be sliced currently to avoid the crash.
- An unhandled exception error was generated when tagging. This was caused by the size of the values array were not matching the number of columns in the DataTable (td). Checks were added to ensure the size of the values array matched the number of columns and checks were added to prevent the index "i" from exceeding the number of columns when assigning values. Additionally, the columns were modified to include the logic to handle duplicate column names by either removing and re-adding columns or updating values in the existing columns.
- When creating a blast letter, the unloaded holes were not being populated in the blast letter table. The unloaded holes be populated in the same table as the loaded holes.
- When simulating a blast, an error would occur. This was due to a missing file. The file has been added to the installer.
- When importing a Datamine file using the column header COLOR, an error message would appear. It has been modified that Amine allows both COLOR and COLOUR pronunciations to import the Datamine file without error.
- Certain Datamine files containing polygons were not being properly importing and missing from the imported dataset. Coding has been fixed to calculate the number of records per page to use the written words per record instead of the logical works per record.
- An unhandled exception error was generated when adding a stop reason using the memo tool. This was caused by a false return in a certain statement. This has been fixed and it allows users to escape and return to the memo window without error.

Amine 2.6.6 Patch Release

New Features

Centroid Blocks

- The Centroid Block insert feature has been added in the End-of-Month dialog (SRV_REC_Drift_Monthly). This automatically saves the blocks measured during the end-of-month process into the Amine database, allowing users to retrieve them using the Drift Monthly Report (SRV_RPT_Drift_Monthly). This saves the Drive Name, Length and Volume of the measured drive for safe and convenient future plotting.

Enhancements

End-Of-Month

- A new End of Month template has been added in the AcadBlock folder.
- Font settings and the add/remove toggle of the face line when processing the end-of-month results has been added in the Settings dialog (SRVSET) in the Advance and EOM tab.
- When choosing Digitize Manually in the Advance Line option, it constrains to the same elevation of the selected outline to prevent vertical anomalies.

Block Model

- Block Models are converted into a Block Reference object when annotated.
- The text position displays at the view plane that the 3D viewer is rotated. This is set and cannot be changed unless users delete the annotation, rotates the view until satisfied and annotates again.

Defect Fixes

- It was found that in the PML_WireframeBoolean command, using the Slice option, an error was generated while trying to slice the object and would fail. This was caused by a previous change in Amine that was unnoticed. Amine slices the object by a lofted surface instead of a 2 triangle surface.
- The warning object when users activate the command ABLS_VStem was found to be in the wrong location. The adjustment has been made and when running single or all holes, the object plots in the correct location.
- It was found that when processing the End-of-Month function using mesh objects, the meshes were not changing colors like the solid objects (Green & Blue), instead they were remaining white and creating difficulty to differentiate the cut location. Meshes have been included to also to the appropriate colors when the function is processed.
- It was noticed that the objects during an advance selection in the End-of-Month process were not being temporarily hidden to allow users to select additional required objects which could be behind these non-hidden objects. The objects hides upon selection providing a better user experience during the end-of-month process.



Amine 2.6.3 Patch Release

Enhancements

Corelog

- It is possible to enter specific script calculations in the corelog block model configuration tool for grade and NSR calculations. Users has the ability to have field properties as part of the rock types found.

Drill & Blast

- It is possible to have site-custom drill & blast templates ready and available in the settings. This can be changed by navigating to the Drill & Blast tab, and selecting Settings in the General Tools panel. In the IBlast - Config dialog, in the Letter tab on the bottom right, users can find the templates that can be chosen.

Note: The templates must begin with IBS_BLAST(xxx) or IBS_DRL(xxx) then following by the site-chosen name in order to be recognized in this tool.

Defect Fixes

- It was reported that a borehole was not able to be imported like previous versions. This was due to the borehole name was empty in a specific file, which would throw an out of range index. It is possible to import a borehole without a name in the file.
- When annotating a block model with a polyline, an unhandled exception error was thrown and the annotation was not complete. It was found that the annotation tool was creating an unsupported object. The annotation tool creates a mesh, a standard object in Amine, and create slices to handle the annotation.
- It was impossible to generate a shotcrete report using points only, no survey strings. Amine did not know how to handle this data and build a proper reports with floor to shotcrete height offsets. The interval parameters have been changed an automated point cleaning has been added to use a point cloud for shotcrete reporting.



Amine 2.6.2 Patch Release

New Features

Object Deleting

- A Confirm Delete dialog appears when deleting multiple objects in a single instance to confirm the deletion and what is being deleted. Users can uncheck objects in this dialog if a mistake has been made.

Enhancements

.STEP Solid Import

- An improvement has been done when importing STEP files into Amine where sometimes it would create irregular shapes or solids with many holes. This has been handled and Amine has the ability to create watertight solids through a STEP file.

End of Month

- In the height and width dialog for recalculating end-of-month sections, a delete button has been added to remove a section that may obscure the overall average height and width.
- The subtract solid tool in the End of Month dialog is able to subtract meshes.

Compliance Plot

- A legend has been added in the generic compliance plot template to help visualize which color is the overbreak and which color is the underbreak.

Defect Fixes

- When loading layers into Amine with the Load Empty Layers option toggled on, a user could return to the Layer Manager and try loading a different set of layers and would receive an index error message. This was caused by a bug found in the code handling the layers. This has been resolved to allow users to return and load empty layers.
- The Convert Object feature would allow users to enter a destination layer name that doesn't exist but would not create it. The error was found in the code and has been resolved.
- When converting a solid to a mesh through the Convert Object tool, the Operation Succeeded prompt was hidden behind the progress bar dialog. The progress bar dialog would not close until the Convert Object tool was closed. The progress bar dialog closes immediately upon finishing the process.
- The Booking Meters tool required an SQL connection setup every time it opened. This was due to the fact that it never saved the credentials in the database. The credentials saves when initial SQL setup.
- It was possible to save a layer that did not exist in the original Layer Manager configuration. If this was done, the layer saved was never able to be retrieved from the Layer Manager and data could be lost. A secondary check has been added into Amine if the layers being saved exist in the Layer Manager. If the layers do not exist, the layer saving stops and asks users to update or remove the layers in question.



Amine 2.6.1.1 Patch Release

Defect Fixes

- Placing the drill was not working properly and failing to plot a drill location. A bug in the code was detected and it is possible to place a drill as intended.
- Drill holes were not able to be generated unless the Show on Line option was selected. A bug in the code was detected and it is possible to generate drill holes as intended.
- Multiple commands in the Drill & Blast module were not detecting holes to place the proper marker requested by users. The module has been recompiled and the No Holes Found error has been resolved.



Amine 2.6.1 Patch Release

New Features

Drill & Blast

New features and commands have been added to provide information to the drillers in drill and blast letters.

- Create a cylindrical model of select, or all, drill holes at a user-defined diameter.
 - ABLS_VM Hole
- Create a cone model of select, or all, drill holes at a user-defined percentage of the length of the entire hole.
 - ABLS_VAutoCone
- Create a warning for miners to insert a bag at the top of the powder to all or select drill holes.
 - ABLS_VStem
- Create a warning for miners to inserts a bag at the bottom of the hole to retain the powder for all or select drill holes.
 - ABLS_VBag
- Create a warning for miners for a certain distance at the end of the hole to be remotely drilled.
 - ABLS_VRemDrill

Enhancements

DDH Import

- Users can annotate the imported diamond drill holes with XYZ coordinates. The toggle to add or remove this option can be found in the profile options.

Reference Layers

- A toggle option in the Amine Layer Manager window has been added to import layers as reference, or foreign, layers which would be used as reference only and not be saved into the database.
- A button to convert Amine layers into reference, or foreign, layers has been added in the Amine CUI, in the Common tab, in the Manager panel drop-down.

Drill & Blast

- Dual quadrant reading values have been added when creating drill letters to accurately determine the direction of the drill on the quadrant table.
- The drill hole can extend or past the blast outline or to shorten to the blast outline.

Compliance Plots

- The overbreak and underbreak sections can be hatched in a compliance plot report. This can be toggled on and off directly in the compliance plot dialog.

Defect Fixes

- When importing a Datamine wireframe using the ImportWireframeDMFile without any values in the color column, or an unrecognizable color value for Amine to detect, Amine would prompt users with a long cryptic error. Users do not receive an error stating that there is no color value or a color that is unrecognized by Amine.
- An error was shown when annotating a block model with a polyline. This error was caught and debugged.
- An error was shown when evaluating a block model. This was caught and debugged.
- When creating a mesh object using the VS_StockPileSurface command, instead of a mesh, numerous 3D faces were being created forcing users to convert the objects into a single mesh. This has been corrected that the process automatically creates a mesh instead of 3D faces.
- When users attempt to initiate the shotcrete process (AM_Shotcrete) and accidentally closed the shotcrete dialog mid-process, they would not be able

to reopen the dialog unless Amine was shut down completely and restarted. The process was not entirely closed in the background when users close the dialogue, therefore when closing the shotcrete dialog, the process terminates completely.



Amine 2.6.0 Base Release

Installation Guide

1. If applicable, navigate to the **Survey** tab, in the **Survey** panel, select **Backup Settings** to back up your settings to the database. Close Amine.
2. If applicable, uninstall in full the Amine software from your computer.
3. If applicable, navigate to **C:\Program Files\Datamine** and delete **Amine 2020** folder.
4. Download the **Amine 2.6.0 Base Release** from the Product Store.
5. **Unzip** the folder.
6. Find **setup.exe** and run as an administrator.
7. Follow the on-screen instructions to install **Amine 2.6.0** to your computer.

New Features

Amine CUI

- Amine CUI updates with new Production and Drill and Blast tabs, icons for Drill and Blast tab, Production tab and Reporting tab.

Drill and Blast

- Revamped Drill and Blast tab, formerly known as iBlast, present in OEM version of Amine with all new icons and workflow.
- A new function called SmartSet recognizes the same drift and blast outline from a single cut, and upon selecting SmartSet it sets the same drift and blast outline for every other cut as long as it is using the same solid or mesh.
- The paper space can handle the North and View arrows as well as the Elevation line.

Temporary and Backup Folders

- Temporary and Backup folders are standard in the Amine approved folder structure. Upon saving, Amine saves a temporary layer file in the temporary folder, check if it is stable and uncorrupted, then proceed to move it to the approved folder. At the same time, Amine saves up to three previous layer versions for user reference.

Refresh Text

- Refresh the text view in the drawing window if it is tilted at a different angle from the text. For example, if the text was written while the drawing was in plan view and then rotated to the side view, run `Amine_RefreshText` and the text becomes readable on the viewing plane.

Amine Login Window

- A refreshment has been done when logging into Amine. The same username and password is to be used.

Trim Selection

- A new multiple trimming tool has been creating allowing users to select multiple lines between other lines, and trimming them automatically without the need to go one by one.

End of Month Height and Width

- A user is able to set custom height and width measurements for their sections used to calculate the end of month. This would be primarily used for drifts that have a severe tilt and the height (center of floor to center of back) is not at an exact vertical position. A perpendicular measurement would then be used for the width of the drift, or excavated area.

Update Release Warning

- A warning displays at the bottom task bar of Amine when a new release is available for public download if users have valid maintenance.

Amine Curve Projection

- The Amine_ProjectCurve function allows users to project an outline to both the back and floor. This can be used to create sections or having the centerline projected to the back and floor for reference.

Enhancements

End of Month

- The "Done By" selection for the End of Month dialogue reflects the logged-in user and cannot be changed. This adds security to survey records with who is preparing them.
- The End of Month dialogue has Hot Keys for user convenience.
 - Slice Wireframe (ALT+W)
 - Subtract Solid (ALT+S)
 - Create Advance (ALT+A)
- Up to three User-Defined attributes are possible in the compliance plot window, allowing to have custom variables as part of the End of Month spreadsheet table.

Build Mesh

- The "Get Volume" function in the Build Mesh dialogue recognizes Mesh objects alongside 3D Solids.
- The Build Mesh function automatically recognize pillars and boolean them out as required.

Contouring

- Decimal intervals are possible for contouring.

Compliance Plot

- The Compliance Plot has been restructured for a better and more quick user experience.
- It is possible to work with both Mesh and 3D Solid objects in the compliance plot function.
- There is an "All Layers On" button in the Compliance Plot function if users require to turn all the layers on.

Object Attributes

- When assigning attributes to a solid, it is possible to select and attach the centerline name to the object.

Line to 3D Polyline Conversion

- It is possible to convert a line object straight to a 3D Polyline object, skipping the polyline conversion.

Mesh Slicing

- It is possible to slice Mesh objects much like 3D Solid objects, using the same function and options.
- Changes have been made in the command VS_SliceSolid where users can choose to slice the object with 2 end points showing a cut line or 3 end points showing a triangle. Users additionally gets the option to keep a slice surface or not.

DDH Import

- The DDH Import has a cancel button if the process take longer than usual.

GeoMapping Hatching

- An option to add the hatch to the active layer or create a layer of choice has been added.



Object Conversion

- Region objects has been added to the object conversion tool.

Create Solid

- Create solids using multiple group points consecutively. Amine allows users to select different groups of points and creates individual solids based on the selection.
- Utilize only 3 wall strings to create a solid.

Section Cutting

- When creating sections, an Auto-Zoom Extents occurs, eliminating users to manually find where the section is done.
- Sections can be locked by clip or UCS status. For example, if it is locked by clip, when users rotate the drawing, the section remains the same and the data continuously regens in the section itself. If it is locked by UCS, the drawing section refreshes to the section only meaning that users can rotate the section and not the entire drawing.
- When cutting multiple sections, users can define the cuts by length intervals along a string or number of cuts along a string.
- It is possible to create an outline by drawing a line along a solid in section view, creating a projection wherever it intersects the solid.

Path Settings

- Path settings are accessible all in one window for all the Amine components. This can be found in the Survey tab in the settings drop-down.

Shotcrete Database

- The allowable characters when saving shotcrete reports have been increased from 20 characters to 200.

Datamine Dilution

- Minerals and grades are split into two different columns making it easier to read.

MeshNPolys

- An option has been added to cap the top and bottom when creating a mesh or solid through the Amine_MeshNPolys command.

Point Cloud Import

- The importing dialogue close automatically upon completion of importing a point cloud instead of remaining open.

Geology Utility

- The latest version of the Geology Utility tool has been added in the root of the install folder.

VisualBasic Library

- The latest version of the VisualBasic Library has been added in the root of the install folder.

Subsampling

- The subsampling dialogue automatically closes when users finish subsampling the dataset.

Valuation Records

- Save valuation records right into the SQL database. This enables users to access the reports on the SQL table to create views and reports on the Sable platform.

Defect Fixes

- The hard crash when slicing specific objects at a titled view, not in plan view, has been resolved. It is possible to tilt the drawing in the 3D viewer and slice at any angle. The slice is based on current view, not plan view.
- When calculating an area on the drawing, the area would be calculated based on the view of the drawing which would often give inconsistent results based on the view the drawing is titled. The area is calculated based on the plan view no matter which view users are looking, providing a consistent result.
- An error was generated when "Memo the PDF" was selected in the layout tools. This error has been fixed.
- The hard crash occurred when users would select the beginning point of their centerline outside of the measured drift. Select the beginning or end point outside of the measured drift however it may cause unwanted plots in the layout.
- When following the commands to generate a compliance report, Amine constantly required users to pick points inside the wireframe even though the points are within the wireframe. These checks have been removed allowing users to pick points outside the wireframe.
- Multiple Compliance Plot windows were able to be opened in a single Amine session. This has been resolved and limited to one only.
- Layers viewed in the Amine Live window would still be locked even though users saved and dumped all layers. This has since been fixed and reads correctly if the layers are locked to a specific user or not.
- When users close a document in Amine, the Amine Live window still shows the layers from the document that was closed. If users try to use this window, to save a layer for example, a crash occurs. This has been fixed.
- The Amine Live window would allow users to save layers without any changes. This has been disabled as Amine recognizes if any changes have been made on the layer trying to save.
- An error is generated when users right-click in the Amine Live window and click Save Layers when there's no layers displayed. The context menu has been disabled, fixing this issue.
- When building a mesh with certain data sets, a jagged and visual unappealing mesh would result. Smoothing factors and iterations have been added to the amine_smoothmesh command allows users to control how smoothness of the mesh.



- When importing a point cloud, it was experienced that a duplicate of points was produced. This has been resolved.
- When subsampling large sets of data in Amine, the software would freeze and not complete the task.
- Connection settings were not being saved unless users ran the config tool with administrator rights. The connection settings have been relocated to allow users to save without any administrator rights.
- User permissions were able to be modified but were not being saved. This has been resolved to ensure appropriate user rights are being saved.
- The error caused by Amine choosing imperial versus metric when trying to load holes has been resolved. Amine loads holes and drill models as the default setting is set to what users set to last, and not automatically defaulting to imperial. If the wrong system of measurement is used, then users receive an error messaging stating the error exactly.
- If a layout has been deleted while the section of a drill letter is still available, the eKeyNotFound error has been resolved. Amine searches for the original drill letter and if it is not available, users are warned and is required to create a new one.
- A less cryptic message displays when a user tries to name holes without holes being generated.
- The Scale Factor populates when the settings dialog is opened, allow users to save settings and exit without any Empty Scale Factor warnings.
- When users create a new layer which conformed to the Amine naming standards, then moved objects into the new layer, it would crash and corrupt the new layer rendering it unusable. This has been resolved and users can create new layers and transfer objects.
- When creating outlines from a wireframe, the outlines were not closed creating data issues. users can use the tool and it creates closed outlines.
- A prompt warns users if no outline was created during the process instead of not warning, and not creating the intended outline.
- The width, height and area were not populating for certain users. This has been resolved.
- The End of Month dialogue was not able to be re-opened if the advance line create process was interrupted by an unhandled exception. The global End of Month form resets to NULL when the dialogue is closed allowing users to reopen if needed.
- The Mine Name filter that was not filtering the level codes according to the selected mine name has been resolved.



- The End of Month window was too small, trimming away the drive record if there was no user-defined attributes entered.
- An unhandled exception was displayed if a solid was sliced. The solid and surface intersection checking function is executed prior to the slicing function to avoid a hard crash.
- In the End of Month dialogue, the Process button stopped function. A change was required in the SDK which resolved the issue.
- When creating contour lines, users would experience overlapping segments if the segments had 2 separate contours on the same elevation. This has been fixed to separate two or more contours.
- When using Amine, the software would retain memory and over time use so much RAM that it could cause Amine to crash. This was recognized and fixed.
- Multiple User Defined Attributes windows were able to be opened in a single Amine session. This has been resolved and limited to one only.
- The TestBmEval.exe component was missing in the base installer, it has since been added.
- The WorkingFolder is automatically created in the latest .dll location.
- The Mine Name drop down was not displaying the mine name table in the Survey database. This was resolved.
- Multiple Create Solid windows were able to be opened in a single Amine session. This has been resolved and limited to one only.
- Users experienced wrong results when using information stored in the centerline. This has been corrected to use the correct attributes in the centerline xdata.
- The MineGrid database was failing to connect. Moving forward, users are required to convert the SDF file to an SQL file to store all MineGrid data in the SQL database. This would be done one time if never done for existing users.
- During the MineGrid setup, users would experience an error when trying to exit the setup dialogue not allowing them to exit and having to stop the software all-together.
- It was reported that the users were unable to exit the MineGrid dialogue when using it for a period of time. This has been resolved.
- When a user restores a database from a select source and the drawing file path is not corrected to point to an existing location on the PC or PC network, this results in a hard crash. A validation for the drawing path is require before login and an approved folder must exist.



- It was reported that errors were produced when obtaining tonnages and grades with the dilution and evaluation tool through the PML_EvaluationDM command. This has been resolved.
- In some instances, users would report a blank window when calculating tonnes in Amine using the PML_EvaluationDM command.
- An Object Reference error would appear during the Amine Layer matching process still allowing users to complete the task however providing an error that would give no reference on what has happened.
- It was found that during the Monthly Advances process with certain data types, the sections would overlap. This has been resolved.
- There was an SQL Error with certain CSV files when trying to import a Datamine Blockmodel. The Datamine Blockmodel option has been disabled to allow simple CSV imports via gemcom.
- Multiple Import windows were able to be open simultaneously along with random errors, this has been resolved.



Datamine enables efficient and sustainable mining through the application of world-leading technology and services.

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