

# RocFall 5.0

## Statistical Rockfall Analysis Software

**Determine rockfall risk and design remedial measures using this easy to use statistical analysis program. RocFall 5.0 offers fast, flexible analyses, a comprehensive array of statistics and presentation-quality output, making it an invaluable tool for projects where rockfall may occur. Both rigid body and lump mass models are included.**

### Easy Input, Fast Output

Input of slope geometry, material properties and rock locations is straightforward in RocFall 5.0. There are no restrictions on slope geometry - add any number of overhanging sections or barriers at any angle/location on a slope. RocFall 5.0 includes an improved set of drawing and editing tools, allowing for fast model creation. For each simulation, a comprehensive set of graphs and statistics is generated, allowing users to quickly determine risk and design remedial measures. Add a remedial measure, re-run the simulation, and results update instantly. Output of graphs, statistics and raw data is available in a variety of formats.

### Variety of Analysis Options

A histogram showing the location of rock endpoints is generated. Energy, velocity

and bounce-height mean, standard deviation, and max are calculated along the slope profile and can be easily graphed. Statistics are calculated automatically and available at any location along the slope. Quickly determine where minimum values occur, and place barriers in the optimal location. RocFall 5.0 includes a reference table of coefficients, consisting of data from journal articles and field-tested values contributed by other RocFall customers.

### Rigid Body Mechanics

RocFall 5.0 offers both rigid body and lump mass models. For rigid body analyses in RocFall 5.0, users choose a rock from the extensive rock-type library.

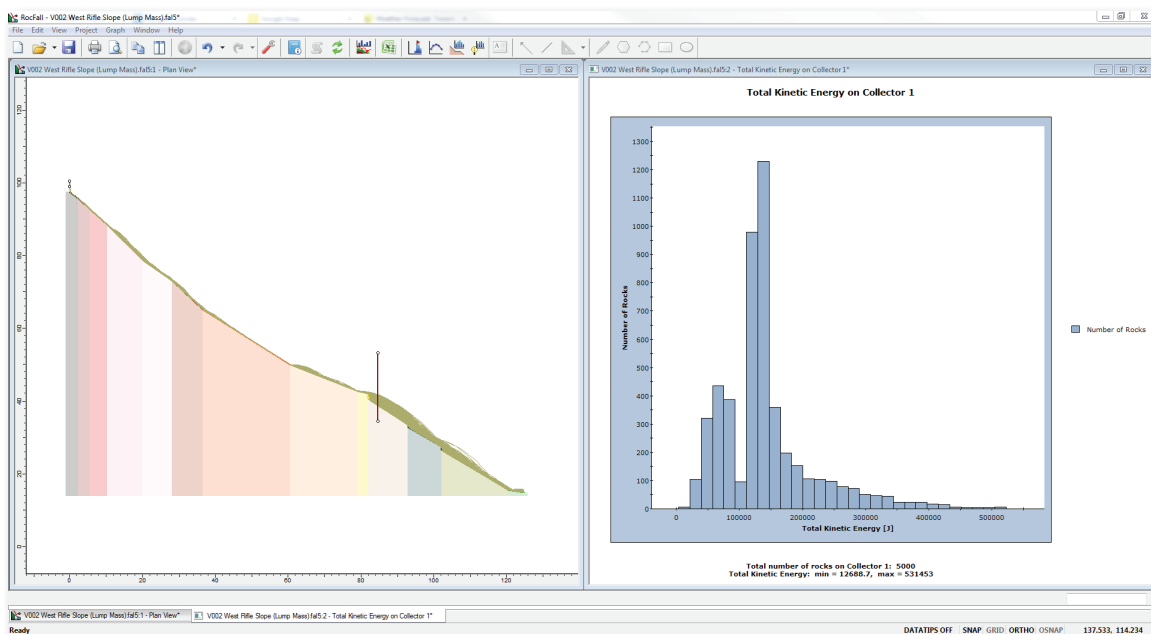
### Design Reliable Remedial Measures

RocFall 5.0 helps users design remedial measures: the material properties of slope

segments can be changed and simulated (e.g. placing loose gravel on a bench) to facilitate results comparison. Graphs and statistical summaries of the kinetic energy and location of impact on a barrier can help determine the capacity, height and location of barriers using ETAG 027 values. Once a measure is applied, a new simulation can be run with one mouse click. Rock paths can easily be filtered - right-click on a barrier and select paths with the highest velocity on impact to see where the rocks originated.

### Advanced Report Generation

RocFall 5.0 offers high quality graphs and printing. Graphs, as well as raw data, can easily be exported to Excel, and slope and rock-paths can be exported as a DXF file. RocFall 5.0 also has an improved Info Viewer with customizable output for report generation.



Use Data Collectors to gather velocity, energy, and bounce height data at different locations along a slope. Total Kinetic Energy on a Data Collector is shown.

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## Technical Specifications

### Barriers

- unlimited number of barriers
- deformable barriers or berms

### Slope

- no restriction on slope geometry (e.g. overhanging sections)
- statistically defined material properties
- rocks can begin sliding/rolling again, after coming to rest
- statistically define slope vertices
- import/export material properties
- import DXF, CRSP (version 3 & 4) files
- import .BMP images
- define slope based on segment lengths and angles

### Coefficients of Restitution

- table of coefficients of restitution included
- table of coefficients of friction included

### Rock Starting Location

- specify single location and line seeders

- unlimited number of starting locations
- probability settings for each seeder
- random / pseudo-random number generation

### Rigid Body Mechanics

- rock type library
- define rock shape and size

### Data Collectors

- gather information/statistics at any location

### Filters

- pick particular rock paths to create statistics/graphs
- define advanced filters based on combinations of criteria

### Graphs Produced

- histogram of rock endpoint locations
- mean, standard deviation, max graphs (energy, velocity, bounce height, etc.)
- distribution graphs show distribution at specific locations (same data as envelope graphs)

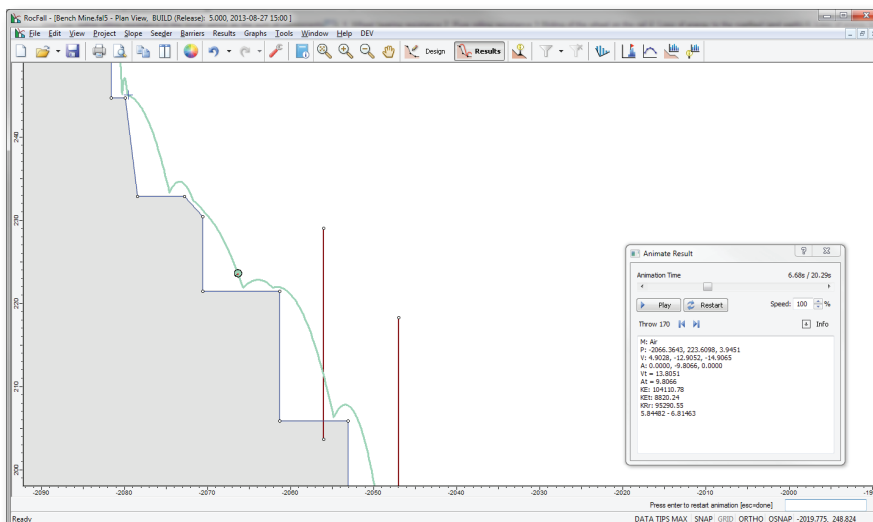
- create histograms or cumulative distributions for specific locations (impact locations, energy etc.)
- statistics generated for graphs, best fit distribution shows Beta, Triangular, uniform parameters

### Output

- copy graphs/plots to clipboard
- transfer plots to Excel with one click
- export rock paths to DXF format
- copy geometry/parameters to clipboard
- advanced report generation
- save screen to images files/captures clipboard
- slope and slope/chart views are easily added to, scaled
- filled/hatch area below slope, to improve presentation
- animate rockfall results
- display contact points
- view path results in table format

### Verification

- extensive verification manual



Animate and filter rockfall results.



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