

GeoStudio Product Details

I. SLOPE/W

SLOPE/W Purchasing Options

GeoStudio						
	Universal	Professional	Standard	SLOPE/W	Basic	Student (Free)
SLOPE/W	●	●	●	●	○	○
SEEP/W	●	●	●		○	○
SIGMA/W	●	●	●		○	○
QUAKE/W	●	●			○	○
TEMP/W	●	●			○	○
CTRAN/W	●	●			○	○
AIR/W	●				○	○
VADOSE/W	●					○

Key: ● = Full edition (all features) ○ = Basic edition (limited features) ○ = Student edition (limited features)

SLOPE/W Feature Comparison

	● Full	○ Basic	○ Student
Number of multiple/staged analyses (within one file)	No limit	2	2
Number of regions	No limit	10	10
Number of materials	No limit	10	3
Finite Element Integration	No limit	500 elements	500 elements
Import regions from AutoCAD® DXF™ files	Yes	No	No
Licensed for engineering consulting use	Yes	Yes	No
Analysis Methods			
Ordinary	Yes	Yes	Yes
Bishop Simplified	Yes	Yes	Yes
Janbu Simplified	Yes	Yes	Yes
Morgenstern-Price	Yes	Yes	Yes
Spencer	Yes	Yes	Yes
GLE	Yes	Yes	Yes
SIGMA/W finite element stress	Yes	Yes	Yes
QUAKE/W finite element stress	Yes	Yes	Yes
QUAKE/W Newmark Deformation	Yes	Yes	Yes
Corps of Engineers 1	Yes	No	No
Corps of Engineers 2	Yes	No	No
Lowe-Karafiath	Yes	No	No
Janbu Generalized	Yes	No	No
Sarma (Vertical Slice Only)	Yes	No	No
Advanced Features			
Probabilistic analysis	Yes	No	No
Sensitivity analysis	Yes	No	No
Automatic inclusion of ponded water load	Yes	Yes	Yes
Staged Rapid Drawdown	Yes	No	No

SLOPE/W Feature Comparison (continued)

● Full

○ Basic

○ Student

Soil Strength Models

Mohr-Coulomb	Yes	Yes	Yes
Spatial Mohr-Coulomb	Yes	No	No
Bedrock (impenetrable)	Yes	Yes	Yes
Undrained ($\Phi = 0$)	Yes	No	No
Bilinear	Yes	No	No
$S = f(\text{depth})$	Yes	No	No
$S = f(\text{datum})$	Yes	No	No
Anisotropic Strength	Yes	No	No
Shear/Normal function	Yes	No	No
Anisotropic function	Yes	No	No
Combined, $S = f(\text{depth})$	Yes	No	No
Combined, $S = f(\text{datum})$	Yes	No	No
$S = f(\text{overburden})$	Yes	No	No
Add-In material model (user defined)	Yes	No	No

Advanced Soil Parameters

Unsaturated strength from Φ B or SWCC	Yes	No	No
Anisotropic function	Yes	No	No
Unsaturated unit weight	Yes	No	No
Steady-state strength for liquefied material	Yes	No	No
Water content function estimation	Yes	No	No

Slip Surface Options

Grid and Radius	Yes	Yes	Yes
Entry and Exit	Yes	Yes	Yes
Optimize critical slip surface location	Yes	Yes	Yes
Fully Specified	Yes	Yes	No
Block Specified	Yes	Yes	No
Auto Locate	Yes	No	No
User defined axis point	Yes	No	No
Detail results on multiple critical slip surfaces	Yes	No	No

Pore-Water Pressure

R_u	Yes	No	No
B bar	Yes	No	No
Piezometric lines	Yes	One line	One line
Piezometric line with R_u or B bar	Yes	No	No
Phreatic correction	Yes	Yes	Yes
SEEP/W heads	Yes	Yes	Yes
SIGMA/W pwp	Yes	Yes	Yes
QUAKE/W pwp	Yes	Yes	Yes
VADOSE/W heads	Yes	No	No
Spatial variation of pressure head	Yes	No	No
Air Pressure interaction	Yes	No	No

SLOPE/W Feature Comparison (continued)	● Full	○ Basic	○ Student
External Loads			
Point Loads	Yes	Yes	No
Reinforcement Loads	Yes	No	No
Horizontal Seismic Loading	Yes	Yes	No
Vertical Seismic Loading	Yes	Yes	No
Surcharge Loads	Yes	Yes	No
Tension Crack Options			
Tension crack line	Yes	Yes	No
Tension crack angle	Yes	Yes	No
Auto search for tension crack	Yes	No	No
Interslice Functions			
Constant	Yes	Yes	Yes
Half-sine	Yes	Yes	Yes
Clipped-sine	Yes	No	No
Trapezoidal	Yes	No	No
Fully Specified	Yes	No	No
Corps Eng Assumption 1	Yes	No	No
Corps Eng Assumption 2	Yes	No	No
Lowe-Karafiath	Yes	No	No

II. SEEP/W

SEEP/W Purchasing Options

	GeoStudio					
	Universal	Professional	Standard	SEEP/W	Basic	Student (Free)
SLOPE/W	●	●	●		○	○
SEEP/W	●	●	●	●	○	○
SIGMA/W	●	●	●		○	○
QUAKE/W	●	●			○	○
TEMP/W	●	●			○	○
CTRAN/W	●	●			○	○
AIR/W	●				○	○
VADOSE/W	●					○

Key: ● = Full edition (all features) ○ = Basic edition (limited features) ○ = Student edition (limited features)

SEEP/W Feature Comparison

	● Full	○ Basic	○ Student
Number of multiple/staged analyses (within one file)	No limit	2	2
Number of regions	No limit	10	10
Number of materials	No limit	10	3
Number of elements	No limit	500	500
Import regions from AutoCAD® DXF™ files	Yes	No	No
Licensed for engineering consulting use	Yes	Yes	No

SEEP/W Feature Comparison (continued)		● Full	○ Basic	○ Student
Methods				
Steady-State	Yes	Yes	Yes	
Transient	Yes	No	No	
Density-Dependent (CTRAN/W and SEEP/W)	Yes	No	No	
Convective Heat Transfer (TEMP/W and SEEP/W)	Yes	No	No	
Air flow compatible (AIR/W and SEEP/W)	Yes	Yes	Yes	
View Options				
2-Dimensional	Yes	Yes	Yes	
Axisymmetric	Yes	Yes	Yes	
Plan	Yes	Yes	Yes	
Allow surface water to pond	Yes	Yes	Yes	
Finite Element Meshing				
Unstructured mesh	Yes	Yes	Yes	
Structured mesh	Yes	Yes	Yes	
Infinite regions	Yes	No	No	
Equation Solvers				
Direct equation solver	Yes	Yes	Yes	
Parallel Direct Solver	Yes	No	No	
Soil Models				
Saturated only	Yes	Yes	Yes	
Saturated-Unsaturated	Yes	Yes	Yes	
Interface material	Yes	No	No	
Property Functions				
Hydraulic conductivity function	Yes	Yes	Yes	
Volumetric water content function	Yes	Yes	Yes	
Hydraulic modifier function	Yes	No	No	
Vol. water content function estimation from grain size function	Yes	Yes	Yes	
Hydraulic conductivity function estimation from vol. water content function	Yes	Yes	Yes	
Add-in function (user's defined)	Yes	No	No	
Boundary Functions				
	Yes	No	No	

III. SIGMA/W

SIGMA/W Purchasing Options

	GeoStudio					
	Universal	Professional	Standard	SIGMA/W	Basic	Student (Free)
SLOPE/W	●	●	●		○	○
SEEP/W	●	●	●		○	○
SIGMA/W	●	●	●	●	○	○
QUAKE/W	●	●			○	○
TEMP/W	●	●			○	○
CTRAN/W	●	●			○	○
VADOSE/W	●					

Key: ● = Full edition (all features) ○ = Basic edition (limited features) ○ = Student edition (limited features)

SIGMA/W Feature Comparison

	● Full	○ Basic	○ Student
Number of multiple/staged analyses (within one file)	No limit	2	2
Number of regions	No limit	10	10
Number of materials	No limit	10	3
Number of elements	No limit	500	500
Import regions from AutoCAD® DXF™ files	Yes	No	No
Licensed for engineering consulting use	Yes	Yes	No
Methods			
Insitu	Yes	Yes	Yes
Load/Deformation	Yes	Yes	Yes
Stress Redistribution	Yes	No	No
Volume Change (Uncoupled Stress/Pore-water Pressure)	Yes	Yes	Yes
Coupled Stress / Pore-water Pressure	Yes	Yes	Yes
Dynamic Deformation (QUAKE/W and SIGMA/W)	Yes	No	No
View Options			
2-Dimensional	Yes	Yes	Yes
Axisymmetric	Yes	Yes	Yes
Finite Element Meshing			
Unstructured mesh	Yes	Yes	Yes
Structured mesh	Yes	Yes	Yes
Infinite regions	Yes	No	No
Structural Elements			
Bar element	Yes	Yes	Yes
Beam element	Yes	Yes	Yes
Equation Solvers			
Direct equation solver	Yes	Yes	Yes
Parallel Direct Solver	Yes	No	No
Soil Models			
Linear-Elastic	Yes	Yes	Yes
Anisotropic-Elastic	Yes	No	No
Hyperbolic Nonlinear-Elastic	Yes	No	No
Elastic-Plastic	Yes	No	No
Modified Cam-Clay	Yes	No	No
Slip Surface	Yes	No	No
Add-In model (user defined)	Yes	No	No
Boundary Functions			
	Yes	No	No

IV. QUAKE/W

QUAKE/W Purchasing Options

	GeoStudio					
	Universal	Professional	Standard	QUAKE/W	Basic	Student (Free)
SLOPE/W	●	●	●		○	○
SEEP/W	●	●	●		○	○
SIGMA/W	●	●	●		○	○
QUAKE/W	●	●		●	○	○
TEMP/W	●	●			○	○
CTRAN/W	●	●			○	○
AIR/W	●				○	○
VADOSE/W	●					○

Key: ● = Full edition (all features) ○ = Basic edition (limited features) ○ = Student edition (limited features)

QUAKE/W Feature Comparison

	● Full	○ Basic	○ Student
Number of multiple/staged analyses (within one file)	No Limit	2	2
Number of regions	No limit	10	10
Number of materials	No limit	10	3
Number of elements	No limit	500	500
Import regions from AutoCAD® DXF™ files	Yes	No	No
Licensed for engineering consulting use	Yes	Yes	No
Methods			
Initial Static	Yes	Yes	Yes
Equivalent Linear Dynamic	Yes	Yes	Yes
Equivalent Linear PWP Only	Yes	No	No
Nonlinear Dynamic	Yes	No	No
Finite Element Meshing			
Unstructured mesh	Yes	Yes	Yes
Structured mesh	Yes	Yes	Yes
Structural Elements			
Bar element	Yes	Yes	Yes
Beam element	Yes	Yes	Yes
Equation Solvers			
Direct equation solver	Yes	Yes	Yes
Parallel Direct Solver	Yes	No	No
Soil Models			
Linear-Elastic	Yes	Yes	Yes
Equivalent Linear	Yes	No	No
Nonlinear	Yes	No	No
Property Functions			
Pore-water pressure function	Yes	Yes	Yes
Cyclic number function	Yes	Yes	Yes
Ka-correction function	Yes	Yes	Yes
Ks-correction function	Yes	Yes	Yes
G-Reduction function	Yes	No	No

QUAKE/W Feature Comparison (continued)	● Full	○ Basic	○ Student
Property Functions (continued)			
Damping Ratio function	Yes	No	No
Add-In function (user defined)	Yes	No	No
Boundary Functions	Yes	No	No

V. TEMP/W

TEMP/W Purchasing Options

	GeoStudio					
	Universal	Professional	Standard	TEMP/W	Basic	Student (Free)
SLOPE/W	●	●	●		○	○
SEEP/W	●	●	●		○	○
SIGMA/W	●	●	●		○	○
QUAKE/W	●	●			○	○
TEMP/W	●	●		●	○	○
CTRAN/W	●	●			○	○
VADOSE/W	●					

Key: ● = Full edition (all features) ○ = Basic edition (limited features) ○ = Student edition (limited features)

TEMP/W Feature Comparison

	● Full	○ Basic	○ Student
Number of multiple/staged analyses (within one file)	No limit	2	2
Number of regions	No limit	10	10
Number of materials	No limit	10	3
Number of elements	No limit	500	500
Import regions from AutoCAD® DXF™ files	Yes	No	No
Licensed for engineering consulting use	Yes	Yes	No
Methods			
Steady-State	Yes	Yes	Yes
Transient	Yes	Yes	Yes
Convective Heat Transfer (SEEP/W / AIR/W and TEMP/W)	Yes	No	No
View Options			
2-Dimensional	Yes	Yes	Yes
Axisymmetric	Yes	Yes	Yes
Plan	Yes	Yes	Yes
Finite Element Meshing			
Unstructured mesh	Yes	Yes	Yes
Structured mesh	Yes	Yes	Yes
Infinite elements	Yes	No	No
Equation Solvers			
Direct equation solver	Yes	Yes	Yes
Parallel Direct Solver	Yes	No	No
Soil Models			
Coupled Convective Thermal	Yes	No	No

TEMP/W Feature Comparison (continued)	● Full	○ Basic	○ Student
Soil Models (continued)			
Full thermal	Yes	Yes	Yes
Simplified Thermal	Yes	Yes	Yes
Interface Material	Yes	No	No
Input Data Sets			
Climate data	Yes	No	No
Thermosyphon data	Yes	No	No
Convective surface data	Yes	No	No
Property Functions			
Thermal conductivity functions (vs VWC or temperature)	Yes	Yes	Yes
Unfrozen water content function	Yes	Yes	Yes
Volumetric specific heat capacity function	Yes	Yes	Yes
Thermal modifiers	Yes	No	No
Unfrozen water content function estimation	Yes	Yes	Yes
Thermal conductivity function estimation	Yes	Yes	Yes
Add-In function (user defined)	Yes	No	No
Boundary Functions	Yes	No	No

VI. CTRAN/W

CTRAN/W Purchasing Options

	GeoStudio					
	Universal	Professional	Standard	CTRAN/W	Basic	Student (Free)
SLOPE/W	●	●	●		○	○
SEEP/W	●	●	●		○	○
SIGMA/W	●	●	●		○	○
QUAKE/W	●	●			○	○
TEMP/W	●	●			○	○
CTRAN/W	●	●		●	○	○
AIR/W	●				○	○
VADOSE/W	●					○

Key: ● = Full edition (all features) ○ = Basic edition (limited features) ○ = Student edition (limited features)

CTRAN/W Feature Comparison

	● Full	○ Basic	○ Student
Number of multiple/staged analyses (within one file)	No limit	2	2
Number of regions	No limit	10	10
Number of materials	No limit	10	3
Number of elements	No limit	500	500
Import regions from AutoCAD® DXF™ files	Yes	No	No
Licensed for engineering consulting use	Yes	Yes	No
Methods			
Advective-Dispersion	Yes	Yes	Yes
Particle Tracking	Yes	Yes	Yes
Density Dependent (SEEP/W and CTRAN/W)	Yes	No	No

CTRAN/W Feature Comparison (continued)		● Full	○ Basic	○ Student
View Options				
2-Dimensional		Yes	Yes	Yes
Axisymmetric		Yes	Yes	Yes
Plan		Yes	Yes	Yes
Finite Element Meshing				
Unstructured mesh		Yes	Yes	Yes
Structured mesh		Yes	Yes	Yes
Infinite elements		Yes	No	No
Equation Solvers				
Direct equation solver		Yes	Yes	Yes
Parallel Direct Solver		Yes	No	No
Property Functions				
Diffusion function		Yes	Yes	Yes
Adsorption function		Yes	Yes	Yes
Add-In function (user defined)		Yes	No	No
Boundary Functions				
		Yes	No	No

VII. AIR/W




AIR/W Purchasing Options

	GeoStudio					
	Universal	Professional	Standard	AIR/W	Basic	Student (Free)
SLOPE/W	●	●	●		○	○
SEEP/W	●	●	●		○	○
SIGMA/W	●	●	●		○	○
QUAKE/W	●	●			○	○
TEMP/W	●	●			○	○
CTRAN/W	●	●			○	○
AIR/W	●			●	○	○
VADOSE/W	●					○

Key: ● = Full edition (all features) ○ = Basic edition (limited features) ○ = Student edition (limited features)



























AIR/W Feature Comparison

	● Full	○ Basic	○ Student
Number of multiple/staged analyses (within one file)	No limit	2	2
Number of regions	No limit	10	10
Number of materials	No limit	10	3
Number of elements	No limit	500	500
Import regions from AutoCAD® DXF™ files	Yes	No	No
Licensed for engineering consulting use	Yes	Yes	No
Methods			
Steady-State	Yes	Yes	Yes
Transient	Yes	No	No
Convective Heat Transfer (AIR/W and TEMP/W)	Yes	No	No

AIR/W Feature Comparison (continued)	 Full	 Basic	 Student
View Options			
2-Dimensional	Yes	Yes	Yes
Axisymmetric	Yes	Yes	Yes
Finite Element Meshing			
Unstructured mesh	Yes	Yes	Yes
Structured mesh	Yes	Yes	Yes
Infinite regions	Yes	No	No
Equation Solvers			
Direct equation solver	Yes	Yes	Yes
Parallel Direct Solver	Yes	No	No
Soil Models			
Saturated Only	Yes	Yes	Yes
Saturated-Unsaturated	Yes	Yes	Yes
Interface Material	Yes	No	No
Property Functions			
Air conductivity function	Yes	Yes	Yes
Vol. water content function estimation from grain size function	Yes	No	No
Air conductivity function estimation from vol. water content function	Yes	Yes	Yes
Add-In function (user defined)	Yes	No	No
Boundary Functions	Yes	No	No



VIII. VADOSE/W*



VADOSE/W Purchasing Options

	GeoStudio			VADOSE/W	Student (Free)
	Universal	Professional	Standard		
SLOPE/W					
SEEP/W					
SIGMA/W					
QUAKE/W					
TEMP/W					
CTAN/W					
AIR/W					
VADOSE/W					

Key:  = Full edition (all features)  = Student edition (limited features)

VADOSE/W Feature Comparison

	 Full	 Student
Number of multiple/staged analyses (within one file)	No limit	2
Number of regions	No limit	10
Number of materials	No limit	3
Number of elements	No limit	500
Import regions from AutoCAD® DXF™ files	Yes	No
Licensed for engineering consulting use	Yes	No

VADOSE/W Feature Comparison (continued)	 Full	 Student
Methods		
Steady-State	Yes	Yes
Transient Coupled	Yes	Yes
Transient Uncoupled	Yes	No
Transient Isothermal	Yes	No
Vegetation	Yes	No
Gas diffusion	Yes	No
Ground freezing	Yes	No
View Options		
2-Dimensional	Yes	1D only
Axisymmetric	Yes	No
Plan	No	No
Finite Element Meshing		
Unstructured mesh	Yes	No
Structured mesh	Yes	Yes
Infinite elements	Yes	No
Equation Solvers		
Direct equation solver	Yes	Yes
Parallel Direct Solver	Yes	No
Soil Models		
Hydraulic and full thermal	Yes	No
Hydraulic and simplified thermal	Yes	Yes
Interface material	Yes	No
Input Data Sets		
Climate data	Yes	40 days
Vegetation data	Yes	No
Property Functions		
Conductivity functions	Yes	Yes
Water content function	Yes	Yes
Thermal functions	Yes	No
Water content function estimation	Yes	Yes
Conductivity function estimation	Yes	Yes
Add-In function (user defined)	Yes	No
Boundary Functions		
	Yes	No

**See the VADOSE/W Basic Product Details document for a comparison of features available in the Basic Edition.*

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