



# SVHEAT<sup>GE</sup>

1D / 2D / 3D FINITE ELEMENT  
FREEZE / THAW MODELING



# SOILVISION<sup>®</sup>

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FEATURE COMPARISON				
PRODUCT VERSION	STUDENT	CLASSROOM	STANDARD	PRO
<b>General</b>				
Verification, Tutorial, and Example Manuals with Corresponding Models Provided	Yes	Yes	Yes	Yes
Create/Edit Models	Yes	Yes	Yes	Yes
CAD Windows Interface	Yes	Yes	Yes	Yes
Integrated Help System	Yes	Yes	Yes	Yes
Batch Analysis of Groups of Models	Yes	Yes	Yes	Yes
Windows 7, 8 and 10 Compatible	Yes	Yes	Yes	Yes
Multi-Core CPUs, Multi-Threading & 64 bit Environments Supported	Yes	Yes	Yes	Yes
Licensed for Engineering Consulting Use (Commercial Licenses Only)			Yes	Yes
<b>Geometry</b>				
Number of Regions	10	Unlimited	Unlimited	Unlimited
Number of Materials	3	Unlimited	Unlimited	Unlimited
Number of 3D Surfaces	3	Unlimited	Unlimited	Unlimited
Finite Element Cells	Limited*	Limited*	Unlimited	Unlimited
Import Regions from AutoCAD™ DXF Files		Yes	Yes	Yes
Import of Shape Files (SHP)		Yes	Yes	Yes
Import of ESRI ASCII Grid Files		Yes	Yes	Yes
Pinch Out Surfaces (3D)	Yes	Yes	Yes	Yes
Slice 3D Models to 2D Cross Section	Yes	Yes	Yes	Yes
<b>Coordinate Systems</b>				
1D Analysis	Yes	Yes	Yes	Yes
2D Analysis	Yes	Yes	Yes	Yes
3D Analysis	Yes	Yes	Yes	Yes
Axisymmetric Analysis		Yes	Yes	Yes
Plan View		Yes	Yes	Yes
<b>Temporal</b>				
Steady-State	Yes	Yes	Yes	Yes
Transient		Yes	Yes	Yes
<b>Initial Conditions</b>				
Other SVHeat™ Analysis	Yes	Yes	Yes	Yes
Constant/Equation of Temperature	Yes	Yes	Yes	Yes
Assign Initial Conditions by Region	Yes	Yes	Yes	Yes
<b>Application Types</b>				
Heat Conduction with Phase Change	Yes	Yes	Yes	Yes
Convective Heat Transfer Coupled with SVFLUX™ or SVAIR™				Yes
<b>Mesh</b>				
Fully-Automatic Generation	Yes	Yes	Yes	Yes
Fully-Automatic Mesh Refinement	Yes	Yes	Yes	Yes
Mesh Refinement Following Freezing/Thawing Front	Yes	Yes	Yes	Yes
<b>Equation Solvers</b>				
Galerkin Finite Element Method	Yes	Yes	Yes	Yes
Parallel Processor Support	Yes	Yes	Yes	Yes
<b>Full coupling</b>				
Water				Yes
Air				Yes
3 way Air / Water / Thermal				Yes
<b>Input Data Sets</b>				
From Seepage (SVFLUX™)	Yes	Yes	Yes	Yes
Climate Data				Yes
Thermosyphon Data				Yes
<b>Property Functions</b>				
Various Unfrozen Water Content Functions	Yes	Yes	Yes	Yes
Saturated/Unsaturated Soils	Yes	Yes	Yes	Yes
Thermal Conductivity Function Estimation	Yes	Yes	Yes	Yes
Frozen/Unfrozen Volumetric Heat Capacity	Yes	Yes	Yes	Yes

\* Student / Classroom editions are limited to 100 cells in 1D, 400 cells in 2D and 1200 cells in 3D.