

## SensAble Technologies, Inc. ClayTools System Feature Chart

<b>Product Name</b>	<b>ClayTools®</b>
<b>Software version number</b>	<b>v.1.3</b>
<b>Haptic Device</b>	
<i>PHANTOM® Desktop™</i>	
<i>PHANTOM Omni®</i>	✓
<i>PHANTOM Omni® Basic</i>	✓
<b>32-bit edition</b>	✓
<b>64-bit edition</b> - designed to run on Windows® XP x64 OS	✓
<b>New User Interface</b>	✓
<b>Voxel Modeling Tools</b>	
<b>Curve Tools</b>	
<i>Extend Curve</i>	
<i>Copy Curve from Parasolid Edge</i>	
<i>Surface to Clay Intersection Curve</i>	
<i>Flatten Curve</i>	
<i>Automated Split (Updated: Parametric splitting) or Join Curve (including ability to heal curves)</i>	✓
<i>Project Curve to Plane, Intersect Sketches, Copy Curve from Sketch Plane, Offset Curve, Curve Helix, Sub-divide Curve Loop</i>	
<i>Select, Draw Curve (Updated only in FreeForm: Cyclic curves), Project Sketch, Fit Curve (Updated only in FreeForm: Adaptive fit option), Split Curve (Updated: Parametric splitting), Join Curve, Mirror Curve, Slice Curve, Smooth Curve, Copy from Reference Group</i>	✓
<b>Plane Tools</b>	
<i>Orient Plane Through Three Points, Orient Plane to Curve, Copy Profile</i>	
<i>Create Plane, Reposition Plane, Orient Plane Flat to View, Import 2D Art to Plane</i>	✓
<b>Sketch Tools</b>	
<i>Pencil, Erase Pencil, Rectangular Array</i>	
<i>Select, Line, Arc, Round Corner, Circle, Ellipse, Rectangle, Freehand Curve (Updated only in FreeForm: Cyclic curves), Curve by Control Points, Trim, Mirror, Offset, Move, Rotate, Scale, View Flat to Sketch Plane</i>	✓
<b>Construct Clay Tools</b>	
<i>Basic Shapes</i>	✓
<i>Loft Clay, Sweep Clay, Toothpaste, Pipe</i>	
<i>Offset Piece</i>	
<i>Edit Reference Piece Selection</i>	
<i>Edit Reference Piece with Curve Loop</i>	
<i>Revolve, Inflate, Connected Spheres ("Add Clay"), Mirror, Wire Cut</i>	✓
<b>Sculpt Clay Tools</b>	
<i>Carve with Cube, Carve with Angle, Carve with Loop, Carve with Razor, Carve with Knife</i>	
<i>Custom Tool</i>	
<i>Carve with Ball, Corndog (Updated in FreeForm only: Axis lock and Draft support), Scraper, Smudge, Attract, Spike</i>	✓
<i>Smooth (Updated in FreeForm only: Blend with mask option), Smooth Area (Updated: Feathering option)</i>	✓
<b>Detail Clay Tools</b>	
<i>Variable Round Edge, Bevel Edge</i>	
<i>Groove, Emboss with Curve, Emboss Area, Emboss with Image, Emboss with Wrapped Image (Updated: Preserve existing clay detail option)</i>	✓
<b>Deform Clay Tools</b>	
<i>Shape Tool (Updated: Tangency falloff control), Deform Box (Updated: Four way symmetry, Align to view, Falloff control)</i>	
<i>Tug, Tug area</i>	✓
<b>Select and Move Tools</b>	
<i>Select Clay with Plane, Select Clay with Box</i>	
<i>Select with Ball, Lump Select, Select with Profile, Separate with Curve, Mask</i>	✓
<i>Reposition Selection (Object list entities)</i>	
<i>Paste 3D Pattern</i>	✓
<b>Object List Functionality</b>	
<i>Fill Voids</i>	✓
<i>Group Booleans (combine into / remove from)</i>	✓
<i>Match Origin</i>	✓
<i>Object List Notes</i>	✓
<b>Utility Tools</b>	
<i>Hide Show Patches and Solids</i>	
<i>Hide / Show Curves, (Updated in FreeForm only: Hide / Show Planes and Hide / Show Clay), Fit to View, Perspective View</i>	✓
<i>Favorites Palette</i>	✓
<i>Custom Color Schemes</i>	✓
<i>Incremental Backup File Saving</i>	✓
<i>Pop Through Force Control</i>	✓
<i>Toggle Touchable Reference Pieces</i>	✓
<i>Toggle Touchable Patches and Solids</i>	

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<b>Product Name</b>	<b>ClayTools®</b>
<b>NURBS Surfacing Tools (patches can be created in 3D space or fit to clay)</b>	
<i>SensAble Auto Surfacers v1.0</i>	
<i>Semi-automatic Patch Creation</i>	
<i>Select All Patches</i>	
<i>Find Folded Patches</i>	
<i>Measure Fit of Patches to Clay</i>	
<i>Refit Curves and Patches</i>	
<i>Copy Patches from Piece</i>	
<i>Shape, Trim, and Mirror Patch</i>	
<i>Extend Patch</i>	
<i>Split Mesh</i>	
<i>Creation of Voxel Solids from NURBS Patches</i>	
<i>Environment and Zebra Mapping</i>	
<b>NURBS Solids Tools</b>	
<i>Wire Cut, Spin, Loft and Sweep Solids</i>	
<i>Mirror Solid</i>	
<i>Creation of Voxel Solids from NURBS Solids</i>	
<i>Stitch Patches into NURBS Solids</i>	
<b>Import/Export File Formats</b>	
<i>Native Parasolid® Solids and Patches</i>	
<i>STEP Solids and Patches</i>	
<i>IGES Solids and Patches</i>	
<i>Buck Support</i>	
<i>IGES Curves</i>	✓
<i>STL, OBJ, PLY, ZCP</i>	✓
<i>Export TextureKiln™</i>	✓
<b>Polygon Support</b>	
<i>Import, Convert to Clay, Decimated Export</i>	✓
<b>Dimensional Control</b>	
<i>Dimension Parasolid Edges</i>	
<i>Reposition Origin(s), Reposition Piece(s) (numeric accuracy relative to local or global coordinates)</i>	✓
<i>Tug with Ruler</i>	
<i>Piece Density</i>	
<i>Mass Properties</i>	
<i>Show Center of Gravity</i>	
<i>Ruler</i>	✓
<i>Haptic Guides</i>	✓
<b>Evaluation Views</b>	
<i>Parting Line Color, Rainbow Color Draft Display</i>	
<i>Cutaway View (only available in FreeForm), Scalable Secondary Views</i>	✓
<i>Flat Shade Clay</i>	✓
<i>Flat Shade Reference Pieces</i>	✓
<b>Paint and Render</b>	
<i>Project Texture</i>	
<i>Wrap Texture</i>	
<i>Voxel Paint (Paint Brush, Air Brush)</i>	
<i>mental ray® Rendering Engine</i>	
<b>Moldable Part</b>	
<i>Blocking</i>	
<i>Parting Line Color</i>	
<i>Parting Line Exploration</i>	
<i>Parting Line Definition</i>	
<i>Parting Line Smoothness &amp; Curvature Evaluation</i>	
<i>Automatic Smoothing of Parting Line</i>	
<i>Automatic Draft Fixing</i>	
<i>Shelling</i>	
<i>Split Line Curve Definition</i>	
<i>Split Joint Design</i>	
<i>Referencing Import Geometry from CAD</i>	
<i>Tug To Smooth Parting Line</i>	
<i>Smooth &amp; Smudge</i>	
<i>Holes &amp; Cutout Design</i>	
<i>Previewing &amp; Preparing Parts For Mold Design</i>	
<b>Mold Insert Design for Tooling</b>	
<i>Pull Direction</i>	
<i>Insert Block Extents</i>	
<i>Planar Parting Line Sections</i>	
<i>Extruded Parting Surface Creation</i>	
<i>3D Offset Parting Surface</i>	
<i>Simple Parting Surfaces</i>	
<i>Multiple Component Creation</i>	
<i>Previewing &amp; Creating Core &amp; Cavity Inserts</i>	