

SensAble Technologies, Inc.  
FreeForm Modeling Systems Feature Comparison Chart

	Digital Content Creation & Fine Arts such as Sculpture & Portions of Jewelry Design
<b>Primary Application</b>	
<b>Product Name</b>	ClayTools®
<b>Software version number</b>	v.1.3
<b>Haptic Device</b>	
PHANTOM® Desktop™	✓
PHANTOM Omni®	✓
PHANTOM Omni® Basic	✓
<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>	
Extend Curve	
Copy Curve from Parasolid Edge	
Surface to Clay Intersection Curve	
Flatten Curve	
Automated Split (Updated: Parametric splitting) or Join Curve (including ability to heal curves)	✓
Project Curve to Plane, Intersect Sketches, Copy Curve from Sketch Plane, Offset Curve, Curve Helix, Sub-divide Curve Loop	
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	✓
<b>Plane Tools</b>	
Orient Plane Through Three Points, Orient Plane to Curve, Copy Profile	
Create Plane, Reposition Plane, Orient Plane Flat to View, Import 2D Art to Plane	✓
<b>Sketch Tools</b>	
Pencil, Erase Pencil, Rectangular Array	
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	✓
<b>Construct Clay Tools</b>	
Basic Shapes	✓
Loft Clay, Sweep Clay, Toothpaste, Pipe	
Offset Piece	
Edit Reference Piece Selection	
Edit Reference Piece with Curve Loop	
Revolve, Inflate, Connected Spheres ("Add Clay"), Mirror, Wire Cut	✓
<b>Sculpt Clay Tools</b>	
Carve with Cube, Carve with Angle, Carve with Loop, Carve with Razor, Carve with Knife	
Custom Tool	
Carve with Ball, Comdog (Updated in FreeForm only: Axis lock and Draft support), Scraper, Smudge, Attract, Spike	✓
Smooth (Updated in FreeForm only: Blend with mask option), Smooth Area (Updated: Feathering option)	✓
<b>Detail Clay Tools</b>	
Variable Round Edge, Bevel Edge	
Groove, Emboss with Curve, Emboss Area, Emboss with Image, Emboss with Wrapped Image (Updated: Preserve existing clay detail option)	✓
<b>Deform Clay Tools</b>	
Shape Tool (Updated: Tangency falloff control), Deform Box (Updated: Four way symmetry, Align to view, Falloff control)	
Tug, Tug area	✓
<b>Select and Move Tools</b>	
Select Clay with Plane, Select Clay with Box	
Select with Ball, Lump Select, Select with Profile, Separate with Curve, Mask	✓
Reposition Selection (Object list entities)	
Paste 3D Pattern	✓
<b>Object List Functionality</b>	
Fill Voids	✓
Group Booleans (combine into / remove from)	✓
Match Origin	✓
Object List Notes	✓
<b>Utility Tools</b>	
Hide Show Patches and Solids	
Hide / Show Curves, (Updated in FreeForm only: Hide / Show Planes and Hide / Show Clay), Fit to View, Perspective View	✓
Favorites Palette	✓
Custom Color Schemes	✓
Incremental Backup File Saving	✓
Pop Through Force Control	✓
Toggle Touchable Reference Pieces	✓
Toggle Touchable Patches and Solids	
<b>NURBS Surfacing Tools (patches can be created in 3D space or fit to clay)</b>	
SensAble Auto Surfer v1.0	
Semi-automatic Patch Creation	
Select All Patches	
Find Folded Patches	
Measure Fit of Patches to Clay	
Refit Curves and Patches	
Copy Patches from Piece	
Shape, Trim, and Mirror Patch	
Extend Patch	
Split Mesh	
Creation of Voxel Solids from NURBS Patches	
Environment and Zebra Mapping	
<b>NURBS Solids Tools</b>	
Wire Cut, Spin, Loft and Sweep Solids	
Mirror Solid	
Creation of Voxel Solids from NURBS Solids	
Stitch Patches into NURBS Solids	
<b>Import/Export File Formats</b>	
Native Parasolid® Solids and Patches	
STEP Solids and Patches	
IGES Solids and Patches	
Buck Support	
IGES Curves	✓
STL, OBJ, PLY, ZCP	✓
Export TextureKiln™	✓
<b>Polygon Support</b>	
Import, Convert to Clay, Decimated Export	✓
<b>Dimensional Control</b>	
Dimension Parasolid Edges	
Reposition Origin(s), Reposition Piece(s) (numeric accuracy relative to local or global coordinates)	✓
Tug with Ruler	
Piece Density	
Mass Properties	
Show Center of Gravity	
Ruler	✓
Haptic Guides	✓
<b>Evaluation Views</b>	
Parting Line Color, Rainbow Color Draft Display	
Cutaway View (only available in FreeForm), Scalable Secondary Views	✓
Flat Shade Clay	✓
Flat Shade Reference Pieces	✓
<b>Paint and Render</b>	
Project Texture	
Wrap Texture	
Voxel Paint (Paint Brush, Air Brush)	
mental ray® Rendering Engine	
<b>Moldable Part</b>	
Blocking	
Parting Line Color	
Parting Line Exploration	
Parting Line Definition	
Parting Line Smoothness & Curvature Evaluation	
Automatic Smoothing of Parting Line	
Automatic Draft Fixing	
Shelling	
Split Line Curve Definition	
Split Joint Design	
Referencing Import Geometry from CAD	
Tug To Smooth Parting Line	
Smooth & Smudge	
Holes & Cutout Design	
Previewing & Preparing Parts For Mold Design	
<b>Mold Insert Design for Tooling</b>	
Pull Direction	
Insert Block Extents	
Planar Parting Line Sections	
Extruded Parting Surface Creation	
3D Offset Parting Surface	
Simple Parting Surfaces	
Multiple Component Creation	
Previewing & Creating Core & Cavity Inserts	