

SensAble Technologies, Inc.
FreeForm Modeling Systems Feature Comparison Chart

| | Product Design | |
|--|---------------------|--------------------------|
| Primary Application | FreeForm® Modeling™ | FreeForm® Modeling Plus™ |
| Product Name | v9.1 | v9.1.2 |
| Software version number | | |
| Haptic Device | | |
| PHANTOM® Desktop™ | ✓ | ✓ |
| PHANTOM® Omni™ | ✓ | ✓ |
| 32-bit edition | ✓ | ✓ |
| 64-bit edition - designed to run on Windows® XP x64 OS | ✓ | ✓ |
| New User Interface | ✓ | ✓ |
| Voxel Modeling Tools | | |
| Curve Tools | | |
| 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: Cyclic curves), Project Sketch, Fit Curve (Updated: Adaptive fit option), Split Curve (Updated: Parametric splitting), Join Curve, Mirror Curve, Slice Curve, Smooth Curve, Copy from Reference Group | ✓ | ✓ |
| Plane Tools | | |
| 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 | ✓ | ✓ |
| Sketch Tools | | |
| Pencil, Erase Pencil, Rectangular Array | ✓ | ✓ |
| Select, Line, Arc, Round Corner, Circle, Ellipse, Rectangle, Freehand Curve (Updated: Cyclic curves), Curve by Control Points, Trim, Mirror, Offset, Move, Rotate, Scale, View Flat to Sketch Plane | ✓ | ✓ |
| Construct Clay Tools | | |
| 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 | ✓ | ✓ |
| Sculpt Clay Tools | | |
| Carve with Cube, Carve with Angle, Carve with Loop, Carve with Razor, Carve with Knife | ✓ | ✓ |
| Custom Tool | ✓ | ✓ |
| Carve with Ball, Corndog (Updated: Axis lock and Draft support), Scraper, Smudge, Attract, Spike | ✓ | ✓ |
| Smooth (Updated: Blend with mask option), Smooth Area (Updated: Feathering option) | ✓ | ✓ |
| Detail Clay Tools | | |
| Variable Round Edge, Bevel Edge | ✓ | ✓ |
| Groove, Emboss with Curve, Emboss Area, Emboss with Image, Emboss with Wrapped Image | ✓ | ✓ |
| Deform Clay Tools | | |
| Shape Tool (Updated: Tangency falloff control), Deform Box (Updated: Four way symmetry, Align to view, Falloff control) | ✓ | ✓ |
| Tug, Tug area | ✓ | ✓ |
| Select and Move Tools | | |
| 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 | ✓ | ✓ |
| Object List Functionality | | |
| Fill Voids | ✓ | ✓ |
| Group Booleans (combine into / remove from) | ✓ | ✓ |
| Match Origin | ✓ | ✓ |
| Object List Notes | ✓ | ✓ |
| Utility Tools | | |
| Hide Show Patches and Solids | | ✓ |
| Hide / Show Curves, Hide / Show Planes, 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 | ✓ | ✓ |
| NURBS Surfacing Tools (patches can be created in 3D space or fit to clay) | | |
| 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 | | ✓ |
| NURBS Solids Tools | | |
| Wire Cut, Spin, Loft and Sweep Solids | | ✓ |
| Mirror Solid | | ✓ |
| Creation of Voxel Solids from NURBS Solids | | ✓ |
| Stitch Patches into NURBS Solids | | ✓ |
| Import/Export File Formats | | |
| Native Parasolid® Solids and Patches | | ✓ |
| STEP Solids and Patches | | ✓ |
| IGES Solids and Patches | | ✓ |
| Buck Support | ✓ | ✓ |
| IGES Curves | ✓ | ✓ |
| STL, OBJ, PLY, ZCP | ✓ | ✓ |
| Export TextureKiln™ | ✓ | ✓ |
| Polygon Support | | |
| Import, Convert to Clay, Decimated Export | ✓ | ✓ |
| Dimensional Control | | |
| 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 | ✓ | ✓ |
| Evaluation Views | | |
| Parting Line Color, Rainbow Color Draft Display | ✓ | ✓ |
| Cutaway View, Scalable Secondary Views | ✓ | ✓ |
| Flat Shade Clay | ✓ | ✓ |
| Flat Shade Reference Pieces | ✓ | ✓ |
| Paint and Render | | |
| Project Texture | ✓ | ✓ |
| Wrap Texture | ✓ | ✓ |
| Voxel Paint (Paint Brush, Air Brush) | ✓ | ✓ |
| mental ray® Rendering Engine | ✓ | ✓ |
| Moldable Part | | |
| 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 | | ✓ |
| Mold Insert Design for Tooling | | |
| 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 | | ✓ |