PLUGIN FOR RHINOCEROS 3D · CAMONSOFT

FastNesting

USER GUIDE

From 3D model to cut plan in Rhino

Nested layouts · Cut lists · Machining drawings · Production reports

Version 1.1.4 Windows (Rhino 7 & 8) · macOS (Rhino 8)

Complete reference for furniture workshops and panel cutting operations. Covers nesting, cut lists, edgebanding, machining drawings, and production reports.

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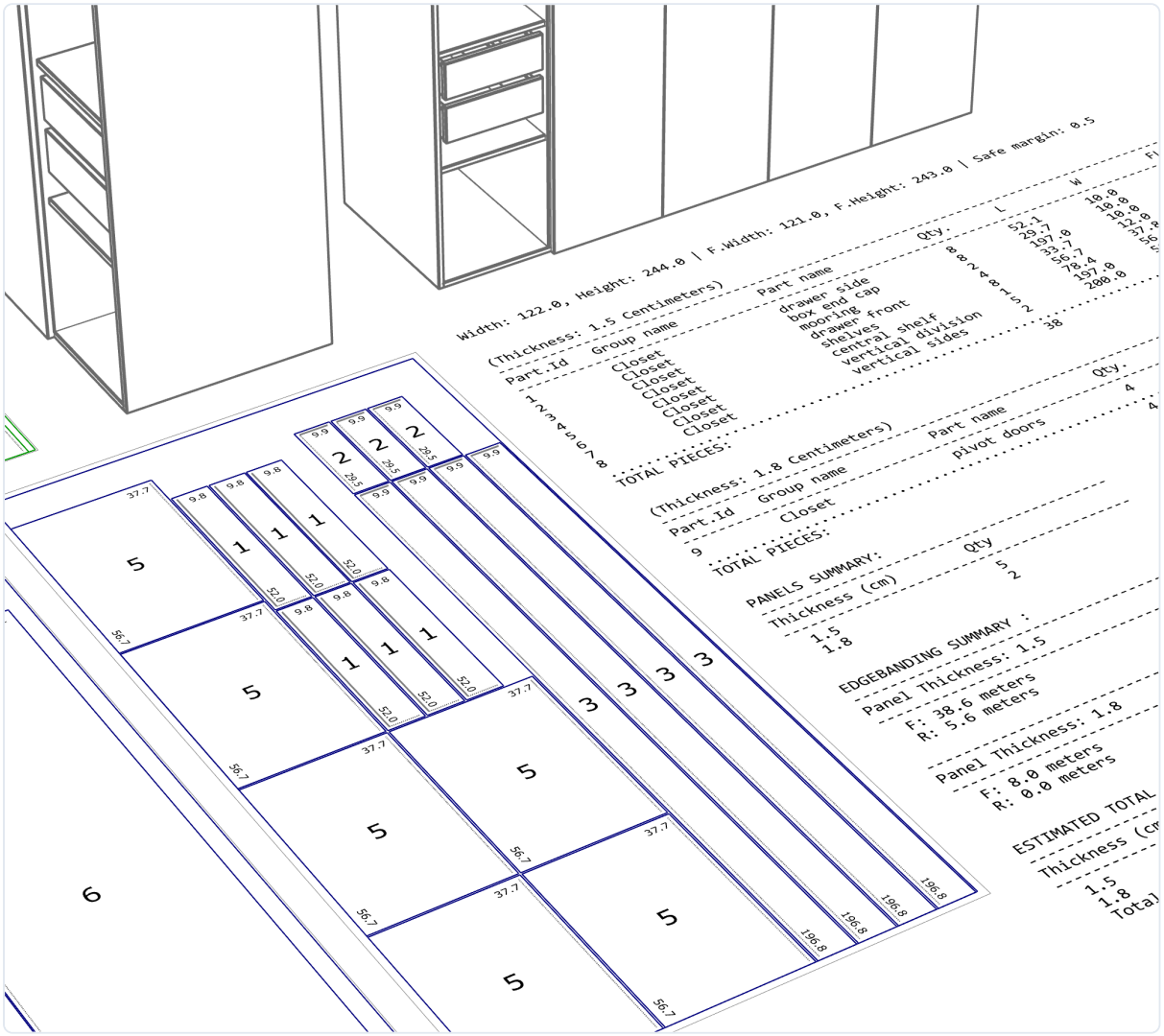
Introduction

What is FastNesting?

FastNesting is a plugin for Rhinoceros 3D that turns your 3D furniture model directly into production-ready cut plans, reports, and labels — without leaving Rhino. It reads the geometry you already have in your model, organizes parts by material and thickness, computes an optimized layout on full sheets, and delivers both a visual Rhino layout and documentary outputs (cut lists, PDF reports, label stickers).

FastNesting is designed for furniture workshops, cabinet makers, and panel-based manufacturing operations using Rhinoceros on Windows or macOS. In this manual, Pro features require FastNesting Pro or an active Trial.



FastNesting in action: from 3D model to nested Rhino layout with cut list report.

Core Concepts

Concept	Definition
Material	Derived from the Rhino layer the part lives on. One material can span multiple thicknesses; FastNesting nests each thickness separately.
Panel	The raw sheet to cut from (e.g. 122 × 244 cm / 48″ × 96″). Defined by width, length, and thickness. The FastNesting Pro version allows different panel sizes per material.
Part / Piece	A flat object in your model. FastNesting reads its geometry to determine cut dimensions and applies edgeband offsets to compute the finished size.
Kerf Width	Width consumed by the blade or router bit on each cut. FastNesting reserves this space between parts automatically.
Part Clearance PRO	An additional gap added around each part during nesting — for holding fixtures or extra safety margins.
Edgebanding PRO	Thin strips applied to edges after cutting. FastNesting subtracts edgeband thickness from the cut size to yield the finished dimension. When thickness is set to **0** for R or F, edges can still be marked **R**/**F** for reports (BOM / linear totals) without changing the cut size.
Grain direction	For veneer or textured materials, FastNesting can lock or rotate parts to respect the sheet grain.
Nesting layout	The optimized arrangement of all parts across panels, drawn as Rhino geometry in FastNesting sublayers.

Feature Highlights

FastNesting includes clear machining views, faithful handling of mirrored parts, and guidance when models are ambiguous. It also provides macOS readability, consistent nesting, 2D machining drawings, regeneration safeguards, high precision, layer-aware PDF export, and configurable Kerf Width / Part Clearance naming.

Machining view: Side A, Side B, and X-ray PRO

Piece Namer and related options use plain-English labels: **Side A**, **Side B**, **Side A (X-ray)**, and **Side B (X-ray)**. X-ray shows both faces for review; single-side modes draw only the chosen face.

Mirror instances in Rhino

Parts created with Rhino's mirror / symmetry workflows are recognized as mirrored instances. Machining and edgeband visualization can differ from a non-mirrored twin so the layout matches how the part will be machined — review mirrored parts in the 2D layout before production.

Edgeband thickness 0 (rigid and flexible) PRO

With thickness **0**, cut and finished sizes stay unchanged while reports still carry designated edge types (**L1**, **L2**, **W1**, **W2**, rigid **R** / flexible **F**) for BOM and linear totals — consistently applied across rigid and flexible presets.

Model quality and verification

2D machining acceleration depends on clean solids and consistent face orientation. Imported geometry, inverted or inconsistent normals, or non-manifold edges can still yield wrong or incomplete machining outlines. **Always visually verify** machining output in Rhino (and PDF when used) before releasing to the shop or CNC.

Ongoing refinements

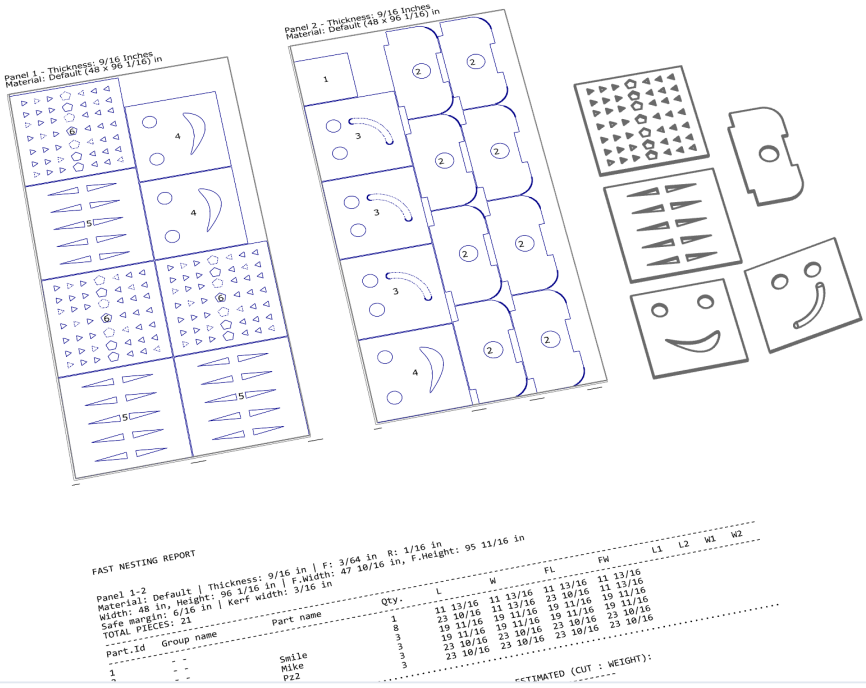
Routing-channel footprints, nesting edge cases, licensing/update messaging, and internal verification tooling continue to be tightened for production use. Re-run nesting after plugin updates if you rely on regenerated reports from older runs.

Optional 3D piece numbers on source solids PRO

FastNesting Pro and **Trial** can place **Rhino Text dots** on each **source 3D solid** after a successful nesting run (optional checkbox in Settings), showing the **piece number** used in the solver. This is independent of the **2D part labels** on the nested layout. Not available in Free. See Chapter 7 and Chapter 13.

• Updating FastNesting

Uninstall the previous package from Package Manager (or follow the manual Yak / RHI path), install the latest version, restart Rhino fully, and use `License_FastNesting` if PRO status needs refresh. Your license is not tied to a single minor version.



FAST NESTING REPORT

Panel 1-2
Material: Default | Thickness: 9/16 in | F: 3/64 in R: 1/16 in
Width: 48 in, Height: 96 1/16 in | F.Width: 47 10/16 in, F.Height: 95 11/16 in
Safe margin: 6/16 in | Kerf width: 3/16 in
TOTAL PIECES: 21

Part.Id	Group name	Part name	Qty.	L	W	FL	FW	L1	L2	W1	W2
1	- -	Smile	1	11 13/16	11 13/16	11 13/16	11 13/16				
	- -	Mike	8	23 10/16	19 11/16	23 10/16	19 11/16				
	- -	Pz2	3	19 11/16	19 11/16	19 11/16	19 11/16				
			3	19 11/16	23 10/16	23 10/16	23 10/16				
			3	23 10/16	23 10/16						

ESTIMATED (CUT : WEIGHT):

Machining Drawings **PRO**: *2D machining detail in the nested Rhino layout (see Chapter 14).*

CHAPTER 3

System Requirements & Installation

System Requirements

Requirement	Detail
Windows	Rhinoceros 7 or Rhinoceros 8
macOS	Rhinoceros 8
RAM	Minimum 4 GB · Recommended 8 GB for normal use, 16 GB for demanding Machining Drawings projects
Internet	Required for PRO license activation and deactivation

New Installation via Package Manager (Recommended)

1. Open Rhinoceros.
2. Type `PackageManager` in the command line and press Enter. If Rhino is installed in a language other than English, use `_PackageManager` (leading underscore runs the English command name).
3. Search for **FastNesting**, select version **1.1.4**, and click **Install**.
4. Restart Rhinoceros when prompted.

Update or reinstall (Package Manager)

For a newer build or a clean reinstall: uninstall the previous package first, then install the new one—the same workflow as How to update on camonsoft.com/docs. Your PRO license is usually unaffected and should register automatically when you reopen Rhino.

1. Run `PackageManager` (or `_PackageManager` if Rhino is not in English).
2. Search for **FastNesting**, select the installed entry, and click **Uninstall**.
3. Close Rhinoceros completely (verify it is not running in the background).
4. Open Rhino and install FastNesting from Package Manager using the same steps as **New Installation via Package Manager** above. Restart when prompted so the new version loads. If the license dialog does not show PRO after a reinstall, run `License_FastNesting` (see Chapter 17).

> • **More detail on camonsoft.com/docs**
>
> Our documentation also covers **manual .yak / .rhi** updates, deleting only the FastNesting folder from *Open containing folder* when an install looks corrupted, and the **Deactivate → uninstall → install → Activate** path if you need to fix licensing after an update.

New Manual Installation

Use this path when you prefer a file-based install instead of Package Manager. Camonsoft and Food4Rhino usually provide a **ZIP archive** that bundles the installers for each supported Rhino build. Download the ZIP from the **FastNesting** listing on Food4Rhino or from the Camonsoft website at camonsoft.com (documentation / downloads for your Rhino version), extract it, then use only the file that matches your Rhino version.

File in the archive (name pattern)	What it is for
`…-rh8_0-any.yak`	**Rhino 8** (Windows or macOS). **Yak package:** open Rhino 8, then **drag-and-drop** this `.yak` into the Rhino window (steps below).
`…-rh7_0-any.yak`	**Rhino 7.** Same Yak workflow: **drag-and-drop** the `.yak` into Rhino 7. Use this when you want the Package Manager–style package without using the online Package Manager UI.
`…-rh7_0-any.rhi`	**Rhino 7 on Windows only. Rhino Installer Engine:** do *not* drag this into Rhino. **Double-click** the `.rhi` in File Explorer to run the standalone installer (McNeel's legacy Windows path for `.rhi` bundles).

Rhino 8 (Windows & macOS) — .yak file

- Uninstall any previous FastNesting version from Package Manager.
- Close Rhinoceros completely (verify it is not running in the background).
- Open Rhinoceros, then drag and drop the `.yak` file into the Rhino window.
- Restart Rhinoceros.

Rhino 7 (Windows) — .yak or .rhi installer

- **Uninstall the previous build first.** *If FastNesting was installed with Package Manager:* run `PackageManager` (or `_PackageManager`), open the **Installed** tab, select FastNesting, and click **Uninstall** — same workflow as **Update or reinstall (Package Manager)** on the previous page.
- *If FastNesting was installed only via Plug-in Manager, drag-and-drop of an `.rhp`, or an `.rhi` installer (not through Package Manager):* Windows has no single automatic uninstall for that path. Per McNeel: run `_PluginManager`, double-click FastNesting, copy the **registry key** path from the details dialog, close Rhino, open Registry Editor (`regedit`), search for that key and delete it, optionally remove leftover files in the folder shown in Plug-in Manager details (for `.rhi` installs, files are often under `%appdata%\McNeel\Rhinoceros\7.0\plugins`), then restart Rhino. See McNeel, How to Use Scripts and Plugins — sections *Uninstalling Plugins* and *Uninstalling RHI files*.
- Close Rhinoceros completely before reinstalling (verify it is not running in the background).
- Drag-and-drop the `.yak` into the Rhino window, or run the `.rhi` installer.
- Restart Rhinoceros.

> **▲ If the plugin appears corrupted after an update**
> Open the Rhino Plug-ins panel → find FastNesting → click "*Open containing folder*" → remove the FastNesting folder contents. Reinstall from Package Manager and restart Rhino.

CHAPTER 4

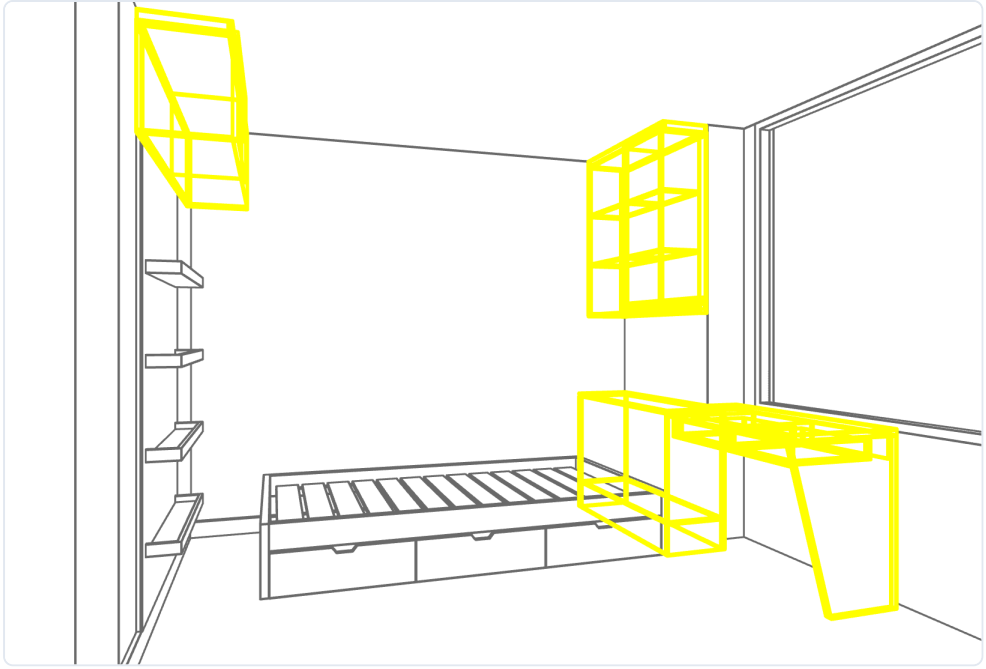
Commands Reference

FastNesting exposes five primary user commands in Rhinoceros. One **optional** command rebuilds 3D piece-number text dots from the last nesting result or from a selection of nested piece curves. Type commands in the command line or access them from the plugin toolbar.

Command	Purpose	When to use
`FastNesting`	Main nesting command. Reads selected parts, opens configuration dialogs, runs the solver, and generates output.	Every production cycle. Start here after selecting parts in Rhino.
`Settings_FastNesting`	Persistent defaults for this installation: units, precision, default panel, layout label font sizes, and (Pro / Trial) optional **3D piece-number text dots** on source solids after nesting.	When setting this workstation's defaults or switching unit systems.
`Clean_FastNesting`	*No selection:* resets defaults and clears document-scoped data. *With selection:* removes FastNesting metadata from selected objects.	Before sharing files, troubleshooting, or starting fresh.
`License_FastNesting`	Activates or deactivates PRO. Shows license status, email, and remaining trial time (when in Trial).	At first setup, when moving to a new computer, or verifying license status.
`GroupEdit_FastNesting`	Browse, rename, and interact with part groups and subgroups directly — without ungrouping objects in Rhino.	When organizing assemblies, renaming groups or subgroups, or selecting parts inside groups to apply transforms.

✓ Tip

Type the first few letters of a command and press **Tab** to autocomplete. For example, type `Fast` + Tab to see all FastNesting commands.



*Organize **layers** and **groups** first, then select the panel parts you intend to nest (yellow wireframe) — step-by-step in **Preparing Your Model** next.*

Preparing Your Model

Layer Strategy

FastNesting uses **Rhino layer names as material names**. Every part on a layer named "OAK Melamine" will be nested with other OAK Melamine parts, and that name appears in all reports and labels.

- Use clear, descriptive material names (e.g. "MDF 18mm", "OAK Veneer", "HR Plywood"). Avoid "Layer 01" — it appears verbatim in cut lists.
- Sublayers are treated as the parent layer name. Use them freely for visual organization without affecting material grouping.

Groups and Assemblies

Rhino groups tag parts as belonging to a specific furniture assembly. FastNesting reads group names and displays them in the Selected Parts Configurator and all reports.

- Select all parts of an assembly → run `Group` → rename with `SetGroupName` (e.g. "Wardrobe-A", "Kitchen-Island").
- Alternatively, use `GroupEdit_FastNesting` to rename groups without ungrouping. See Chapter 11.
- Group names appear in reports under "Group Name" and enable Veneer Match by Group PRO.
- FastNesting supports one subgroup level per group. Subgroup names appear in reports alongside the parent group name.

Naming Best Practices

A useful habit: **name pieces as you model them**. Part names assigned in Rhino (as object names) are read directly by FastNesting and appear in labels and cut lists. Naming early saves time later.

- Parts with names starting with `!` (e.g. `!handles`, `!hardware`) are automatically excluded from nesting. Use this for objects in the model that are never meant to be cut (hinges, handles, fixtures).
- For temporary per-session exclusion, use the **Skip** checkbox in the Selected Parts Configurator. See Chapter 9.

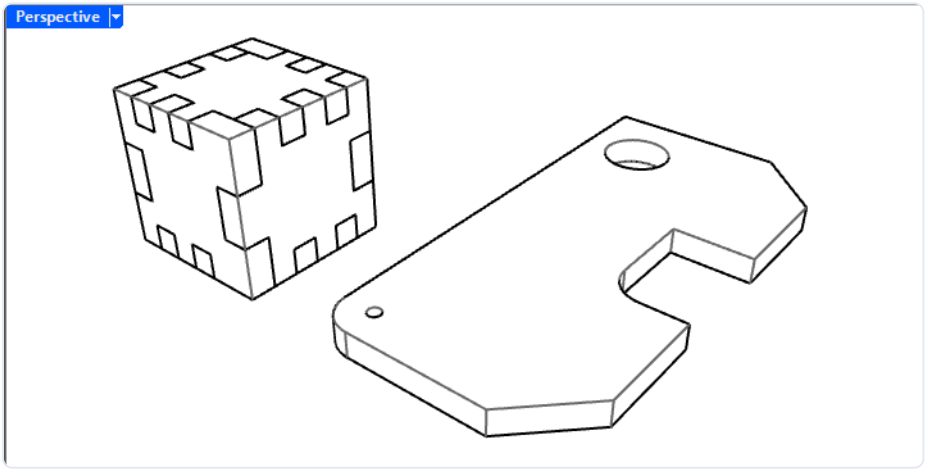
How FastNesting Reads Geometry

FastNesting reads parts by scanning the full object surface in the object's own local coordinate plane. This is important to understand:

- **Works with objects rotated in 3D space:** because FastNesting reads geometry in the part's local plane (not a global projection), a panel rotated at an angle in the Rhino scene is still read correctly.
- **Not the same as Rhino's Make2D:** FastNesting does not project geometry onto a world plane. This can produce different results from Make2D, especially for objects with 3D detail.
- **Irregular flat contours are supported:** nesting uses the part bounds, while cutouts, L-shapes, and non-rectangular outlines can be drawn as 2D detail with Machining Drawings.
- **When Machining Drawings is disabled:** FastNesting falls back to the bounding box for efficiency. Enable it only when machining detail is needed.
- **Non-planar parts are not supported:** objects whose main faces are not parallel (e.g. wedge shapes, tapered panels) may produce errors or be omitted. Review warnings in the Rhino command line.

▲ Non-planar geometry

FastNesting is designed for flat panel parts. Non-planar objects (those with non-parallel main faces) are not supported and may be skipped or produce incorrect output. Always check the command line output for warnings after running FastNesting.



Example model: an irregular flat part with holes and a complex 3D object — FastNesting reads the flat geometry for nesting and machining drawings.

CHAPTER 6

Standard Workflow

The complete FastNesting cycle follows these steps. For typical projects, the workflow is designed to move quickly from model review to output.

1. **Select your parts**
   In Rhino, select all flat panel parts to nest. Use window selection, layer selection, or any Rhino method.

2. **Run FastNesting**
   Type `FastNesting`. The Selected Parts Configurator opens with all detected parts grouped by material and thickness.

3. **Review and configure parts**
   Verify names, quantities, Pro edgebands (L1/L2/W1/W2), and grain rotation (Grain.90°). Skip parts not needed this cycle. Use **Apply** at any point to save edits (names, edgebands, Skip flags) to Rhino without running nesting yet — useful if you need to step away or adjust other settings first.

4. **Check panel settings**
   The top section shows the active panel per material. Click **Edit** to adjust size, Kerf Width, margins, and nesting behavior for each material.

5. **Click Continue**
   FastNesting runs the solver. Results are drawn from the model-space origin (0, 0) as FastNesting sublayer geometry. A text report is placed below the nested panels. Nested parts are grouped per part in Rhino for selection; move the layout and report together as needed.

6. **Review the Rhino layout**
   Inspect nested panels. Verify placement, check utilization percentages, confirm accuracy.

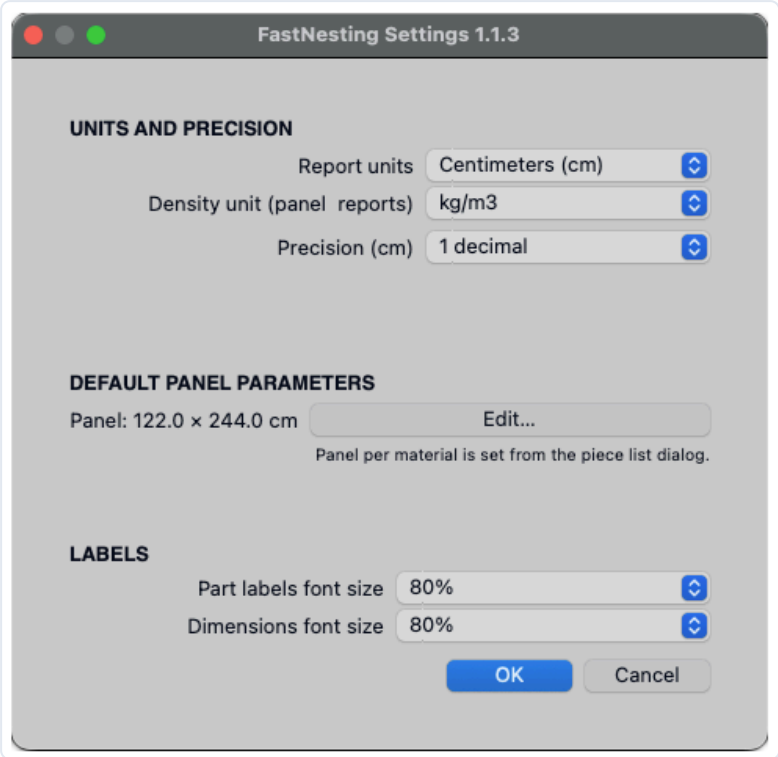
7. **Export**
   The Export Report dialog opens automatically. Choose the output you need: Excel, PDF, or Rhino layout.

> **▲ After toggling Machining Drawings ON or OFF**
> Close the Selected Parts Configurator and re-run FastNesting. Parts must be reloaded to pick up or release machining geometry from the model.

CHAPTER 7

Settings Dialog

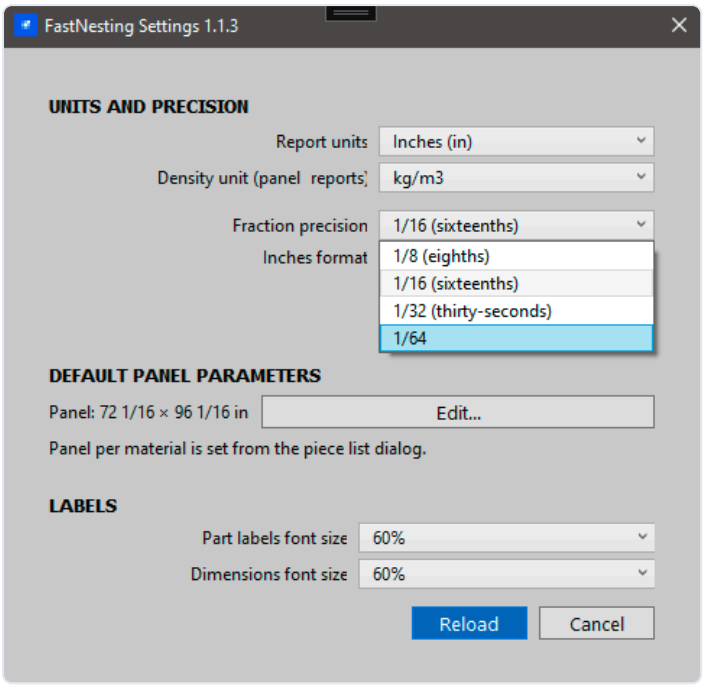
Run `Settings_FastNesting` to access persistent defaults for this FastNesting installation. Document-specific material settings can still travel with a `.3dm` file and override these defaults when present.



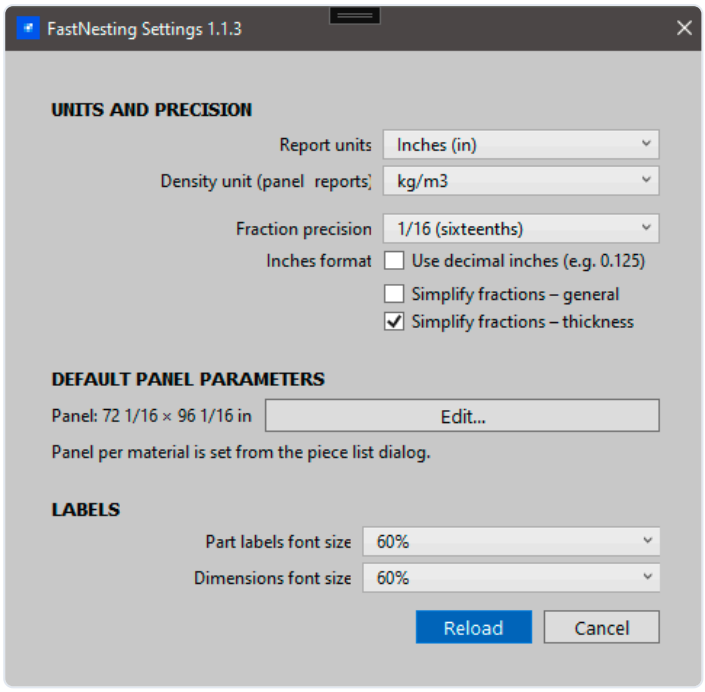
FastNesting Settings 1.1.4 — Units and Precision, Default Panel, and Labels sections (macOS).

Units and Precision

Setting	Description
Report units	Display unit for all dialogs and reports: Millimeters (mm), Centimeters (cm), or Inches. Does not change the Rhino document unit.
Density unit	Unit for material density in weight estimates: kg/m³ or lb/ft³.
Precision (cm)	Decimal places for cm output: 1 or 2 decimals.
Precision (mm)	Decimal places for mm output: 0 or 1 decimal.
Precision (inches)	Display as decimal (1 or 2 decimal places) or fractional. Fraction denominators: 1/8, 1/16, 1/32, up to 1/64". Fractions can be simplified (e.g. 2/8 → 1/4).



Fraction precision dropdown — up to 1/64" available.



Inches selected — decimal and fractional options appear.

> ◆ **On fractional inch precision**
>
> FastNesting supports fractional inches up to 1/64". For everyday furniture and panel cutting, 1/16" or 1/32" is often sufficient on the shop floor. For most cabinet-making operations, 1/64" or 1/32" keeps reports readable and practical.

Default Panel Parameters

The Default Panel shows the installation's default panel size. Click **Edit** to open Panel Parameters and change dimensions, Kerf Width, margins, and edgeband values. These defaults apply to any material not individually configured in Pro.

> • **Note**
>
> Panel per material is configured from within the Selected Parts Configurator, not from Settings. Settings is for installation defaults only.

Labels

Part labels font size and **Dimensions font size** control text size in the **nested 2D layout** (sublayer *Parts › Labels* and dimension text), as percentages of a base size. Reduce if labels overlap on small parts; increase if they are hard to read at scale.

3D piece numbers on source solids PRO

This section applies to **FastNesting Pro** and **Trial** only; the checkbox is hidden in **Free**. The option **After nesting, add 3D piece-number labels on source solids** controls a **separate** numbering aid: **Rhino Text dots** on each **source Brep** (the original 3D part), not on the flat nested rectangles. When enabled, FastNesting adds these dots *after* the layout is drawn and you complete the export step — one dot per source object with the **piece number** from the run.

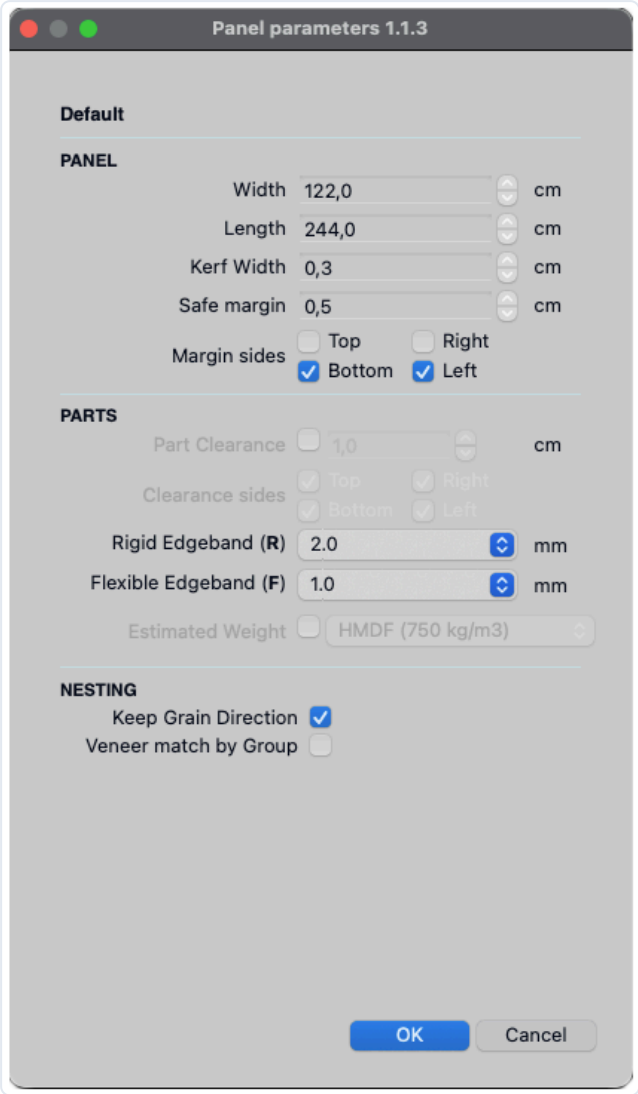
- **Position:** Each dot is anchored at the source solid's **bounding-box center**, nudged slightly toward the **active viewport** at placement time so the label reads clearly from your current view.

- **Font height:** Text dots use a fixed **font height of 12** in Rhino's Text-dot display scale. This value is **not** converted from millimeters, centimeters, or inches — it is the same `12` regardless of the Rhino document unit system.
- **Layer:** Dots are created on `FastNesting::3D piece numbers` (child of `FastNesting`). The layer color is set to dark blue **#0000BF**. Each run **clears that layer** first, then writes new dots and groups them under a name starting with `FN_3D_piece_numbers_` so you can select one group member and delete the whole set if needed.
- **Editing:** Text dots are ordinary Rhino annotation objects: move them with the gumball, edit the displayed text, or adjust dot properties from Rhino's **Properties** panel.

> **• Layout labels vs. 3D dots**
>
> The two **font size** dropdowns above affect only the **2D layout** labels and dimensions. They do **not** change the Text-dot font height (`12`), which is fixed in the plugin for consistent readability across projects. **Free** licenses do not show the 3D option and do not create these dots.

Panel Parameters

Panel Parameters defines the physical properties of the raw sheet and how nesting behaves on it. Access it from Settings (default panel) or from the **Edit** button next to each material in the Selected Parts Configurator.



Panel Parameters 1.1.4 — Default panel configuration showing PANEL, PARTS, and NESTING sections (macOS).

PANEL Section

Parameter	Description
Width	Width of the raw panel as supplied by your material vendor.
Length	Length of the raw panel. Width × Length defines the full sheet area.
Kerf Width	Width consumed by the blade or bit on each cut. Parts are spaced by this amount. Typical values: 3–5 mm for CNC routers, 3/16″ for imperial shops.
Safe margin	Reserved perimeter band that cannot hold parts — for clamps, handling edges, or sheet defects.
Margin sides	Which of the four sides (Top / Bottom / Left / Right) receive the safe margin. Deselect sides that are clear.

PARTS Section

Parameter	Description
Part Clearance PRO	Extra gap around every part during nesting. Useful for holding fixtures, additional saw path space, or safety margins.
Clearance sides	Which of the four part edges receive the clearance gap.
Rigid Edgeband (R) PRO	Thickness of the rigid edgeband (ABS, PVC, solid wood strip). Subtracted from the cut size on edges marked R to give the finished dimension. Preset **0** keeps cut dimensions unchanged while still allowing **R** on parts — same reporting behavior as flexible **0** — useful when edgebanding is handled in CNC postprocessing but you need meters and L1/L2/W1/W2 in exports.
Flexible Edgeband (F) PRO	Thickness of the flexible edgeband (thin melamine tape). Subtracted from the cut size on edges marked F. Preset **0** does not reduce cut size; **F** remains visible in reports and contributes to linear edgeband totals.
Estimated Weight PRO	When enabled, FastNesting calculates part and panel weights using the selected material density. Weights appear in PDF and Excel reports.

NESTING Section

Parameter	Description
Keep Grain Direction	Locks all parts to the panel grain direction. No part will be rotated 90°, preserving veneer or texture orientation.
Veneer match by Group PRO	Parts in the same group are placed on the same panel when possible — ideal for bookmatch veneers or keeping cabinet components on one sheet.
Rotation Priority	*Grain first (no rotation):* solver tries without rotation first. *Cross first (rotated):* solver tries 90° rotation first, which can improve fit for certain part mixes.

CHAPTER 9

Selected Parts Configurator

The **Selected parts configurator** opens when you run `FastNesting` after selecting parts. It is the central hub for reviewing, naming, and configuring every part before nesting runs.

Panel Per Material (Top Section)

Each detected material is listed with its current panel configuration. Click **Edit** to open Panel Parameters for that material. Free uses the default panel; per-material panels require Pro or Trial.

Parts Table — Column Reference

Column	Description
N°	Auto-assigned part number used in labels and reports.
Group Name	Rhino group name (set with SetGroupName or GroupEdit_FastNesting). Read-only display.
Part Name	Editable. The name shown in labels, cut lists, and reports. Saved back to the Rhino object name on Apply or Continue.
Skip	Excludes this part from nesting until you clear the flag. The choice is saved on the Rhino object (UserString) when you Apply or Continue — clear Skip to include the part again.
Material	The Rhino layer name. Read-only.
Thickness	Detected from model geometry. Read-only.
Qty	Number of identical parts with this name and dimensions.
Length / Width	Part dimensions along and across the grain direction.
Grain.90°	Rotates this part's grain interpretation 90°. Useful when the part's long axis runs perpendicular to the sheet grain.
L1, L2 PRO	Edgeband on the two Length-direction edges. R = Rigid, F = Flexible, blank = no edgeband.
W1, W2 PRO	Edgeband on the two Width-direction edges. Same R / F / blank logic.

Skip vs. Permanent Exclusion

- **Skip checkbox:** exclusion until cleared. The part stays in the model; Skip is stored on the object when you Apply or Continue. Uncheck Skip (then Apply or Continue) to include the part in nesting again. Use it for parts you do not need in a given cut run.
- **! prefix in part name** (e.g. `!handles`, `!hinges`): FastNesting permanently ignores any part whose name starts with `!`. Use this for hardware, fixtures, or any non-panel object that lives in the model but should never be nested.

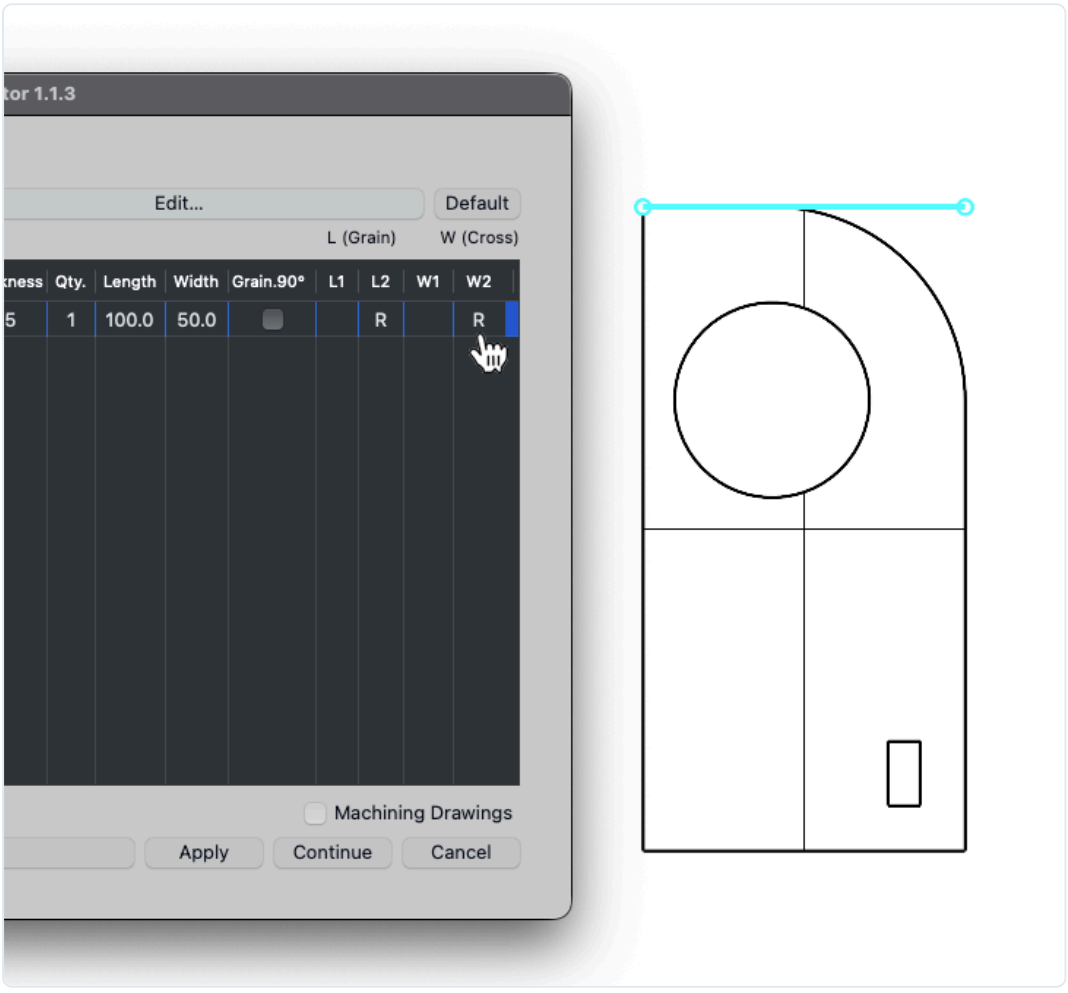
Edgeband Keyboard Shortcuts PRO

In Pro or Trial, click any L1/L2/W1/W2 cell and use these shortcuts for fast entry:

Key	Action
R or Numpad 2	Set as Rigid (R)
F or Numpad 1	Set as Flexible (F)
Delete / Backspace / 0 / Numpad 0	Clear (no edgeband)

✓ Visual aid

Clicking an L1/L2/W1/W2 cell highlights the corresponding edge in Rhino. If the geometry is non-planar or has issues, the edge appears in red and a warning is printed in the command line.



Assigning an edgeband — the selected edge (W2) is highlighted in cyan in the Rhino viewport for visual confirmation.

Part Label

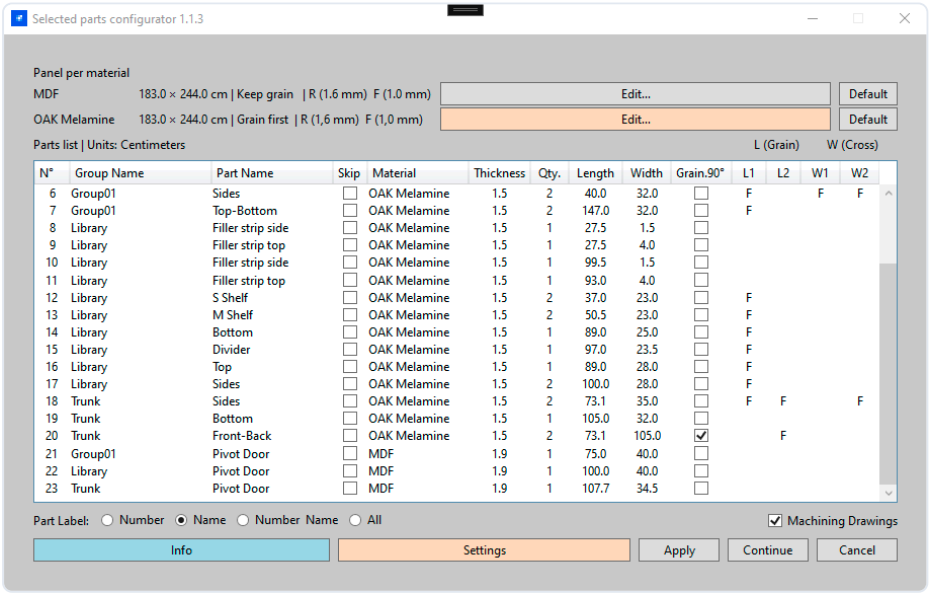
Option	Output
Number	Part number (N°) only. Available in Free and PRO.
Name PRO	Part name only.
Number Name PRO	Number + name.
All PRO	Number, name, group, and full dimensions.

Machining Drawings PRO

When checked in Pro or Trial, FastNesting reads machining geometry (holes, slots, outlines) and draws it on each nested part. If switching ON or OFF, close the dialog and re-run FastNesting so parts reload with or without machining detail.

Action Buttons

Button	Action
Apply	Saves edits (part names, Pro edgebands, Skip, Grain.90°) to Rhino without running nesting. Use this to preserve changes before adjusting settings or if you need to step away.
Continue	Saves edits and runs the nesting solver. The Export dialog opens when nesting completes.
Cancel	Closes without saving changes made since the last Apply.
Info	Opens the built-in help guide for the Selected Parts Configurator.
Settings	Opens Settings_FastNesting without closing the Configurator.

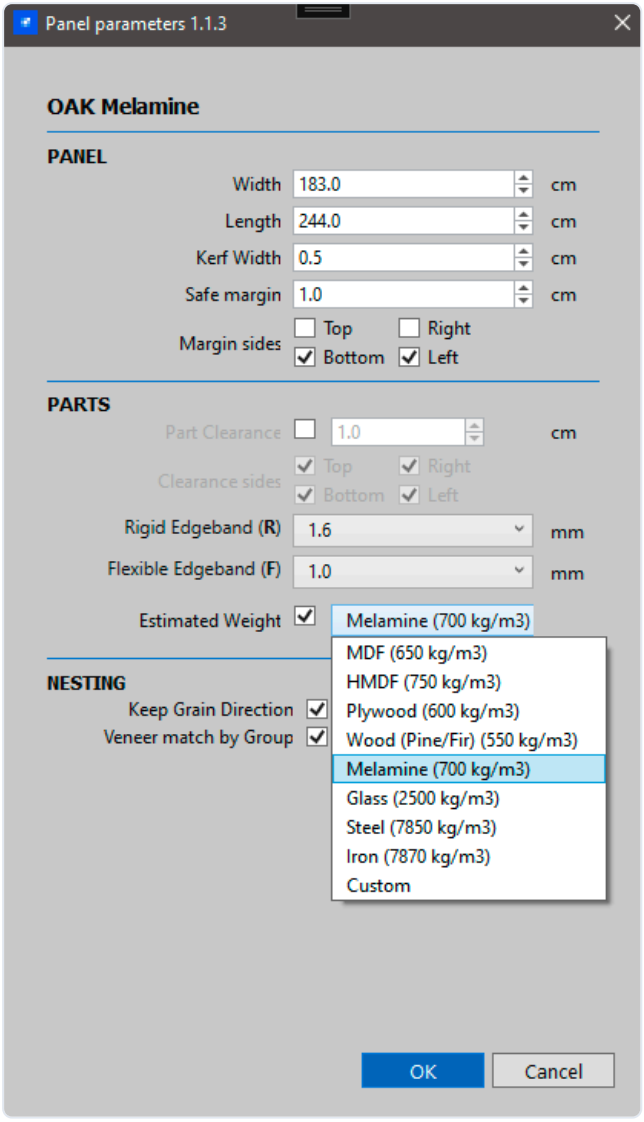


Selected Parts Configurator 1.1.4 — Panel per material (top), parts table, Part Label options, and action buttons.

Panel Per Material PRO

In Pro or Trial, each material detected in your selection can have its own panel configuration: different sheet sizes, Kerf Width, margins, and edgeband thicknesses. Free uses the default panel for all materials.

Click **Edit** next to a material in the Selected Parts Configurator to open Panel Parameters pre-populated for that material. Changes are saved per material and do not affect the installation defaults.



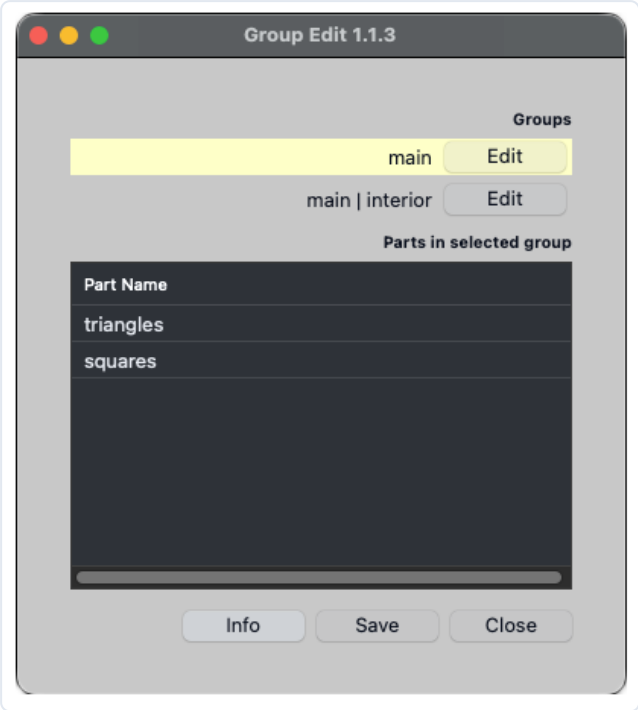
Panel Parameters for a specific material (OAK Melamine) — Keep Grain Direction enabled, material density dropdown open showing available presets.

Material Density Presets

The Estimated Weight section in Panel Parameters offers density presets for common materials: MDF, HMDF, Plywood, Wood (Pine/Fir), Melamine, Glass, Steel, and Iron. You can also type a custom density (kg/m^3). When Estimated Weight is enabled, FastNesting uses the selected density to calculate and report part and panel weights in PDF and Excel exports.

GroupEdit_FastNesting

Run `GroupEdit_FastNesting` to browse and edit groups without ungrouping (Free and PRO). The dialog lists every group and subgroup with their parts — quicker than picking each group in the viewport for `SetGroupName`.



Group list (top), parts for the selected group (bottom), and Edit Group Name.

What You Can Do

- **Browse & select:** click a group to highlight its parts in Rhino and in the table; select table rows to run Rhino commands (Move, Rotate, Copy, ...) on those objects without ungrouping.
- **Rename:** edit **Part Name** in the table, or **Edit** on a group row for the **Group** name and optionally **one** subgroup level — these names feed all FastNesting reports.
- **Merge:** give two groups the same name to consolidate them (subgroups merge when applicable).

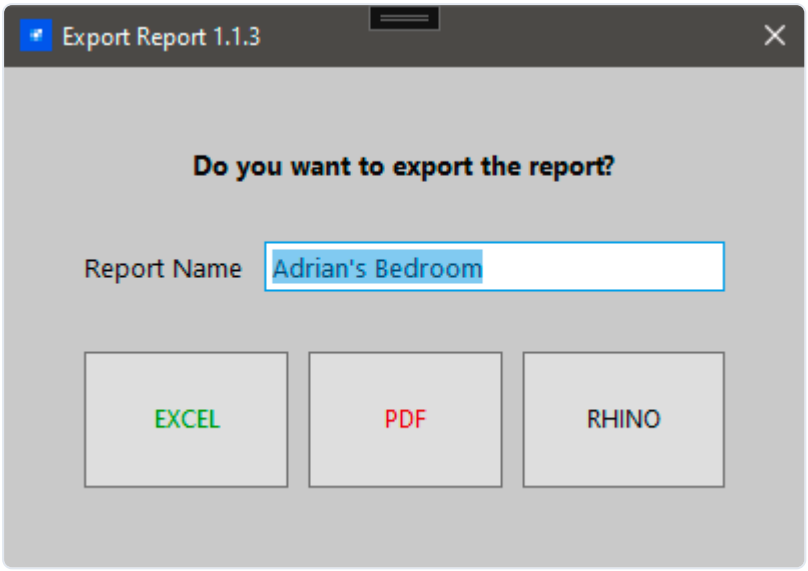
Save Behavior

- **Save** — writes part names and group/subgroup renames to Rhino.
- **Close** — exits without applying changes since the last Save.

> • **Hierarchy**
> Only **one subgroup level** per group; deeper nesting is not supported. Subgroup names appear in reports with the parent group.

Export & Reports

After nesting completes, the Export Report dialog opens automatically. Name your report and choose one output per run: Excel, PDF, or Rhino layout.



Export Report dialog — enter a project name and choose one output: Excel, PDF, or Rhino layout.

Report Name

The project identifier used across all output files — appears as the heading in Excel, the title in the PDF, and the layout page title in Rhino. Use a meaningful project or client name.

Excel Cut List

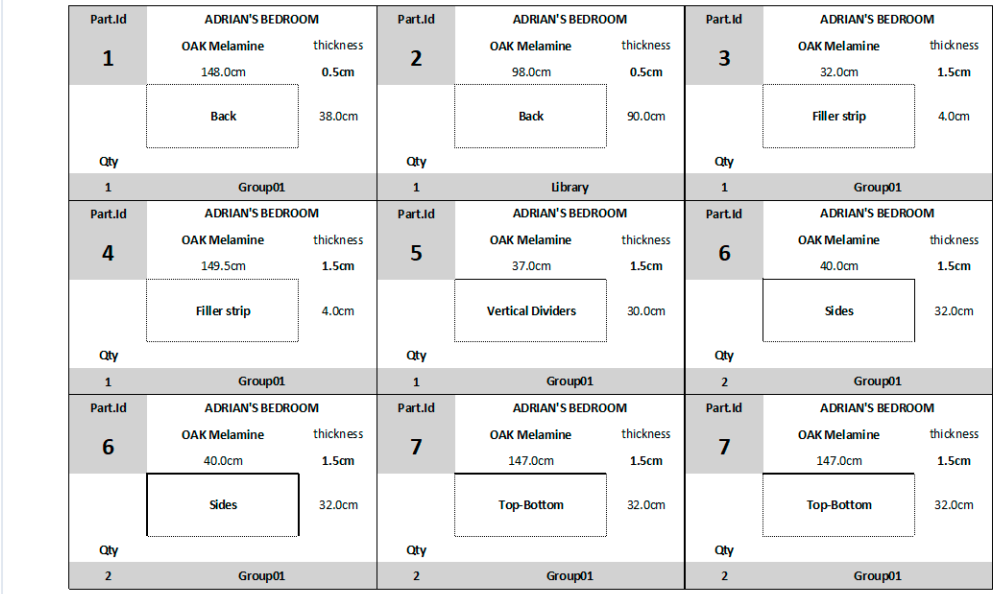
The FastNesting Pro version allows exporting a `.xlsx` file with two sheets:

- **Cut list sheet:** parts organized by panel, with Part ID, group name, part name, quantity, raw dimensions (L, W), finished dimensions (FL, FW), edgeband columns (L1, L2, W1, W2), and estimated raw and finished lengths (RL, RW). A panel summary at the bottom shows edgebanding totals and estimated cut length per thickness. With rigid or flexible thickness at **0**, assigned **R**/**F** still appear in those columns and in edgebanding totals (meters) while cut sizes stay unadjusted — consistent for regenerated reports from nested geometry.
- **Label stickers sheet:** formatted for printing sticker labels — one label per part showing Part ID, project name, material, thickness, dimensions, and quantity.

Excel output PRO

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	**Fast Nesting Report**	y:2026 m:4 d:27												
2	Units	Centimeters												
3														
4	Panel 1													
5	Material: OAK Melamine | Thickness: 0.5 cm | F: 1.2 mm R: 1.6 mm | Safe margin: 0.9 cm | Kerf width: 4.8mm													
6	Width: 183.0 cm, Height: 244.0 cm | F.Width: 182.1 cm, F.Height: 243.1 cm													
7	TOTAL PIECES: 2													
8	**Part.Id**	**Group name**	**Part name**	**Qty.**	**L**	**W**	**FL**	**FW**	**RL**	**RW**	**L1**	**L2**	**W1**	**W2**
9	1	Group01	Back	1	148,0	38,0	148,0	38,0	150,5	40,5				
10	2	Library	Back	1	98,0	90,0	98,0	90,0	100,5	92,5				
11														
12	Panel 2-3													
13	Material: OAK Melamine | Thickness: 1.5 cm | F: 1.2 mm R: 1.6 mm | Safe margin: 0.9 cm | Kerf width: 4.8mm													
14	Width: 183.0 cm, Height: 244.0 cm | F.Width: 182.1 cm, F.Height: 243.1 cm													
15	TOTAL PIECES: 25													
16	**Part.Id**	**Group name**	**Part name**	**Qty.**	**L**	**W**	**FL**	**FW**	**RL**	**RW**	**L1**	**L2**	**W1**	**W2**
17	3	Group01	Filler strip	1	32,0	4,0	32,0	4,0	34,5	6,5				
18	4	Group01	Filler strip	1	149,5	4,0	149,5	4,0	152,0	6,5				
19	5	Group01	Vertical Dividers	1	37,0	30,0	37,0	29,9	39,5	32,4	F			
20	6	Group01	Sides	2	40,0	32,0	39,8	31,9	42,3	34,4	F		F	F
21	7	Group01	Top-Bottom	2	147,0	32,0	147,0	31,9	149,5	34,4	F			
22	8	Library	Filler strip side	1	27,5	1,5	27,5	1,5	30,0	4,0				
23	9	Library	Filler strip top	1	27,5	4,0	27,5	4,0	30,0	6,5				
24	10	Library	Filler strip side	1	99,5	1,5	99,5	1,5	102,0	4,0				
25	11	Library	Filler strip top	1	93,0	4,0	93,0	4,0	95,5	6,5				
26	12	Library	S Shelf	2	37,0	23,0	37,0	22,9	39,6	25,4	F			
27	13	Library	M Shelf	2	50,5	23,0	50,5	22,9	53,0	25,4	F			
28	14	Library	Bottom	1	89,0	25,0	89,0	24,9	91,5	27,4	F			
29	15	Library	Divider	1	97,0	23,5	97,0	23,4	99,5	25,9	F			
30	16	Library	Top	1	89,0	28,0	89,0	27,9	91,5	30,4	F			
31	17	Library	Sides	2	100,0	28,0	100,0	27,9	102,5	30,4	F			
32	18	Trunk	Sides	2	73,1	35,0	73,0	34,8	75,5	37,3	F	F		F
33	19	Trunk	Bottom	1	105,0	32,0	105,0	32,0	107,5	34,5				
34	20	Trunk	Front-Back	2	105,0	73,1	104,9	73,1	75,7	107,4				F
35														
36	Panel 4													
37	Material: MDF | Thickness: 1.9 cm | F: 1.0 mm R: 1.6 mm | Safe margin: 1.0 cm | Kerf width: 5.0mm													
38	Width: 183.0 cm, Height: 244.0 cm | F.Width: 182.0 cm, F.Height: 243.0 cm													
39	TOTAL PIECES: 3													
40	**Part.Id**	**Group name**	**Part name**	**Qty.**	**L**	**W**	**FL**	**FW**	**RL**	**RW**	**L1**	**L2**	**W1**	**W2**
41	21	Group01	Pivot Door	1	75,0	40,0	75,0	40,0						
42	22	Library	Pivot Door	1	100,0	40,0	100,0	40,0						
43	23	Trunk	Pivot Door	1	107,7	34,5	107,7	34,5						
44														
45	PANELS SUMMARY:			EDGEBANDING:		ESTIMATED (CUT : WEIGHT):								
46	**Thickness**	**Material**	**Qty**	**F (meters)**	**R (meters)**	**Length (meters)**								
47	0,5	OAK Melamine	1	0	0	12,3								
48	1,5	OAK Melamine	2	17	0	44,3								

Excel cut list with panel sections, part data, edgeband assignments, and the Panels Summary section at the bottom.



Label sticker sheet — ready for printing and applying to each cut part on the shop floor.

PDF Technical Report PRO

Generates a `.pdf` file with two content types:

- **Visual nesting layout:** one page per panel showing the cut plan with labeled parts, edgeband marks, dimensions, and (if enabled) machining elements.
- **Cut list tables:** part tables organized by panel with all dimensions and edgeband data.
- **Layer visibility-aware:** FastNesting sublayers hidden in Rhino are excluded from the PDF. Hide machining or label layers for a cleaner print before exporting.

PDF nesting layout showing Panel 2 with part outlines, edgeband marks (red = rigid), dimensions, and part names.

Fast Nesting Report

Date: 2026-04-27 16:39

Units: Inches

Panel 1
Material: OAK Melamine | Thickness: 3/16 in | F: 1/16 in R: 1/16 in
Width: 72 1/16 in, Height: 96 1/16 in | F.Width: 71 11/16 in, F.Height: 95 11/16 in
Safe margin: 3/8 in | Kerf width: 3/16 in
TOTAL PIECES: 2

Part	Group	Name	Qty	L	W	FL	FW	RL	RW	L1	L2	W1	W2
1	Group01	Back	1	58 1/4	14 15/16	58 1/4	14 15/16	59 1/4	15 15/16				
2	Library	Back	1	38 9/16	35 7/16	38 9/16	35 7/16	39 9/16	36 7/16				

Panel 2-3
Material: OAK Melamine | Thickness: 9/16 in | F: 1/16 in R: 1/16 in
Width: 72 1/16 in, Height: 96 1/16 in | F.Width: 71 11/16 in, F.Height: 95 11/16 in
Safe margin: 3/8 in | Kerf width: 3/16 in
TOTAL PIECES: 25

Part	Group	Name	Qty	L	W	FL	FW	RL	RW	L1	L2	W1	W2
3	Group01	Filler strip	1	12 5/8	1 9/16	12 5/8	1 9/16	13 5/8	2 9/16				
4	Group01	Filler strip	1	58 7/8	1 9/16	58 7/8	1 9/16	59 7/8	2 9/16				
5	Group01	Vertical Dividers	1	14 9/16	11 13/16	14 9/16	11 3/4	15 9/16	12 3/4	F			
6	Group01	Sides	2	15 3/4	12 5/8	15 5/8	12 9/16	16 5/8	13 9/16	F		F	F
7	Group01	Top-Bottom	2	57 7/8	12 5/8	57 7/8	12 9/16	58 7/8	13 9/16	F			
8	Library	Filler strip side	1	10 13/16	9/16	10 13/16	9/16	11 13/16	1 9/16				
9	Library	Filler strip top	1	10 13/16	1 9/16	10 13/16	1 9/16	11 13/16	2 9/16				
10	Library	Filler strip side	1	39 3/16	9/16	39 3/16	9/16	40 3/16	1 9/16				
11	Library	Filler strip top	1	36 5/8	1 9/16	36 5/8	1 9/16	37 5/8	2 9/16				
12	Library	S Shelf	2	14 9/16	9 1/16	14 9/16	9	15 9/16	10	F			
13	Library	M Shelf	2	19 7/8	9 1/16	19 7/8	9	20 7/8	10	F			
14	Library	Bottom	1	35 1/16	9 13/16	35 1/16	9 13/16	36 1/16	10 13/16	F			
15	Library	Divider	1	38 3/16	9 1/4	38 3/16	9 3/16	39 3/16	10 3/16	F			
16	Library	Top	1	35 1/16	11	35 1/16	11	36 1/16	12	F			
17	Library	Sides	2	39 3/8	11	39 3/8	11	40 3/8	12	F			
18	Trunk	Sides	2	28 13/16	13 3/4	28 3/4	13 11/16	29 3/4	14 11/16	F	F		F
19	Trunk	Bottom	1	41 5/16	12 5/8	41 5/16	12 5/8	42 5/16	13 5/8				

PDF cut list tables — panels organized by material and thickness with full part data in inches format.

▲ PDF is a reference document

The PDF is a technical reference report. For final production decisions, measuring, and any CNC-related work, use the Rhino geometry and layers as the primary source of truth.

Rhino Layout Output

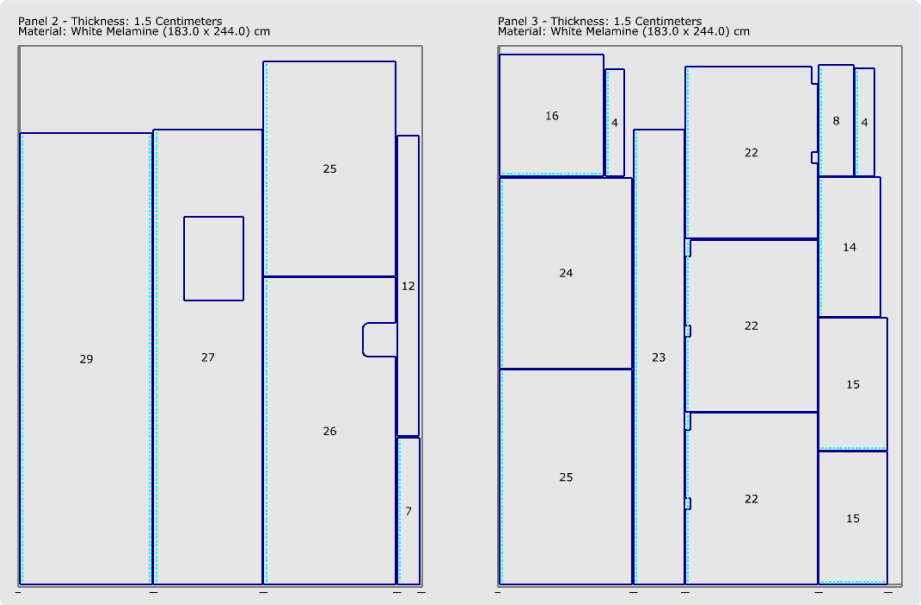
- Draws the nesting result as geometry in the current Rhino document using FastNesting sublayers.
- Each panel occupies one layout view. Parts, labels, ruler, edgebands, and machining each have dedicated sublayers.
- Toggle sublayer visibility, measure any element directly, and print from Rhino's built-in layout tools.

Reading the Rhino Layout

What appears on each nested sheet

FastNesting draws the layout in **model space** on dedicated sublayers (defaults below come from the plugin; you can change layer colors and plot weights in Rhino after the first run).

- **Sheet & panel frame** (*Panels › Sheet bounds*): gray fill and outline for the usable panel after safe margins; shows the physical sheet you cut.
- **Panel title** (*Panels › Panel labels*): panel index, material name, thickness, and sheet dimensions.
- **Cut-strip ruler** (*Panels › Cut strip ruler*): horizontal and vertical reference along the sheet edge for strip / cumulative cut distances.
- **Part cut outline** (*Parts › Placed bounds › Outline*): black closed curves — the cut boundary of each nested part.
- **Cut & finished dimensions** (*Parts › Placed bounds › Dimensions*): text for raw cut size and finished (FL / FW) sizes.
- **Part clearance (PRO)** (*Parts › Clearance*): when Part Clearance applies, a **red** placement rectangle and optional RL/RW labels show the larger placement box versus the cut outline.
- **Edgeband strokes (PRO)** (*Parts › Edgebanding*): short line segments on banded edges, drawn **12 mm** inside the cut rectangle. Default color is **cyan**. **R** uses a continuous linetype; **F** uses `Fast_dashed_line`. L1/L2/W1/W2 follow nesting rotation and stay aligned with PDF output.
- **Part labels** (*Parts › Labels*): part number and/or name (and optional extra text per Part Label mode), centered on each **nested part rectangle** in the layout.
- **3D piece-number text dots** PRO (*optional, Settings — Pro / Trial*): when enabled, Rhino **Text dots** on each **source 3D solid** show the nesting **piece number**; layer `FastNesting::3D piece numbers`. Not available in Free. See Chapter 7.
- **Machining (PRO)**: holes, slots, outlines, and drill centers on the machining sublayers when Machining Drawings is enabled.

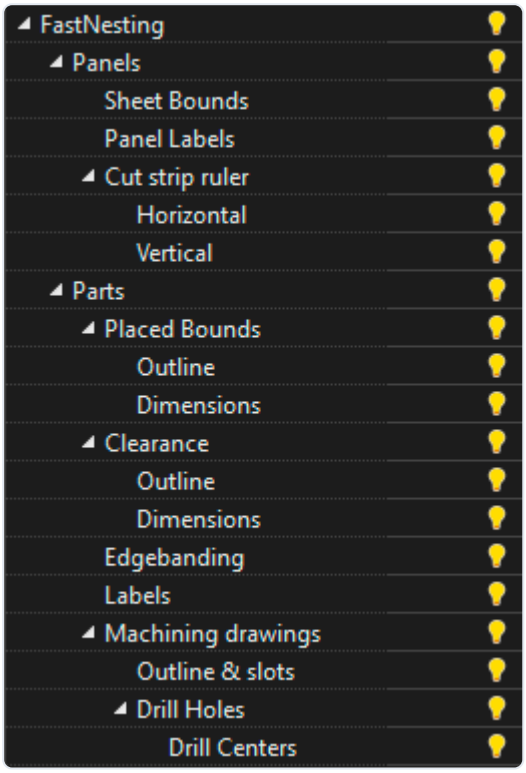


Example sheet: gray panel, black cut outlines, cyan edgeband strokes (solid = R, dashed = F), part labels, and cut-strip ruler.

Panel Title Block

Above each panel, two **Panel labels** text lines summarize the sheet: **panel number and thickness** (first line), then **material and full sheet dimensions** (second line).

FastNesting Layer Structure



The full FastNesting layer tree in Rhino showing all sublayers organized under Panels, Parts, and Machining drawings.

Sublayer	Content
Panels › Sheet Bounds	The raw sheet outline and background fill for each panel.
Panels › Panel Labels	Panel title block showing panel number, thickness, material, and dimensions.
Panels › Cut strip ruler	Horizontal and vertical ruler showing cumulative cut strip positions.
Parts › Placed Bounds › Outline	The cut outline for each part.
Parts › Placed Bounds › Dimensions	Dimension text for cut and finished sizes.
Parts › Clearance › Outline	Part Clearance placement rectangle (PRO). Red outline showing the larger placement box.
Parts › Clearance › Dimensions	RL / RW labels for the clearance placement box (PRO).
Parts › Edgebanding	PRO edge strokes: cyan by default; continuous linetype = rigid **R**; dashed (`Fast_dashed_line`) = flexible **F**. Segments sit 12 mm inside banded edges.
Parts › Labels	Part name and/or number labels centered on each nested part rectangle (2D layout).
FastNesting › 3D piece numbers PRO	Optional **Text dots** on source 3D solids after nesting (Settings; Pro / Trial). Piece numbers match the solver; not the same objects as *Parts › Labels*. Hidden and inactive in Free.

Sublayer	Content
Parts › Machining drawings PRO	Parent layer for all machining sublayers. Hiding it excludes all machining from PDF output.
› Outline & slots	Elongated pockets, machined contours, and clipped perimeter outlines.
› Drill Holes	Circular holes drawn as circles with center marks.
› Drill Centers	Cross/dot marks at the center of each hole (child of Drill Holes; hidden by default).
› Back Holes	Drill holes on the back face (non-through, child of Drill Holes).

Text Report in the Rhino Model Space

After nesting, FastNesting places a detailed text report directly in the Rhino model space — below the nested panels, as regular Rhino text objects. It lists every panel with parts, quantities, raw and finished dimensions, edgebands (L1, L2, W1, W2), and overall sheet utilization per panel.

- **Nesting origin and grouping**

  The nesting layout starts from the **model-space origin (0, 0)**. The text utilization report is placed **below** the nested panels. Each nested part is placed in its own Rhino **group** for selection; move geometry as needed to organize your sheet relative to the 3D model.

ADRIAN'S BEDROOM

Panel 1
Material: OAK Melamine | Thickness: 0.5 cm | F: 1.0 mm R: 1.6 mm
Width: 183.0 cm, Height: 244.0 cm | F.Width: 182.0 cm, F.Height: 243.0 cm
Safe margin: 1.0 cm | Kerf width: 5.0mm
TOTAL PIECES: 2

Part.Id	Group name	Part name	Qty.	L	W	FL	FW	L1	L2	W1	W2
1	Group01	Back	1	148.0	38.0	148.0	38.0				
2	Library	Back	1	98.0	90.0	98.0	90.0				

Panel 2-3
Material: OAK Melamine | Thickness: 1.5 cm | F: 1.0 mm R: 1.6 mm
Width: 183.0 cm, Height: 244.0 cm | F.Width: 182.0 cm, F.Height: 243.0 cm
Safe margin: 1.0 cm | Kerf width: 5.0mm
TOTAL PIECES: 25

Part.Id	Group name	Part name	Qty.	L	W	FL	FW	L1	L2	W1	W2
3	Group01	Filler strip	1	32.0	4.0	32.0	4.0				
4	Group01	Filler strip	1	149.5	4.0	149.5	4.0				
5	Group01	Vertical Dividers	1	37.0	30.0	37.0	29.9	F			
6	Group01	Sides	2	40.0	32.0	39.8	31.9	F		F	F
7	Group01	Top-Bottom	2	147.0	32.0	147.0	31.9	F			
8	Library	Filler strip side	1	27.5	1.5	27.5	1.5				
9	Library	Filler strip top	1	27.5	4.0	27.5	4.0				
10	Library	Filler strip side	1	99.5	1.5	99.5	1.5				
11	Library	Filler strip top	1	93.0	4.0	93.0	4.0				
12	Library	S Shelf	2	37.0	23.0	37.0	22.9	F			
13	Library	M Shelf	2	50.5	23.0	50.5	22.9	F			
14	Library	Bottom	1	89.0	25.0	89.0	24.9	F			
15	Library	Divider	1	97.0	23.5	97.0	23.4	F			
16	Library	Top	1	89.0	28.0	89.0	27.9	F			
17	Library	Sides	2	100.0	28.0	100.0	27.9	F			
18	Trunk	Sides	2	73.1	35.0	73.0	34.8	F	F		F
19	Trunk	Bottom	1	105.0	32.0	105.0	32.0				
20	Trunk	Front-Back	2	105.0	73.1	104.9	73.1				F

Panel 4
Material: MDF | Thickness: 1.9 cm | F: 1.0 mm R: 1.6 mm
Width: 183.0 cm, Height: 244.0 cm | F.Width: 182.0 cm, F.Height: 243.0 cm
Safe margin: 1.0 cm | Kerf width: 5.0mm
TOTAL PIECES: 3

Part.Id	Group name	Part name	Qty.	L	W	FL	FW	L1	L2	W1	W2
21	Group01	Pivot Door	1	75.0	40.0	75.0	40.0				
22	Library	Pivot Door	1	100.0	40.0	100.0	40.0				
23	Trunk	Pivot Door	1	107.7	34.5	107.7	34.5				

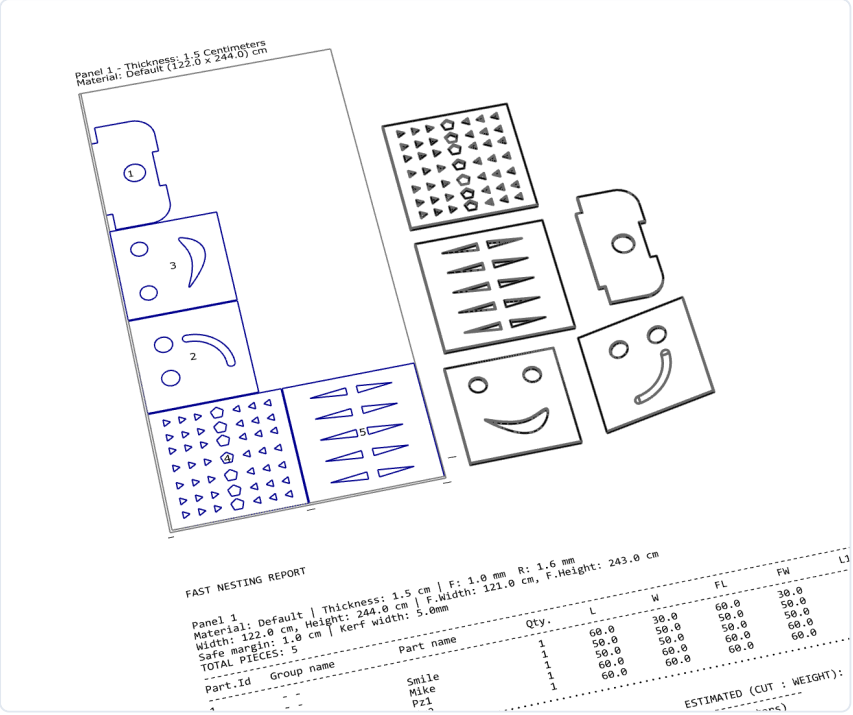
Text report detail — parts, dimensions, edgebands, and sheet utilization listed below the nested panels.

Machining Drawings PRO

Machining Drawings reads machining geometry from your Rhino model and draws it on each nested part in the layout. This produces a 2D visual reference of holes, slots, and outlines alongside the cut plan — useful for shop floor review and pre-production verification.

Side A, Side B, and X-ray PRO

In Piece Namer, the machining display control uses **Side A** and **Side B** for single-face views, and **Side A (X-ray)** or **Side B (X-ray)** when you need both faces at once (through holes, opposite-side pockets, and cross-checking). The choice affects what is drawn on nested layouts and in PDF exports for visible machining sublayers.



Nesting layout with Machining Drawings enabled.

How Geometry Is Read

FastNesting reads machining elements directly from the 3D model by scanning each object's surfaces edge by edge — **not** by projecting onto a plane (as Rhino's Make2D does). This means:

- Parts rotated in 3D space are read correctly in their local plane.
- The result may differ from what Make2D would produce for the same geometry.
- Parts with mesh errors, displaced nodes, or planimetry issues in the model may produce incomplete drawings, incorrect outlines, or be omitted entirely.

Supported Machining Elements

Element	Description
Drill holes	Circular holes from cylinder or circle geometry, drawn as circles with center marks.
Drill centers	Cross/dot marks at the center of each hole for CNC referencing.

Element	Description
Outline & slots	Elongated pockets and machined contours drawn with dashed or solid outlines on the Machining sublayer.

Enabling Machining Drawings

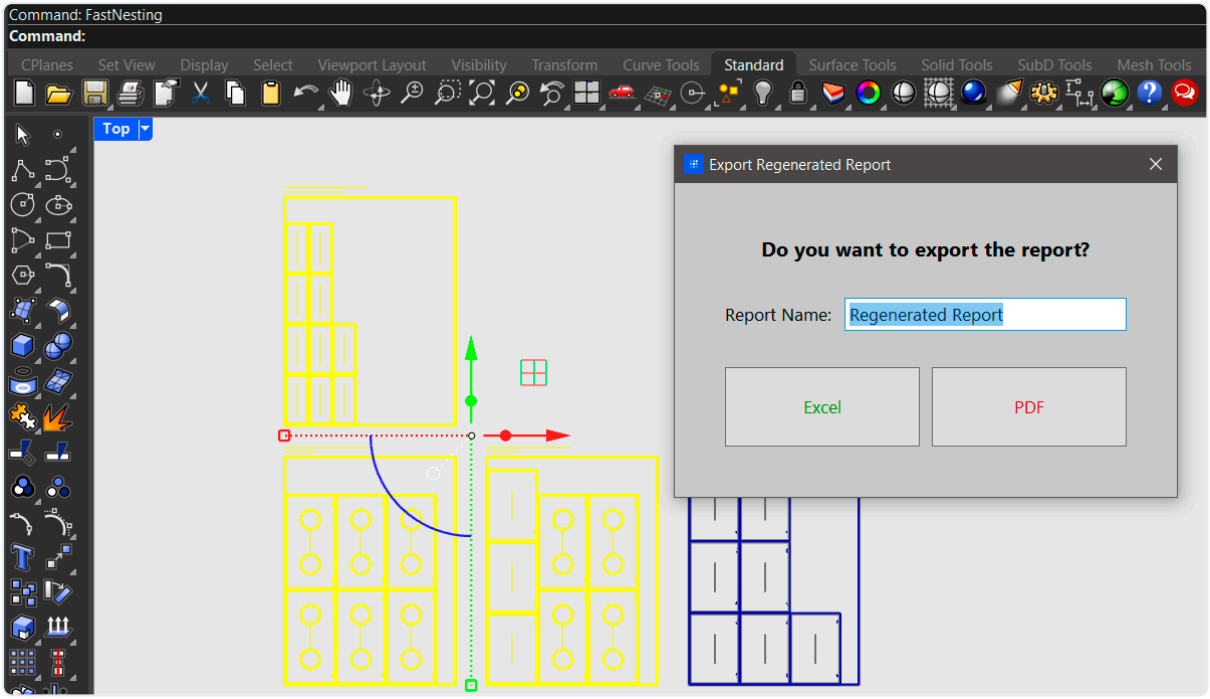
- In the Selected Parts Configurator, check the **Machining Drawings** checkbox (bottom-right).
- If switching from OFF to ON: close the dialog and re-run FastNesting to reload parts with machining detail.
- The Machining drawings sublayers appear in Rhino's layer panel under **Parts** once enabled.
- Hide these sublayers to keep Rhino responsive on large projects — hidden sublayers are automatically excluded from the PDF.

▲ Note on CNC use

Machining Drawings in FastNesting are **visual references for production planning and shop floor review** — not direct CNC programs. FastNesting does not export machining geometry in CNC-machine formats, and does not include preset configurations for specific CNC machines. The machining layout requires review by the user in Rhino, and additional processing steps are typically needed before sending work to a CNC machine. Complex or irregular geometry should always be verified manually before production.

Regeneration Mode

Regeneration mode produces Excel and PDF reports from an existing nesting already drawn in Rhino — without running the solver again. Use it when the Rhino layout is correct but you need to re-export with updated settings or a different format.



Regeneration in action: FastNesting nesting output selected in Rhino (yellow highlights) and the Export Regenerated Report dialog offering Excel and PDF.

How to Regenerate

1. In Rhino, select the FastNesting output geometry — the drawn nesting panels, **not** your original model parts.
2. Run `FastNesting`. The plugin detects that the selection is nesting output and opens the **Export Regenerated Report** dialog.
3. Enter a Report Name and choose Excel or PDF.
4. The report is generated from the nesting data stored in the Rhino geometry.

Constraints and Best Practices

- **Only works with the most recent nesting:** regeneration reads from the latest nesting data stored in the geometry. Older or overwritten nestings cannot be regenerated reliably. Maintain one active nesting at a time for best results.
- **Only 90° rotations are supported:** if parts in the nesting have been manually rotated to arbitrary angles after the run, regeneration may not read them correctly.
- **Parts must remain within panel cutting margins:** parts moved outside the original panel area after nesting will not be included in the regenerated report.
- **Partial selection is supported:** you can select just one panel or a subset of panels from a multi-material nesting. The regenerated report will include only the parts contained in the selected panels — useful when you only need to re-export one sheet from a large project.

• Precision

Regeneration reads the same part metadata stored with the nesting layout, so dimensions and labels in Excel and PDF stay aligned with the original run for a given report-units and precision setting.

Clean_FastNesting

The `Clean_FastNesting` command has two distinct functions depending on whether objects are selected when you run it.

No Selection — Reset Settings

Run `Clean_FastNesting` with nothing selected. Rhino prompts: "*No objects selected. Reset FastNesting defaults and clear document-scoped FastNesting data for this file? Yes / No*"

- **Yes:** restores FastNesting defaults and clears document-scoped data for this file. License and activation data are not affected.
- **No:** cancels without changes.
- Restart Rhino after reset for the changes to appear in all dialogs.

Panel size	1220 × 2440 mm · 122 × 244 cm (same sheet expressed in cm as in Settings) · 48″ × 96″ nominal full sheet (4×8 ft)
Kerf Width	3.0 mm factory default (~0.12″)
Safe margin	5.0 mm factory default (~0.20″); default applies to two sheet edges — enable per side in Panel Parameters
Rigid Edgeband	2.0 mm canonical default (~0.079″)
Flexible Edgeband	1.0 mm · approx. 3/64″
Part Clearance	Off by default (0 mm when enabled)
Estimated Weight	Off by default; when enabled, default density is 750 kg/m^3 (HMDF)
Label font size	80%
Units	Derived from Rhino document units until you change report units in Settings

With Selection — Clean Object Metadata

Select objects first, then run `Clean_FastNesting`. Two options appear:

- **PreserveNames (default):** removes FastNesting metadata UserStrings from selected objects (including most `FN_*` keys, edgeband fields, rotation, Skip, etc.). Press Enter to use this default. The Rhino object name and `FN_Name` are kept.
- **ClearNames:** same as above plus clears the Rhino object name and FN_Name to empty. A warning is shown before proceeding. Use for bulk renaming from a clean state.

> **✓ When to use**
> Use Clean with selection when sharing DXF/DWG with other software, fixing parts with incorrect metadata, or preparing a model for a completely fresh start.

License Tiers

FastNesting is available as **Free** (built-in) and **PRO** (purchased license). A **10-day** Trial gives temporary access to Pro features for evaluation (calendar days; see `License_FastNesting` for remaining time). Run `License_FastNesting` to activate PRO, check status, or deactivate before moving to a new computer. Internet access is required for activation and deactivation.

Feature	Free	PRO
Maximum parts per nesting	16	Large production jobs
Rhino layout output	✓	✓
Text report (Rhino command line)	✓	✓
Measurements in Rhino	✓	✓
Number label	✓	✓
Part name / Number+Name / All labels	—	✓
Excel export (cut list + stickers)	—	✓
PDF export (visual + cut list)	—	✓
Edgeband assignment (R / F)	—	✓
Part Clearance	—	✓
Panel per material (multi-material)	Default panel only	✓ per material
Machining Drawings	—	✓
Estimated weight in reports	—	✓
Veneer match by Group	—	✓

Activating PRO

1. Run `License_FastNesting`.
2. Enter your email address and license key received after purchase.
3. Click **Activate**. An internet connection is required.
4. PRO features are available immediately — no Rhino restart required.

Moving to a New Computer

- On the old computer: run `License_FastNesting` → Deactivate.
- Install FastNesting on the new computer.
- Activate with the same email and license key.

> • **Note**
> Each PRO license covers one active machine at a time. Contact **support@camonsoft.com** if you need to transfer a license and the old machine is unavailable.

CHAPTER 18

Troubleshooting & Support

Common Issues & Quick Fixes

Plugin not loading after install

Restart Rhino completely. If the problem persists: open Rhino Plug-ins → find FastNesting → click "Open containing folder" → delete the folder contents → reinstall from Package Manager → restart.

Parts not detected or zero parts listed

Confirm you selected geometry before running FastNesting. Verify objects are on named layers. Try window-selecting all objects if a filter selection missed some. Objects with the `!` prefix are intentionally excluded.

Dimensions in reports don't match the model

Verify that the Rhino document unit matches your working unit. Check Report Units in Settings_FastNesting. For regenerated old nestings, run a fresh nesting to update stored metadata with current precision settings.

Layout looks corrupted or layers are wrong

Run `Clean_FastNesting` (no selection → Reset settings), restart Rhino, and run FastNesting again. On shared files, a previous user's settings may be embedded — a reset clears these.

Machining geometry not showing or incomplete

Confirm Machining Drawings is available in Pro or Trial and checked in the Selected Parts Configurator. If just enabled, close the dialog and re-run FastNesting. Check that the Machining sublayers are visible in Rhino.

PDF is missing content

PDF export requires Pro or Trial. If available, check FastNesting sublayer visibility in Rhino — hidden sublayers are intentionally excluded from PDF. Make all needed sublayers visible before exporting.

PRO features greyed out after update

Open `License_FastNesting` and verify activation status. If inactive, deactivate and reactivate with your email and key.

2D Geometry Reading — Known Limitations

FastNesting draws machining elements by reading the model's geometry edge by edge, in the object's local plane. This approach is more accurate than a global projection for rotated objects, but it has limitations:

- Parts with **planimetry errors** (displaced nodes, coincident edges, invalid surface seams) may produce incomplete outlines, incorrect shapes, or be silently omitted.
- **Surface orientation and imports:** inverted normals, inconsistent face winding, or geometry imported from other CAD tools can confuse face classification — always compare the 2D machining drawing to your design intent.
- **Complex freeform geometry** (NURBS surfaces with heavy curvature, SubD) may not be read correctly. FastNesting is optimized for flat rectangular and simple-contour flat parts.
- **Non-planar objects** (wedges, tapered panels, faces not parallel) are not supported and may cause errors or missing output.
- **Always review machining output** visually in Rhino before production use. FastNesting is a production aid and reference tool — the user is responsible for verifying accuracy before committing parts to the machine.

▲ Production review is required

FastNesting accelerates the nesting and documentation workflow, but the 2D machining output should always be reviewed by a qualified operator before production. Verify dimensions, hole positions, and slot geometry against the original model before sending work to any cutting machine.

Getting Support

Email	support@camonsoft.com
Website	camonsoft.com/docs
Food4Rhino	food4rhino.com — search FastNesting

✓ When contacting support, include:

FastNesting version · Rhino version · Operating system · Brief description of what you were doing · Screenshot or Rhino command line output if available.

APPENDIX A

Quick Start Card

Shop floor reference — keep at the workstation

CORE WORKFLOW

1. Model parts in Rhino; name each object.
2. Assign parts to named layers — each layer = one material.
3. Group assemblies with `Group` → `SetGroupName`.
4. Window-select all parts → run `FastNesting`.
5. Configure **Panel Parameters**, **Parts**, grain & edgebands.
6. Click **Continue** → review layout in Rhino.
7. Export: **Excel** (cut list) · **PDF** (layout report).

COMMANDS

`FastNesting`	Main nesting and export flow
`Settings_FastNesting`	Units, precision, global defaults
`License_FastNesting`	Activate / deactivate PRO
`Clean_FastNesting`	Reset settings or strip metadata
`GroupEdit_FastNesting`	Rename groups without ungrouping

EXCLUDING PARTS

`!` prefix in name	Always excluded (handles, hardware)
Skip checkbox	Stored on object until cleared

PANEL PARAMETERS — KEY SETTINGS

Setting	Typical value
Sheet size	1220 × 2440 mm / 48″ × 96″
Kerf Width	3 mm / ~0.12″ (factory default)
Part Clearance	0 mm (disabled by default)
Sheet margin	5 mm default; two sides on by default (see Panel Parameters)
Edgeband — Rigid	2.0 mm / ~0.079″
Edgeband — Flexible	1.0 mm / ~3/64″

RHINO LAYER TREE

- **FastNesting**
  - **Panels**
    - Sheet Bounds · Panel Labels · Cut strip ruler
  - **Parts**
    - Placed Bounds · Clearance · Edgebanding · Labels
    - Machining drawings PRO : Outline & slots · Drill Holes (Drill Centers · Back Holes)

FREE VS PRO AT A GLANCE

Feature	Free	PRO
Parts per run	16 max	Large jobs
Excel / PDF export	—	✓
Edgebanding	—	✓
Machining drawings	—	✓
Panel Per Material	—	✓

Tip: After any install or update, always restart Rhino fully before running FastNesting. If output looks wrong, run `Clean_FastNesting` (no selection → Reset) and restart.