



OFFICIAL USER GUIDE · BLENDER ADD-ON

MATRIX PRO 2.1

NEXT EDITION

Smart materials, layered imperfections, paint masks, decals and trim sheets. Everything you need to turn a clean model into a used one, inside Blender.



VERSION 2.1.0

BLENDER 4.5 – 5.2

ADD-ON & EXTENSION

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Requires Blender 4.5 or newer · tested through Blender 5.2

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START HERE

MatricX PRO turns a clean model into a used one. You pick a material, stack a few restrained imperfections on it — edge wear, dirt, scratches, rust — and the surface gains a history. No texture painting, no UV work, no shader network to build.



The same weapon with its base materials only (left) and finished with MatricX imperfection layers (right).

70

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WORKSPACES • 3 PIE MENUS

YOUR FIRST MATERIAL IN FIVE STEPS

1. Install the add-on and the asset pack (Sections 04 and 05).
2. In the 3D Viewport press **N** and open the **MatricX PRO** tab.

3. Select a mesh, pick a **Family** (for example Metal), then click a material in the collection.
4. Click **Apply Material**.
5. Open **Imperfection Studio**, click **Add Layer**, and choose Edge Wear or Dirt.

The core idea: several restrained layers read as more realistic than one strong layer. A surface that has been touched, wiped, knocked and left outdoors has many faint stories on it, not one loud one.

HOW TO READ THIS GUIDE

- **New to MatricX?** Read Part 1, then Sections 07, 11 and 13. That covers 90% of daily use.
- **Coming from 2.0?** Start with Sections 02 and 03, then follow the markers below.

Throughout the guide, **NEW** marks something added in 2.1 and **CHANGED** marks something that works differently from 2.0.

WHAT'S NEW IN 2.1

2.1 is about choice and control: more ready-made materials, more places imperfections can go, and faster ways to work in the viewport.

MATERIAL RECIPES AND A LARGER COLLECTION

70 materials across nine families. 38 of them are **recipes** — finished materials built in MatricX from a base material and a layer stack. Unlike the locked authored stacks of 2.0, every recipe layer can be edited, added or removed, and **Reset Imperfections** brings the shipped look back. See Section 10.

TWO NEW FAMILIES

- **Weapon & Guns** — 19 materials: alloys, polymers, damaged steel and brass, damaged woods and four Scope Glass tints.
- **Military Camo** — 8 camouflage patterns, now a family of their own and open to every imperfection type.

IMPERFECTIONS ON MORE SURFACES

- **Powder Dust** — a new 16th type: fine, pale, dry particles settled on a surface.
- **Wood** now takes 11 types (was 3), **Rubber & Leather** 15 (was 6 and 2), and **Tinted Glass** 10 (glass took none in 2.0).
- **Dirt Stain** — the former Leaking layer, reworked for dirt and liquid staining with flow, pools and wet or dried residue.
- A new **Scratch Paint** pattern: finer scrapes with real surface relief.

FASTER TO WORK WITH

- **Material Family** picker — a card popover to switch families in one click.
- **Add Layer** opens a thumbnail grid of every imperfection the material supports.
- **Paint masks** gain Add / Remove modes, brush Size, Strength and Soft Edge, and Mask Strength.
- **Three radial pies**: Viewport **Ctrl** + **Shift** + **M**, Decal **Ctrl** + **Shift** + **D**, Trim **Ctrl** + **Shift** + **T**.
- **Link Material to Selected** — share the active material with every selected mesh.
- **Material Looks** now also save Material Group Controls (glass, fabric, shiny and damaged woods).

- Applied materials get a matching **Solid-mode colour**, so parts read correctly in the Solid viewport.
- Each **Apply Material** click is a single undo step.

UPGRADING FROM 2.0

Five minutes here saves you surprises later. Read this once before opening your 2.0 projects.

1 - INSTALL THE NEW ASSET PACK

MatricX PRO 2.1 needs `MatricX_Assets_2.1.0.zip`. Older packs (2.0.x and earlier) are recognised but never used — Locate Asset Pack tells you so if you select one. Extract the 2.1.0 pack **beside** the old one.

Keep your 2.0 pack folder where it is. MatricX never changes or deletes it, and decals already placed in your 2.0 scenes still load their images from it. If that folder moves, those decals stay in the scene but their images go missing.

2 - INSTALL ONE CODE PACKAGE

Remove the old add-on and restart Blender before installing 2.1. MatricX disables a detected older copy and migrates your saved asset-pack path, favourites, recent items and custom material catalog — but a restart is what guarantees no old Python modules stay in memory.

3 - WHAT MOVED, CHANGED OR WAS REMOVED

AREA	IN 2.1
Special Mat	Removed as a category. Its camo patterns live on in the new Military Camo family (Camo 1–8). The other Special Mat presets are no longer offered.
Metal & Plastic presets	The 2.0 presets were replaced by a new set of recipe materials. Some names return, built new. Default Metal and Default Plastic remain.
Authored stacks	No longer locked. Recipe layers are fully editable; Reset Imperfections restores the shipped stack.
Leaking	Renamed Dirt Stain and reworked.
Scratch Paint	New pattern. Layers from 2.0 switch to it automatically the next time their material is rebuilt (see below).

AREA	IN 2.1
Decal library	17 decals. The text and label decals (HD, 4K, numbers, warning labels and others) are no longer included.
Tinted Glass	New independently authored glass shader. Starts slightly clearer: Roughness 0.04, IOR 1.52, Coat 0.30.
Material thumbnails	Now ship inside the asset pack, not the add-on. The collection is empty until the pack is connected.
Bevel default	New Default Metal and Default Plastic materials start at Bevel 0.006 (was 0.020). Existing materials keep theirs.

4 - YOUR EXISTING SCENES

- **Materials you already applied are stored in your .blend files** and keep rendering. To use a new 2.1 shader (for example the new Tinted Glass) on an existing object, apply the material again.
- **Scratch Paint from 2.0** switches to the new pattern the next time its material is rebuilt — when you change a setting, apply a Look, or add, remove or reorder a layer. Settings are kept, but the result looks different: finer scrapes, more coverage at the default Amount (0.25), and only the Z rotation is used. Adjust Amount and Scale if needed.
- **Saved browser selections** for removed decals may be empty. Pick the decal you want before placing.

INSTALLATION

THE THREE DOWNLOADS

FILE	WHAT IT IS
<code>MatricX_PRO_2.1.0_Addon.zip</code>	The add-on, for Blender's classic Add-ons installer.
<code>MatricX_PRO_2.1.0_Blender_Extension.zip</code>	The same add-on packaged as a Blender Extension.
<code>MatricX_Assets_2.1.0.zip</code>	The asset pack: materials, thumbnails, textures and the decal library.

Install one code package, not both. Never enable the legacy add-on and the extension at the same time.

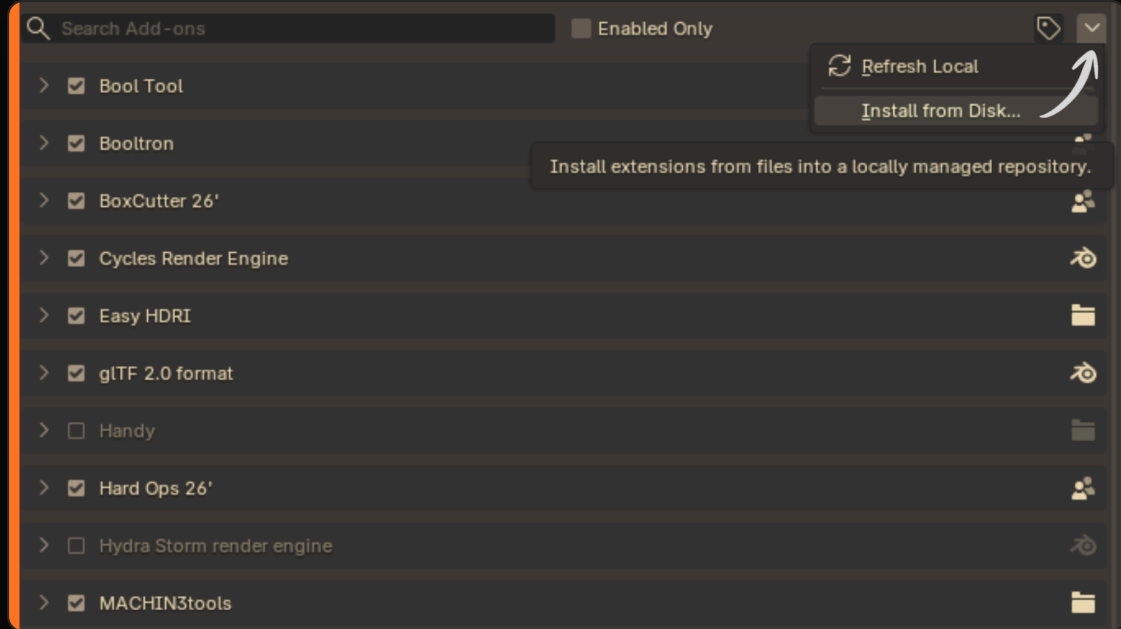
AS A CLASSIC ADD-ON

1. Edit → Preferences → **Add-ons**.
2. Dropdown (top right) → **Install from Disk**.
3. Select `MatricX_PRO_2.1.0_Addon.zip`.
4. Enable **MatricX PRO** if it is not enabled for you.

AS AN EXTENSION

1. Edit → Preferences → **Get Extensions**.
2. Dropdown (top right) → **Install from Disk**.
3. Select `MatricX_PRO_2.1.0_Blender_Extension.zip`.

Then press **N** in the 3D Viewport and open the **MatricX PRO** tab. Continue with the asset pack in Section 05 — MatricX cannot apply materials without it.



Edit → Preferences → Add-ons (or Get Extensions) → dropdown → **Install from Disk**.

THE ASSET PACK

The add-on is the tool; the asset pack is what it works with. Every material file, thumbnail, texture and decal lives in the pack.

WHERE TO PUT IT

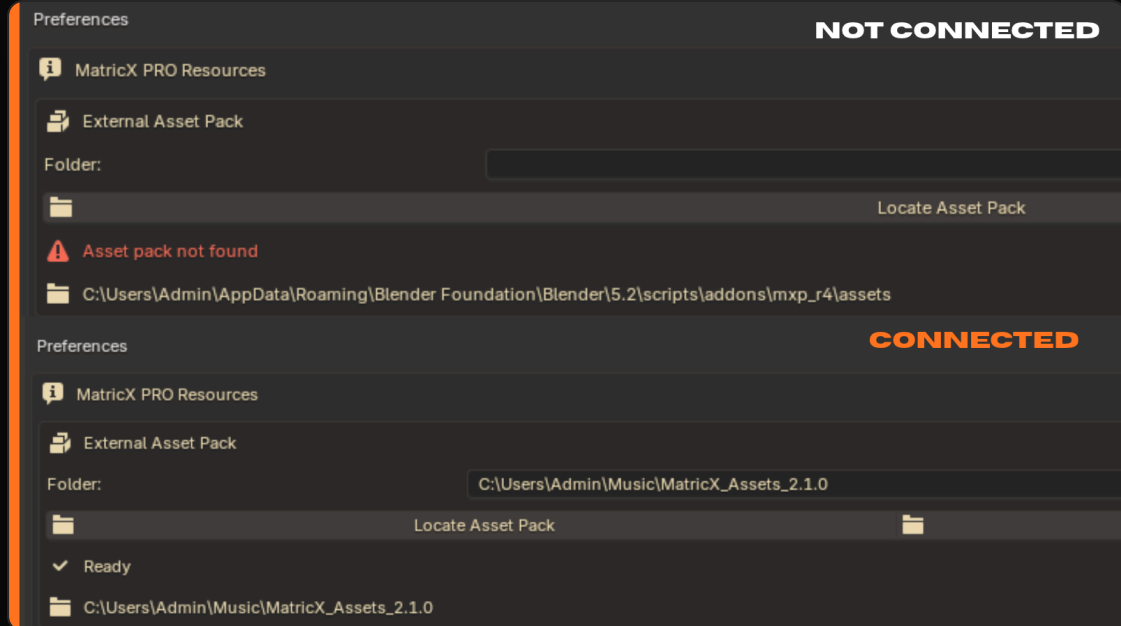
Extract `MatricX_Assets_2.1.0.zip` to a normal folder on a fast local drive. Placing it **beside the installed add-on** lets MatricX find it automatically. Anywhere else works too — you point MatricX to it once with Locate Asset Pack.

<code>MatricX_Assets_2.1.0/</code>	
<code>asset_manifest.json</code>	pack version
<code>ASSET_LICENSE.txt</code>	
<code>Material/</code>	material and recipe files
<code>material_preview/</code>	collection thumbnails
<code>MX_Texture/</code>	runtime and imperfection textures
<code>Decals/MX_Decals/</code>	the official MatricX decal library

LOCATE ASSET PACK

If the panel shows **Asset pack not connected**, click **Locate Asset Pack** and select the `MatricX_Assets_2.1.0` folder. Any folder at or near the pack works: the pack itself, the folder you extracted it into, the wrapper folder your archive manager created, or one of its subfolders.

- The path is stored outside the add-on, so reinstalling — or switching between add-on and extension — does not lose it. It survives Blender restarts.
- If a folder is rejected, a popup explains why: no pack found, a pack too old for 2.1, or an incomplete extraction with the missing subfolders named. NEW



Preferences → MatricX PRO: the asset pack **not connected** (top) and **connected** (bottom).

LINUX AND FLATPAK NEW

On Linux, extract the pack to a normal folder in your home directory, such as `~/Downloads` or `~/Documents`, then use Locate Asset Pack and select the `MatricX_Assets_2.1.0` folder.

Flatpak Blender: do not place the asset pack inside the `.var` sandbox folder. Extract it to your home directory and use Locate Asset Pack. A Flatpak Blender keeps its add-ons under `~/.var/app/org.blender.Blender/`, so "beside the add-on" does not apply there.

WINDOWS: KEEP THE PATH SHORT

Windows limits full file paths to 260 characters. Extract the pack to a short location such as `C:\Users\<you>\Documents\` or `D:\Assets\`. If the folder that holds `MatricX_Assets_2.1.0` has a very long path, Blender cannot read the deepest decal files and the decal browser stays empty.

Studio deployments: set the `MATRICX_ASSET_ROOT` environment variable to a shared pack location and every workstation picks it up.

INTERFACE OVERVIEW

Press **N** in the 3D Viewport and select the **MatricX PRO** tab. Three workspace buttons sit at the top of the panel.

MATERIALS

Choose, tune and apply materials; save Looks; build imperfection stacks.

DECALS

Decals mode places decal objects; **Trims** mode applies trim-sheet regions to faces.

VIEWPORT

Fast modelling colours, swatches and collection helpers for blockout.

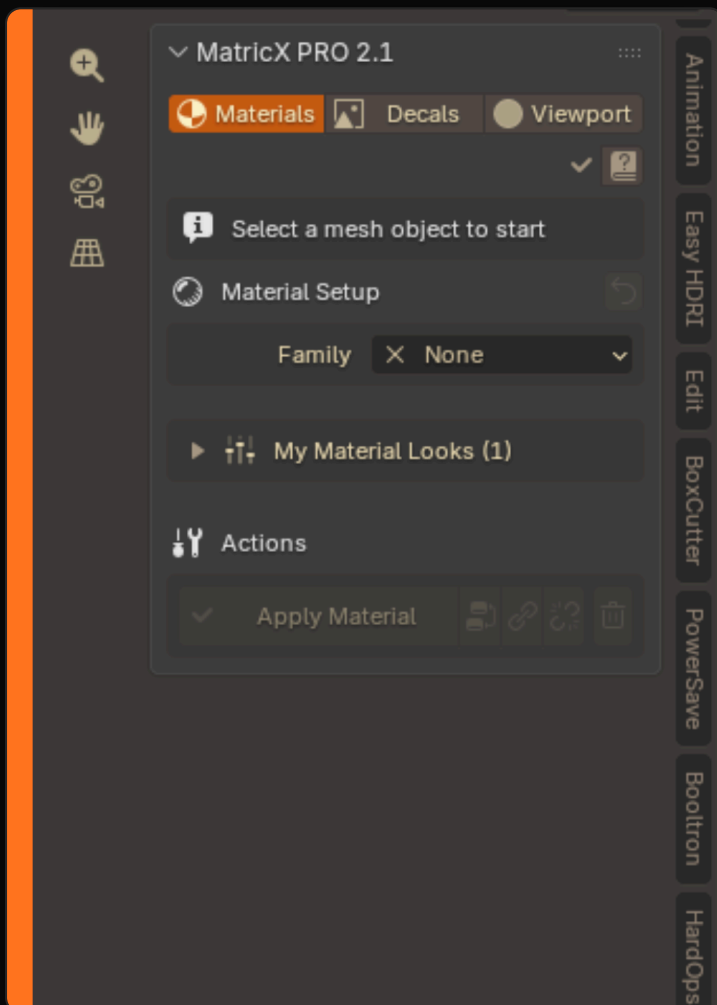
THE PANEL FOLLOWS YOUR SELECTION

Select an object carrying a MatricX material and the panel loads its settings, including the whole imperfection stack. Select a decal and you get that decal's controls. Controls that do not apply are hidden or greyed out.

If you browse to a different material than the one applied, the panel says **Panel is browsing a different material** — click **Load Applied Material** to jump back.

HELP

The ? button at the top of the Materials workspace shows the version and **Check Update**.



The MatricX PRO tab with no object selected: workspace tabs, Help, Material Setup with the Family row, My Material Looks and Actions.

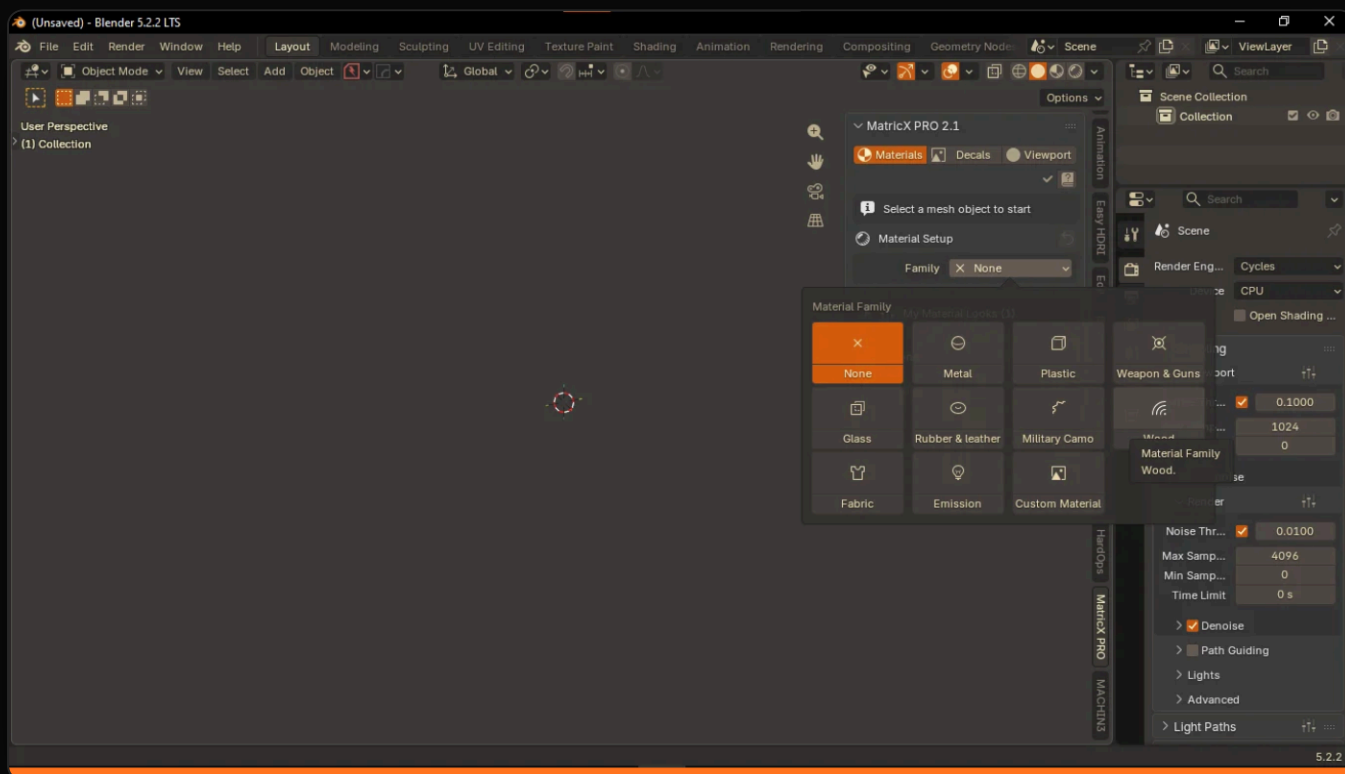
MATERIALS WORKSPACE

THE BASIC LOOP

1. Select one or more mesh objects.
2. Pick a **Family**.
3. Click a material in the **Material Collection**.
4. Adjust its controls in **Material Setup**.
5. Click **Apply Material**.

MATERIAL FAMILY PICKER NEW

Click the **Family** row to open a card popover with every family. One click switches the collection.



The **Material Family** picker: one click switches the collection.

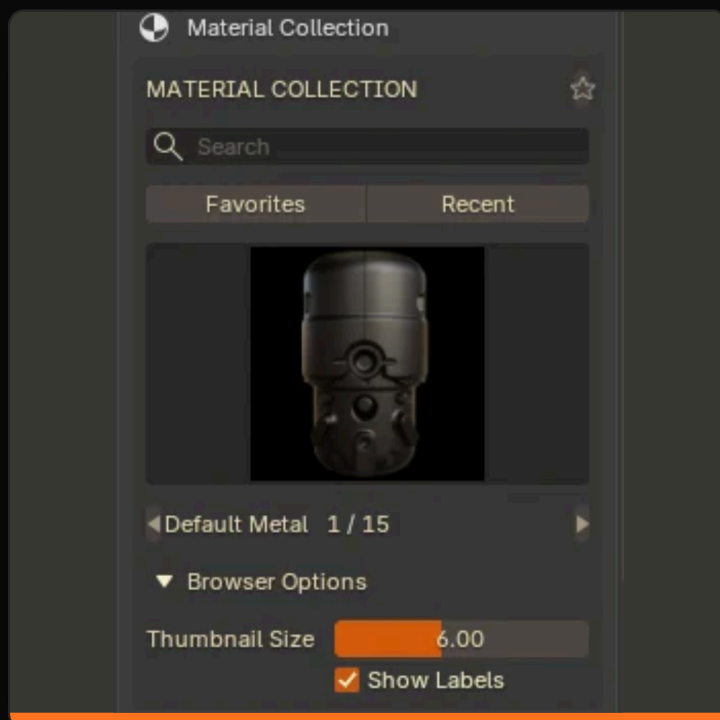
FAMILY	WHAT IS IN IT
Metal	Default Metal plus 14 recipe metals.
Plastic	Default Plastic plus 3 recipe plastics.
Weapon & Guns NEW	19 recipe materials for weapons and gear.
Glass	Glass, Plastic Glass, Chromatic, Iridescent and Tinted Glass.

FAMILY	WHAT IS IN IT
Rubber & Leather	Rubbers, leathers, a tyre rubber and 2 recipes.
Military Camo NEW	Camo 1–8.
Wood	Seven woods, from procedural to shiny lacquered.
Fabric	Three procedural weaves (need a UV map).
Emission	A glowing surface with a strength control.
Custom Material	Your own imported PBR texture sets (Section 16).

THE MATERIAL COLLECTION

The thumbnail browser shows the current family. Use it to explore; everything you need is on one row.

- **Search** filters by name; the ✕ clears it.
- **Favorites** and **Recent** narrow the view; **Clear** empties the recent list.
- ◀▶ step to the previous and next material.
- **Browser Options**: Thumbnail Size and Show Labels.



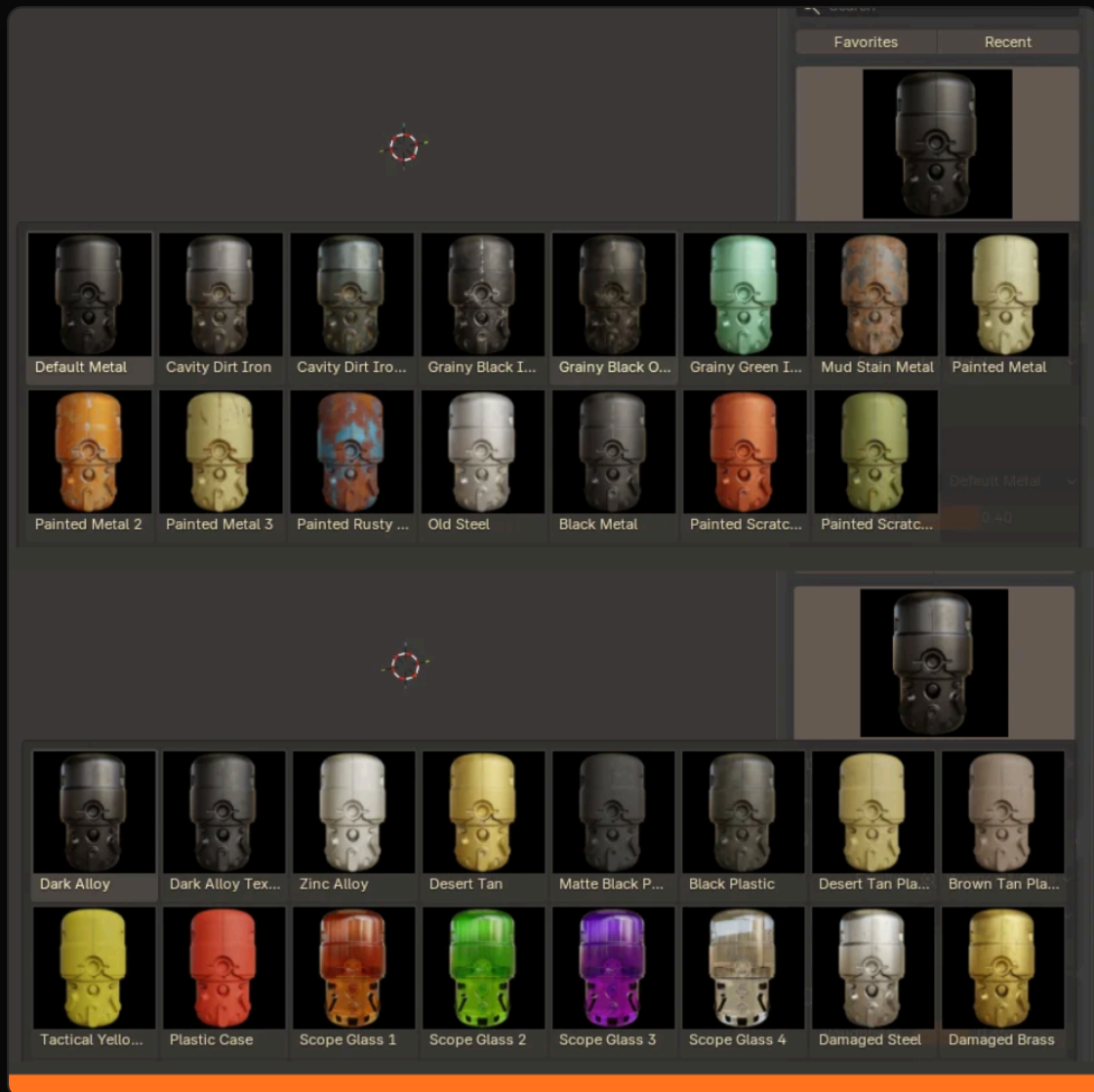
The Material Collection: search, Favorites / Recent, previous / next, and Browser Options.

Browsing does not change your object. Clicking a thumbnail only loads it into the panel. Nothing is applied until you click Apply Material.

THE 2.1 MATERIAL COLLECTION

70 materials ship in the 2.1.0 asset pack. Names below match what you see in the browser; every family shows its own thumbnails there once the asset pack is connected.

METAL – 15



The collection browser showing **Metal** (top) and **Weapon & Guns** (bottom).

Default Metal · Cavity Dirt Iron · Cavity Dirt Iron 2 · Grainy Black Iron · Grainy Black Old Iron · Grainy Green Iron · Mud Stain Metal · Painted Metal · Painted Metal 2 · Painted Metal 3 · Painted Rusty Metal · Old Steel · Black Metal · Painted Scratch Metal · Painted Scratch Metal 2

PLASTIC – 4

Default Plastic · Old Black Plastic · Old Red Plastic · Dirty Plastic Blue

WEAPON & GUNS – 19

NEW

Dark Alloy · Dark Alloy Textured · Zinc Alloy · Desert Tan · Matte Black Polymer · Black Plastic · Desert Tan Plastic · Brown Tan Plastic · Tactical Yellow Polymer · Plastic Case · Scope Glass 1 · Scope Glass 2 · Scope Glass 3 · Scope Glass 4 · Damaged Steel · Damaged Brass · Damaged Wood · Damaged Wood 2 · Damaged Wood 3

GLASS – 5

Glass · Plastic Glass · Chromatic Glass · Iridescent Glass · Tinted Glass

CHANGED

RUBBER & LEATHER – 8

None (plain rubber) · Normal · Black · Dark Brown Leather · Brown · Rubber Tyre · Rubber Hose · Dirty Rubber

MILITARY CAMO – 8

NEW

Camo 1 (green) · Camo 2 (triad) · Camo 3 (urban) · Camo 4 (olive-brown) · Camo 5 · Camo 6 (green digital) · Camo 7 (tan, olive and sage blocks) · Camo 8 (green with red patches)

WOOD – 7

Custom Wood · Red Wood · Light Wood · Deep Brown Wood · Shiny Brown Wood · Shiny Dark Brown Wood · Shiny Deep Brown Wood

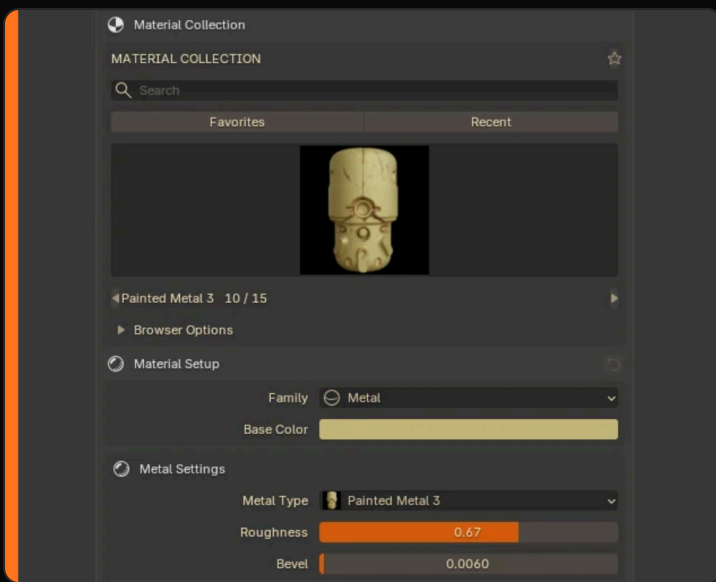
FABRIC – 3 · EMISSION – 1

Fabric 1 · Fabric 2 · Fabric 3 · Emission

MATERIAL SETUP & RESET

Material Setup holds the controls of the surface underneath the imperfections. What you see depends on the family.

FAMILY	CONTROLS
Default Metal	Base Color, Roughness, Bevel.
Default Plastic	Base Color, Roughness, Gloss (Coat), Bevel.
Glass (plain)	Base Color, Roughness, Smudge, Texture Scale, Crack Amount, Crack Scale.
Grouped materials	Material Group Controls — the authored shader's own inputs, such as Base Color, Roughness, IOR, Clarity, Coat and Bevel Radius on Tinted Glass.
Military Camo	Camo Material Settings; Camo 5–8 add their own group settings (colours, scale, roughness, metallic).
Wood · Rubber & Leather	Base controls; Deep Brown Wood and Dark Brown Leather add group settings.
Fabric	Fabric Type. Needs a UV map — click Create UV Map if MatricX warns you.
Emission	Glow Strength.



Material Setup for a Metal recipe (Painted Metal 3): Family, Base Color and Metal Settings.

EVERY MATERIAL BRINGS ITS OWN VALUES

Selecting a material loads its own authored colour, roughness and settings into the panel. Values never bleed from one material to the next.

RESET BASE MATERIAL

The ↺ button on the Material Setup header restores the material's shipped colour, roughness and surface values. It does not touch your imperfection layers.

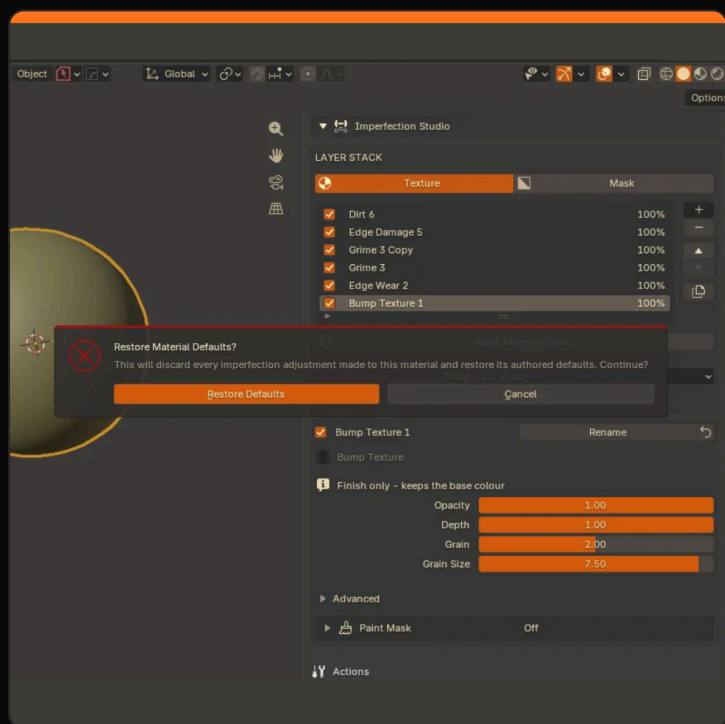
BEVEL CHANGED

Default Metal and Default Plastic expose a **Bevel** radius that rounds shading on hard edges — this is what makes edge wear catch light. New materials start at **0.006**.

MATERIAL RECIPES

A recipe is a finished material made in MatricX itself: a base material with its own settings and a stack of imperfection layers. Apply one and it is done — but nothing is locked.

- **It behaves like its base.** A recipe built on Default Metal has every Default Metal control and accepts every imperfection Metal accepts. Weapon & Guns recipes are built on metal, plastic, glass and wood bases alike.
- **Every layer is yours.** Add, remove, reorder, rename and tune layers freely.
- **One click back. Reset Imperfections,** under the layer stack, restores the stack it shipped with, after a confirmation. **Reset Base Material** restores its surface values.

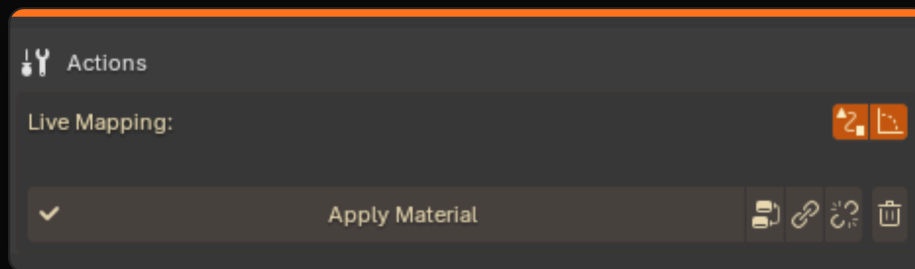


Reset Imperfections asks for confirmation before it restores a recipe's shipped stack.

Start from a recipe, finish as your own: tune the recipe to your asset, then save the result as a Material Look (Section 12) so you can reuse it.

APPLY, LINK, **UNIQUE**, REMOVE

The **Actions** box at the bottom of the Materials workspace.



The Actions box: Live Mapping toggles, Apply Material, then Arrange, Link, Make Unique and Remove.

BUTTON	WHAT IT DOES
Apply Material	Assigns the material in the panel to the selected meshes. One click is one undo step. CHANGED
Arrange Material Nodes	Tidies the active material's shader nodes.
Link Material to Selected NEW	Gives every other selected mesh the active material. Edits are then shared.
Make Material Unique	Gives the active object its own copy, so edits stop affecting the others. Objects sharing its mesh use the copy too.
Remove Material CHANGED	Unassigns the MatricX material from the selected meshes' active slots only — other slots stay intact. Asks for confirmation and can be undone.

LINKED MATERIALS

When one material is used by several objects, editing it updates all of them — base colour, roughness, every layer and every layer value. Use Make Unique when one object should stop following the rest.

LIVE MAPPING

Two toggles above Apply Material keep procedural textures correct on transformed objects, without applying transforms:

- **Scale Compensation** keeps procedural texture size constant while you scale the object.
- **Rotation Compensation** keeps edge wear correct when the object is rotated.

Turn them off when you want mapping to stretch with the object, or before you apply transforms.

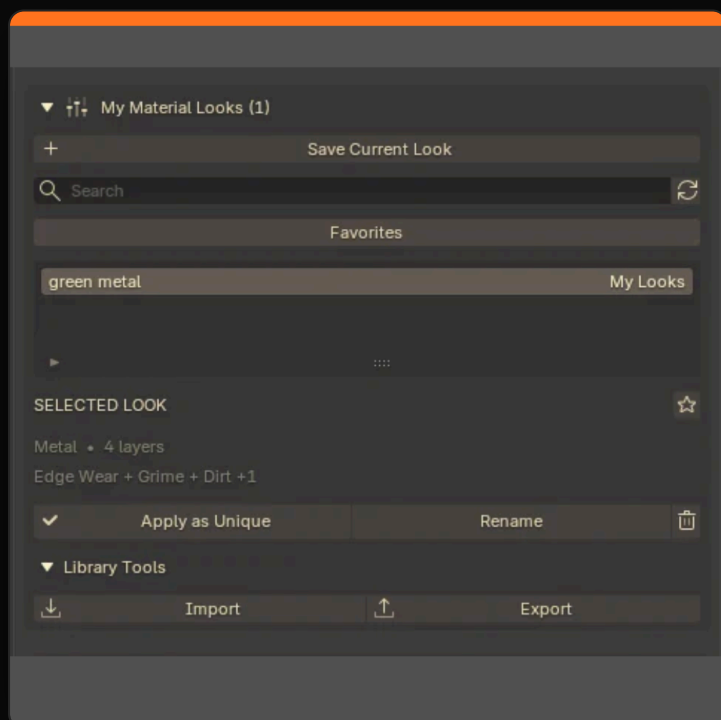
SOLID-MODE COLOUR NEW

Applied materials get a viewport display colour taken from their own Base Color, so parts read correctly in the Solid viewport. A display colour you set by hand is kept.

MATERIAL LOOKS

A Material Look is a complete saved setup: base material, every surface value and the whole imperfection stack. Build a look once; reuse it on every prop in a set.

1. Build and tune a material on a mesh.
 2. Expand **My Material Looks** and click **Save Current Look**. Give it a name, category and description.
 3. Later, select another mesh, pick the look and click **Apply as Unique** — it is applied as a new, independent material.
- **Search** and **Favorites** find looks quickly; the star marks a favourite.
 - **Rename** edits a look's name, category and description; the bin deletes it.
 - **Library Tools** → **Export** saves a look as a `.json` file to share; **Import** adds one to your library.
 - Looks are stored in your Blender user configuration, so they follow you between projects.
 - **Group controls are saved too** NEW — Tinted and Scope Glass, the other glasses, fabrics, shiny and damaged woods keep their Material Group Controls values.



My Material Looks: Save Current Look, search, Favorites, the selected look and Library Tools.

Name them for the result, not the recipe: "Worn Red Painted Metal", "Subtle Dirty Rubber". You will scan this list at speed six months from now.

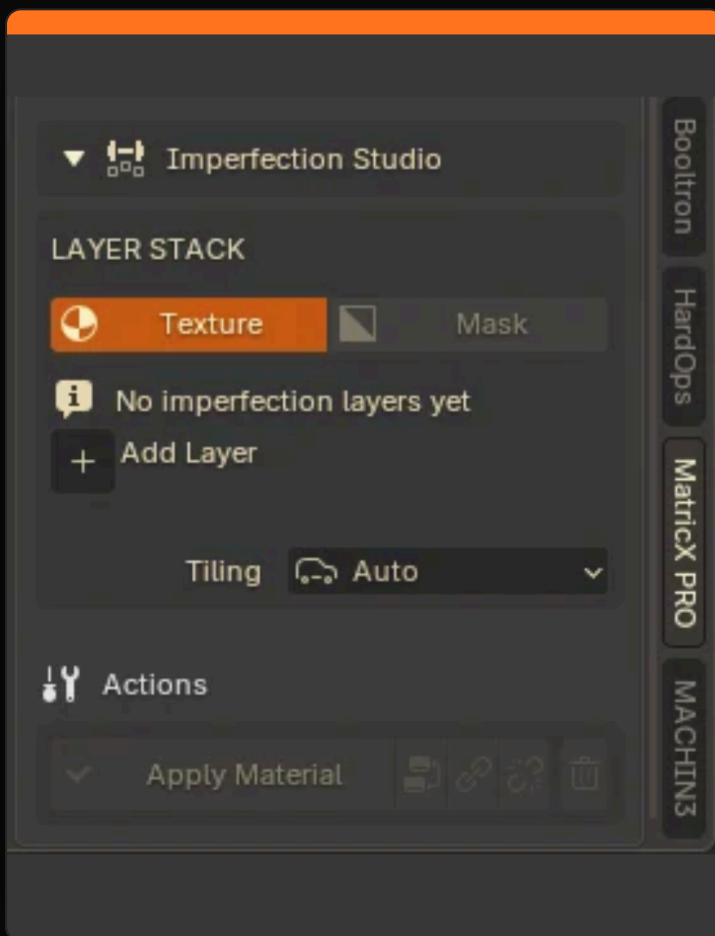
IMPERFECTION STUDIO

Where a material stops looking new. Layers stack, reorder and composite over one another — you are building a history, not applying a texture.

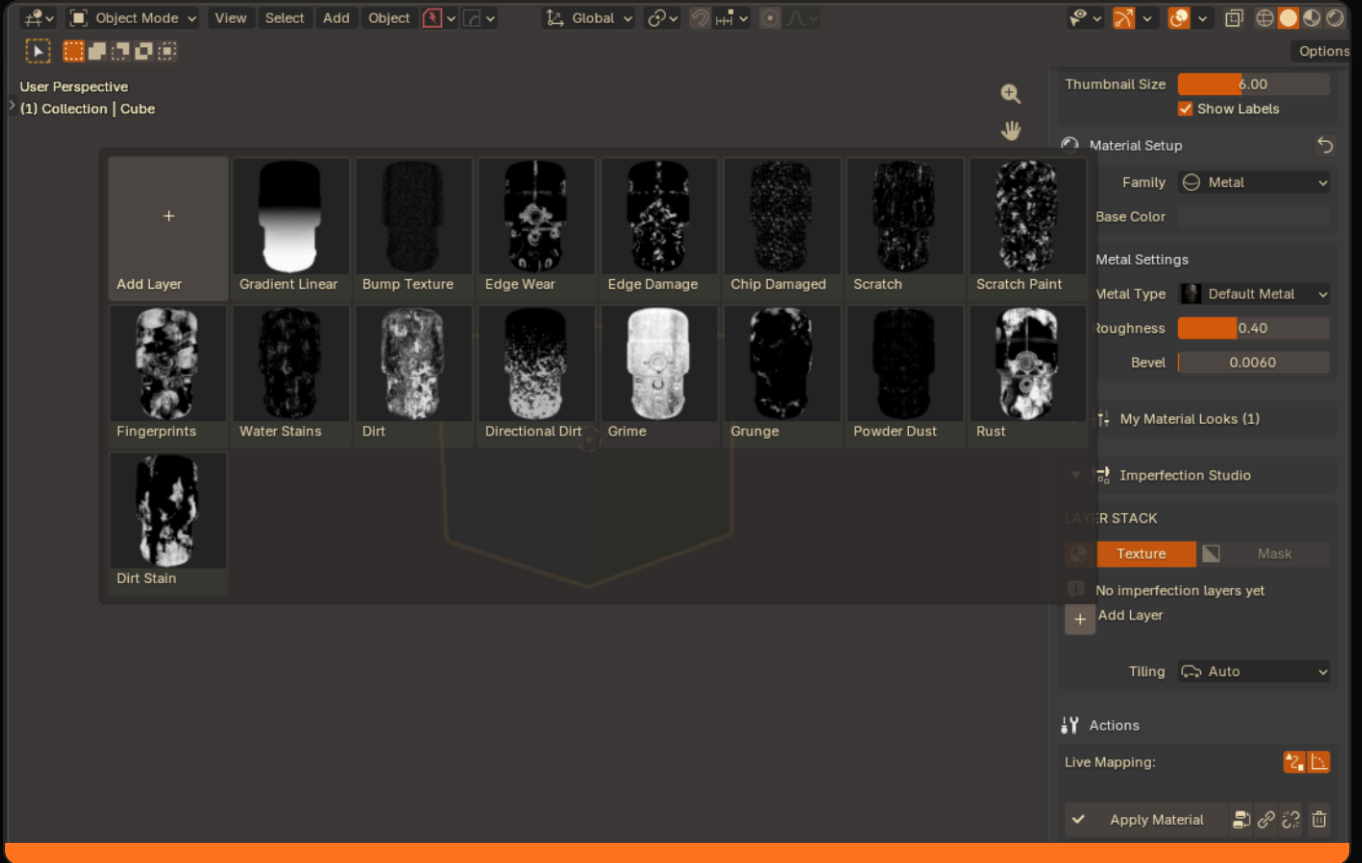
ADDING A LAYER

CHANGED

1. Apply a material that supports imperfections.
2. Click **Add Layer**. A thumbnail grid shows every type the material supports.
3. Click a thumbnail. The new layer is selected so you can edit it straight away.



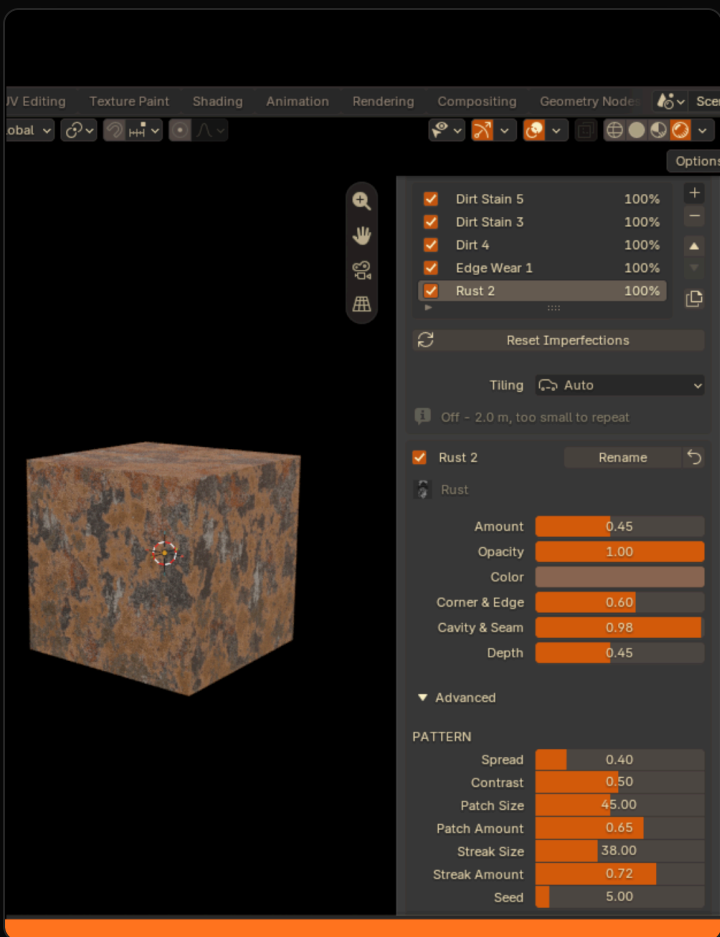
Imperfection Studio before the first layer: Texture / Mask, Add Layer and Tiling.



The **Add Layer** grid on a Metal material — all 16 types.

MANAGING THE STACK

- ▲ ▼ reorder layers. Gradient Linear always evaluates beneath the physical layers.
- **Duplicate** copies the selected layer with independent settings; – removes it.
- The checkbox hides a layer without losing its settings — a good A/B switch.
- **Rename** gives a layer a meaningful name. The ↺ on the layer card resets that layer to its type's defaults, after a confirmation.



A Rust layer on a recipe: Amount, Opacity, Color, its own controls and Depth, then **Advanced** opening on Pattern.

THE LAYER CARD

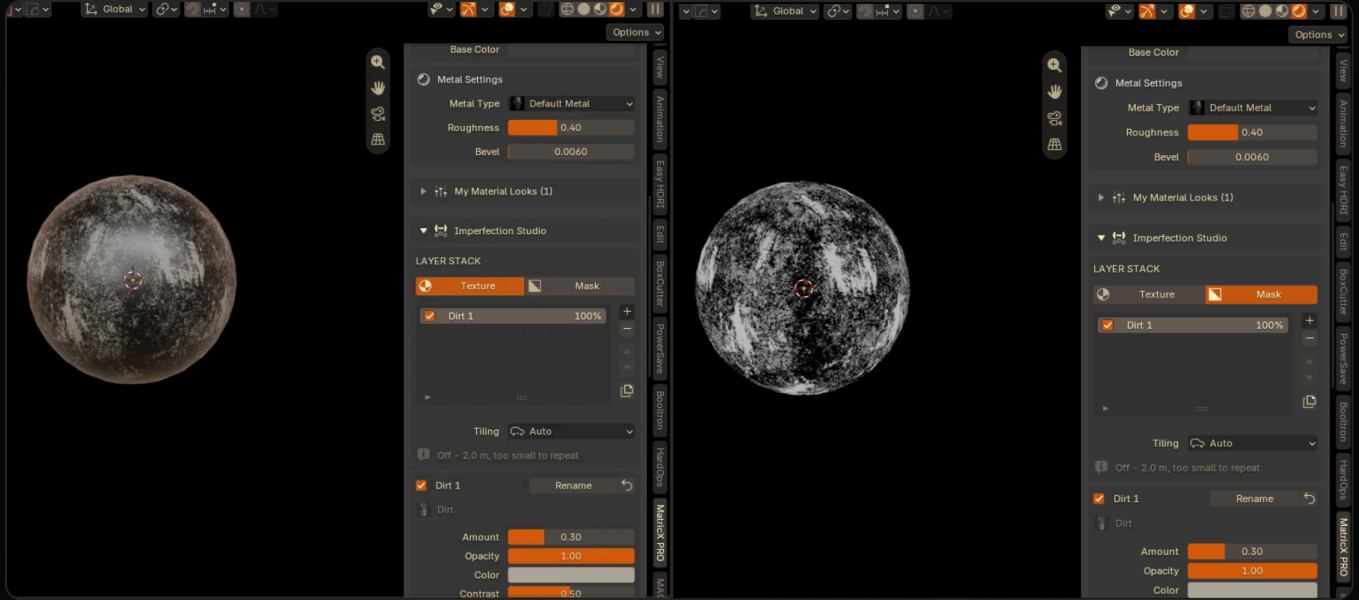
CHANGED

Every type uses the same layout, so you always know where to look:

- **Amount** — how much of the surface the layer covers (two-pass types show Layer 1 and Layer 2).
- **Opacity** — how strong the layer is. New layers start at 1.0.
- **Color**, then the type's own signature controls, then its relief (**Depth** or **Bump**).
- **Advanced** holds the rest in the same order on every type: **Pattern**, **Tone**, **Placement**, **Relief**, **Surface**.

TEXTURE / MASK PREVIEW

Switch to **Mask** to see the active layer alone, in greyscale — white is where the imperfection appears. It is the fastest way to understand what a slider does.



The same Dirt layer in **Texture** view (left) and **Mask** view (right).

TILING (ANTI-TILING)

Large surfaces reveal the repeat in any texture. Tiling blends phase-shifted samples to break it up.

MODE	BEHAVIOUR
Auto	Default. Reads the largest object using the material: off below 12 m, 2 samples from 12 m, 3 samples from 30 m.
Off	One sample. Fastest; right for small objects.
Fast	Two blended samples. Hides repeats at moderate cost.
High	Three blended samples. For very large surfaces; slowest.

In Auto, the info line under Tiling shows what was decided for the current object.

THE 16 IMPERFECTION TYPES



The imperfection types in Mask view — white is where each one appears. Their names and colour thumbnails are in the Add Layer grid (Section 13).

Tone & Finish

TYPE	WHAT IT DOES
Gradient Linear	A directional colour gradient across the surface. A tonal foundation, always evaluated beneath the physical layers.
Bump Texture	Fine surface grain and raised flakes. Finish only — it keeps the base colour.

Edges & Damage

TYPE	WHAT IT DOES
Edge Wear	Wears the finish off exposed corners and edges. Renders in Cycles only (Section 23).
Edge Damage	Chips and breaks up edges where they take impacts.
Chip Damaged	Deep chips cut into the surface, with real crater depth.

Scratches & Marks

TYPE	WHAT IT DOES
Scratch	Grooves with depth and self-shadowing. Depth controls how dark the groove floor goes.

TYPE	WHAT IT DOES
Scratch Paint CHANGED	Fine scrapes through paint to the material beneath, with surface relief. Amount sets coverage.
Fingerprints	Sparse oily fingerprint marks. Best at low opacity on gloss and glass.
Water Stains	Dried water marks and mineral staining.

Dirt & Weathering

TYPE	WHAT IT DOES
Dirt	Loose particulate settling into recesses and cavities.
Directional Dirt	Dirt washed along one axis, as run-off or airflow leaves it.
Grime	Thin handled residue on open surfaces — handles, rails, touched panels.
Grunge	General-purpose grunge overlay with real carved depth.
Powder Dust NEW	Fine pale, dry particles settled on the surface.
Rust	Corrosion eating into corners, seams and cavities. Keep it restrained.
Dirt Stain CHANGED	Dirt and liquid staining with flow, pools and wet or dried residue. Formerly Leaking.

WHICH MATERIALS SUPPORT WHICH TYPES **CHANGED**

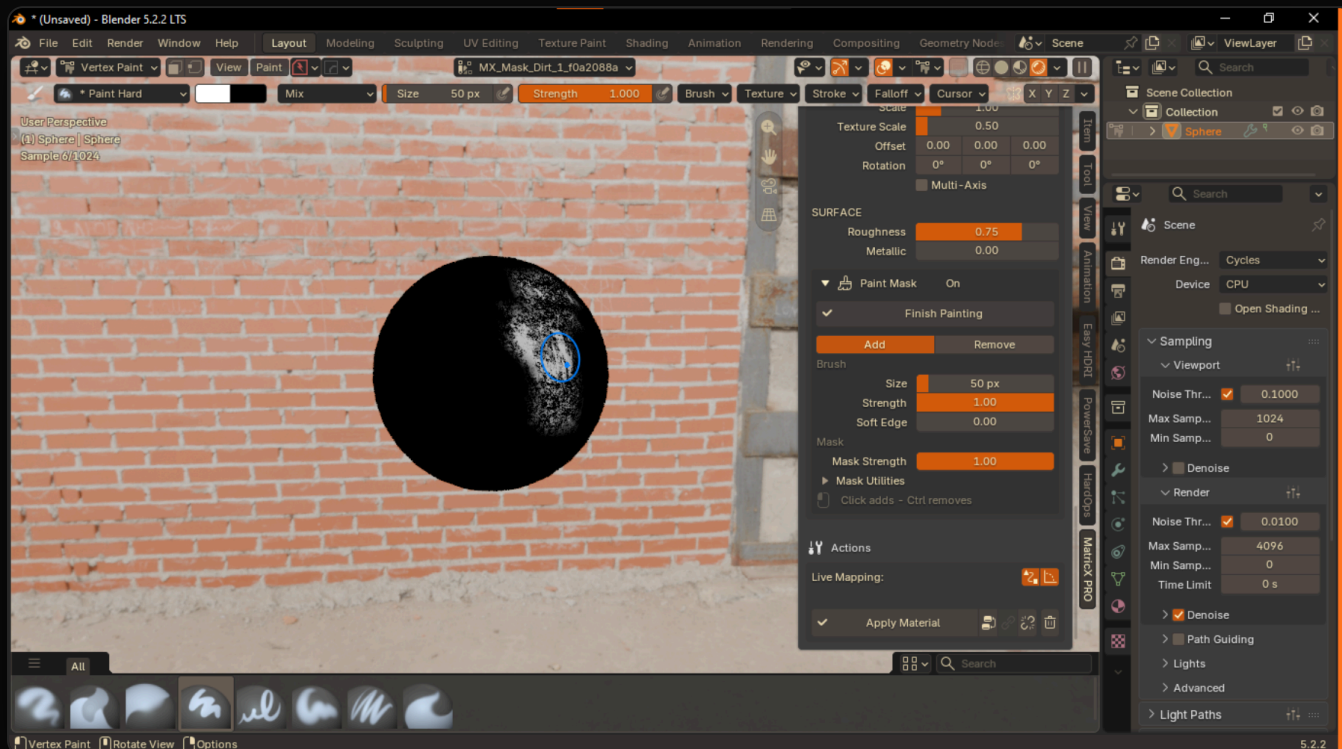
Add Layer only offers what makes sense on the selected material.

MATERIAL	AVAILABLE IMPERFECTIONS
Metal	All 16.
Military Camo	All 16 — painted military hardware rusts like bare metal.
Plastic	All except Rust (15).
Rubber & Leather	All except Rust (15). Overlays stay non-metallic.
Wood	Gradient Linear, Edge Wear, Edge Damage, Chip Damaged, Scratch, Dirt, Directional Dirt, Grime, Grunge, Dirt Stain, Water Stains (11).
Tinted Glass	Scratch, Fingerprints, Water Stains, Powder Dust, Dirt, Directional Dirt, Grime, Grunge, Dirt Stain, Bump Texture (10).
Weapon & Guns	Same as the recipe's base: metal, plastic, Tinted Glass or wood.

MATERIAL	AVAILABLE IMPERFECTIONS
Other glass	None — plain Glass has its own Smudge and Crack controls.
Fabric · Emission · Custom	None.

PAINT MASKS

Procedural masks decide where an imperfection goes by rule. A paint mask lets you decide by hand — brush rust onto the one corner that should have it, wipe grime off where a hand would polish.



Painting a Dirt layer's mask in Vertex Paint, with the Add / Remove modes, Brush and Mask controls in the panel.

PAINTING A LAYER

1. Select the layer and expand **Paint Mask**.
2. Choose a **Paint Mode**, then click **Start Painting**. MatricX switches to Vertex Paint with a brush ready.
3. Paint on the mesh.
4. Click **Finish Painting** to return to the finished material.

PAINT MODE NEW

MODE	STARTS	CLICK	CTRL + CLICK
Add	Hidden — paint it in	Adds the imperfection	Removes it
Remove	Visible — paint it out	Removes the imperfection	Restores it

Switching modes never changes what is already painted. Pick whichever means less painting.

BRUSH AND MASK CONTROLS

NEW

- **Size**, **Strength** and **Soft Edge** set the brush. Strength is linear: 0.5 paints half.
- **Mask Strength** scales the whole painted mask without repainting. 0 ignores the paint.
- **Mask Utilities**: **Hide Everywhere**, **Show Everywhere** (both replace every stroke), and **Delete Paint Mask**, which returns the layer to its procedural mask.

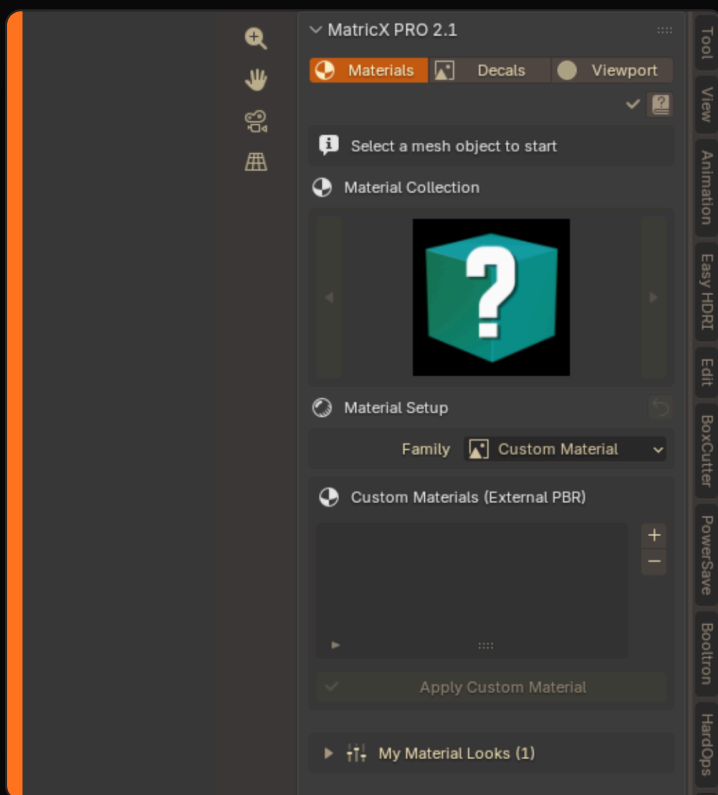
Paint masks are vertex-based. Detail follows mesh density — a default cube has eight vertices and cannot hold a mask. MatricX warns you when a mesh is too coarse. Subdivide where you need detail.

Shared materials: the mask lives on each mesh. Objects without one have the layer hidden. MatricX warns you and offers **Add Mask To All**. Only one layer can be painted at a time; if another session is open, click **Finish That Session**.

CUSTOM PBR MATERIALS

Turn an external texture set into a reusable MatricX entry.

1. Set the family to **Custom Material**.
2. Click + and select one or more texture files from the set's folder.
3. MatricX scans the folder and identifies the maps by name.
4. Check the detected entry, then click **Apply Custom Material**.



The Custom Material family before a texture set is added — click + to import one.

MAPS DETECTED

Base Color, Normal, Roughness, Metallic, Ambient Occlusion, packed ORM, Height, Emission, Opacity.

CONTROLS

Mapping (scale, rotation, offset, UV map), PBR Textures, and Advanced options such as treat-as-metal, ORM mode, normal strength, displacement and alpha.

Entries are stored in add-on preferences and stay available across projects. Imperfection layers are not offered on custom materials — your maps are the complete surface definition.

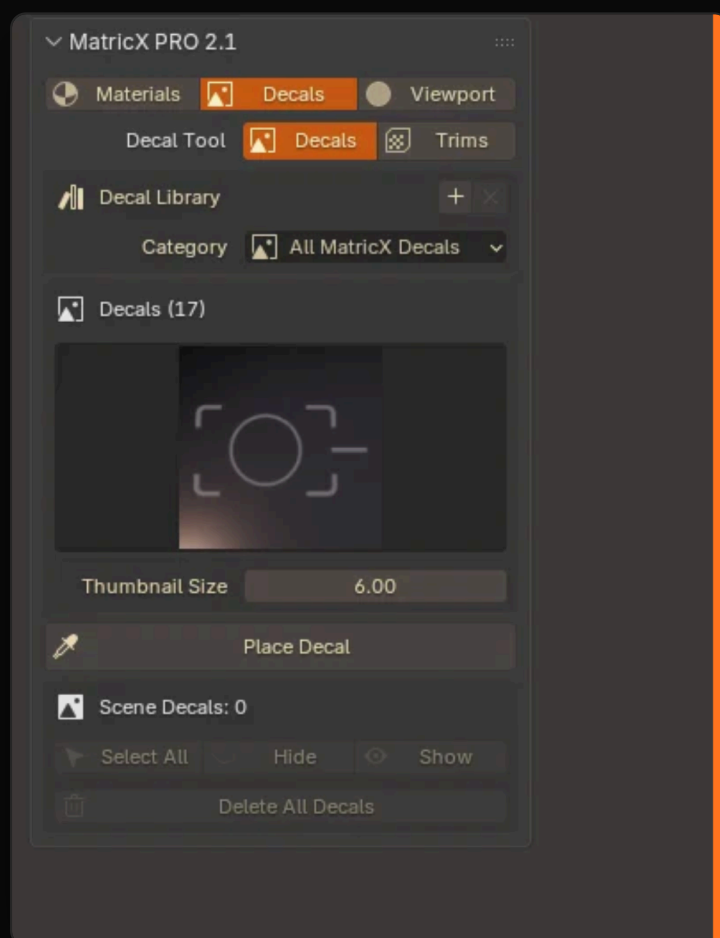
DECALS **WORKSPACE**

Place, project and manage decal objects. The official library has 17 decals **CHANGED**; add as many of your own as you like (Section 18).

PLACING A DECAL

1. Pick a library, category and decal thumbnail.
2. Click **Place Decal** and move the cursor over a mesh — the decal aligns to the surface.
3. Confirm.

INPUT	ACTION
LMB / Space	Confirm
RMB / Esc	Cancel
Wheel	Rotate 15°
Ctrl + Wheel	Rotate 5°
Shift + Wheel	Scale
R	Straighten



The Decals workspace: Decal Library, the 17 MatricX decals, Place Decal and Scene Decals.

WORKING WITH A PLACED DECAL

→ **Reposition** moves it to another point or mesh, keeping its settings.

- **Scale & Rotate** resizes or angles it in place.
- **Opacity** blends it into the surface, from 0 to 1. **CHANGED**
- **Adjust Offset** sets the gap that prevents z-fighting; **Set 1 mm Offset** is a good start.
- **Conform Quality** sets how closely it follows curved surfaces.
- **Project to Surface** builds final conforming geometry. Only the first surface along each ray is kept, so a decal never prints through a closed mesh.
- **Material Base / Subset Base** on surface decals: Color, Metallic, Roughness, IOR, or **Match Target Material**.
- **Scene Decals:** Select All, Hide, Show and Delete All Decals.

Decal Color and **Change Color** remain available for supported decals from your own libraries. None of the 17 bundled decals offers them.

For speed in the viewport, use the Decal pie, **Ctrl** + **Shift** + **D** (Section 21).

YOUR OWN DECAL LIBRARIES

ADDING A LIBRARY

1. Click + on the Decal Library header, or **Add Library** in Preferences.
2. Select the folder that *contains* the decal subfolders.
3. Optionally name it — otherwise the folder name is used.

MatricX validates the folder and tells you if there is nothing usable inside.

Expected folder layout

```
My Decal Pack/  
  001_some_decal/  
    decal.blend      required  
    decal.png        thumbnail, recommended  
    uuid             optional, gives the decal a stable identity  
  002_another_decal/  
    decal.blend  
    decal.png
```

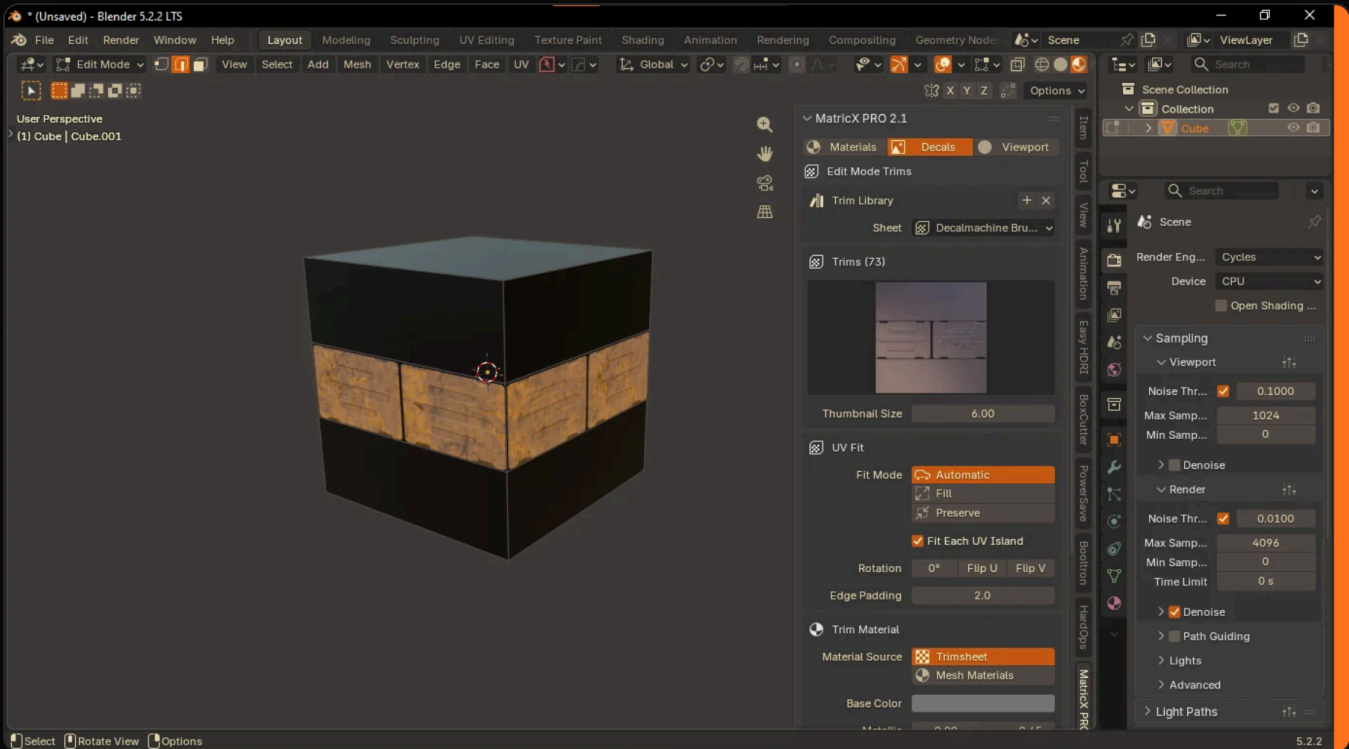
REMOVING A LIBRARY

Click ✕ on the library header, or beside any entry in Preferences. Only the reference is removed — nothing is deleted from disk. The bundled library cannot be removed.

Duplicates are filtered. The same decal in two libraries shows once. Identity comes from the `uuid` file, so give copies unique uuids if you want them treated as distinct.

TRIM SHEETS

MatricX does not ship trim sheets. The Trims tool is fully functional; add a folder of your own sheets with **Add Trim Sheet Library**.



Trims mode in Edit Mode: a trim region applied to the selected faces, with UV Fit and Trim Material.

APPLYING A TRIM

1. Enter **Edit Mode** and select the faces that should receive the trim.
2. Open **Decals** → **Trims**, pick a sheet, then a trim region.
3. Set **UV Fit** and **Trim Material**.
4. Click **Apply Trim to Selected Faces**.
5. Refine with **Live Trim Adjustment**: Move, Rotate, Scale — or the Trim pie, **Ctrl** + **Shift** + **T**.

OPTION	BEHAVIOUR
Automatic	Picks the sensible fit for the selection. Start here.
Fill	Stretches the selection to fill the region. Fast for panel strips.
Preserve	Keeps more of the existing UV proportions.
Fit Each UV Island	Fits islands separately — good for repeated strips.

OPTION	BEHAVIOUR
Rotation / Flip U / Flip V	Correct orientation without re-selecting.
Edge Padding	Insets UVs slightly to stop neighbouring regions bleeding in.
Trimsheet / Mesh Materials	Assign the sheet's material, or keep each face's existing material and apply only UV placement. Restore Material undoes it.

Trim sheet folder format

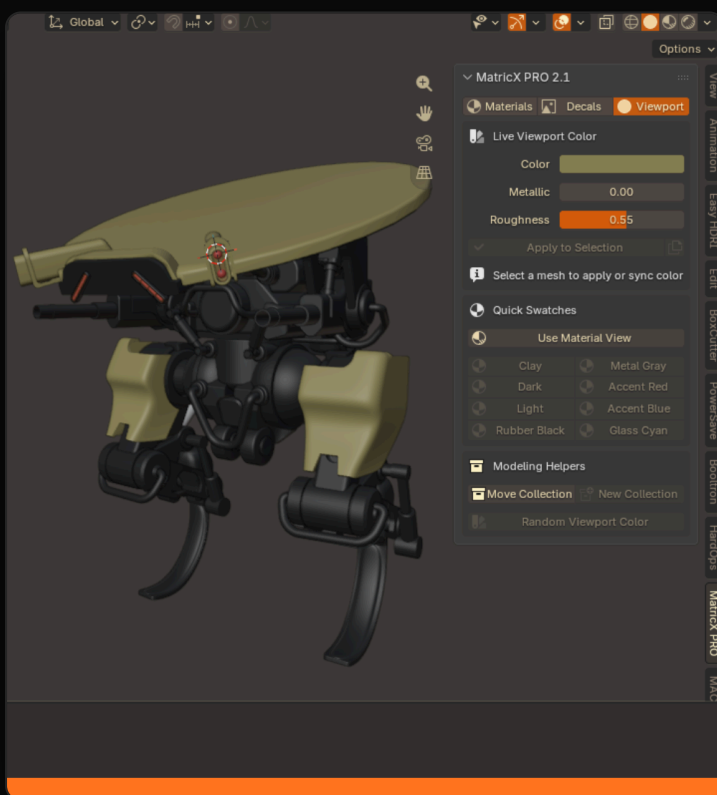
A sheet folder is identified by a `data.json` with a `resolution` pair and a `trims` list; each trim has `coords` and `dimensions` in 0-1 UV space.

```
{
  "name": "Panel Sheet 01",
  "resolution": [2048, 2048],
  "trims": [
    { "name": "Panel A", "coords": [0.0, 0.0], "dimensions": [1.0, 0.25] },
    { "name": "Panel B", "coords": [0.0, 0.25], "dimensions": [1.0, 0.25] }
  ],
  "maps": { }
}
```

VIEWPORT WORKSPACE

Fast, disposable colour for blockout and modelling — parts stay readable long before look development starts.

- **Live Viewport Color** — set Color, Metallic and Roughness, then **Apply to Selection**. The controls then edit that material live; selecting another viewport-coloured object syncs the panel. The button beside Apply to Selection is **Separate Material**: the mesh keeps its look but stops sharing the material.
- **Quick Swatches** — Clay, Dark, Light, Rubber Black, Metal Gray, Accent Red, Accent Blue, Glass Cyan. **Use Material View** switches viewports to Material Preview so the colours show.
- **Modeling Helpers** — Move Collection, New Collection, and Random Viewport Color (a different colour per selected mesh).
- **Linked recolouring** NEW — recolouring one mesh recolours every mesh sharing its viewport material.



The Viewport workspace on a blockout model.

Production materials are protected. Viewport colours never replace a MatricX production material; MatricX tells you how many objects it skipped and why.

RADIAL PIE MENUS

Three radial menus put the common actions under your cursor. Each can be switched on or off in Preferences.

VIEWPORT PIE

Ctrl + **Shift** + **M** · Object Mode

Add Material, Black, Grey, Red, Random Colors, Custom Color, Link Materials, Separate Materials.

DECAL PIE

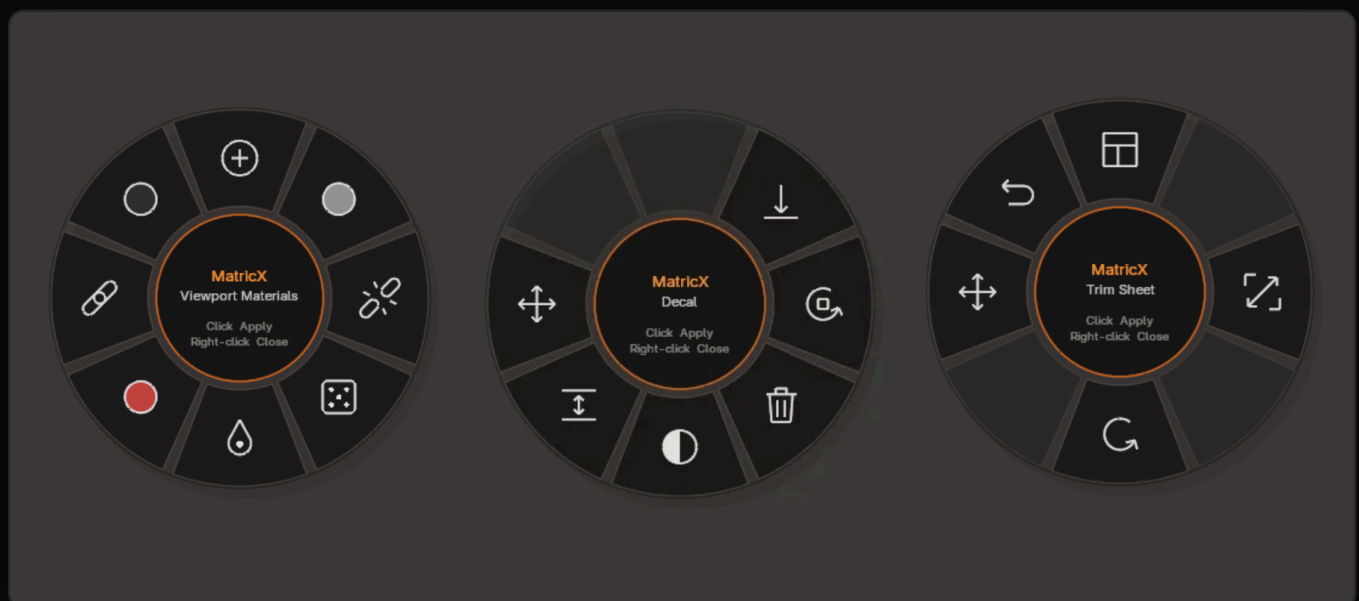
Ctrl + **Shift** + **D** · over a selected decal

Reposition, Scale & Rotate, Surface & Opacity, Project to Surface, Adjust Offset, Delete Decal, plus Material Base / Subset Base where available.

TRIM PIE

Ctrl + **Shift** + **T** · Edit Mode

Move, Scale, Rotate, Refit Selected Trim.



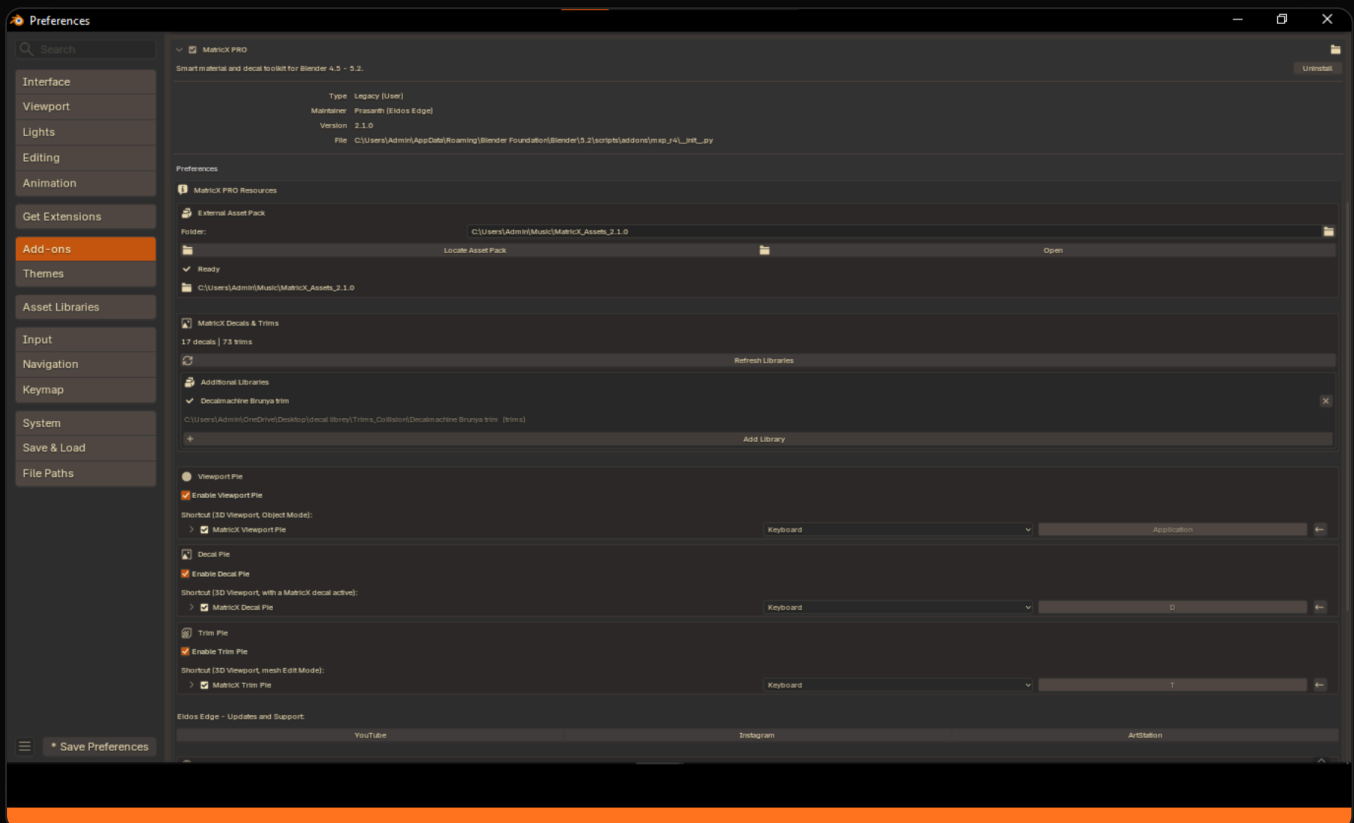
The **Viewport**, **Decal** and **Trim** pies.

A shortcut conflicts with another add-on? Turn the pie off in Preferences, or rebind it under Preferences → Keymap.

PREFERENCES

Edit → Preferences → Add-ons (or Get Extensions) → **MatricX PRO**.

- **External Asset Pack** — the folder, Locate Asset Pack, Open, and a live status line.
- **MatricX Decals & Trims** — decal and trim counts, pie shortcut toggles, Refresh Libraries.
- **Additional Libraries** — every library you added, with a ✕ to remove it. A missing folder is flagged but stays listed so you can clear it.
- **Updates and support** — official Eidos Edge links.



MatricX PRO preferences: asset pack, decals & trims, libraries, pie shortcuts and links.

CROSS-PLATFORM

One build runs on Windows, macOS (Intel and Apple Silicon) and Linux. Paths use no platform-specific separators and tolerate differences in capitalisation, so projects move between systems.

RENDERING & PERFORMANCE

EDGE WEAR NEEDS CYCLES

Edge Wear finds edges with Bevel nodes, which only Cycles evaluates. It does not show in Eevee or in the Material Preview viewport; the layer card says so when that applies. Edge Damage, Chip Damaged and the other types work in both engines.

KEEP IT FAST

- **Tiling:** leave it on **Auto**. Fast and High cost more render time on every object using the material.
- **Layer count:** a few restrained layers usually look better and render faster than many strong ones. Hide layers with their checkbox to compare.
- **Heavier materials:** some procedural materials, such as Camo 1–4, are more expensive to render in Cycles than the rest of the collection. Use lower samples while you iterate.
- **Paint masks** add no render cost beyond the layer itself; mesh density only affects painting detail.

GLASS

Tinted Glass and Scope Glass are transmissive with a clear coat in Cycles; lowering **Clarity** below 1 adds a milky haze. In Eevee they stay see-through without turning on scene raytracing.

RECOMMENDED WORKFLOWS

FAST HARD-SURFACE

1. Apply Default Metal or Default Plastic.
2. Turn on Live Mapping if transforms are unapplied.
3. Set colour, roughness and bevel.
4. Add subtle Edge Wear.
5. Add low-opacity Dirt or Directional Dirt.
6. Add Scratch or Fingerprints only where they earn their place.
7. Save it as a Material Look.

START FROM A RECIPE

1. Apply a recipe — the stack is already built.
2. Tune Base Color and Roughness to your asset.
3. Adjust layer Amount and Opacity to taste.
4. Add or remove layers freely.
5. Reset Imperfections to start over.

RUSTED METAL

1. Apply a metal and add Rust; keep Opacity restrained.
2. Add Edge Damage for chipped areas.
3. Add Dirt at low opacity to unify everything.
4. Paint the rust mask where water would actually sit.

DUSTY WEAPON PROP

1. Apply a Weapon & Guns recipe.
2. Add Powder Dust on top surfaces.
3. Add Fingerprints at low opacity on grips.
4. Use Scope Glass for lenses.

HAND-PLACED WEAR

1. Get the layer's procedural look right first.
2. Start Painting in the mode that means less brushing.
3. Check coverage in Mask view.
4. Finish, then lower Mask Strength if needed.

MODELLING BLOCKOUT

1. Open Viewport and click Use Material View.
2. Assign swatches by part group, or Random Viewport Color.
3. Use **Ctrl** + **Shift** + **M** for speed.
4. Organise with the collection helpers.

TROUBLESHOOTING

"Asset pack not connected"

Click **Locate Asset Pack** and select the `MatricX_Assets_2.1.0` folder (Section 05). Until a pack is connected, the panel's "Looked in" line shows a default location inside the add-on folder — that is a placeholder, not a sign your selection was ignored.

"This is a 2.0.x asset pack"

You selected an older pack. MatricX PRO 2.1.0 needs `MatricX_Assets_2.1.0.zip` : download it, extract it, and select the new folder. The old pack is not changed.

The Material Collection shows no thumbnails

In 2.1 the thumbnails live in the asset pack. Connect the pack.

Linux / Flatpak: the pack is not found

Extract the pack in your home directory (not inside `.var`) and use **Locate Asset Pack**.

Windows: the decal browser is empty

The pack is probably in a folder with a very long path. Move it somewhere short, such as `D:\Assets\` , and locate it again.

Edge Wear does not show

It renders in Cycles only — not in EEVEE or Material Preview (Section 23).

An imperfection covers far too much

Lower **Opacity** first, then **Amount**. Switch to Mask view to see exactly what the mask does.

Add Layer is missing a type

The list follows what the material supports (Section 14). Plain glass, Fabric, Emission and Custom offer none.

My 2.0 Scratch Paint looks different

2.1 uses a new pattern (Section 03). Adjust Amount and Scale.

Decals in an old scene have no images

Their images live in your 2.0 pack folder. Keep it in its original location.

Painting says another layer is being painted

Click **Finish That Session**, then start again on the layer you want.

My paint mask is blocky

Masks are vertex-based. Subdivide where you need finer control.

A fabric looks flat

Fabrics need a UV map. Click **Create UV Map** when MatricX warns you.

A decal appears twice

Refresh libraries and check the same folder is not added twice. Decals are de-duplicated by `uuid`.

A pie shortcut conflicts with another add-on

Turn the pie off in Preferences, or rebind it under Preferences → Keymap.

SUPPORT

Use the official Eidos Edge links in MatricX Preferences for support, updates and tutorials.

When reporting a problem, include:

- Blender version and operating system.
- MatricX PRO version, and whether you installed the add-on or the extension.
- Whether the asset pack is connected — Preferences shows the status.
- A screenshot or short recording.
- A minimal `.blend` where possible.
- The exact steps to reproduce it.

Thank you for using MatricX PRO.

— Prasanth · Eidos Edge · MatricX PRO Developer

