Introduction to FRC Extrusion

Rectangular aluminum extrusion is used in FRC to build robot frames and structural mechanisms. The strength, stiffness, and weight depend on both size and wall thickness.

Common Extrusion Sizes

1" × 1"

- Small, lightweight structural member
- Used for mechanisms and compact structures

2" × 1"

- Most common FRC structural extrusion
- High stiffness in the 2" direction
- Used for drivetrains and main frames

2" × 2"

- Heavy-duty, very rigid
- Used for high-load structures
- Heavier, used only when needed

Wall Thickness (WCP Options)

West Coast Products (WCP) commonly offers:

- **0.063"** — Lightweight, lower strength
- **0.090"** — Balanced strength and weight (most common)
- **0.125"** — Maximum strength and stiffness

Thicker walls increase strength but also add weight.

0.5 Inch Hole Spacing

Many FRC designs use a **0.5 inch grid pattern** when drilling extrusion.

This means holes are placed every half inch (0.5", 1.0", 1.5", etc.) to create consistent mounting locations.

This system:

- Matches CAD layouts
- Improves alignment between parts
- Makes fabrication repeatable and accurate
- Helps standardize robot construction

Key Idea

Different extrusion sizes and wall thicknesses control strength and weight, while the 0.5 inch grid system ensures accurate and repeatable assembly.

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