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The ABC's of 80/20 Fasteners

From
Warden Fluid Dynamics

One of the great features of 80/20's T-slot aluminum extrusions is ease of assembly, requiring little more than a set of hex wrenches and ball drivers. However, there are some important tricks and techniques that one should learn to make best use of this excellent framing material.

Anchor Fastener: Strong and moveable connection between two extrusions connected at right angles. Requires a counter-bore. Available as single and double fasteners. Double anchor fastener recommended for doors. Fastener does not protrude outside of T-slot. Single anchor with counter-bore costs less than the simplest joining plate. Requires precise measurement because fastener can slide along the T-slot before tightening.

End Fastener: Virtually same cost as a single anchor fastener, even when including cost of drilling access hole and tapping. Creates a strong joint because more of the surface of the two mating extrusions are under clamp load. Offers more resistance to straight and torsion moment loads than a single anchor fastener. Because the screw is in the middle of the extrusion, joint is less subject to loosening due to twisting. No measuring required once the access hole is drilled because access hole must line up with tapped hole in end of extrusion to be joined. Easy to assemble. Available as a single or double fastener.

Joining Plate: No matching required, but plates require more screws so assembly time is longer. Unlike anchor or end fasteners, plates attach to the sides of extrusions. Typically more expensive than anchor or end fasteners because of the need for more screws and T-nuts. In twisting applications, depending on their shape, joining plates are stronger than end or anchor fasteners.

In their 2000 catalog on page 38, 80/20 offers some engineering data on the relative strengths of their various fastening hardware. It is good to familiarize yourself with this page before beginning a design project, especially if your application involves movement.



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