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SUBMITTAL SHEET: Breakaway Fire Anchors

Several building codes now require masonry walls to be secured, but to break-away in the event of a fire. To accomplish this we offer our structural ties to be manufactured from Rolled Strip Zinc Alloy type 710. A general recommendation for structural steel anchors is 1/8" thick. The chart below lists the physical and mechanical properties of the zinc strips and comparisons to other metals. As you can see, the melting point of the zinc strip material is under 800 degrees Fahrenheit.

	Zinc	Brass	Copper	Stainless Steel	DQ Steel	Aluminum
	710	70/30	ETP	304	1008	3003
Physical Properties						
Density (lb/in ³)	.0259	0.306	0.321	0.29	0.29	0.099
Melting Point(F°)	792	1660	1949	2550	2730	1190
Coefficient of Thermal Expansion (Micro inch/in/°F)	15.4	11.3	9.3	9.6	6.4	12.9
Electrical Conductivity (% IACS)	27	27	101	3.0	14.5	42
Thermal Conductivity (BTU/(hr)(ft ²)(ft) (°F)	60.5	67.7	195.9	9.4	37	94.1
Specific Heat (68°F)BTU/lb/F°	0.096	0.090	0.092	0.12	0.115	0.213
Specific Gravity	7.18	8.47	8.89	7.9	7.9	2.74
Mechanical Properties						
Tensile Strength (ksi)	21-30	48-80	32-57	50-90	38-50	16-29
% Elongation(in2")	30-45	8-65	6-45	0-40	35-45	4-30
Olsen Ductility(in.)	.25-.35	.10-.40	.10-.40	.10-.30	.35-.42	.15-.35
Hardness R (15T)	55-68	60-91	50-80	0-86	73-77	40-75
Shear Strength (ksi)	24-28	31-48	22-29	60-120	45-52	10-16

Breakaway Fire Wall Anchors (Meltaway Anchors)

IBC Section 705 requires fire walls to allow collapse of construction on either side without collapse of the wall for various durations of time. Anchors attaching the fire wall to CMU, Concrete or Steel must have the capability of providing structural performance, but “detach” during a fire.

The majority of our non-wire anchors can be manufactured from **Rolled Zinc Alloy 710** material which has a melting point of 792 degrees. **Choose your non-wire anchor from this catalog**, specify your required dimensions, and specify “Rolled Zinc Alloy 710” as the steel type. The Rolled Zinc Alloy 710 material is available in 1/8” and 16 gage thickness only.

Comparison Chart	Rolled Zinc Alloy 710	Brass 70/30	Copper ETP	Stainless 304	DQ Steel 1008	Aluminum 3003
Density (lb/in ³)	.0259	0.0308	0.321	0.29	0.284	0.099
Melting Point (F)	792	1680	1950	2550	2730	1190
Tensile Strength (ksi)	21-28	44-99	32-57	75-15	38-50	16-29
% Elongation (in 2”)	30-45	3-68	4-45	0-40	35-45	4-40
Olsen Ductility (in.)	.25-.35	.10-.40	.10-.40	.10-.30	.35-.42	.15-.35
Hardness (R15T)	55-68	60-91	50-80	88 max	73-77	40-75
Shear Strength (ksi)	24-28	31-48	22-29	60-120	45-52	11-16

Below are popular Heckmann anchors used as fire wall anchors.

