



Essex Trading Company  
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## ALUMINIZED HIGH-STRENGTH STEEL

Essex Trading Company has very competitive pricing, and especially for our secondary Aluminized high-strength stocks. This material will almost always accept a 90° bend on 1T (T = thickness). Even 180°/1T bending is often possible. With surprisingly good formability, high-strength Aluminized is suitable for a wide variety of pressbrake and rollforming applications. Some stamping may be possible, though it's not recommended without user expertise. The product also offers excellent spot weldability. This Aluminized was mainly rolled for automotive anti-intrusion parts, i.e., door beams, roof pillars and fender beams. Aluminized samples can be furnished for your examination and testing. We can also provide digital photos of specific master coils.

### Physical/Chemical Properties & Comparisons Ultra-High Strength Aluminized

The following data was derived from independent metallurgical analyses on various High Strength Aluminized samples ...

Comparative Properties												
Tag	Ga.	Physical Properties				Bending Properties			Chemistry			
		Rock.	Yield psi	Tens. psi	Elong. %/2"	90° 1T	180° 1T	180° 0T	C	Mn	Si	Al
						Long.	Long.	Long.				
						Trans.	Trans.	Trans.				
81399	.038	B86	74000	88000	20.5	OK OK	na	na	.226	1.21	.271	.041
81473	.048	B86	70500	89000	22.0	OK OK	na	na	.235	1.24	.262	.032
81393	.056	B92	80500	92500	22.0	OK OK	na	na	.215	1.22	.263	.036
81285	.059	C30	124000	128000	10.0	OK OK	na	na	.228	1.21	.265	.042
81309	.066	B88	66000	83500	24.0	OK OK	OK OK	OK OK	.209	1.20	.275	.039
81255	.066	B90	73000	87500	22.5	OK OK	OK OK	OK OK	.210	1.21	.265	.046
81303	.066	B92	70500	87500	26.0	OK OK	OK OK	OK OK	.209	1.18	.264	.038
81310	.066	B84	60500	80000	25.5	OK OK	OK OK	OK OK	.209	1.20	.275	.039
81256	.068	B94	79500	94500	20.0	OK OK	OK OK	OK OK	.210	1.21	.265	.046

**Legend:** Long. = longitudinal bend (with grain, easy way); Trans. = transverse bend (against grain, hard way);  
 OK = passed; NG = failed.



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**General Aluminized Information**

Aluminized steel sheet (Type 1) is made from a Cold Rolled substrate, upon which a hot-dipped Aluminum-Silicon coating is applied to both sides. It offers excellent resistance for applications in which a combination of heat and corrosion resistance is required. Aluminized sustains heat and oxidation protection up to about 900° F. without discoloration, while maintaining its strength up to about 1200° F.

It generally affords about twice the corrosion protection of hot-dipped galvanized, however, unlike Galvanized, the Aluminum coating is not self-sacrificial. As such, cut edges or other uncoated areas will exhibit rust. Aluminized has a silvery-satin smooth appearance. Major end-uses include automotive mufflers, toasters, ovens, heaters, broilers, heat shields, fireplaces and chimney linings. Aluminized is normally produced in accordance with ASTM A463 standards and tolerances.

<b>Min. Coating Wt. - oz/ft<sup>2</sup> total both Sides</b>		
<i>Designation</i>	<i>Triple Spot Test</i>	<i>Single Spot Test</i>
T1-40	.40	.30
T1-25	.25	.20
T1-13	.13	.10

For determination of our coil coating weights, Essex normally uses the single spot test method and as performed by the independent, ISO-accredited, Kieh Metallurgical Laboratory.

<b>Base Metal Classifications – Mechanical Properties</b>				
<i>Classification</i>	<i>Yield Str. psi</i>	<i>Tens. Str. psi</i>	<i>Elong. % / 2"</i>	<i>Rockwell</i>
Commercial Steel (Type B)	45000 typ.	56000 typ.	>22 typ.	B48 typ.
Forming Steel	35000 typ.	52000 typ.	>26 typ.	B38 typ.
Deep Drawing Steel	32000 typ.	49000 typ.	>32 typ.	B34 typ.
Extra Deep Drawing Steel	24000 typ.	45000 typ.	>38 typ.	B30 typ.
Structural Steel – Grd. 40	40000 min.	55000 min.	16 min.	B65 typ.
High Strength/Ultra High Strength	60000-125000	80000-130000	10-28	B84-C30

typ. denotes typical commercial; min. denotes minimum per ASTM standards

Please visit Essex’s website, [www.tonsandtons.com](http://www.tonsandtons.com), especially our “Products” and “Steelopedia” sections, for much more extensive information.

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