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Stainless prices are
up (↑) and Nickel prices
are down (↓) for
April deliveries.

1106 Kansas Street, Memphis Tennessee
Phone: (270) 331-0578
Fax: (901) 774-1308

Material Test Reports (MTR'S)

Understanding Material Test Reports (MTR'S) can be difficult to the uninitiated or to those who seldom need to interpret them. Why? There is NO standard format for reporting the required information.

Each producing mill has generated their UNIQUE version of the report. In some cases mills indicate their ability to modify the format, or the information, is limited because of internal system constraints.

There are some commonalities. Each test report should have a section that identified the alloy, heat number, specification(s) and product form, size and condition. Unfortunately, the condition that is reported does not always translate into clear understanding of what is being supplied. For example, cold finished, cold worked and strain hardened may all sound similar, but mean different things.

There will be a section reporting the ladle analysis of the heat. There may also be a second chemistry reported as a Check or Product analysis. For most materials, the melt practice is not required to be reported.

Another section of the test report will show mechanical properties. The information reported will vary by alloy

And by specification requirements. Flat products for many grades require simple room temperature yield strengths (0.2% YS), tensile (UTS), elongation (E%), and hardness.

Some materials also require impact toughness testing on a Charpy V-Notch (CVN) sample. These tests are performed at sub-zero temperatures and the results are reported as impact energy and a measure of lateral expansion ductility.

Alloys that can be thermally hardened will also show the results of CAPABILITY test. These are test performed on heat treated samples of the supplied materials to demonstrate the materials' ability to achieve the required properties.

Some thermally hardenable materials will require elevated temperature capability testing. This can involve elevated tensile tests as well as stress rupture testing. At elevated temperature, loads below the yield strength can cause materials to elongate and fail over time. These test may take several days to complete and re results are usually reported in hours to failure.

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nlockard@trumboinc.com

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Capability test results are from heat treated samples and do not represent the actual condition being supplied.

Depending on other requirements of the specification or purchase order, there may be test results data reported for grain structure, corrosion testing, magnetic properties or more. With so many different styles, languages and terms, even veteran metallurgist may need extra time to decipher the results on a test report. If in doubt, ask for clarification from the mill.

NON FERROUS SURCHARGE CHART

Stainless prices are up (↑) and Nickel prices are down (↓) for April deliveries. Remember, this chart is for surcharge only, it does not include the base price for materials.

Alloy	Jan	Feb	March	Arpil	May	June	July	Aug	Sept
2205	0.3715	0.385	0.3714	0.3787					
304 CLAD	0.1723	0.1752	0.1689	0.1771					
304/304L	0.3352	0.3321	0.3195	0.3315					
304H	0.3352	0.3321	0.3195	0.3315					
304LN	0.3352	0.3321	0.3195	0.3315					
304N	0.3352	0.3321	0.3195	0.3315					
309/309S/309H	0.4592	0.451	0.4334	0.4518					
310/310S	0.6373	0.6208	0.5963	0.6278					
316/316L	0.4112	0.4155	0.4003	0.419					
316LN	0.4112	0.4155	0.4003	0.419					
316Ti	0.4267	0.4303	0.4146	0.4341					
317/317L	0.4724	0.4801	0.4628	0.4834					
347	0.6186	0.6145	0.6012	0.6157					
AL-6XN Plus	0.9877	0.9569	0.7962	0.7521					
alloy 20	1.2687	1.3089	1.0928	0.9979					
AL-200 TM	2.5184	2.7585	2.1593	1.8684					
Al-400 TM	1.8595	2.014	1.5694	1.357					
Al-600 Tm	2.0577	2.2246	1.7855	1.5694					
Altemp 625 In	3.733	3.7687	3.4028	3.2682					
Alloy 276	2.9592	2.9126	2.5444	2.4467					



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