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A NON-RUSTING STEEL.

Sheffield Invention Especially Good for Table Cutlery.

According to Consul John M. Savage, who is stationed at Sheffield, England, a firm in that city has introduced a stainless steel, which is claimed to be non-rusting, unsharable, and untarnishable. This steel is said to be especially adaptable for table cutlery, as the original polish is maintained after use, even when brought in contact with the most acid foods, and it requires only ordinary washing to cleanse.

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A publication of American Structures, Inc. ~

“Dedicated to being the trusted supplier of Bolted Stainless Steel Storage Tanks.”

Stainless Steel—the metal of the 21st century



The building of the St. Louis Archway in 1963 utilized 886 TONS of 304 stainless steel.

Stainless Steel—The Long Lasting Shine of Modernity

(Excerpt of an article by Sebastian Kaufmann/
Kaufmann Mercantile)

It's easy to fall in love with stainless steel. It is sleek, shiny, strong, doesn't flake or wear-off and feels nice and smooth. In addition, stainless steel's beauty is long-lasting, which it owes to its most notable characteristic – **it doesn't rust.**

Stainless steel has brought vast changes to the automotive, aviation, food, machinery, and medical industries. It's versatility has allowed it to easily be called the metal of the 21st century.

Iron and steel production go back thousands of years B.C. In contrast, **stainless steel** was discovered less than a hundred years ago.

Harry Brearley (1871-1948) is most commonly credited with the invention of stainless steel. In 1912, Brearley was working at the Brown-Firth Research Laboratory in Sheffield, England, in search for a corrosion-resistant steel for gun barrels, when he noticed that a

combination of chromium and iron led to desired result.

Word about Brearley's invention spread fast in Sheffield, a town known for its fine cutlery since the 16th century. The cutlery industry enthusiastically embraced the new alloy. Up to that time, kitchen utensils were primarily made from carbon steel, which can begin to corrode rapidly when it comes into contact with food. Silver, then the only 'affordable' metal which was corrosion resistant, was too expensive for most people. A Sheffield cutlery manufacturer is also credited with the term "stainless steel", hoping for a positive marketing effect (until then it was called 'rustless steel').

Stainless steel soon paved the way for the advancement of modern technology. It was used in car parts, airplane engines, toasters, vacuum cleaners, trains, kitchen equipment, tools, surgical instruments, and jewelry. By WWI, stainless steel became so vital to the war industry that England banned its production for use in anything else in 1917.

Perhaps one of the best signs of stainless steel's modernity is best embodied in New York City's Chrysler building. When built in 1928, not only was it the city's tallest building, but the top arches were clad in shining 302 grade stainless steel. A recent inspection of the building showed how well the material was suited for the job – no signs of corrosion or deterioration were found.

Corrosion is a big deal. It is estimated to cost the US 276,000,000,000 dollars every year (4.2% of the GNP). An average 8% of our electricity bill is due to corrosion and in some industrial countries, it is the reason that 30% of the water never makes it from the water plant to the consumers.

In general, all metals except gold, platinum, and palladium corrode. Also stainless steel can rust when it loses its 'corrosion shield'. This protection is a thin film (one ten thousandth of a human hair) of chromium oxide, which keeps the iron in the steel from turning into rust. The film is automatically formed when a minimum of 10.5% chromium is added to iron and it immediately repairs itself when scratched.

When looking for reasons why stainless steel corrodes under certain circumstances, you have to first look for things that destroy the chromium oxide film. It is only when the film is destroyed, that the usual environmental influences that lead to corrosion take effect.

Chloride, acid, and an absence of oxygen are the biggest dangers to stainless steel's chromium oxide film. Regular water has too low a level of chloride and enough oxygen to react with the chromium layer, thereby having no effect on stainless steel. But when the water has a very low PH (high acid), or the chloride is very high, as in swimming



(The Modernity of Stainless Steel, con't.) pools, or high sodium, as in sea water, stainless steel **WILL** corrode. But, usually long-term exposure is required for the corrosion to start taking effect.

Today, stainless steel is the standard in commercial food processing, storage, transportation, and preparation. Stainless steel is used in this regard for good reason — it has no pores or cracks to harbor dirt, grime or bacteria. Stainless steel also doesn't change the color or taste of food. It also releases small amounts of iron and chromium, which are healthy. Stainless steel doesn't chip, need painting or surface finishes. It is fingerprint resistant and doesn't require aggressive cleaners. For the home chef, a wide array of stainless steel products are available — knives, silverware, utensils, measuring cups, pots, containers, cookware, and others.

With proper care, stainless steel has almost unlimited life expectancy. Proper care means keeping the chromium oxide film intact, so substances with chlorine (as in some cleaners) and or salt should not be exposed to stainless steel for extended periods. Also, food with higher acidic levels can destroy the film if exposed to some stainless steels for a longer time.

Not all stainless steels are the same. In fact there are more than 180 different steel alloys that fall under the stainless steel category (containing a minimum of 10.5% chromium). Nickel is most commonly added, but also molybdenum, copper, carbon, titanium, silicon, aluminum, vanadium, nitrogen, sulfur and others are added, as well. The addition of these metals and non-metals influence stainless steel's properties, most importantly corrosion resistance, hardness, and

machinability, which, in turn, affect production costs.

Finishes, which vary in smoothness and shininess, also affect corrosion — the smoother the finish, the better the corrosion resistance. Stainless steel can be hardened through a series of temperature changes (heat treatment) and rolling, hammering, or stretching at low temperature (cold working). Heat hardening achieves better results, but not all stainless steels can be subjected to heat hardening.

The most commonly used rating for stainless steel is SAE grade. It consists of three to four digit numbers, sometimes with the addition of the letter "L" or "H". "L" is an indicator for low makes stainless steel harder but also more sensitive to corrosion, and vice versa.

The best quality stainless steel knife blades have a high carbon content, and usually have molybdenum and vanadium in their composition.

Stainless steel's resistance to corrosion and staining, low maintenance and familiar luster make it an ideal material for many applications. There are over 150 grades of stainless steel, of which fifteen are most commonly used. The alloy is milled into coils, sheets, plates, bars, wire, and tubing to be used cookware, cutlery, household hardware, surgical instruments, major appliances, industrial equipment (for example, in sugar refineries) and as an automotive and aerospace structural alloy and construction material in large buildings. Storage tanks and tankers used to transport orange juice and other food are often made of stainless steel, because of its corrosion

resistance. This also influences its use in commercial kitchens and food processing plants, as it can be steam-cleaned and sterilized and does not need paint or other surface finishes.

Stainless steel is 'truly' 100% recyclable, because there is no loss in quality no matter how many times it's being processed. Approximately 60% of all stainless steel comes from recycled steel, and 90% of all stainless steel is being recycled. As in all steel production, a lot of energy is needed for its production (also when recycled), but this can be justified due to its long-lasting qualities. With proper care, stainless steel products last hundreds of years.

Here at American Structures, Inc. we utilize our bolted, stainless steel tanks in a variety of applications, such as:

- Leachate Storage Tanks
- Containment Rings
- Reservoir Water tanks
- Aeration Tanks
- Equalization Tanks
- Sludge Storage Tanks
- Fire Water Tanks
- Bio Towers
- Digester Tanks
- Clarifier Tanks
- Anaerobic Digester Tanks
- Sequencing Batch Reactor (SBR) Tanks
- Toxic SBR Tanks
- Aerobic Digester Tanks
- Clear Well Tanks
- Dry Storage Tanks (grain, minerals, feed, etc.)
- Multiple other water, waste water, and processing tanks

Sources: <http://kaufmann-mercantile.com/stainless-steel/>

<https://www.google.com/#q=ameristruc.com>

http://en.wikipedia.org/wiki/stainless_steel





Here are some facts that are quite thought provoking regarding the many advantages of stainless steel as a general construction material, one example of which be American Structures, Inc.'s bolted, stainless steel tanks. Take a look and ponder:

1. The thin and invisible chromium oxide layer that naturally develops on the surface of stainless steel is a near-perfect solar and thermal reflector.
2. This natural solar and thermal reflector translates to energy savings
3. The passive reflection of stainless steel is a powerful tool against global warming.
4. The remarkable thermal properties of stainless steel result in R value for the metal itself, thereby lessening the demands of panel insulation systems to meet design criteria.
5. A stainless roof has a major warm climate and cold climate year-round advantages that translates into insulation savings of R=30.
6. The surface properties of stainless steel minimize energy losses to and from the structure by acting as a radiant barrier.
7. Stainless steel structures prevent global warming and heat islands, while minimizing energy usage.
8. Stainless steel and titanium are both resistant to corrosion in any environment in which humans can live. Thus, they stand out as the two viable bare metals which can keep their initial surface qualities indefinitely.

In conclusion, since the chromium oxide layer that naturally develops on the

surface of stainless steel is thin and invisible it is a near-perfect solar and thermal reflector. This translates to energy savings in hot as well as cold climates, and a reduction in the heat island effect, therefore mitigating climate change. This improvement comes in part from a reduction of the energy used to heat and cool buildings, but the effect is compounded by the efficiency with which stainless steel reflects light without converting the wavelengths, thereby sending solar energy back into space. So, stainless steel-clad buildings not only save energy, but significantly reduce the heat island effect and mitigate the affects of global warming.

Clearly, stainless steel has been an underappreciated building material. While it does cost a bit more to install than conventional metals used in construction, it has tremendous value in terms of durability and low maintenance cost. We can now add energy savings and heat island mitigation to that equation. Not to mention it's ultimate sustainability as a totally green product that can be fabricated, , used, scrapped, and melted for use yet again. What's not to like?

Sources: http://www.metalresources.net/index.php?option=com_content&view=article&id=328&Itemid=237

http://www.metalresources.net/index.php?option=com_content&view=article&id=327&Itemid=238

<http://www.ssina.com/overview/features.html>



Each year, American Structures, Inc. attends a variety of state and national water industry trades shows. Be they state rural water associations or national events such as the American Water Works Association of the Water Environment Federation Technology Conference, or the International Production and Processing Exposition, American Structures, Inc. staff average 9-10 state rural water association and 2-3 national trade show events per year.

We recently attended WEFTEC 2013 in Chicago, IL from October 5th through the 9th. This years WEFTEC event was held at McCormick Place and was a record breaking event in terms of attendance, as well participating vendors.

This year's 86th annual WEFTEC event set a record-breaking attendance figure of 22,589 water professionals and 971 exhibiting companies from around the globe, all occupying 297,400 square feet of exhibition space.

American Structures, Inc. was pleased to be a part of this conference and found it to be invaluable in terms of connecting with current customers, meeting prospective customers, and networking with industry professionals. Attendance at such conference is also an integral function of keeping current on industry trends, developments, and challenges.

January 2014 will mark the beginning of our new trade show season, with our appearance at he International Production and Processing Exposition in Atlanta, GA, followed by three months of state rural water association conference attendance. We will post our appearance at upcoming trade shows on our website as the dates draw near. If your in those neck f the woods, stop on by our booth for a chat about how our bolted, stainless steel tanks can best serve your storage needs!



Don't Forget! Veteran's Day is Monday, November 11, 2013 . . .

To some, Veteran's Day is just another day off for state, federal, or other governmental workers. But for those that have served in our nation's armed forces, Veteran's Day has a deeper meaning.

World War I – known as “The Great War” - officially ended when the Treaty of Versailles was signed on June 28, 1919, outside the town of Versailles, France. However, actual fighting ceased seven months earlier when an armistice between the Allied nations and Germany went into effect on the eleventh hour of the eleventh day of the eleventh month. In November 1919, President Wilson proclaimed November 11 as the first commemoration of Armistice Day .

Act 52 Stat. 351; 5 U. S. Code, Sec. 87a—approved May 13, 1938, made the 11th of November in each year a legal holiday—a day to be dedicated to the cause of world peace and to be thereafter celebrated and known as "Armistice Day." Armistice Day was initially a day set aside to honor veterans of World War I, but in 1954, after World War II had required the greatest mobilization of soldiers, sailors, Marines and airmen in the Nation's history and after American forces had fought aggression in Korea, the 83rd Congress, at the urging of the veterans service organizations, amended the Act of 1938 by striking out the word "Armistice" and inserting in its place

word "Veterans." With the approval of this legislation (Public Law 380) on June 1, 1954, November 11th became a day to honor American veterans of all wars.

The Uniform Holiday Bill (Public Law 90-363 (82 Stat. 250)) was signed on June 28, 1968, and was intended to ensure three-day weekends for Federal employees by celebrating four national holidays on Mondays: Washington's Birthday, Memorial Day, Veterans Day, and Columbus Day. It was thought that these extended weekends would encourage travel, recreational and cultural activities and stimulate greater industrial and commercial production. Many states did not agree with this decision and continued to celebrate the holidays on their original dates.

The first Veterans Day under the new law was observed with much confusion on October 25, 1971. It was quite apparent that the commemoration of this day was a matter of historic and patriotic significance to a great number of our citizens, and so on September 20th, 1975, President Gerald R. Ford signed Public Law 94-97 (89 Stat. 479), which returned the annual observance of Veterans Day to its original date of November 11, beginning in 1978.

Therefore, since 1978, Veterans Day continues to be observed on November 11, regardless of what day of the week on which it falls. The restoration of the observance of Veterans Day to November 11 not only preserves the historical significance of the date, but helps focus attention on the important purpose of Veterans Day: A celebration to honor America's veterans for their patriotism, love of country, and willingness to serve and sacrifice for the common good.

Here at American Structures, Inc. nearly 1/4 of our employees are veterans. We are extremely proud of their service to our nation. We extend a heartfelt **THANK YOU** to all veterans who have served in the U. S armed forces.

Source: <http://www.va.gov/opa/vetsday/vetdayhistory.asp>



Daylight Saving Time (DST) 2013: When Does It End?

For most Americans daylight saving time will end with a "fall back" to standard time on **Sunday, November 3, 2013 at 2 a.m.**

The federal government doesn't require all U.S. states or territories to observe daylight saving time, which is why residents of Arizona (except for residents of the Navajo Indian Reservation), Hawaii, Puerto Rico, the Virgin Islands, American Samoa, Guam, and the Northern Marianas Islands won't need to change their clocks this weekend.

In the U.S., a federal law standardized the yearly start and end of daylight saving time began in 1918—for the states that chose to observe it. During World War II, the U.S. made daylight saving time mandatory for the whole country, as a way to save wartime resources. Between February 9, 1942, and September 30, 1945, the government took it a step further. During this period DST was observed year-round, essentially making it the new standard time, if only for a few years.

Since the end of World War II, though, daylight saving time has always been optional for U.S. states, and controversial. There are many arguments for and against the practice. And DST's energy gains in the U.S. largely depend on your geographical location. With verdicts on the benefits and costs of daylight saving time split, it is not surprising that the yearly time changes inspire polarized reactions.

In general, the consensus is that most people enjoy the extra hour of daylight in the evening eight months of the year.

Source: <http://news.nationalgeographic.com/news/2013/10/131028-when-does-daylight-savings-time-end-november-3/>