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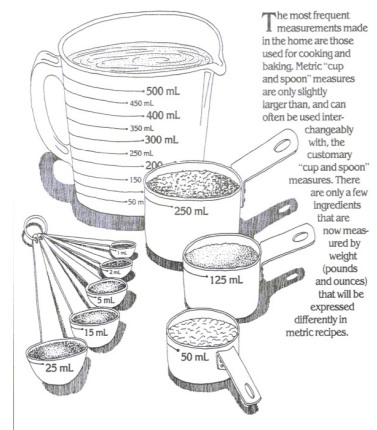


## The Metric System is Sneaking Up on Us

As we all know, the US is according to the press one of only 2 or 3 countries left in the world that is not following the Metric System – except that's not exactly true. Metric measurements have been sneaking up on us over time.

It started with scientific measurements – all measurements in scientific applications are metric. This comes out as rather weird to me. My experience in learning Thermodynamics was in physics class, where we dealt with Joules, kilograms, liters, and so on. However, if I design a heating or air conditioning system, were at British Thermal Units (BTU's), pounds, and cubic feet. It just doesn't feel right.

Also, all your medical measurements are in Metric. Except when they take your height and weight. Somehow, I think if they told me my weight in Kilograms, it would be less depressing since a Kilo is



The most frequent measurements made in the home are those used for cooking and baking. Metric "cup and spoon" measures are only slightly larger than, and can often be used interchangeably with, the customary "cup and spoon" measures. There are only a few ingredients that are now measured by weight (pounds and ounces) that will be expressed differently in metric recipes.



2.2 pounds, I could lose over half my weight with little effort. As it is, I take off my shoes, exhale, and empty my pockets, but it doesn't help.

While we weren't looking, the Metric System snuck into the grocery store. Everything in there is in "soft" Metric. In other words, the Imperial system is used, and the Metric equivalent is in parenthesis. So, if you get a quart of milk, it's in parenthesis that you are getting 946 Milliliters of the same. That's not so threatening, but the Metric system is kind of sneaky. I bought some milk today, and I noticed it was 52 ounces. What kind of measurement is that? Then I noticed that in the parenthesis was "1.5 liters" – wait a minute! That's more like "soft" Imperial and hard Metric, not the other way around.

Of course, our cars have been Metric for a while. I used to have a 67 Mustang with a 289 Cubic Inch engine. Then I had a Ford Capri with a 2000 cc engine and all metric stuff that was next to impossible to replace and mechanics refused to work on it because they didn't have the tools. The next engines were Imperial, and then one day when it was clear my Dodge pickup with the 383 Cubic Inch engine had to go. It was replaced by a Ford Ranger with a something or the other Liter engine. 3 more cars have since gone by with engines in Liters and everything in Metric. I still have my wrenches that measure in inches, I paid a lot for them, but they haven't done anything in a while, unless I can't find my 12 mm wrench. The ½" wrench seems to work there.

Notice the speedometer on your car – it's in KMH and MPH. It won't be long until they start putting distances on highway signs in Kilometers again next to the Miles, just like the we saw happen in the Seventies. I think the attitude back then was Kilometers was new and foreign, thus bad, my grandmother told me that. I explained to Grandma that the Metric system was adopted as the official US system of measurement in 1893, and our traditional measurements are based on Metric (see, it was sneaking in early). For example, an inch is officially 25.4 millimeters. I also pointed out that the Imperial System comes from British measurements, and Britain (well, the United Kingdom) is a foreign country.

Grandma didn't appreciate what I had to say, and even less when I explained to her that they even spoke English over there in the United Kingdom, it just sounded funny, but yes, it was real English. Fortunately for Grandma, if she was alive, some things will probably have to stay Imperial.

Measurements in construction – with buildings built with stuff like 2x4 lumber (which measures 1 ½” x 3 ½”), it’s going to be hard to use an expression like 38 x 86. You aren’t going to be able to change dimensions of standard building materials and hope to work them into existing buildings.

The Canadian Building Code lists everything in Metric measurements, and it’s hard to decipher because of the odd conversions it generates. In daily life in Canada they still use the Imperial system for building materials, it just doesn't work in Metric. One of my trips to Canada I was on a jobsite, and we went several kilometers to get there, and it was about 10 degrees Centigrade outside. The house had 14 inch wood I joists for floor framing, and 2x4’s for the second and third floor framing. The basement was 3 meters deep made from 8” block. We may go that way here.

Will we go from Fahrenheit to Centigrade? I don’t know. I had to deal with Centigrade in Canada and the Middle East, so I can guide you with some simple conversions.

Centigrade	Imperial (this is from experience in the Middle East)
30 degrees	Getting hot
35 degrees	Really hot
40 degrees	Hot as \$%^\$
45 degrees	You wish you were dead hot
50 degrees	The heat takes you out in the parking lot and beats you within an inch of your life.

Now for Cold.

-10 degrees	Cold
-20 degrees	Unbelievably Cold
-30 degrees	Tell me why I thought visiting Canada in the Winter was a good idea cold.
-40 degrees	When you talk you have to grab your words and take them inside to warm them up so people can hear what you said cold. Just don’t use your bare hands, they will freeze to your words, and you will look stupid.

As a tip, if you visit Canada in the winter, don’t lick



metal poles.

I hope this all helps you realize the threat we face from the Metric system as it takes over, and we wake up one day and find everything based on ten. It's too late to do anything about it, just learn to live with the tyranny of measuring stuff in centimeters.

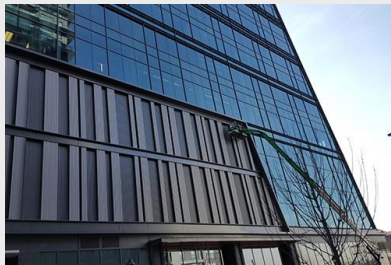


## Structural Engineers

Runkle Consulting was founded in 2000 by George W. Runkle III, PE, SE. We provide structural design for structures fabricated from shipping containers, the structural design for building cladding, and forensic engineering services.

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# What We Do



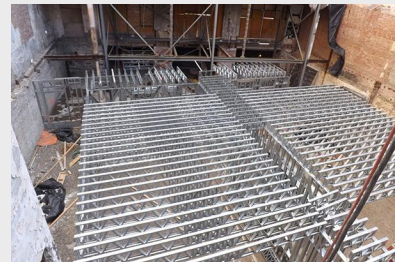
## Building Cladding

We have 15 years of experience in the structural engineering of exterior building panels, store fronts, and curtain walls for commercial and government buildings.



## Shipping Container Buildings

We provide design services for the design of buildings fabricated from repurposed shipping containers. Our services include the complete design package, architectural, structural, and MEP. Depending on the area, we may be able to help you find a fabricator to provide the containers.



## Cold Formed Steel Design

We have extensive experience in cold formed steel design. We can provide structural design services and shop drawings for your project.

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