Tubing	Material	Ultimate Strength	Minimum Elongation	Description
STEEL				
Columbus Life/Spirit	Niobium	177-205 KSI	14% min	The extreme strength of this alloy allows Columbus to draw the tubes to thinner specifications than ever before, down to 0.38mm! The chemical makeup of this alloy produces excellent hardening and reduces the sensitivity to overheating by maintaining a fine-grained structure. This tubing is marginally heavier than aluminum while still possessing the strength and ride qualities of steel. Spirit tubes are 20% thinner for even more weight savings, and also offered in special shapes.
Columbus Zona	Nivacrom	134-149 KSI	10% min	Nivacrom alloy has been developed especially for cycling with all considerations taken. The asymmetric double-butted tubes go through a series of treatments that homogenize the mechanical properties, giving the tubes great fatigue behavior and weld ability. This tube set produces a bike of moderate weight and notable strength with a compliant steel ride.
Reynolds 953	Carpenter Stainless Steel	255-290 KSI	NA	This is Reynolds new “Super Steel”. Using what is at this time the strongest steel alloy Reynolds is able to make seamless butted tubes with exceptionally thin walls down to .3mm. 953 should be able to produce a sub three pound road race frame. Because it is stainless steel it is corrosion resistant and also can be polished. Appropriate for either TIG or brazed construction.
Reynolds 853	Proprietary Air Hardening Heat Treated	180-210 KSI	10% min	Reynolds853 is made from a seamless steel alloy originally developed for the side impact beams on high performance cars. The term “air-hardening” refers to a special category of steels that when welded and allowed to cool in air, actually get harder in the weld area. Because this is normally the critical zone for fatigue life, 853 frames will out-perform conventional steel alloys due to this innovation.
Reynolds 631	Proprietary Air Hardening	115-130 KSI	10% min	This is the upgrade form the legendary “531” steel. The strength has gone up 10% allowing weight savings on tough, durable but comfortable frames. Perfect for the long distance tourer or hard-tail MTB where ride feel and toughness matter.
Reynolds 725	25CrMo4 Heat Treated	157-186 KSI	10% min	Using an industry standard steel alloy, Reynolds mandrel butt and then heat-treats this alloy. 725 can be TIG welded and can also be using in a “Designer Select” combination with Reynolds air hardened range of 853 and 631 tubing
Reynolds 525	25CrMo4	114 KSI	10%	Mandrel butted for accurate profiles and available in a number of shapes, 525 offers a tube-set with strengths similar to the famous 531 range.
True Temper S3	Proprietary Air Hardening Heat Treated	150-217 KSI	10% min	True Temper's newest steel tubing is the S3 Super Strength Steel Series. This alloy makes possible top tubes and down tubes having end butts of a weight shaving 0.5mm and center sections of 0.4mm. This alloy with its special heat treatment is used to create the S3 Super Strength Steel tube set. This makes a compact style (sloping top tube) frame that weighs only 2.85 pounds (1295 grams) for riders who want the lightest weight possible.
True Temper OX Platinum	Proprietary Air Hardening Heat Treated	135-185 KSI	10% min	True Temper's premium steel tubing is the OX PLATINUM Series. The high strength of the PLATINUM alloy make possible top tubes and down tubes have end butts of 0.7mm and center sections of 0.4mm to minimize weight. In recognition of the needs of Custom Frame Builders and their customers, each main triangle tube comes in a range of wall thicknesses and butt lengths so builders can fine-tune the frame's stiffness to their customer's needs.

True Temper Verus HT	4130 Heat Treated	150-175 KSI	10% min	True Temper's VERUS HT Series tubing is made possible by True Temper's decades of experience in the heat treatment of 4130 steels for maximum performance. As steels are strengthened by heat treatment, the ductility is reduced. If you were to heat treat 4130 steel as hard as possible, the tensile strength would go all the way up to 255,000 PSI. But the steel would very brittle and subject to failure by fracture, making it unsuitable for bike frames. The metallurgists at True Temper designed the VERUS HT heat treatment to reach the high level of 175,000psi, while still maintaining good ductility.
True Temper Verus	4130	110 KSI	10% min	True Temper's VERUS Stress Relieved 4130 steel is designed for reliability that is even better than commercial grade 4130. This heat treatment removes internal stresses left over from the manufacturing process. The end result of removing internal stresses is that the tube (and your frame) lasts much longer.
Dedacciai EOM 16.5	Micro alloy Low carbon	N/A	N/A	The EOM 16.5 tube sets are made with a low carbon content that is ideal for welding. After the tubes are formed they are then austempered in a low carbon atmosphere, after which they undergo external surface tempering.
Dedacciai SAT 14.5	18MCDV6 Micro alloy	>203KSI	13% min	A heat-treated Micro alloy. Both extremely light, and super strong, this tube set possess excellent fatigue characteristics. Available in standard and oversize tubes.
TITANIUM				
Ancotech 3Al/2.5V	Titanium 3Al/2.5V	90-95 KSI	15%	American titanium with straight wall tubing offers a worry free lifetime frame. Tube diameters are available to produce a frame as stiff as desired or conversely, as supple as imagined. Frame weights are typically lighter than most steel tube sets.
Reynolds 3Al/2.5V	Titanium 3Al/2.5V	90-95 KSI	15%	Reynolds as a lighter alternative to straight gauge tubing offers double-butted titanium. Thicknesses are down to 0.6mm on mainframe tubes. This tube set will build a very reliable, lightweight, and excellent riding frame that will last a lifetime.
Reynolds 6Al/4V	Titanium 6Al/4V	130-145 KSI	10% min	The added strength of 6/4 titanium allows it to be drawn out thinner than 3/2.5, resulting in a lighter frame.
ALUMINUM				
Columbus XLRBR Scandium	Aluminum Doped w/zirconium	80 KSI	12% min	This aluminum alloy uses zirconium to reduce grain size and improve strength, which enables tubes to be drawn down to 0.6mm. Recovery of mechanical properties after welding is achieved through a 20-hour ageing process. A high strength to weight ratio along with radically shaped tubes yields a very light bike with good reliability and comfort. A great tube set for nearly all race applications.
Columbus Airplane	Aluminum Zn, Mg	61 KSI	10%	A light tube set that is well suited for track and time trials. Aero shapes are offered for all main tubes, including a teardrop seat tube with a radius cutout to accommodate short chain stays common to track bikes. Mechanical properties are recovered after welding through a 10-hour artificial ageing process.
Dedacciai U2	Proprietary Aluminum	N/A	N/A	Radically shaped and drawn aluminum alloy for weight savings and stiffness. This material uses elements from the rare earth series to block grain growth and increase strength. A very light tube set intended for road racing.
Easton Scandium	Sc7000	71 KSI	13 %	Designed for the highest ride quality in the lightest package possible. The Scandium-enhanced aluminum alloy produces an even finer grain alignment, increasing the strength of the aluminum. This tube set yields a very light, responsive yet supple ride for road or MTB. Sc7000 is also offered in Aero shaped tubes.
Easton Ultralite	7005	59 KSI	15%	With unparalleled fatigue strength and superb ride characteristics, Ultralite is a high performing lightweight tube set available for road and off-road racing or lightweight enthusiasts. Easton taper walls have the smoothest walls in the industry along with consistent butts.