Mir 50® vs. Various Stainless Steels

Mir 50® High Strength Corrosion Resistant - Stainless Pump Shaft	304 and 316 Commercial Grade Stainless Steel
Ease of machining. Engineered for ease of machining. Less induced stress. Less movement. Not gummy. Will hold a close tolerance bright surface finish.	**Hard to Machine**. Gummy. Won't hold a bright finish. Machining difficulty results in bow and twist. Subject to bow later in service. (memory).
Corrosion Resistant. Superior service life in corrosive applications. Corrosion resistance like 316.	**Corrosion Resistant**. Most frequently used stainless in maintenance applications because of high degree of corrosion resistance.
High strength. At approx. 30RC **Mir 50** has Typical Tensile Properties of 140KSI - consistent from the smallest diameter through large size rounds.	**Low strength**. Not harden-able by heat treatment. Can be supplied with some hardness developed by "Strain Hardening", but limited to sizes smaller than 1-3/4" Diameter. Strain hardening results in higher retained stress.
Anti-galling. Excellent for use with OEM threaded parts of 300 series stainless. Use in conjunction with; 300 series stainless, 400 series stainless, PH series, carbon and alloy steel grades. Parts come apart easily during changeovers.	**Highly susceptible to "galling".** Most OEM parts are supplied with both male and female parts made from a 300 series grade. Parts seize and gall. Threads are easily damaged due to galling and low strength.
Low-Retained-Stress. Special "Double-Stress-Relief" at mill. Second tempering cycle added at end of mill production. Ease of machining means less stress is released during processing operations. **Less stress=less memory=no movement**.	**High degree of retained stress**. i.e. high degree of "Memory". Gummy during machining operations. Even moderate machining results in bow, twist, and movement.
Pump Shaft Straightness. Delivered to special straightness. (.005"in first 5 ft, plus .0015" for each additional foot of shaft.) Less wear on bearings, seals and sleeves. Shipped "Boxed-and-Cradled".	**Commercial straightness**. Subject to movement in machining. Subject to movement in service. Chatter, vibration, wear on bearings, seals and sleeves.
More Options From Stock. Available in two surface finishes; TG&P and Fine Turned Oversize (The size will make the size), and rough machined heavy wall bushing stock. Tight tolerance TG&P will often accept bearings with no further machining.	**Limited options.** Commercially available as Cold Drawn. Centerless Ground, or peeled. Tolerances are plus ***and*** minus. Most often requires machining the next largest size for bearings fit. Difficult machining causes bow and twist, etc.
Long Lengths. On the shelf in lengths to 30ft. Sold also as cut lengths, even to 17 and 18ft dead lengths. No splicing or welding is required. Offered as random lengths covering a broad length range. Also supplied cut to your exact lengths. Short pcs, or long cut bars are no problem.	**Standard commercial lengths** are 10 to 13ft random. Difficult to purchase as small cut lengths. Difficult to purchase as long cut lengths.