



Properties	Unit	Plastic Sleeves	Nickel Sleeves	Stainless Steel Sleeves	Aluminum Cores	Steel Cores
Material		Polyimide / Polyamidimide	99.99% Nickel	SUS 316L	AL 6061T / 6063 / 5052	St37 / St52 / 2Cr13
Dimensions	Length in mm	< 700	< 350	< 350	< 1.000	< 1.600
	Diameter in mm	20 - 310	15 - 180	20 - 60	< 300	< 300
	Wall thickness in $\mu\text{m}$	25 - 150	> 30	> 30	> 0.5 mm	> 0.5 mm
Runout	mm	n/a	n/a	n/a	up to 0.02 (typically 0.03 - 0.04)	
Remarks		<ul style="list-style-type: none"> <li>- improved thermal conductivity</li> <li>- electrical conductivity <math>10^{(6\pm 1)}</math></li> <li>- semi-conductive sleeves in development</li> </ul>	- seamless	<ul style="list-style-type: none"> <li>- seamless</li> <li>- 100mm diameter with seam possible</li> </ul>	<ul style="list-style-type: none"> <li>- Standard welded</li> <li>- Friction welded</li> <li>- swaged (cold formed)</li> <li>- with black inside coating</li> <li>- combination of aluminum cylinder with steel journals</li> </ul>	