

Technical Bulletin 22

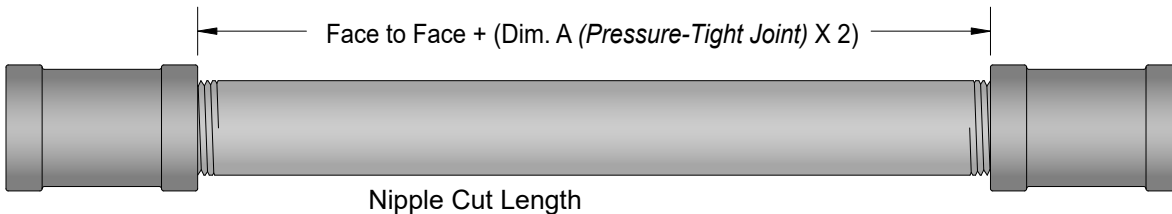
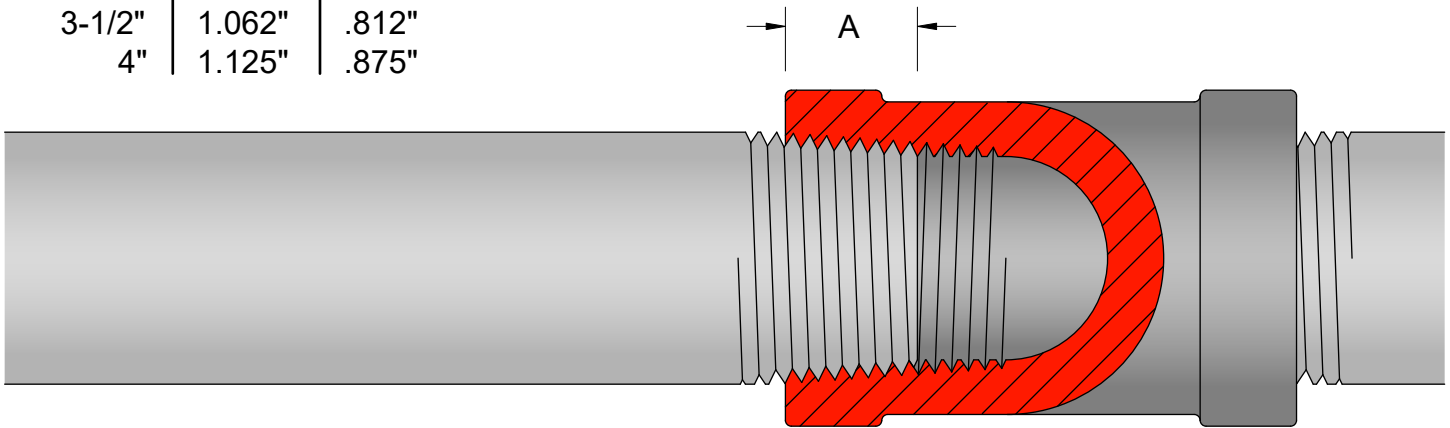
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Length of Thread Required to Make a Tight NPT Joint

by Brian S. Elliott

Pipe Size	Pressure-Tight Joint	Hand-Tight Engagement
1/8"	.250"	.156"
1/4"	.375"	.228"
3/8"	.375"	.250"
1/2"	.500"	.312"
3/4"	.562"	.344"
1"	.687"	.406"
1-1/4"	.687"	.562"
1-1/2"	.687"	.562"
2"	.750"	.437"
2-1/2"	.937"	.687"
3"	1.000"	.750"
3-1/2"	1.062"	.812"
4"	1.125"	.875"

The chart to the left shows nominal thread engagement for hand-tight and pressure-tight joints using national taper pipe threads (NPT). It should be noted that many factors can affect the engagement lengths of pipe threads, such as sharpness and adjustment of the dies used to cut the threads. The individual technique of the machinist or plumber operating the threading equipment can also affect the thread engagement. Burrs and dirt on the finished threads will usually affect engagement and prevent proper seating. Before make-up, both male and female threads should be thoroughly cleaned and free of any dirt, chips or burrs. Generally, it's a good idea to use an ordinary wire brush to clean external threads and a circular wire brush mounted in a hand drill to clean internal threads.



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