



ATI Flowform Technology for Oil & Gas Applications

Flowforming is an advanced, cold metal forming process used to manufacture dimensionally precise, seamless, round, hollow components which can often be an economical alternative to machining bar. Flowforming offers a number of benefits for Oil & Gas applications:

Improve Material Yield - Lower Component Cost	Flowforming reduces the amount of material lost through conventional machining operations
Improve Dimensional Accuracy	Precise dimensional control improves engineering efficiency when designing in OCTG components
Tailored Cold Work - Custom Mechanical Properties	Exact control of wall deformation (cold work) combined with post-flowform NACE heat treatments allow for tailored, mechanical properties in specified alloys
Reduce Grain Structure	Flowforming refines the grain structure of metals resulting in improved fatigue resistance of critical, high-performance components
Seamless Tube - 40' Lengths	Flowforming allows for the manufacture of seamless, corrosion resistant alloy tubes up to 610mm (24") in diameter and 12m (40') long
Integral Flanges - No Welds	Flowforming can create single-piece tubulars with integrated flanges, no welds
Engineered Tubulars	Flowforming produces tubular products from corrosion-resistant, high-strength materials that could not be otherwise economically produced made of Titanium, Nickel, Cobalt (ATI 35N™) and Non-Magnetic Stainless Steel alloys
Secure, Integrated Supplier	From melt to finished component, ATI has a secure supply chain with redundant capabilities and integrated flow paths capable of serving critical markets with reliable delivery and unmatched product breadth



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Allegheny Technologies Incorporated
1000 Six PPG Place
Pittsburgh, PA 15222-5479 U.S.A.
www.ATImetals.com



Technical Data Sheet

Standard Sizes

Inner Diameter:	0.250" to 23"	6.35mm to 584mm
Wall Thickness:	0.008" to 1.5" wall	0.20mm to 38mm
Length:	up to 40 feet long	12 meters

Standard Tolerances

Inner Diameter:	± 0.005"	±0.127mm
Wall Thickness:	± 0.005"	±0.127mm
Straightness:	0.001" per foot	0.076mm per meter

Exact tolerances are dependent on the material, size and thickness of the components as well as any post-flowform heat treatment distortion.

ATI Corrosion Resistant Alloys for Oil & Gas

Stainless		Cr	Ni	Mo	Other	PREw
ATI 304L™	UNS S30403	18	8	-		18
ATI 316L™	UNS S31603	17	10	2		24
ATI 317L™	UNS S31703	18	12	3		28
ATI 321™	UNS S32100	17	17	-	Ti	17
ATI 347™	UNS S34700	17	17	-	Nb	17
ATI 310™	UNS S31000	25	20	-		25
Specialty Stainless						
ATI Datalloy 2®	--	15	2	2	0.4N	29
ATI Staballoy® AG17®	--	17	0.5	-	0.5N	25
AL-6XN®	UNS N08367	20.5	24	6.2	0.2N	45
AL-6XN Plus®	UNS N08367	21.8	25	6.7	0.2N	48
ATI 904L™	UNS N08904	20	25	4	1.5Cu	35
Duplex						
ATI 2205™	UNS S32205	22	5	3	0.17N	36
Lean Duplex						
ATI 2102®	UNS S82011	21.5	0.5	-	0.22N	26
ATI 2003®	UNS S32003	22	3.5	1.7	0.18N	30
Super Duplex						
Zeron® 100	UNS S32760	25.5	6	3.7	0.24N	42
Nickel Alloy						
ATI 276™	UNS N10276	16	60	16	3.5W	75
ATI 625™	UNS N06625	21	63	9	3.7Nb	50
ATI 718™	UNS N07718	18	53	3	5.3Nb	28
ATI 718-OP®	UNS N07718	19	53	3	5Nb	29
ATI 725™	UNS N07725	21	57	9	Ti+Nb	47
ATI 825™	UNS N08825	21	41	3	Cu+Ti	31
ATI 925™	UNS N09925	21	44	3	Cu+Ti	31
ATI 59™	UNS N06059	23	59	16		75
ATI 35N™	UNS R30035	20	35	10	35Co	52
ATI 22™	UNS N06022	21	60	14	3W	72
ATI G3™	UNS N06985	22	49	7	5Co,1W	47
ATI 28™	UNS N08028	27	30	3	1Cu	39

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