



WELLHEAD EQUIPMENT TECHNOLOGY COMPANY

STANDARD PRODUCTS FOR API 6A-20th Edition Service Conditions



H2S BELOW 0.05 psia NON-NACE <small>Based on equipment working pressure</small>		H2S 0.05 to 0.5 psia NACE sour service <small>Based on equipment working pressure</small>		H2S 0.5 to 1.5 psia NACE sour service <small>Based on equipment working pressure</small>		H2S above 1.5 psia NACE sour service <small>Based on equipment working pressure</small>						
Non-Corrosive	API service:	AA <small>Non-Sour & Non-Corrosive</small>	CO2 below 7 psia & H2S below 0.05 psia	API service:	DD-0.5 <small>Sour & Non-Corrosive</small>	CO2 below 7 psia & H2S 0.05 to 0.5 psia	API service:	DD-1.5 <small>Sour & Non-Corrosive</small>	CO2 below 7 psia & H2S 0.5 to 1.5 psia	API service:	DD-NL <small>Sour & Non-Corrosive</small>	CO2 below 7 psia & H2S above 1.5 psia
	Part	Material		Part	Material		Part	Material		Part	Material	
	General API material requirements for this material class											
	Bodies & Bonnets	Carbon or Low-Alloy Steel		Bodies & Bonnets	Carbon or Low-Alloy Steel(AISI 4130)		Bodies & Bonnets	Carbon or Low-Alloy Steel(AISI 4130)		Bodies & Bonnets	Carbon or Low-Alloy Steel(AISI 4130)	
	Internal Parts	Carbon or Low-Alloy Steel		Internal Parts	Carbon or Low-Alloy Steel(AISI 4130)		Internal Parts	Carbon or Low-Alloy Steel(AISI 4130)		Internal Parts	Carbon or Low-Alloy Steel(AISI 4130)	
	Tubing Hanger Mandrels & Stems	Carbon or Low-Alloy Steel		Tubing Hanger Mandrels & Stems	Carbon or Low-Alloy Steel(AISI 4130)		Tubing Hanger Mandrels & Stems	Carbon or Low-Alloy Steel(AISI 4130)		Tubing Hanger Mandrels & Stems	Carbon or Low-Alloy Steel(AISI 4130)	
	*SS can be used for internal parts, tubing hanger mandrels, or stems											
	WETCO Products											
	Wellhead, Tbg Head	AA(Carbon or Low-Alloy Steel)		Wellhead, Tbg Head	Carbon or Low-Alloy Steel(AISI 4130)		Wellhead, Tbg Head	Carbon or Low-Alloy Steel(AISI 4130)		Wellhead, Tbg Head	Carbon or Low-Alloy Steel(AISI 4130)	
	Adpt, Tee, Tree Cap	AA(Carbon or Low-Alloy Steel)		Adpt, Tee, Tree Cap	Carbon or Low-Alloy Steel(AISI 4130)		Adpt, Tee, Tree Cap	Carbon or Low-Alloy Steel(AISI 4130)		Adpt, Tee, Tree Cap	Carbon or Low-Alloy Steel(AISI 4130)	
Valves 5M & below	AA(Carbon or Low-Alloy Steel)		Valves 5M & below	DD-NL		Valves 5M & below	DD-NL		Valves (all):	chk w/ eng-trims vary by model & working pressure		
Valves 10M & up:	BB w/17-4 SS stem		Valves 10M & up:	EE-0.5 w/ 17-4 SS stem		Valves 10M & up:	EE-1.5 w/ 410 SS stem		Tbg Hgr	DD-NL (AISI 4130 ,80 ksi max)		
Tbg Hgr	AA(Carbon or Low-Alloy Steel 110 ksi)		Tbg Hgr	DD-NL (AISI 4130 ,80 ksi max)		Tbg Hgr	DD-NL (AISI 4130 ,80 ksi max)					
*use FF-0.5 (17-4 SS) tbg hanger if >80 ksi req'd												
Slightly Corrosive	API service:	BB <small>Non-Sour & Slightly Corrosive</small>	CO2 7 to 30 psia & H2S below 0.05 psia	API service:	EE-0.5 <small>Sour & Slightly Corrosive</small>	CO2 7 to 30 psia & H2S 0.05 to 0.5 psia	API service:	EE-1.5 <small>Sour & Slightly Corrosive</small>	CO2 7 to 30 psia & H2S 0.5 to 1.5 psia	API service:	EE-NL <small>Sour & Slightly Corrosive</small>	CO2 7 to 30 psia & H2S above 1.5 psia
	Part	Material		Part	Material		Part	Material		Part	Material	
	General API material requirements for this material class											
	Bodies & Bonnets	Carbon or Low-Alloy Steel		Bodies & Bonnets	Carbon or Low-Alloy Steel(AISI 4130)		Bodies & Bonnets	Carbon or Low-Alloy Steel(AISI 4130)		Bodies & Bonnets	Carbon or Low-Alloy Steel(AISI 4130)	
	Internal Parts	Stainless Steel		Internal Parts	Stainless Steel(AISI 410)		Internal Parts	Stainless Steel(AISI 410)		Internal Parts	Stainless Steel(AISI 410)	
	Tubing Hanger Mandrels & Stems	Stainless Steel		Tubing Hanger Mandrels & Stems	Stainless Steel(AISI 410)		Tubing Hanger Mandrels & Stems	Stainless Steel(AISI 410)		Tubing Hanger Mandrels & Stems	CRA(Inconel 718, ...)	
	*use FF-0.5 (17-4 SS) tbg hanger if >80 ksi req'd											
	WETCO Products											
	Wellhead, Tbg Head	AA(Carbon or Low-Alloy Steel)		Wellhead, Tbg Head	Carbon or Low-Alloy Steel(AISI 4130)		Wellhead, Tbg Head	Carbon or Low-Alloy Steel(AISI 4130)		Wellhead, Tbg Head	Carbon or Low-Alloy Steel(AISI 4130)	
	Adpt, Tee, Tree Cap	AA(Carbon or Low-Alloy Steel)		Adpt, Tee, Tree Cap	Carbon or Low-Alloy Steel(AISI 4130)		Adpt, Tee, Tree Cap	Carbon or Low-Alloy Steel(AISI 4130)		Adpt, Tee, Tree Cap	Carbon or Low-Alloy Steel(AISI 4130)	
Valves(all)	BB		Valves(all)	EE-0.5 w/17-4 SS stem		Valves(all)	EE-1.5 w/ 410 SS stem		Valves(all)	EE-NL w/ Inconel 718 stem		
Tbg Hgr	CC(17-4 SS)		Tbg Hgr	FF-0.5(17-4 SS)		Tbg Hgr	FF-1.5(410 SS)		Tbg Hgr	HH-NL (Inconel 718)		
*use HH-NL (Inconel 718) tbg hanger if >80 ksi req'd												
Moderately to Highly Corrosive	API service:	CC <small>Non-Sour & Moderately to Highly Corrosive</small>	CO2 above 30 psia & H2S below 0.05 psia	API service:	FF-0.5 <small>Sour & Moderately to Highly Corrosive</small>	CO2 above 30 psia & H2S 0.05 to 0.5 psia	API service:	FF-1.5 <small>Sour & Moderately to Highly Corrosive</small>	CO2 above 30 psia & H2S 0.5 to 1.5 psia	API service:	FF-NL <small>Sour & Moderately to Highly Corrosive</small>	CO2 above 30 psia & H2S above 1.5 psia
	Part	Material		Part	Material		Part	Material		Part	Material	
	General API material requirements for this material class											
	Bodies & Bonnets	Stainless Steel		Bodies & Bonnets	Stainless Steel(AISI 410)		Bodies & Bonnets	Stainless Steel(AISI 410)		Bodies & Bonnets	Stainless Steel(AISI 410)	
	Internal Parts	Stainless Steel		Internal Parts	Stainless Steel(AISI 410)		Internal Parts	Stainless Steel(AISI 410)		Internal Parts	Stainless Steel(AISI 410)	
	Tubing Hanger Mandrels & Stems	Stainless Steel		Tubing Hanger Mandrels & Stems	Stainless Steel(AISI 410)		Tubing Hanger Mandrels & Stems	Stainless Steel(AISI 410)		Tubing Hanger Mandrels & Stems	CRA(Inconel 718, ...)	
	*use FF-0.5 (17-4 SS) tbg hanger if >80 ksi req'd											
	WETCO Products											
	Wellhead, Tbg Head	N/A unless exposed to well flow		Wellhead, Tbg Head	N/A unless exposed to well flow		Wellhead, Tbg Head	N/A unless exposed to well flow		Wellhead, Tbg Head	N/A unless exposed to well flow	
	Adpt, Tee, Tree Cap	Stainless Steel		Adpt, Tee, Tree Cap	FF-NL(AISI 410)		Adpt, Tee, Tree Cap	FF-NL(AISI 410)		Adpt, Tee, Tree Cap	FF-NL(AISI 410), any fittings are AISI 316 SS	
Valves(all)	Stainless Steel		Valves(all)	FF-0.5 w/17-4 SS stem		Valves(all)	FF-1.5 w/ 410 SS stem		Valves(all)	FF-NL w/ Inconel 718 stem		
Tbg Hgr	CC(17-4 SS)		Tbg Hgr	FF-0.5(17-4 SS)		Tbg Hgr	FF-1.5(410 SS)		Tbg Hgr	HH-NL (Inconel 718)		
*use HH-NL (Inconel 718) tbg hanger if >80 ksi req'd												
<p>Note:</p> <ul style="list-style-type: none"> Per API 6A: The user is ultimately responsible for the selection of Material Classes and Temperature Ratings of equipment. The latest edition of NACE MR0175 is referenced by API 6A 20th edition (effective 2-1-05) for sour service, and does not allow 17-4 SS for tubing hanger mandrels or stems above 0.5 psia H2S partial pressure unless the customer supplies or approves material specifications per section 4.2.3.3 to build ZZ trim equipment for a specific application. The manufacturer cannot rate ZZ equipment for a specific H2S partial pressure. Chokes not Included Please contact Engineering at WETCO with any questions about the use of this information 												

	Non-Nace Carbon or Low-Alloy
	Non-Nace Stainless Steel
	AISI 4130 (UNS-G41300)
	AISI 410 (UNS-S41000)
	INCONEL 718 (UNS-N07718)