

**PIPING MATERIAL SPECIFICATION: ACA**  
**150# BUTTWELD/SCREWED**

9/14/2011

Project Location: \_\_\_\_\_  
 Project Name: \_\_\_\_\_  
 Prepared By: \_\_\_\_\_

Requisition: \_\_\_\_\_  
 Project No: \_\_\_\_\_  
 Approved By: \_\_\_\_\_

Pipe and Fittings				
SERVICE	Hydrocarbon Process and Utility (Buttweld/Screwed) Sweet hydrocarbon			
RATING	150#ANSI Primary Flange			
LIMITS	285 psig @ -20°F to 100°F; Corrosion Allowance: 0.05” 260 psig @ 200°F 230 psig @ 300°F 170 psig @ 500°F			
ITEM	SIZE	RATING (2)	TYPE	SPECIFICATION
Pipe (1) (8)	½” thru 2”	XS	Seamless	ASTM A-106,Gr B
	2 1/2” thru 10”	STD	Seamless	ASTM A-53, Gr B
	12”	.375” Wt.	Seamless	ASTM A-53, Gr B
	14” thru 16”	.250” Wt.	Seamless	ASTM A-53, Gr B
	18” thru 24”	(2)	Seamless	ASTM A-53, Gr B
Fittings Ells, Tees & Reducers Nipples Swages Unions (3) Plugs Threadolet Weldolet				
	½” thru 1 1/2”	3000#	Screwed	ASTM A-105
	2 1/2” thru 24”	(2)	Butt Weld	ASTM A-234,Gr WPB
	½” thru 1 1/2”	S/80	Seamless	ASTM A-106, Gr B
	½” thru 1 1/2”	XH	Seamless	ASTM A-106, Gr B
	½” thru 1 1/2”	3000#	Screwed	ASTM A- 105
	½” thru 1 1/2”	Solid Steel	Hex Head	ASTM A-105
	½” thru 1 1/2”	3000#	Screwed	ASTM A-105
	2 1/2” thru 16”	Match Pipe	Butt Weld	ASTM A-105
Flanges (5)	½” thru 1-1/2”	150#ANSI	TH’D-RF	ASTM A-105
	2” thru 24”	150#ANSI	WN-RF	ASTM A-105
Bolts	Stud bolts ASTM A-193, Gr B7 with 2 heavy hex nuts ASTM A-194 Gr 2H			
Gaskets	1/8” flexitallic type CG, 304 SS			
Notes:				
1.	Based on full flange rating. Check pressure design for most economical wall thickness.			
2.	G.J. steel-to-steel seat.			
3.	Standard finish with bore to match pipe.			
4.	Threaded connections shall be made using Key Graphite Paste.			
5.	Examination and inspection of piping components and weldments shall be in accordance with ANSI 31.3 latest edition, paragraphs 336 and 337.			
6.	Stress Relief is not required.			
7.	ERW pipe can be used in low pressure service			
8.	2” Threaded fittings are acceptable with prior WGR approval.			

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<b>VALVES</b>
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ITEM	SIZE	RATING	END CONN	MFG. FIG. NO. ( 1 )
Gate (2)	½" thru 1-1/2"	800#	Scrd.	
	2" thru 24"	150#ANSI	Flng.	Powell 1503N-P140
Ball (3)	½" thru 1-1/2"	600#	Scrd.	
(5)	2" thru 8"	150#ANSI	Flng.	
(5)	8" thru 14"	150#ANSI	Flng.	
	2" thru 16"	300#ANSI	Flng.	
Globe	½ "thru 1-1/2 "	800#	Scrd.	RP & CF-80-D
	2" thru 12"	150#ANSI	Flng.	Powell 1531-P140
Check				
H Lift	½" thru 1-1/2"	800#	Scrd.	Vogt 701
V Ball	½" thru 1-1/2"	800#	Scrd.	Vogt 5-4853
Swing	2" thru 14"	150#ANSI	Flng.	Powell 1561A-P140
Wafer	2" thru 24"	150#ANSI	Wafer	Gulf MB-30-2027-WR
Piston	2" thru 14"	150#ANSI	Flng.	
Plug (4)	½" thru 1-1/2"	300#	Scrd.	Nordstrom 2024
	2" thru 4"	150#ANSI	Flng.	Nordstrom 2025
	6" thru 24"	300#ANSI	Flng.	Nordstrom 4249
Butterfly (3)	3" thru 6"	150#ANSI	Wafer	
	8" thru 24"	150#ANSI	Wafer	
Vents & Drains	½" thru 1-1/2"	800#	FxF Scr'd.	
Needle	½"	6000#	FxF Scr'd	

**Notes :**

1.	Suggested manufacturer's names and valve numbers identify construction and quality of materials required. Other valves of the same or better construction may be considered.
2.	Gear operator 14" and larger.
3.	Gear operator 8" and larger.
4.	Gear operator 6" and larger.
5.	Generally use reduced port (Long Pattern) ball valves, 8" and above use full port ball valves, except when used as a block valve around PSV's or rupture discs. Then use full port valves that are lockable.

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BRANCH CONNECTION																
← BRANCH →																
	24	20	18	16	14	12	10	8	6	4	3	2	1 1/2	1	3/4	1/2
24	T	RT	RT	RT	RT	RT	W	W	W	W	W	W	Th	Th	Th	Th
20		T	RT	RT	RT	RT	W	W	W	W	W	W	Th	Th	Th	Th
18			T	RT	RT	RT	RT	W	W	W	W	W	Th	Th	Th	Th
16				T	RT	RT	RT	RT	W	W	W	W	Th	Th	Th	Th
14					T	RT	RT	RT	W	W	W	W	Th	Th	Th	Th
12						T	RT	RT	RT	W	W	W	Th	Th	Th	Th
10							T	RT	RT	W	W	W	Th	Th	Th	Th
8								T	RT	RT	W	W	Th	Th	Th	Th
6									T	RT	RT	W	Th	Th	Th	Th
4										T	RT	RT	Th	Th	Th	Th
3											T	RT	Th	Th	Th	Th
2												T	RT	Th	Th	Th
1 1/2													T	RT	TS	TS
1														T	RT	TS
3/4															T	RT

**T** = Full Size Tee  
**RT** = Reducing Tee  
**TS** = Tee with Swage  
**Th** = Threadolet  
**W** = Weldolet

**Notes:**

- Couplings may be substituted for Threadolets when necessary provided the nominal run size is at least four times and nominal branch size.
- For conditions of pulsation , vibration, or high bending moment, use branch connections specified for spec. DCA ( 600# Buttweld/screwed).
- Deviations from the above table may be allowed provided that:  
 A: Branch connection is in accordance with ANSI B31.3 and  
 B: Branch connection is approved by WGR