OXYGEN
0 to 100 Psig
Ambient Temperature

Pipe			
	1" and Under	P-28B	ASTM A-106, Grade B, extra-strong seamless steel pipe.
	1½"	P-27B	ASTM A-106, Grade B, standard weight seamless steel pipe.
	2" and Over	P-3B	ASTM A-53 or API-5L, Grade B, Schedule 40, seamless steel pipe, open hearth or electric furnace steel.
Fittings	E = 90° Ell, L = 45° Ell, T = Tee, R = Reducer		
®	1½" and Under	ELTR-64A	3000-lb. forged steel socket welding fittings, ASTM A-181, Grade II.
®		C-14B	3000-lb. forged steel socket welding couplings, ASTM A-181, Grade II.
		U-10	3000-lb. socket welding FS union, moly steel seat, Rockwood Type 603B.
	1½" and Over	ELTR-15	Standard weight seamless steel welding fittings, ASTM A-234, Grade WPA or WPB, ASA B16.9.
	Flanges	F-3-RF	150-lb. raised face blind falnge, ASTM A-181, Grade I or II, ASA B16.5.
		F-24-RF	150-lb. raised face welding neck flange, ASTM A-181, Grade I or II, ASA B16.5, bore to match welding fittings.
	Branch Connections	BC-18W	For welded piping, branch lines shall be welded in without reinforcement regardless of size combination. For threaded branch connection, use Thredolet or 3000-lb. full coupling welded to header. For socket welding branch connections, use Sockolet or socket welding coupling welded to header.
	Gaskets	G-4	Standard flat ring gasket, 1/16 inch thick asbestos, Garlock 900 or equal.
	Joint Compound	JC-15	Teflon tape 1/2 inch by 3 mil thickness, Scotch Brand 547.
	Flange Bolts	B-3	ASTM A-193, Grade B-7, alloy steel bolt studs with ASTM A-194, Grade 2H, heavy hex nuts. (Note: For temperature range from -50°F to +1000°F inclusive.)

Valves

1½" and Under	V-474 (Gate)	800-lb. socket weld, OS/Y, solid wedge gate valve, carbon steel body, 13 chrome alloy steel trim with hard-faced seat rings.			
		Crane	3605XU	RP-C	F-57-DE
		Hancock	950W	Smith	800SW
		Jenkins	8800W	Vogt	SW-12111-18
		OIC	1117-W	Worcester	600-HF
		Pacific	596-2		
1½" and 2"	V-617 (Gate)	150-lb. flanged, OS/Y, gate valve, carbon steel body, 13 chrome alloy steel trim with hard-faced seats.			
		Crane	3510XU	Pacific	3150-2
		Hancock	950-F-15	RP-C	F-158-DE
		Jenkins	8815	Smith	815
		OIC	1100-W		
2" and Over	V-51 (Gate)	150-lb. flanged, OS/Y, wedge gate valve, carbon steel body, 13 chrome alloy steel trim.			
		Chapman	150	Pacific	150-1
		Crane	47X	Powell	1503
		Jenkins	1009-C	RP-C	1501D
		Lunk	1751B2	Stockhma	15-OF-1
		OIC	1502-C	Walworth	5202-F-AA
1½" and Under	V-472 (Globe)	600-lb. socket welding, OS/Y, flocontrol type globe valve, carbon steel body, chrome stainless trim.			
		Hancock	5525W		
	V-595 (Globe)	600-lb. socket welding, OS/Y, globe valve, carbon steel body, 13 chrome alloy steel trim, with hard-faced seat.			
		Crane	3652XW	OIC	1717-W
		Hancock	5500-W	RP-C	F-81DE
		Jenkins	8G80W	Smith	G-80-1
1½" and Over	V-36 (Globe)	150-lb. flanged, OS/Y, globe valve, carbon steel body, 13 chrome alloy steel trim.			
		Chapman	153-A	Pacific	160-1
		Crane	143X	Powell	1531-P
		Jenkins	1040-C	RP-C	1511D
		Lunk	1755B2	Stockham	15-GPF-1
		OIC	1532-C	Walworth	5275-F-AA

Valves (Continued)

1" and Under	V-594 (Check)	600-lb. socket welding, horizontal lift, check valve, carbon steel body, 13 chrome alloy steel trim, bolted cap.			
		Crane	3682X	RP-C	F-91-DE
		Jenkins	8C80W	Smith	C80R
		Pacific	3682-1	Vogt	SW 6083-90
1½" and Over	V-46 (Check)	150-lb. flanged, horizontal swing, check valve, carbon steel body, 13 chrome alloy steel trim, bolted cap.			
		Chapman	151-A	Pacific	180-1
		Crane	147X	Powell	1561-A
		Jenkins	1025-C	RP-C	1531D
		Lunk	1759B2	Stockham	15-SF-1
		OIC	1572-C	Walworth	5341-F-AA

Notes:

Every precaution must be taken to keep piping system free of all hydrocarbons (grease, oil, etc.). The following precautions shall be taken:

Pipe:

1. All pipe shall be degreased in pickling vat using a caustic solution as recommended by Dow. Pipe shall then be rinsed thoroughly in clean, hot water. Immediately after cleaning, the pipe ends shall be temporarily capped or plugged to prevent recontamination before final assembly. Each length of pipe shall be marked, using a color code or other means of identification. No pipe or piece of pipe shall be used in the piping system which does not have this identification mark.

2. After leaving pickling vat, it shall be the contractor's responsibility to keep the internal and external surfaces of this pipe free of all hydrocarbons or other foreign matter. Open ends must be plugged at the end of each work day.

3. Workmen shall wear clean gloves when handling this pipe.

4. Carbon tetrachloride shall be used as a lubricant on dies in cutting threads. All threads shall be wiped free of lubricant after removing dies.

5. Ends of pipe shall be thoroughly reamed to remove burrs.

6. Cyl-Seal as specified in Engr. Spec. 48-855 shall be used as a pipe joint compound. It shall be applied on the male thread only, starting from the second thread from the end of the pipe.

Notes (Continued)

Pipe (Continued)

7. After piping has been installed and tested, carbon tetrachloride shall be circulated through the piping system to insure against any hydrocarbons remaining in the piping. The contractor shall furnish the necessary labor and material to connect up the pump, flush the piping, and drain the system.

Valves:

1. Valves which have been especially processed for oxygen service and sealed by the manufacturer shall be kept sealed until actual installation in the line.

2. Valves which have not been especially processed and sealed for oxygen service shall be processed in the field as follows:

   a. All valves shall be dismantled and degreased, using perchlorethylene or other suitable solvent. This work shall be done on the job site. Each valve will be inspected by designated Dow personnel before being reassembled.

   b. Valve stem packing shall be removed during this operation and replaced with Johns-Manville MX-3681 or equal. Packing shall be free of all hydrocarbons. Spool form or cut ring packing may be used. Valves shall be handled in the same manner as pipe; clean gloves, etc.

   c. Ends of valve shall be plugged after reassembly to eliminate possibility of any foreign matter entering valve.

   d. Nameplate shall be stamped with the symbol O_2 in the presence of inspector upon completion of reassembly. Valves shall be color coded, same as pipe.

Fittings:

1. All fittings shall be degreased and thoroughly cleaned inside and out, using perchlorethylene or other suitable solvent. This work shall be done on the job site immediately prior to installation to insure that all fittings are degreased and clean when installed. Fittings shall be color coded, same as pipe, and shall be handled with clean gloves.