| SIZE | PIPE (NOTES: E18,E50,S98) |
|---|---|
| 1/2 | SCH 160, ASTM A 106 Gr B/ A 53 Gr B / API 5L Gr B , SMLS, GALVANIZED, THRD (NOTE: G1) |
| 1/2-2 | SCH 80, ASTM A 106 Gr B/ A 53 Gr B / API 5L Gr B , SMLS, GALVANIZED, THRD |
| 3-24 | STD W.T . CS, ASTM A53B/A106B/API 5L GR B, WLD, ERW/EFW, (J.F.-0.85) BEVELED ENDS |
| ABOVE 24 | CALC W.T., ASTM A672-C65 CL 13, EFW (J.F.=0.85), BEVELED ENDS (NOTE: E1,E20) |

| SIZE | FITTINGS (NOTE: E18) |
|---|---|
| 1/2-2 | CLASS 3000, GALVANIZED, ASTM A105, SCREWED FITTINGS, ASME B16.11 |
| | CLASS 3000, CS GALVANIZED, ASTM A105, SCRD PLUG, ASME B16.11 |
| | CLASS 3000 CS GALVANIZED, ASTM A105, SCRD GJ UNION WITH INTEGRAL STEEL SEATS, MSS SP-83 |
| ALL | GALVANIZED, ASTM A234-WPB-S, SMLS, SWAGES (END PREPARATION PER PIPE SPEC), MSS SP-95 |
| 1/2-8 | ASTM A105, FORGED INTEGRALLY REINFORCED BUTTWELD FITTING, MSS SP-97, SEE BRANCH CONNECTION TABLE |
| 3 - 24 | ASTM A234-WPB-W, BW, ASME B16.9 |
| ABOVE 24 | ASTM A234-WPB-W, BW, ASME B16.9 |
| ABOVE 48 | ASTM A516-70 MITERED FITTINGS (ELBOW- 3 PIECE, 90 DEG LR / 2 PIECE, 45 DEG LR) (NOTE: E20) |

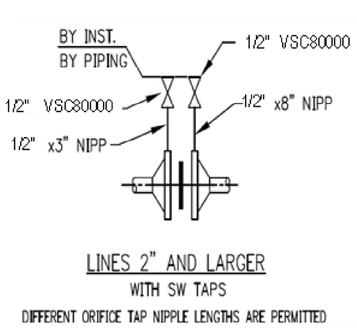
| SIZE | FLANGES (NOTE: E32) |
|---|---|
| 1/2-2 | CLASS 150, ASTM A105 GALVANIZED, RF, SCRD, ASME B16.5 |
| | CLASS 150, ASTM A105 GALVANIZED, RF, BLIND, ASME B16.5 |
| 3-24 | CLASS 150, ASTM A105, RFWN, ASME B16.5 |
| | CLASS 150, ASTM A105, RF, SLIP-ON, ASME B16.5 (NOTE: E3) |
| | CLASS 150, ASTM A105, RF, BLIND, ASME B16.5 |
| | CLASS 150, ASTM A105, FF, FLANGE, ASME B16.5 |
| | CLASS 150, ASTM A105, FF, BLIND, ASME B16.5 |

| SIZE | ORIFICE FLANGES |
|---|---|
| 2 | CLASS 300, ASTM A105, RF, SCREWED, GALV, ORIFICE FLG. SET W/SW TAPS, ASME B 16.36 |
| 3 - 24 | CLASS 300, ASTM A105, RF,WN, ORIFICE FLG. SET W/SW TAPS, ASME B 16.36 |

| | SIZE | TAG | VALVES |
|---|---|---|---|
| GATE | 1/2-1 1/2 | VSC80000 | CLASS 800, CS, THR'D ENDS, BOLTED BONNET, API 602, API 624, LOW EMIS |
| | 1/2-2 | VSC10200 | CLASS 150, CS, RF FLG, BOLTED BONNET, API 602, API 624, LOW EMIS (NOTE: E17) |
| | 2-24 | VSC10204 | CLASS 150, CS, RF FLG, BOLTED BONNET, API 600, API 624, LOW EMIS |
| GLOBE | 1/2-1 1/2 | VSC81000 | CLASS 800, CS, THR'D ENDS, BOLTED BONNET, ASME B16.34, API 624, LOW EMIS |
| | 1/2-2 | VSC11209 | CLASS 150, CS, RF FLG, BOLTED BONNET, ASME B16.34, API 624, LOW EMIS (NOTE: E17) |
| | 2-24 | VSC11200 | CLASS 150, CS, RF FLG, BOLTED BONNET, ASME B16.34, API 624, LOW EMIS |
| CHECK | 1/2-1 1/2 | VSC87000 | CLASS 800, CS, LIFT CHECK, SPRING LOADED, THR'D ENDS, BOLTED BONNET, API 602, ASME B16.10 |
| | | VSC82000 | CLASS 800, CS, SWING CHECK, THR'D ENDS, BOLTED BONNET, API 602, ASME B16.10 (NOTE: E43) |
| | 1/2-2 | VSC17200 | CLASS 150, CS, LIFT CHECK, SPRING LOADED, RF FLG, BOLTED BONNET, ASME B16.34, ASME B16.10 (NOTE: E17) |
| | | VSC12200 | CLASS 150, CS, SWING CHECK, RF FLG, BOLTED BONNET, API 602, ASME B16.10 (NOTES: E17,E43) |

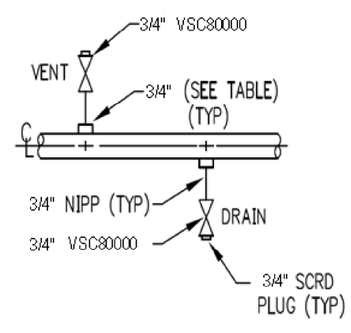
| | SIZE | TAG | VALVES |
|---|---|---|---|
| CHECK | 2-24 | VSC12208 | CLASS 150, CS, SWING CHECK, RF FLG, BOLTED BONNET, API 594, TYPE B, ASME B16.10 (NOTE: E43) |
| | 2-12 | VSC13900 | CLASS 150, CS, DUAL PLATE CHECK, SPRING LOADED, RF LUG WAFER, API 594, API 594 (NOTE: E66) |
| | 8-24 | VSC13203 | CLASS 150, CS, DUAL PLATE CHECK, SPRING LOADED, DOUBLE RF FLG'S, API 594, API 594 |
| BALL | 1/2-2 | VSC65001 | CLASS 600, CS, THR'D ENDS, STD PORT, FLOATING BALL, RPTFE SEATS, ASME B16.34, API 607 FIRE TESTED |
| | 2-8 | VSC15200 | CLASS 150, CS, RF FLG, STD PORT, FLOATING BALL, RPTFE SEATS, API 608, SHORT PATTERN, API 607 FIRE TESTED |
| BUTTERFLY | 2-36 | VSC16901 | CLASS 150, CS, DOUBLE OFFSET, RF TAP'D LUG, ASME B16.5 & B16.47 SERIES B, API 609 F2F, API 609, CAT B (NOTES: G48,E66) |
| | 3-24 | VSC16212 | CLASS 150, CS, TRIPLE OFFSET, DB'L RF FLG, SHORT PATTERN, API 609, CAT B |

## ORIFICE ASSEMBLY (NOTES: G4,E26)



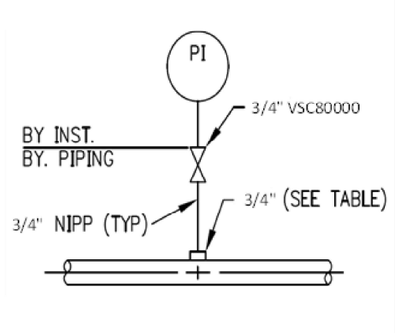

PIPE NIPPLES ARE MIN. SCH. 160

## VENT / DRAIN ASSEMBLY (NOTES: G4,E26)




PIPE NIPPLES ARE MIN. SCH. 80

## PRESSURE INSTRUMENTS (NOTES: G4,E26)




PIPE NIPPLES ARE MIN. SCH. 80

## GASKETS (NOTES: E20,E27,E69)

**G-153**

CLASS 150, SPIRAL WOUND, 100% FLEX GRAPHITE FILLER, 316 SS WINDINGS, 316 SS INNER RING, CS OUTER GAGE RING, ASME B16.20

**G-169**

CLASS 150, SPIRAL WOUND, 100% FLEX GRAPHITE FILLER, 304 SS WINDINGS, CS OUTER GAGE RING, 304 SS INNER RING, ASME B16.20

**G-163**

FLAT FACE FLANGE APPLICATIONS, 1/16" THK, FULL FACE, COMP GRAPHITE, 316 TANGED INSERT GRAFOIL GHE, ASME B16.21 (NOTE: E32)

## BOLTING (NOTE: E21)

ASTM A193-B7/ASTM A194-2H NUTS

## GENERAL NOTES

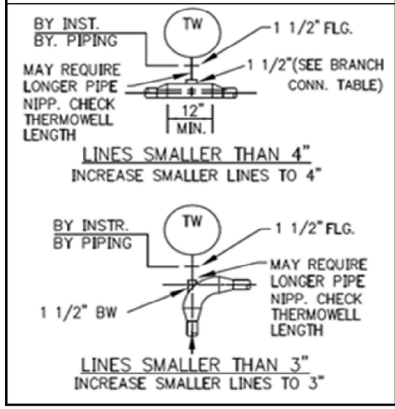
**G1** FOR USE WITH ORIFICE TAPS ONLY

**G4** SEE BRANCH REINFORCEMENT NOTES ON SHEET 2 FOR PIPE SUPPORT REQUIREMENTS

**G48** VALVES LARGER THAN 24" SHALL BE FURNISHED WITH ASME B16.47 SERIES B FLANGES

**G73** EXTENDED BRANCH REINFORCEMENT CHART CONNECTIONS ABOVE 24" ARE BASED ON 0.375" MINIMUM PIPE WALL THICKNESS. FULL ENCIRCLEMENT SADDLES MAY BE REPLACED WITH REDUCING TEES IF AVAILABLE PER ASME B16.9

## TEMPERATURE INSTRUMENT (NOTES: E26)




## BRANCH REINFORCEMENT DETAILS (NOTES: G4,G73,E30)

RT=ASME B16.9 Reducing Tee
RTH=ASME B16.11 Screwed Reducing Tee
T=ASME B16.9 Tee
TH=ASME B16.11 Screwed Tee
TOL=Forged Integrally Reinforced Threaded Fitting
W=ASME B16.11 Forged Integrally Reinforced Buttweld Fitting
P=Fabricated Reinforced Branch Connection Pad (RePad)
F=Fabricated Branch Full Encirclement Saddle Reinforcement

Optional: 'W' Style Fittings May Be Replaced With An Alternate Reducing Tee or RePad

| BRANCH SIZE | 48" | 42" | 36" | 30" | 24" | 20" | 18" | 16" | 14" | 12" | 10" | 8" | 6" | 4" | 3" | 2" | 1 1/2" | 1" | 3/4" | 1/2" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 48" | T | | | | | | | | | | | | | | | | | | | |
| 42" | RT | T | | | | | | | | | | | | | | | | | | |
| 36" | RT | RT | T | | | | | | | | | | | | | | | | | |
| 30" | RT | RT | RT | T | | | | | | | | | | | | | | | | |
| 24" | RT | RT | RT | RT | T | | | | | | | | | | | | | | | |
| 20" | P | P | RT | RT | RT | T | | | | | | | | | | | | | | |
| 18" | P | P | RT | RT | P | RT | T | | | | | | | | | | | | | |
| 16" | P | P | P | RT | P | P | RT | T | | | | | | | | | | | | |
| 14" | P | P | P | P | P | P | P | RT | T | | | | | | | | | | | |
| 12" | P | P | P | P | P | P | P | P | RT | T | | | | | | | | | | |
| 10" | P | P | P | P | P | P | P | P | P | RT | T | | | | | | | | | |
| 8" | W | W | W | W | W | W | W | W | W | W | RT | T | | | | | | | | |
| 6" | W | W | W | W | W | W | W | W | W | W | W | RT | T | | | | | | | |
| 4" | W | W | W | W | W | W | W | W | W | W | W | W | RT | T | | | | | | |
| 3" | W | W | W | W | W | W | W | W | W | W | W | W | RT | RT | T | | | | | |
| 2" | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | RTH | TH | | | |
| 1 1/2" | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | RTH | TH | | | |
| 1" | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | RTH | RTH | TH | | |
| 3/4" | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | TOL | RTH | RTH | RTH | TH | |
| 1/2" | | | | | | | | | | | | | | | | | | | | TH |

HEADER SIZE

## SERVICE NOTES

**S93** THIS SPECIFICATION IS DESIGNED FOR PRESSURE CONTAINMENT ONLY. ADDITIONAL THICKNESS MAY BE REQUIRED TO WITHSTAND THE OVERBURDEN OR LOADING ON UNDERGROUND PIPING.

**S94** BURIED PIPING SHALL BE 100% WELDED CONSTRUCTION. AN EXCEPTION IS ALLOWED FOR TIE-INS TO DISSIMILAR PIPE SYSTEMS.

**S96** VALVES AND FLANGES IN BURIED PIPE SYSTEMS SHALL BE LOCATED IN EXPOSED VALVE BOXES.

**S97** COAT AND WRAP UNDERGROUND PIPING PER LYB STANDARD ES-343

**S98** MINIMUM SIZE OF BURIED PIPE TO BE NPS 3 INCH

## LINE SERVICE SPECIFICATION

lyondellbasell

| RATING |
|---|
| ASME B31.3 |
| ASME B16.5 |
| CLASS 150 |

**SERVICE:** NORMAL FLUID SERVICE

**REV. NO.** 10

**UTILITIES (ABOVE & UNDER GROUND):**
**COOLING/SERVICE WATER/PLANT AIR/NITROGEN/INSTRUMENT AIR**

**SPECIFIED CORR. ALLOW.** 0.0625"

# 1CG1U1

SHT 1 OF 2

# SERVICE RATING CHARTS (NOTES: E22)

| SERVICE RATING CHART #1 | | | |
|---|---|---|---|
| CLASS 150 CARBON STEEL PIPING (P-1) | | | |
| A105 FORGED FLANGES /A216-WCB CAST VALVE FLANGES (1.1) | | | |
| TEMPERATURE (F) | TEMPERATURE [C] | PRESSURE (PSIG) | PRESSURE [kPa] |
| 15 | -10 | 285 | 1964 |
| 100 | 38 | 285 | 1964 |
| 200 | 93 | 260 | 1791 |
| | | | |

TEMPERATURE LIMITS: 15F TO 200F

MAXIMUM HYDROSTATIC TEST PRESSURE = 450 PSIG AT 100F REFERENCE TEMPERATURE

MAX PRESSURE RANGE IS LIMITED BY FLANGE PRESS/TEMP RATINGS

MAX TEMPERATURE IS LIMITED BY SERVICE

REF: ES-320-S FOR ALL NDE REQUIREMENTS BASED ON ACTUAL SERVICE TYPE AND MTL'S OF CONSTRUCTION

UNDERGROUND DESIGN RESTRICTION:

•WHEN CONNECTING TO EXISTING UNDERGROUND PIPING SYSTEMS CHECK FOR THE " WEAKEST LINK" PRESSURE RATING FOR PIPING TIE-INS CONNECTED TO CAST IRON,PLASTICS,ASBESTOS CEMENT OR DUCTILE IRON

•FOR EXISTING UNDERGROUND PIPING SYSTEMS CHECK FOR BELL & SPIGOT OR MECHANICAL JOINT PIPING CONNECTIONS AND PROVIDE THRUST BLOCKS IF NECESSARY TO PREVENT " TELESCOPING"

| SERVICE RATING CHART #2 (API 608) | | | | |
|---|---|---|---|---|
| BALL VALVES WITH PTFE/RPTFE SEATS (PRESSURE IN PSIG) | | | | |
| MAXIMUM BALL VALVE SEAT DIFFERENTIAL PRESSURE (PSIG) AND TEMPERATURE (F) RATING | | | | |
| TEMPERATURE (F) | FLOATING BALL VALVES | | | TRUNNION |
| | 1/2"-2" | 3"-4" | 6" & LARGER | 2" & LARGER |
| 15 | 285 | 285 | 285 | N/A |
| 100 | 285 | 285 | 285 | N/A |
| 150 | 273 | 273 | 240 | N/A |
| 200 | 260 | 260 | 200 | N/A |
| | | | | |
| SYSTEM HYDROTEST MUST BE PERFORMED WITH BALL VALVES IN THE OPEN POSITION | | | | |

TEMPERATURE LIMITS: 15 F TO 200 F.

MAXIMUM TEMPERATURE IS LIMITITED BY UNDERGROUND PIPE TEMPERATURE LIMITS

MAXIMUM VALVE SEAT DIFFERENTIAL PRESSURE RANGE IS LIMITED BY PTFE/RPTFE SEATS

## BRANCH REINFORCEMENT NOTES

(1a) Permitted branch connections include forged, Wrought or Extruded (ASTM F2014) Straight and Reducing Tees, Forged Integrally Reinforced Fittings (OLETS), Reinforcing Pads (RePads) and Full Encirclement Saddles.

(2a) Forged integrally reinforced fittings (W) include: Weldolets (WOL), Flexolets, Latrolets (LOL), Sockolets (SOL), Nipolets, Elbolets (EOL), Sweepolets, Insert Weldolets, etc.

(3a) See Branch Reinforcement Details for RePad and Full Encirclement Saddle (F) diagrams.

(4a) Where noted below, branch connection preference for low stress intensification assumes the branch item meets the necessary condition to produce the lowest stress intensification factor per Table D300 of B31.3.

(5a) For thin walled piping where large OLET fittings can flatten or crush the pipe, evaluate using these branch connections in order of preference: Forged or Wrought Tee, Sweepolet, or a Reinforcing Pad.

(6a) Manifolds or headers with multiple close branch connections may require Extruded Tees fabricated to ASTM F2014. The more closely spaced connections may have higher stress intensification than an Extruded Tee and should not be used where low stress connections are desired (vibration service, etc).

(7a) Weldolets have a tapered flow path at the welded pipe header connection whereas a Flexolet has straight flow path like a half coupling. Flexolets can be ordered with a flat contour for use with flat surfaces.

(8a) For vibration service evaluate using the following branch connection options in order of preference: a Wrought or extruded Straight or Reducing Tee, Sweepolet, Insert Weldolet or a Weldolet.

(9a) For Acoustic Induced Vibration, refer to the requirements of EG3215.

(10a) For installations with high loads or stress, evaluate using the following branch connection options in order of preference: a Wrought or Extruded Straight or Reducing Tee, Sweepolet, Insert Weldolet, or Weldolet.

(11a) Forged or Extruded Tees or integrally reinforced fittings shall be used for branch connections to piping systems in vibration services. Flexolets, half couplings and pad reinforced branch connections shall not be used in vibration services.

(12a) For angled branch connections using a RePad, calculate the RepPad requirements per the applicable ASME Pipe code.

(13a) Two inches and smaller cantilever type branch connections (used for vents, drains and instrument connections) with unsupported length greater than 12 in shall be reinforced using gussets.

(14a) Gusset supports shall be installed in at least two planes on all branch connections, vents and drains.

(15a) Long welding neck flanges may be used for the branch connection takeoff, if it is short, straight, and immediately followed by a flange.

| BRANCH REINFORCEMENT SPECIFICATION EXAMPLES | | |
|---|---|---|
| Forged Integrally Reinforced Fittings | Forged Reinforced Fitting Specification Description Notes | |
| Weldolet, Flexolet, Sockolet, Nipolet, Elbolet, Latrolet, Sweepolet, Brazolet, etc.<br><br>Must include descriptinve connections like: Reducing, BW, SW, THRD, etc before fitting name. See Examples below. | 1. Header Pipe Diameter x Branch Pipe Diameter.<br>2. Fitting Name with BW, SW, THRD, etc; to complete Fitting Description.<br>3. Select Header Pipe Wall Thk x Branch Pipe Wall Thk, or Pressure Class.<br>4. ASTM Material with Type or Grade Classification.<br>5. Length or Special Requirement.<br>6. Branch Connection Bore to Match Branch Pipe I.D. | |
| Forged Reinforced Fitting Examples | | |
| Weldolet (different Header and Branch Thk) | 36" Header x 6" Branch | 36" x 6", Weldolet, 0.250" x STD Wt, A105 |
| BW Latrolet (same Header & Branch Thk) | 12" Header x 1 ½" Branch | 12" x 1 ½", BW Latrolet, S/40, A182, Gr. F304/304L |
| Sockolet (use Pressure Rating only) | 12" Header x 1" Branch | 12" x 1", Socklolet, 6000#, A182, Gr. F316/316L |
| SW Elbolet (use Pressure Rating only) | 8" Header x ¾" Branch | 8" x ¾", Elbolet, 3000#, A350 Gr. LF2 Class 1 |
| Flexolet (same Header & Branch Thk) | 6" Header x 2" Branch | 6" x 2", Flexolet, STD Wt, A105 |
| Threaded Nipolet (Header Thk and Length) | 4" Header x 1" Branch | 4" x 1", THRD Nipolet, XS, A105, 4 ½" Long |
| Threadolet (use Pressure Rating only) | 8" Header x ¾" Branch | 8" x ¾", Thredolet, 6000#, A105 |

| BRANCH REINFORCEMENT PAD SPECIFICATION EXAMPLE | |
|---|---|
| Reinforcement Pad (RePad) | Reinforcement Pad (RePad) Specification Description Notes |
| RePad specification shall provide the pipe material of construction, pipe header, and outside branch diamters, wall thickness, and pad material. The pad material shall be the same or equivalent to the header pipe and have the same allowable stress. Variations require engineering review. | 1. Header Pipe Diameter x Branch Pipe Diameter.<br>2. RePad.<br>3. Pad O.D. (outside diameter) x Pad I.D. (inside diameter) x Wall Thk (thickness).<br>4. ASTM Compartible Material / Allowable Stress with Type or Grade Class.<br>5. Weld Bevel Angle (Degrees) or Special requiremets (vent, painting, treatment, etc). |
| Branch Reinforcement Pad Example | |
| CS Repad for A106B Pipe Header | 10" x 4", RePad, 9" O.D. x 4 ¾" I.D. x 0.365" Thk, A516-65, 37.5 Degree I.D. Bevel |

## ES 321 SPECIFIC NOTES FOR PIPING SPECIFICATIONS

**E1** Where "CALC" is specified for wall thickness, the appropriate wall thickness shall be calculated in accordance with ASME B31.3 for the MAWP of the pipe flanges or the design conditions of the line.

**E3** Slip-on flanges may be used only at design temperatures below 500°F. Slip on flanges shall be double welded for all services. Slip-on flanges SHALL NOT be used with spiral wound gaskets in sizes 1 1/2 in., or less; nor in vibrating service, special service, or acid service as defined in ES 320S. Refer to ES 322 for additional restrictions on the use of Slip-on flanges.

**E4** ASME B16.47, Series A flanges may be used when mating to Series A (MSS-SP-44) flanges.

**E17** Flanged valves NPS 1-1/2 in. and smaller shall only be used as control valve bypass or when required to mate to flanged equipment and at the first block valve of header branches.

**E18** Seamless pipe and fittings may be substituted for welded pipe and fittings in all sizes.

**E20** All components greater than 48 in. nominal diameter shall be reviewed and approved for use by LyondellBasell Engineering (pipe, gaskets, flanges, fittings, valves, etc.)

**E21** PTFE coated studs and nuts may be used in services where sweating conditions exist, bolting hardware could be exposed to corrosive media, or in any area of the plant where the bolting hardware is subject to external corrosion, such as cooling water tower drift areas. PTFE coating systems for studs and nuts shall be either Fluorokote #1 or Xylan coatings and are limited to a service temperature of 500°F. The use of PTFE coated studs and nuts are preferred for oxygen and Alky services.

**E22** The service rating chart(s) is only intended for use with new installations conforming to the details of this specification and may not be valid for existing installations. Existing installations may have different or unlisted components and schedules and may not be good for the maximum listed pressures or for the hydrostatic test pressure provided. It is the responsibility of those performing the hydrostatic test to insure that the test pressure is acceptable for all components of a given system.

**E26** Length of pipe nipples shall be adequate to clear insulation. This requirement does not apply to studdet-type branch connections used for thermowells. Alternative integrally reinforced branch connections such as contoured-insert type flanged outlet or stud pad may be used if required to maintain the U dimension for the fluid velocity per ES 403.

**E27** Approved gasket manufacturers are listed in ES 322.

**E30** Refer to ES-321D for branch and header connection sizes greater than 48 in.

**E32** When mating to cast iron flat-face flanges, a flat-face pipe flange with a full-face gasket shall be used. Full-face gasket material shall be compatible with process stream and shall be in accordance with ES-322 requirements or as identified in the pipe specification.

**E43** Use Swing check valves in horizontal or vertical up flow runs only.

**E50** The listed piping schedules are the minimum required to meet the service conditions, specified corrosion allowance and LYB Eng. Stds. A thicker pipe wall schedule is permitted with engineering consideration for factors such as PWHT and auto-refrigeration.

**E66** Wafer and lugged wafer valves shall not be used in hydrocarbon or Special Services.

| DESCRIPTION | | | | |
|---|---|---|---|---|
| 10 | Mar-19 | 2019 GENERAL REVISION, REMOVED FW SERVICE, REDUCED TEMP RATING | JT | CB |
| | | FOR PREVIOUS REVISIONS SEE ARCHIVED PIPE SPECIFICATIONS LOCATED IN DOCUMENTUM | | |
| REV. NO. | DATE | REVISIONS | CHK. | APP. |

## LINE SERVICE SPECIFICATION

lyondellbasell

| RATING |
|---|
| ASME B31.3<br>ASME B16.5<br>CLASS 150 |
| **SERVICE:** NORMAL FLUID SERVICE — **REV. NO. 10** |
| UTILITIES (ABOVE & UNDER GROUND): COOLING/SERVICE WATER/PLANT AIR/NITROGEN/INSTRUMENT AIR<br>SPECIFIED CORR. ALLOW. 0.0625" |
| **1CG1U1**<br>SHT 2 OF 2 |