

### 7.3.4 Wall-thickness Transitions

Joint design for pipe of different wall thickness exceeding three thirty-second (0.094") inch mismatch shall conform to ANSI/ASME B31.8. If the thicker-wall pipe or fitting is the same or higher grade as the thinner wall pipe, the inside wall shall be ground to a smooth 4:1 taper.

If the thicker wall pipe or fitting is the lower grade, a transition piece made of the same grade as the thinner wall pipe shall be used and with a wall thickness equal to the thicker wall pipe or fitting. Length of the transition piece shall be 1.5 times pipe diameter (12 inch minimum) up through NPS 24, and 1 times pipe diameter for larger sizes. Both ends shall be beveled for butt-welding, with an internal 4:1 machined taper to match the internal diameter of the thinner wall pipe.

## 8.0 PIPE WELDING

Welding of the pipeline and associated piping facilities shall conform to API Standard 1104 (20<sup>th</sup> edition).

### 8.1 WELDING PROCEDURE QUALIFICATION

Procedure qualification shall be in accordance with API Standard 1104 and the following.

#### 8.1.1 Procedure Specifications by COMPANY

CONTRACTOR has the option to propose alternative Procedure Specifications, subject to COMPANY approval.

In the case of CONTRACTOR-provided alternative procedures and for welding situations not covered by COMPANY Procedure Specifications, CONTRACTOR shall qualify procedures in accordance with Sections 8.1.2 through 8.1.5 below.

#### 8.1.2 Procedure Specifications by CONTRACTOR

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If CONTRACTOR chooses to propose an alternative Procedure Specification, CONTRACTOR shall submit for COMPANY review and approval a Procedure Specification for each essential variable grouping on forms similar to Figures shown in API Standard 1104, at least 14 days before scheduled pipeline welding work. The Procedure Specifications shall be approved by COMPANY before CONTRACTOR makes qualification test welds.

Procedure Specifications shall cover all welding situations anticipated for the project, such as new pipe to new pipe, new pipe to existing pipe, and branch connections, and shall cover the sizes, wall thicknesses and grades of pipe and fittings for the project.

#### **8.1.3 Test Joints and Testing**

Welding and testing of joints shall be in accordance to API Standard 1104. Testing shall be done by an independent testing laboratory approved by COMPANY. Coupon test reports shall be on forms similar to Figures shown in API Standard 1104.

COMPANY Inspector will witness welding of test joints and will review and accept or reject the test results. CONTRACTOR shall notify COMPANY of time and place of qualification welding at least 2 days in advance.

#### **8.1.4 Approval of Procedures**

Procedures with accepted test results shall be submitted to COMPANY for final approval. COMPANY reserves the right to reject any procedure which in COMPANY'S opinion will not produce acceptable welds.

Acceptance or approval by COMPANY shall not alter CONTRACTOR'S responsibility for producing acceptable welds.

#### **8.1.5 Qualified and Approved Procedures**

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