Sara Sae

Engineering Standards/Specifications

Procedure No.

SES 26-715

SOCKET WELD PROCEDURE

V.P. of Manufacturing	V.P. of Engineering	V.P. of QA/QC	V.P. of Sales/ Marketing	Revision Description	Release Date	Rev. Ltr

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SOCKET WELD PROCEDURE

1.0 SCOPE

This procedure covers all socket welds for pressure containing piping.

2.0 REFERENCE

ASME B31.3 – Chemical Plant and Petroleum Refinery Piping.

3.0 REQUIREMENTS

3.1 Welding is to be performed by qualified welders. Welding shall be in accordance with approved WPS as qualified by PQR.

3.2 The WPS to be utilized shall be specified on the Assembly Drawing.

4.0 SOCKET WELD PROCEDURES

4.1 Preparation and Planning

4.1.1 Proper preparations are important when fabricating pipe or tube assemblies using weld fittings. After the pipe or tube has been cut to length remove all foreign material or debris to assure a proper weld.

4.1.2 Avoid unnecessary weld splatter. Remember it must be removed later from drilled or tapped holes, cap screw head contact surfaces and O'Ring sealing surfaces.

4.1.3 When preparing the pipe or tube for welding, position the appropriate fitting on the tube and make sure it is aligned with mating ports. Tack weld the fitting in place and remove all weld scale. To insure hydraulically sound joints, weld scale must be removed before joining any weld pass or multiple passes.

4.1.4 During the welding operation, care should be taken to avoid undercutting the pipe or tube. If this does occur, a second weld pass should be made to fill the undercut.

5.0 SOCKET WELD REQUIREMENT

5.1 Socket weld fillet size, "F", requirements can be determined by multiplying the pipe or tube wall thickness, "W", by 1.25.

$F_{minimum} \geq 1.25 \times W$

NOTE: Fillets should not be less than .156 inches. Be sure to provide proper cap screw head clearance. Refer to Figure 1 for proper fit. Table 1 provides minimum weld size, "F", for common pipe sizes and schedules.

6.0 HYDROTEST REQUIREMENTS

6.1 Weld assemblies are to be hydrotested. Hydrotest requirements shall be noted on the drawing.

7.0 INSPECTION

7.1 Welds are to be inspected, utilizing non-destructive testing after hydrotest, as specified on the drawing. Test process and pass/fail criteria to be in accordance with SARA SAE standard.

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TABLE 1

PIPE SIZE	SCHEDULE	"W" WALL THICKNESS	"F" MINIMUM WELD
½	40	.109	.156
	80	.147	.183
	160	.187	.233
	XXS	.294	.367
¾	40	.113	.156
	80	.154	.192
	160	.218	.272
	XXS	.308	.385
1	40	.133	.166
	80	.179	.223
	160	.250	.312
	XXS	.358	.447
1-¼	40	.140	.175
	80	.191	.238
	160	.250	.312
	XXS	.382	.477
1-½	40	.145	.181
	80	.200	.250
	160	.281	.351
	XXS	.400	.500
2	40	.154	.192
	80	.218	.272
	160	.343	.428
	XXS	.436	.545

SOCKET WELD PROCEDURE

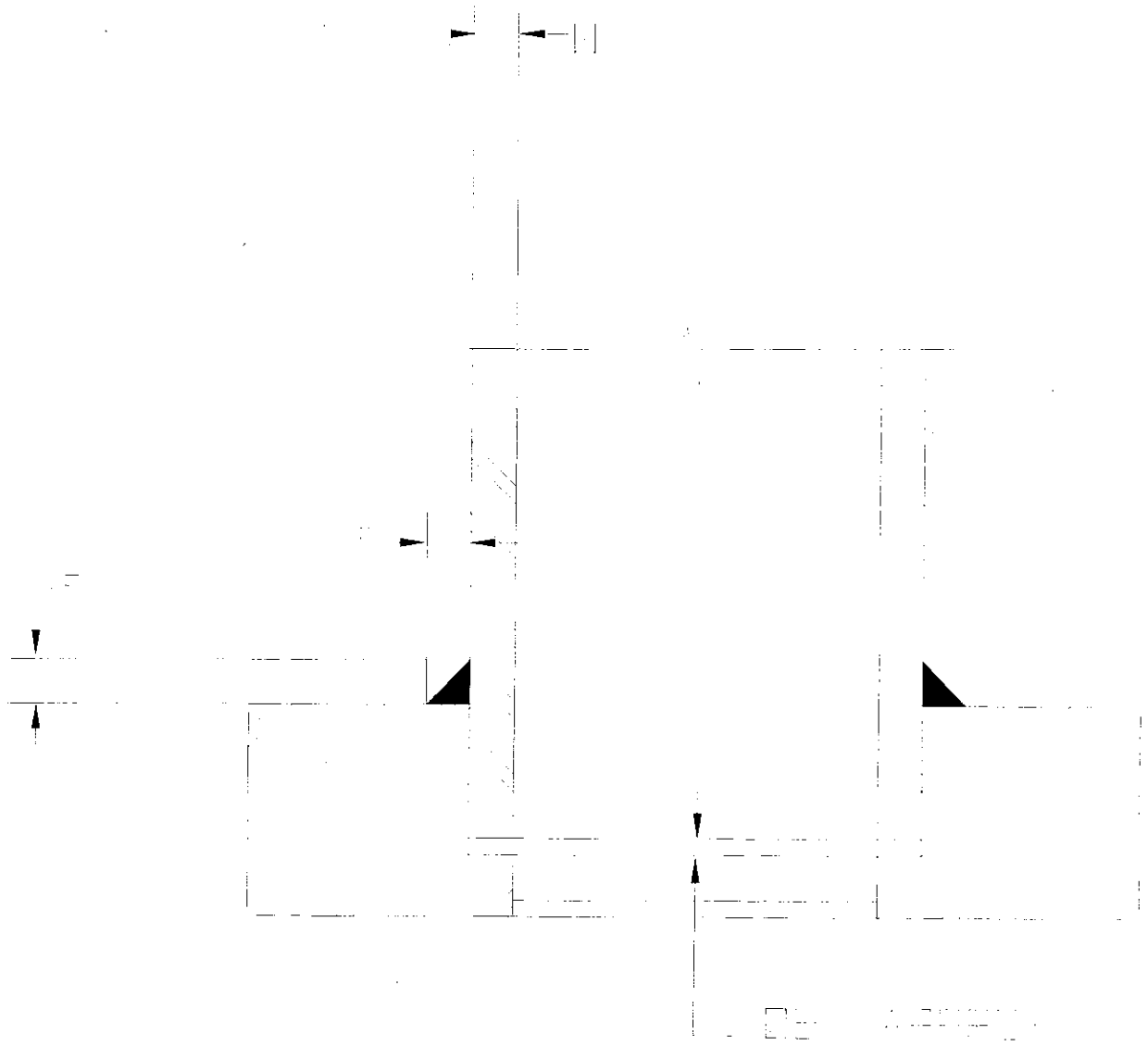

FIGURE 1