1. Purpose

Pyplok connection system is a mechanical connector which may be used as a piping repair method for connecting piping for certain medium and services as defined in this operating procedure. Pyplok connection system utilizes a hydraulically powered compression tool that swages the fitting over the pipe or tube, hence plastically deforming the fitting to form a 360° radial compression around the pipe for sealing without performing any hot work.

2. Scope

This procedure is applicable to only small bore carbon steel and stainless steel piping ranging from NPS ½" up to NPS 2". Pyplok connection system can be considered as either a permanent or temporary repair, depending on the type of service medium, design pressure and design temperature as defined in Section 6.3 and 6.4 of this procedure.

3. References

3.1 E4-07-012 – Total Flange Assurance

3.2 DEP 01.00.01.30-Gen – Definition of Temperature, Pressure and Toxicity Levels

3.3 MNT_INTG-2019OP – Temporary Repair Management Procedure

4. Definitions

MOC	Management of Change
DEP	Design and Engineering Practice

5. Responsibility

Mechanical Static Equipment Engineer shall be responsible to update the procedure.

The respective plant engineers shall be responsible to be conversant with this procedure and carried out the execution of the repair method as required in this procedure.

6. Procedures

6.1 Stainless steel Pyplok mechanical connector shall be used for repair of existing stainless steel small bore piping.

6.2 Carbon steel Pyplok mechanical connector shall be used for repair of existing carbon steel small bore piping.

6.3 Criteria for Pyplok to be defined as a permanent repair.

Item	Criteria				
Pipe Material	Carbon Steel, Stainless Steel				
Pipe Size, NPS	½", ¾", 1", 1 ½", 2"				
Minimum Pipe Wall Thickness	½"	¾"	1"	1 ½"	2"
	2.5mm	2.5mm	3mm	3mm	3mm
Maximum Pipe Wall Thickness	Schedule 80 rating for all pipe size				
Pipe Class	Class 150#, Class 300#				

Temperature	-20°C to 180°C
Applicable Area	Above ground
Applicable Services	• Industrial water • Sea water • Fire main/sprinkler/foam systems • Compressed air • Low pressure steam with design pressure < 5 Bar • Nitrogen • Hydraulic systems

6.4 Criteria for Pyplok to be defined as a temporary repair.

Item	Criteria				
Pipe Material	Carbon Steel, Stainless Steel				
Pipe Size, NPS	½", ¾", 1", 1 ½", 2"				
Minimum Pipe Wall Thickness	½"	¾"	1"	1 ½"	2"
	2.5mm	2.5mm	3mm	3mm	3mm
Maximum Pipe Wall Thickness	Schedule 80 rating for all pipe size				
Pipe Class	Class 150#, Class 300#				
Temperature	-20°C to 180°C				
Applicable Area	Above ground				
Non-applicable Services	• All substances classified as "Very Toxic" as defined in DEP 01.00.01.30-Gen • System with significant cyclic behavior such as vibration, pulsation and temperature variation				

6.5 The use of Pyplok connection system as a temporary repair is subjected to the MOC process.

6.6 A Temporary Repair Form (Reference 3.3) has to be raised and approved by all relevant parties for all temporary repair activities using Pyplok connection system.

6.7 Only Pyplok manufactured equipment and fittings shall be used.

6.8 Only personnel who have attended the Pyplok training course and have been issued with a certificate of proficiency by Pyplok for the operation of the Pyplok connection system are permitted to use the equipment and to make pipe connections.

6.9 All Pyplok mechanical connectors shall be installed following the Basic Installation Manual provided by Tube-Mac Pyplok.

7. Records and Related Documents

Ref No.	Title	Storage custodian	Retention Period
None	None	None	None

8. Custodian and Review Panel

The custodian of this procedures is : Dept QSC

This procedure was reviewed by: DMA/124, DMA/12471

This procedure was approved by: DMA/124

Date of last formal review: December 2013

9. Change History