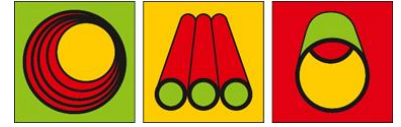


TPS-Topseal

Field Inspection



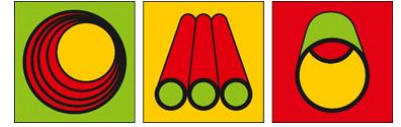


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Issued : J. Stolz

Approved : A. Kessler



1. Field Inspection & Repair Recommendations

1.1 Scope

This procedure provides direction and guidance for field inspection and repair classification on pipes or accessories fitted with **TPS-Topseal** connections. The recommendations below apply to field inspection of both new and used products. Field Inspection is by Visual Inspection only.
This procedure does not apply to re-cuts carried out in a machine shop.

2. Reference documents

Latest revisions of API 5A5

3. Procedure

3.1 Identification

Confirm that all pipes items to be inspected are properly identified.
Where it is not possible to determine the original manufacturing identification of each pipe or accessory a sequential number shall be identified on each item to provide traceability throughout inspection & repair process.

3.2 Preparation

Remove thread protectors and all traces of storage compound.
A high pressure washer is recommended. Non-chlorine solvent may also be used provided all traces of the solvent are removed prior to inspection.
The connections shall be clean and dry to facilitate the inspection.

Note:

1. Wire brushes and coarse abrasive methods **shall not be used** on the threads and seal areas
2. Protectors must be cleaned and dried prior to refitting



3.3 Equipment Required

- a) 6"/12" Steel Rule
- b) Pit Gauge
- c) Fine Tooth Triangle File (small)
- d) Emery Paper – 'Super Fine' Grade

3.4 Connection Inspection General

Inspection shall be carried out by personnel competent in the visual inspection of TPS connections.

Visual inspection shall evaluate the zones of each connection as detail in Figures 1 & 2. The following imperfections which may commonly arise in the field are addressed within this document.

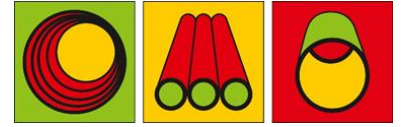
- Rust
- Pitting
- Scratches
- Gallling
- Dents
- Tong Marks

Any alternate imperfections detected should be brought to the attention of TPS for assessment and guidance.

3.5 Identification

Both acceptable connections and connections categorised for repair shall be positively identified on the product as to their status and the results noted on the inspection report against the corresponding identification of the item. A single Red band is recommended for field repair and two red bands for recuts.

Reject product shall be physically segregated from acceptable product to ensure exclusion from running operations.



3.6 Hand Repairs

Hand Repairs must be performed by competent personnel.

Any connection which has been hand repaired, will only be considered acceptable if the damage has been completely removed and hand repair has not significantly changed the shape of the repaired area.

If after repairing, the connection is not acceptable, the product shall be classified as "Recut" and shall be sent to a TPS licensed Facility repair.

If after repairing, the connection is acceptable the application of Molycote type spray, prior to applying the thread compound, is recommended.

3.7 Post Inspection/Hand Repair

Acceptable connections shall have the required running compound or storage compound as applicable applied.

Clean dry thread protectors shall be filled unless running is imminent.

3.8 Records

Records shall be maintained of all items inspected together with the result and status. Hand repairs shall be documented.



4. BOX Connection Inspection

Box Connection Evaluation

The appropriate action to be taken on an imperfection is dependent upon its precise location with reference to Figure 1 below. The appropriate action is detailed in Table 1.

Figure 1: BOX Connection

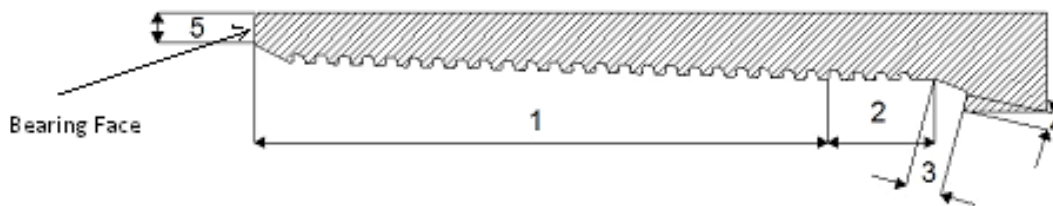
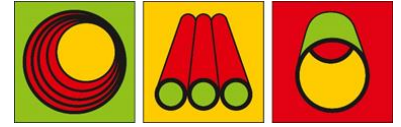


Table1: Box Connection Evaluation & Required Action

Imperfection	Zone	Evaluation Criteria	Action
Corrosion Rust Pitting	1 - Perfect Thread 2 - Cylindrical Thread Area 4 - Shoulder 5 - Face	Minor imperfection < 0.004" (0.1mm)	Hand repair with Emery Cloth
		Imperfection > 0.004" (0.1mm)	Reject Coupling.
	3 Seal Area	Pitting Not Acceptable	(Accessory may permit recut at TPS Licensed Facility)
Scratches	1- Perfect Thread 2- Cylindrical Thread Area 4 – Shoulder 5 - Face	Acceptable	No further Action Required
	3 Seal Area	Not Acceptable	Reject Coupling (Accessory may permit recut at TPS Licensed Facility)
Galling	1- Perfect Thread 2- Cylindrical Thread Area 3 - Seal 4 – Shoulder	Not Acceptable	
Dents	1- Perfect Thread 3 - Seal 4 – Shoulder*	Not Acceptable *Includes Deformation of shoulder indicating Over-Torque	
	2- Cylindrical Thread Area 5- Face	Minor Dents	Hand repair with Emery Cloth
Tong Marks	Coupling OD	Tong Marks that reach the bearing face are not acceptable	Reject Coupling (Accessory may permit recut at TPS Licensed Facility)



5. PIN Connection Inspection

Pin Connection Evaluation

The appropriate action to be taken on an imperfection is dependent upon its precise location with reference to Fig 2 & 3 below. The appropriate action to be taken is detailed in Table 2.

Figure 2: PIN Connection

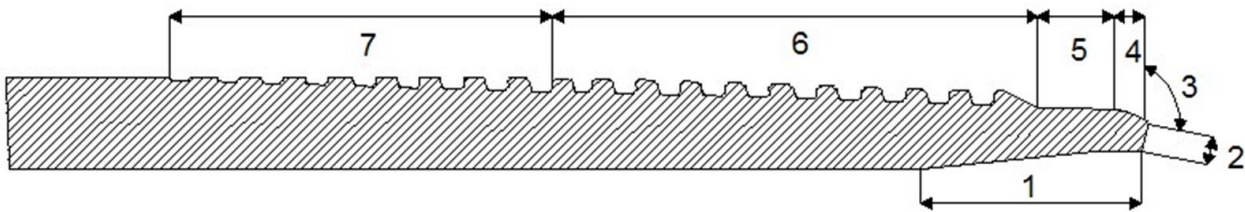
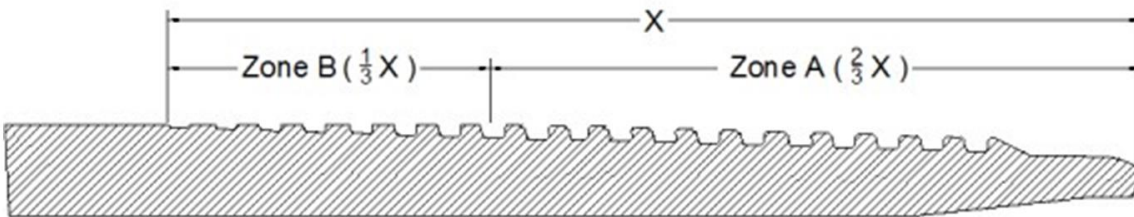


Figure 3: Tong Marks on Re-cut Pin



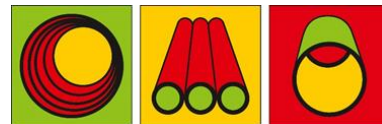


Table 2: Pin Connection Imperfections & Required Action

Imperfection	Zone	Evaluation Criteria	Action
Corrosion Rust Pitting (Fig 2)	1 – Internal C'bore 2 – Shoulder 3 – Seal/Shoulder Radius 5 – Cyl. Section 6-Perfect Thrd Lgth 7-Imperfect Thread	Minor imperfection < 0.004" (0,1mm)	Hand repair with Emery Cloth
		Imperfection > 0.004" (0,1mm)	Recut required at TPS Licensed Facility
	4 Seal Area	Not Acceptable	
Scratches (Fig 2)	1 – Internal C'bore 2 – Shoulder 3 – Seal/Shoulder Radius 5 – Cyl. Section 6-Perfect Thrd Lgth 7-Imperfect Thread	Acceptable	No further Action Required
	4-Seal Area	Not Acceptable	Recut required at TPS Licensed Facility
Galling (Fig 2)	2 – Shoulder 3 – Seal/Shoulder Radius 4-Seal Area 6-Perfect Thrd Lgth 7-Imperfect Thread	Not Acceptable	
Dents (Fig 2)	1 – Internal C'bore	Acceptable	No further Action Required
	5 – Cyl. Section 6-Perfect Thrd Lgth 7-Imperfect Thread	Not Acceptable	Hand Repair with file or Emery Cloth
	3 – Radius from Seal to Shoulder 2 – Shoulder 4-Seal Area	Not Acceptable	Recut required at TPS Licensed Facility
Tong Marks on Recut Pin (Fig 3)	Zone A	Not Acceptable	
	Zone B	Depth > 50% of thread depth at given point: Not Acceptable	No further action required
		depth is <50% of thread depth at given point: Acceptable	