API SC 15  Meeting Notes June 14th and 15th

Attendees-


NOTES from June 14th

- Meeting agenda followed the presentation by FGS “June 14 discussion” attached. Outcomes, action items, and highlights from discussion are contained in the following minutes:

- FGS and Petroplastic were the only SC15 members to submit discussion points prior to the June 14th meeting, these points were captured within the “June 14th discussion presentation”.

- No minutes from previous meeting to review
- Review of documents in Group A consideration: 15HR, LR, TL4, CLT
- Call for secretary of SC15 Group A: Eric Jepson-PPG Industries accepted
- Review of member interest in each document and leads for each:

  - API Group A Document Leads:
    - 15HR - David Granderson, Paul Bryan, John Biro
    - 15LR- Craig Moore, John Biro
    - 15TL4 - Noe Hoijman
    - 15CLT – Tom McLaughlin

- New document interest:

  - Fiber Glass down hole tubing spec/RP - 15 TR was original down hole draft specification never approved as it lacked committee consensus. May be better to come up with “recommended practice and properties publication”. Previous relevant API publications (5AR, 15TR, 15AR). John Biro to lead, Noe Hoijman, David Granderson to participate.

  - FGS suggestion - Stress strain relationship as design criteria, avoid regression testing.
• Request for website for API document update – Shail Ghaey confirmed API will coordinate this effort to place minutes, presentations, etc on an API website for public viewing and comment.

• (API) Shail Ghaey will supply or allow access to pertinent API 15 documents specs and RP’s to members of SC15.

Specific discussion by SC 15 Document:

15TL4- Care and Handling of Fiberglass Pipe

• issue - wire brush to clean fiberglass threads- Suggest soft brush care to clean threads to prevent damage. *Accepted by all present

• 15TL4 mentions field testing but is ambiguous and not standardized. An RP is not recognized in the industry as a standard. API 15HR and LR lack a standard statement for field pressure testing. End Users having difficulty applying alternate standards such as ASME B31.3, or B31.4 to fiberglass oilfield pipe. API 15 specifications require a standardized field test pressure to remove ambiguity and possible misapplication of improper standards. Suggestion for language within presentation. This to be considered, detailed, and finalized at next SC 15 meeting.

15CLT- Composite lined Steel

• 15CLT- Tom McLaughlin volunteer to lead efforts

• 15CLT- Attempt to move to a specification from an RP. Move more to “Shall from Should” , and standardize methods within.

15LR – Low Pressure fiberglass pipe

• Appendix B- Method to test Tg by DSC- Suggestion allow other means to test Tg - General acceptance – Applies to HR as well.

• Use ASTM or ISO standard for reference to Tg measurement methods

• Bill Stringfellow to recommend (min and Max) Tg limits across pipe length, and recommend a standard to follow for each method of Tg measurement

• 5.3- Min properties discussion – Allow static properties in addition to cyclic

• 5.7- suggest ASTM D5685- 168 hours test durations 252,000 cycles

• Factory pressure test- Recommend Static and Cyclic options

• Field Pressure test – see above 15TL4 discussion

• General comments to LR – was originally a cyclic pressure design specification, now allows both static and cyclic. Scope changed while the body of the specification does not appear to have been updated to accommodate the static option.
15HR- High Pressure Line pipe

Comments from Pretroplastic

- DSC for all components - agreed
- Change in liner thickness require requalification, referenced in ASTM D2992 - agreed
- Appendix A5-A8 not related to regression testing, FGS others agree, consider and close at next meeting.
- Suggest modification of regression failure times – none less 1000, & more after 10,000
  - Potentially negates much of the currently available test data
  - Discussion on mixing failure modes and intent of D2992 testing
  - High stresses can change failure mode in early testing distorting data
  - Mixing Joint / related failures with pipe failures confuses data and intent of test
  - Joint testing vs. pipe testing regression analysis- Pipe testing should relate to the pipe wall thickness, adding joints at best qualifies a single joint size for a single pressure class
  - Consider stronger wording in HR, such as “No joints in primary pipe regression data after (current date)”
  - Consider and discuss further next meeting

D-2992 vs. 15 HR

- 2in vs. 8in pipe they are potentially different design – should require requalification
- 5.1.1- 15HR clarification regression times - 6,000 hours and D2992 requires 10,000 hours. Does 15HR intend maximum 6K or 10K total hours? This section of 15HR needs to be revised to be more explicit and clear.
  - Decision on intent next meeting

- Regression testing proposed originally by Ameron to test pipe at a reasonable stress, remove and determine strength loss. Beta testing going on at FGS and Ameron, share data later.


- Recommend referencing new standards unless there is technical reason to avoid
- Need to review all reference standards- Noe Hoijman action to review existing references
- All to consider and be ready to decide external references by next meeting
5.4- Requalification due to changes in Appendix A

- Changes requiring re-qualification
- Need to identify relevant testing, regression or not regression related
- Noe Hoijman – disagrees to separating joint from pipe qualification – more next meeting
- Currently no requalification requirement for “plant location”. Discussion on whether location is important and if location means within the plant or a different plant. Consensus is that this is not an intended requirement of HR or D2992. Full 10,000 hour testing is not required where base data is available. Consider whether requalification per section 12 ASTM D2992 is acceptable to add to HR for “location”.

  - Topic to be considered for fiberglass pipe and decided next meeting

- Third Party (independent) Inspection Yes/No Debate Who, Cost, held to specification, Location and raw materials. Currently no requirement in 15HR for 3rd party independent verification of qualification testing, API licenses facilities and performs Audits. API (Shail Ghaey) to look into whether or not API can require additional independent testing or verification. What is the common practice and guidelines within other API standards? Customer can require 3rd party independent of standard.

15HR- Joint related reconfirmation testing – determine method of qualifying joint related changes.

- 1) Comprehensive: Full joint regression per ASTM D2992, and requal similar per section 12
- 2) Alternate: Treat joints equal to fitting qualification in 15HR, shorter version of regression test section 5.1.2.
- 3) Alternate shorter term methods? Example within presentation? Recognize not all joint aspects have regression behavior, and even if they did, may not have the same rate of degradation as the pipe.
- All to consider this subject and come to next meeting with proposals

15HR Appendix A.9 – All components differ slightly, requires clarity as to acceptable limits Require defined tolerances before a change is considered major. Example in presentation.

- 5.2.2- Min inside diameters and custom sizes,
  - Require standardization that does not suggest a limit to pipe sizes. Example in presentation- Prepare to make decision on this next meeting.

- 5.3.4 Threads and gauging practice – Discussion on “master gages”, and non-standard joints, etc.

Agreed, “access to master gages” to change to thread dimensions shall be dimensioned and traceable to an international standard. i.e. API 5B threads traceable to a certified API master gage is sufficient. This section is commonly misinterpreted.
• **5.1.1- OD/t** - Recommendation to go with thin wall pressure equation #2- Same as D2992 and ISO 14692. General acceptance to consider omit the D/t requirements or modifying limit to 20 instead of 10. Examples in presentation. Consider and prepare to make decision next meeting.

• Burst testing D1599 – consensus that default ASTM D1599 is not very useful, manufacturers typically test for longer periods of time when attempting to establish meaningful results.
  
  o Agreement to modify time frames and pressure rates. i.e. 2 minutes or rate and/or linear pressure rate increase to failure.

• Component marking Manufacturer, API, Size, ID.
  
  o Recommendation- 15HR marking requirements clearly referenced in single location. Include as a minimum : API 15HR Standard pressure rating at standard temperature 150F. Suggest to refine pressure increments to smaller increments instead of 250psi above, possibly only for larger diameters, i.e. > 10in. Prepare to make decision on this next meeting.

  o David Granderson to propose alternate wording to Section 9

**15HR ASTM-D3567 - Measurement and Clarification of “reinforced wall thickness”** – not in formal presentation, incomplete slides presented.

Proposed clarification:

A) Total wall thickness (included reinforced and non reinforced) - result of completing the procedure in ASTM D3567. The result or (wall thickness) of the measured pipe section is the average of the 6 required measurements at a specific location along the pipe length. One may search for the smallest dimension to begin dimensioning the pipe section, but the remaining 5 dimensions must be evenly spaced 60 degrees apart around the circumference of the pipe section per D3567 to determine the measured “wall thickness” of that pipe section.

B) Reinforced wall thickness – Precisely the same as in (A) but includes subtracting non reinforced areas at each of the 6 measurements.

C) Minimum reinforced wall thickness – Guaranteed minimum value which can be obtained following (B). i.e. regardless of where the pipe is sectioned, the resulting reinforced wall thickness shall not be less than guaranteed minimum reinforced wall thickness given by the manufacturer.

  limitations need to be placed on allowable variations within the 6 observations. Example: no single measurements or observation may be less than 90% of the stated “minimum reinforced wall thickness”. FGS to follow up on this subject next meeting
TUESDAY June 15th

Al Wilkes and Tim Dyer join meeting to review 15S, 15LT

15S discussion – Discussion points by Flexpipe, Mr. Weller

Review of Scope

High Strength fibers added to body of scope, not single out single type of reinforcement – General agreement.

4.2.1- D-3350, PE80 and PE 3608

Appendix A- Additional requirements for products using “dry” fiber re-inforcement. Recommend to remove from specification reference requested. – General agreement not to single out a reinforcement method.

• Ph level- Measure all ph level or 3-9 Appendix A- Measure level of Ph. Why widen the specification?

• Move from recommended Practice to Specification – Blaine Weller to Lead
  Requires shall and not should, and reference to applicable test and inspection standards which are applicable for all manufacturing methods

4.3.1- Dimension and Pressure- 6 in limitation due to ability to spool and transport. Need to open up. No need to limit size and pressure

  • Fix- Maximum Service Pressure- depends on liquid being moved (water gives lower rating that hydrocarbon)
  • Regression testing- Pipe wall failure vs. joint failure. * Should joints be included or be tested separate on regression testing? Tabled until we see what happens to 15HR and then determine how to move forward. (lots of discussion!) One argument- Joint should be included with compensation factors or test each on there own. PSF should be maximum service 1.5 factor or .67. Use language from 15HR for 15S.

  • Cyclic Pressure Service Factor defined as +/- 20% Ex. 1,200high 1,000mid 800low. Defined as if during service there is a pressure that goes up or down 20% once per day. If cyclic application need to have cyclic data. Cyclic testing data needs to reflect the actual application with built in safety factor. All pipe is cyclic to some degree, define limits to cyclic / static

  • Failure in Thermoplastic pipe is a rip in the liner (hot dog split)
  • Hydrocarbon / thermoplastic permeation discussion - Care not to indicate in API RP’s/ or specs that chemical resistance is sufficiently addressed in d scope
• Propose new production line qualification same facility requires requal - Should this be a new qualification or requalification of product? Flexpipe- Requalification D2992-12

• 15S participants- Future Pipe, Flexpipe, Fiberspar

• Factory Pressure Testing- 1.5 times pressure rating could damage coiled pipe. Propose to go with 1.25 for longer time of 2 hours. Pipe is axially stressed due to coiling, longer test time may compensate for lower pressure. Additional thought on time vs. pressure for next meeting.

Pipe size table for Thermoplastic Pipe-
• Small number of sizes. Table to be added to 15S with the sizes.
• reference standard on how to measure Tg
• Testing: 3rd party should confirm or not? Recommendation to be made by API.
• Suggestion: If ISO-17025 certified plant you do not need 3rd party.

API 15LE- Ductile and Brittle failure only parameters –
• reduction of burs testing requested
• Performance pipe Only one failure in 43 years. Would like to change the wording in the specification (Reference handout from Al Wilkes) Need to define “whenever production conditions change”.
• D2513 and API-15LE- would like to change both standards or trying to...

Ballot process- Vote at next meeting, Can vote on a portion or whole standard, Work group leads write the documents, Sending a ballot initiated by API
One company one vote
Can work with other members directly to get votes
1. Justification for revision
2. Send change to Shail
3. Shail sends out ballot for change 6 weeks prior
4. Ballots go to committee chairs
5. 50% participation required
6. 2/3 of ballots needed to re-affirm
7. 13 voters for Fiberglass
8. 10 votes for spoolable products

API (Shail Ghaey) –Priority to be given for API 15HR as it is overdue for review and reaffirmation.

End
Meeting notes by: Eric Jepson and David Granderson