API Ballot Summary Sheet

10/21/2005

Ballot: 32-05: 650-506, Frangible Roofs, Part II **AMS ID: 714**

Start Date: 8/3/05 **Closing Date:** 10/5/05 **Associate:** **Gordon Robertson**

Coordinator: **Valeen Young**

Proposal:

				Vote Results			
Voter		**Company**	**Comments**	**Affirmative**	**Negative**	**Abstain**	**Did Not Vote**
134629	Nelson Acosta	HMT Inspection	Yes	X			
131617	Joel Andreani	Equity Engineering Group, Inc., The	No	X			
38921	Robert Annett	Alyeska Pipeline	No	X			
73074	Ronald Bailey	American Tank & Vessel, Inc.	No	X			
136219	Mark Baker	Baker Consulting Group, Inc.	No	X			
142888	Chris Bashor	Minnesota Pollution Control Agency	No	X			
134681	Ernie Blanchard	MOSAIC	No	X			
109375	Jerry Boldra	SBC Global	No	X			
22200	Dan Boley	DJA Inspection Services	No	X			
134782	Steve Caruthers	Tank Consultants, Inc.	No	X			
154212	Gary Cavey	Conservatek Industries, Inc.	No			X	
7127	Earl Crochet	Kinder Morgan	No	X			
150217	Jody Day	Lide Industries, Inc.	No				X
142685	Domingo de Para	ExxonMobil	No	X			
133403	Jeffrey DeArmond	BP p.l.c. Whiting Refinery	No	X			
146748	Terry Delong	Terasen Pipelines (USA) Inc.	No	X			
135965	Kenneth Erdmann	Matrix Service Company	Yes	X			
105011	David Flight	Dow Chemical Company	No	X			
134870	Laurence Foster	Marathon Ashland Petroleum LLC	No	X			
134880	John Fumbanks	Pond and Company Inc.	No				X
115033	Alan Geis	Colonial Pipeline Company	No	X			
83689	Ty Hagen	Hagen Engineering International, Inc.	No	X			
136619	Robert Hendrix	Eastman Chemical Co	Yes	X			
70596	Marty Herlevic	James Machine Works, Inc.	No	X			
93133	Randy Kissell	TGB Partnership	No	X			
81918	Manfred Lengsfeld		No	X			
135014	John Lieb	Tank Industry Consultants, Inc.	No	X			

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Ballot: 32-05: 650-506, Frangible Roofs, Part II **AMS ID: 714**

Start Date: 8/3/05 **Closing Date:** 10/5/05 **Associate:** **Gordon Robertson**

Coordinator: **Valeen Young**

Proposal:

136274	Thomas Lorentz	AEC Engineering, Inc.	Yes	X			
135072	Francis Maitland	Quense LLC	No				X
113545	James McBride	Petrex, Inc.	Yes			X	
139045	Craig Meier	ConocoPhillips	No				X
137255	Carl Mikkola	Enbridge Energy Partners, L.P.	No	X			
131185	Douglas Miller	Chicago Bridge & Iron Company(CB&I)	No				X
69609	Bhana Mistry	TIW Steel Platework	No	X			
83736	John Mooney		Yes	X			
92212	George Morovich	TEMCOR	No	X			
136286	Philip Myers	Chevron Corporation	No	X			
132210	David Nasab	Kellogg Brown & Root	No	X			
82544	John Oleyar	HMT, Inc.	No	X			
5193	Richard Pinegar	Cargill Inc.	No				X
102412	Roy Ralph	Petro-Canada	No				X
135169	Michael Richardson	International Paper	No	X			
73744	Bruce Roberts		No	X			
101360	Marilyn Shores	Sunoco Logistics	No	X			
126019	Larry Speaks	Mass Technology Corporation	No	X			
134314	Tearle Taylor	Flint Hills Resources	No	X			
134325	Donald Thain	Shell Global Solutions (US) Inc.	Yes	X			
145034	Leith Watkins	Explorer Pipeline Company	No	X			
145896	Alan Watson	A.R. Watson, USA	No	X			
132209	Richard Whipple	Fluor, Inc.	No	X			

API Ballot Summary Sheet

10/21/2005

Ballot: **32-05: 650-506, Frangible Roofs, Part II** **AMS ID:** **714**

Start Date: 8/3/05 **Closing Date:** 10/5/05 **Associate:** **Gordon Robertson**

Coordinator: **Valeen Young**

Proposal:

	Affirmative	Negative	Abstain	Did Not Vote
Balloting Totals:	**41**	**0**	**2**	**7**

Total Responses:	**43**	
Total Ballots:	**50**	
Response Rate :	**82%**	Must be > 50%
Approval Rate:	**100%**	Must be > 67%
Consensus:	**YES**	

API Ballot Summary Sheet

10/21/2005

Ballot: 32-05: 650-506, Frangible Roofs, Part II **AMS ID: 714**

Start Date: 8/3/05 **Closing Date:** 10/5/05 **Associate:** **Gordon Robertson**

Coordinator: **Valeen Young**

Proposal:

API Template for Ballot Comments and Resolution

Ballot ID: 714	Date: November 3, 2005	Document: **32-05-650-506**

#	(1) Voter/ Commenter	(2) Company	(3) Section No. (e.g. 3.1)	(4) Type of comment	(5) Comment (justification for change)	(6) Proposed Change	(7) Comment Resolution
1	Steven Adolphsen	Morse Construction Group, Inc.		Technical	positive without additional comments		
2	James McBride	Petrex, Inc.		Technical	Do not feel qualified to vote affirmative or negitive on this subject.		
3	Nelson Acosta	HMT Inspection	3.10.2	Technical	In 3.10.2.2, the paragraph reference is given as "Plate Thickness". Since the text references plate and sheet, I would suggest the reference be changed to just "Thickness" and that the text begin "Roofs" and delete "plates" immediately following. The words "plate or" can be added after "5 mm (3/16 in.)" in the first sentence. Also, in the last sentence, the words "the plates of" should be deleted between "for" and "supported". This clarifies the wording such that either plate or sheet can be used without confusion by the reader. In 3.10.2.6.a.2, the word "only" should be deleted between "side" and "that" (to be consistent with the deletion of "only" at the end of the first sentence in 3.10.2.5 already made in the proposed text). Also, in this same item, reference to a maximum fillet weld size is made but as to how this measurement applies no guidance is given (throat thickness or leg dimension?). In 3.10.2.6.b.2, the first "shell" in the proposed text should be deleted as unnecessary. In footnote 17, the first sentence should be changed to read "...for tanks exposed to an outside fire." .... In footnote b to Tables 3-21 a & b, the term "thickness" should be changes to "thicknesses" since there are multiple components of possibly differing thickness involved.	3.10.2.2 Thickness - Roofs shall have a minimum nominal thickness of 5 mm (3/16 in.) plate or 7-gauge sheet. Thicker....Any corrosion allowance for supported roofs shall be added to the minimum nominal thickness. 3.10.2.6.a.2 The roof is attached to the top angle with a single continuous fillet weld on the top side that does not exceed 5 mm (3/16 in.) throat thickness. 3.10.2.6.b.2 Attachments (including nozzles and manholes) to the tank are designed to accommodate at least 100 mm (4 in.) of vertical movement of the shell without rupture. Footnote 17 - A frangible roof satisfies the emergency venting requirement for tanks exposed to an outside fire. See API 2000. Frangible..... Footnote b (under Tables 3-21 a & b) Frangibility pressure applies only to tanks designed to 3.10.2.6.d The frangibilty pressure shall be calculated using as-built thicknesses.	

NOTE Columns 1, 2, 4, 6 are compulsory.

#	(1) Voter/ Commenter	(2) Company	(3) Section No. (e.g. 3.1)	(4) Type of comment	(5) Comment (justification for change)	(6) Proposed Change	(7) Comment Resolution
4	Kenneth Erdmann	Matrix Service Company	3.10.2.6	Technical	self anchored was deleted from sub paragraph a) but not from subsequent paragraphs.	I suggest all "self anchored" text either be deleted or changed to "unanchored".	
5	Donald Thain	Shell Global Solutions (US) Inc.	3.10.2.6 b	Editorial	"self-anchored" tank: I know the term has been included in previous editions, but I do not think there is a definition included in the document		
6	John Mooney		3.10.2.6 b &c	Technical	Why do the bottoms reqire butt welding?	Either eliminate the bottom butt welding or allow butt welded annular plates. The failure of the bottom joint will not be influenced by the type of bottom weld away from the bottom to shell joint	
7	Donald Thain	Shell Global Solutions (US) Inc.	3.10.2.6 b2 and c3	Editorial	As reminder for the purchaser, that there may be connecting piping that may exert restraint during an uplift and needs to be accounted for	Attachments (including nozzles, manholes and any connecting piping) to the tank.....	
8	Donald Thain	Shell Global Solutions (US) Inc.	3.10.2.6 d	Editorial	add more clarity around "anchorage" as relates to this section. Suggest including verbiage also referring to the stiffened chair-type assemblies or anchor rings and that localized stresses in the shell will be adequate for the design.	... and the anchorage (including anchor chair or ring design, as well as local shell stresses) and counterweight shall be designed for 3 times...	
9	James McBride	Petrex, Inc.	3.10.2.6 foot note 17	Editorial	Checking my listing of API publications it appears that the reference to API publication 927 found in foot note 17 should actually be 937.	Change 927 to 937.	
10	James McBride	Petrex, Inc.	3.10.2.6.b & .c	Technical	I am not quite sure what the difference is between self-anchored tanks greater than 30 ft but less than 50 ft (3.10.2.6.b)and self-anchored tanks less than 50 ft (3.10.2.6.c)other than the fact that 3.10.2.6.c could cover tanks less than 30 ft.	Needs some clarification.	
11	Thomas Lorentz	AEC Engineering, Inc.	3.10.2.6.b. 2	Editorial	The word "shell" is repeated unnecessarily.	modify the sentence to read: "Attachments . . . of vertical movement of the shell without rupture.	

#	(1) Voter/ Commenter	(2) Company	(3) Section No. (e.g. 3.1)	(4) Type of comment	(5) Comment (justification for change)	(6) Proposed Change	(7) Comment Resolution
12	Robert Hendrix	Eastman Chemical Co	F.4.1	Technical	It is unclear what the intent is here for the "lowest yield strength of the materials....". I would think that for safety, the yield value of the compression ring materials should be no less than the lowest measured value rather than the specified minimum value when anchorage for frangibility is required. Maybe the multiplier of 3 on anchor loads is intended to account for the possible variation between specified minimums and measured values. There can be considerable variation in these values, say for stainless steels. Since the expressions apply to both frangible and non-frangible situations, it's difficult to craft a single "fix". Maybe leaving things alone for the non-frangible case and requiring measured material test report values for the frangible case would suffice.		
13	Larry Hiner	Chicago Bridge & Iron Company(CB&I)	F.6	Technical	Positve comment F.6 Calculated Minimum Failure Pressure In tanks that meet the criteria of 3.10.2.5.1, failure can be expected to occur when the stress in the compression ring area reaches the yield point.	The referenced section should be 3.10.2.6 paragraph 1a parts 1 through 5	
14	Donald Thain	Shell Global Solutions (US) Inc.	Table 3-21b	Editorial	add Fy to legend		