

		
	Tank Cleaning For Inspection Purposes	
	API 2006 Storage Tank Conference Presentation Doug Bayles Engineering Manager HMT Inc.	

	API 653 Section 3 - Definitions	
	3.12 owner/operator: The legal entity having both control of and/or responsibility for the operation and maintenance of an existing storage tank.	
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	API 653 Section 3 - Definitions	
	3.4 d. An independent organization or individual under contract to and under the direction of an owner/operator and recognized or otherwise not prohibited by the jurisdiction in which the aboveground storage tank is operated. The owner/operator's inspection program shall provide the controls necessary for use by authorized inspectors contracted to inspect above-ground storage tanks.	
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	Tank Cleaning	
	• How are you going to achieve a tank bottom clean enough to provide your inspection vendor the opportunity to meet your needs? And finally why this is so Important...	

	Ask Yourself	
	• What would your answer be to the following question: “What is the most important step you can take to insure a quality tank bottom inspection?	

	It's Not a Trick Question	
	A) Remaining Plate Thickness B) Corrosion Rate C) Type of Scanner Used D) Tank Bottom Surface Preparation / Cleanliness	

	What to Ask for from your Cleaner !	
	• The Society for Protective Coatings provides excellent standards of cleaning performance. • Key specifications would be: - SSPC-SP 6 - Commercial Blast - SSPC-SP 7 - Brush-off Blast - SSPC-SP 14 - Industrial Blast	

	SSPC-SP 6	
	• " A <u>commercial blast</u> cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, dirt mill scale, rust, coating, oxides, corrosion products, and other foreign matter, except for staining... Random staining limited..."	

	SSPC-SP 7	
	• "A <u>brush-off blast</u> cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose coating. Tightly adherent mill scale, rust and coating may remain on the surface."	

	Example of Original Condition	
		

	Blast Cleaned to SP 6	
		

	Blast Cleaned to SP 7	
		

	SSPC-SP 14	
	An industrial blast cleaned surface,... shall be free of all visible oil, grease, dust, and dirt. <u>Traces</u> of tightly adherent mill scale, rust, and coating residues are permitted..."	

	Blast Cleaned to SP 14	
		

	Wet Blast Alternative	
	• When you have the need to use a wet blast instead of the dry blast method for tank surface preparation ... • SSPC provide a similar standard for wet blast options	

	Why is cleaning so Important	
	• "What an inspector cannot see cannot be effectively inspected." • <u>The visual portion of the API Standard 653 inspection is critical.</u> • Additionally, items such as vacuum box, helium testing or other NDE methods can be severely limited without proper cleaning.	

	MFL Considerations	
	• These issues haven't even mentioned the overwhelming problems created by poor tank bottom preparation for the MFL inspection. Issues such as: 1) Loose material clogging MFL scanner magnets 2) Material packed into pits that make UT prove-up nearly impossible, but certainly un-reliable	



	Wish Everyone Would	
	• The following slides are some examples of good surface preparation using either a dry blast or wet abrasive blast:	





	In Contrast	
	The following are typical examples of what we encounter:	







	"Just do the best you can!"	
	• Think back – have you asked the above of your inspection vendor? • Under the pressure of trying to get your tank back in service – believe me most of you have either used these words or have been very tempted.	

	How will Inspection vendor react?	
	• My hope is that all of the inspection community would tell you that a comprehensive inspection cannot be preformed under the conditions presented. Without proper cleaning the inspection company should decline the work since they cannot perform to the level required.	

	In Summary	
	• Cleaning to a reasonable industry standard is a must to insure that you are getting a “quality” tank bottom MFL inspection – to say nothing of the API Standard 653 visual portion of the inspection.	

	• I would like to thank the Society of Protective Coating (SSPC) for their assistance with this presentation. • Additionally, SSPC provides a wonderful visual reference guide you can use to work with your tank cleaner.	