Battermann + Tillery Group

Flexible Tanks for Liquid Bulk Cargo

Recommended Best Practices

18 September 2024 | Nicolas Gabriel

Flexitanks - an industry standard

Number of flexible tanks in use worldwide :

400k
2010

1.1 mil.
2020

2.2 mil.
and more today

Transported volume of liquid goods in flexible tanks:

45 bil. litres
and more today

General economic considerations helped flexible tanks achieve a breakthrough at the turn of the millennium.

Recommended best practices – Why?

Dozens of manufacturers provide hundreds of different flexitank systems – there are specific risks to be understood by underwriters, brokers and insured parties.

The implementation of these best practices will have a positive impact on the reduction in claims associated with the use of flexible tanks.

Variety of tanks

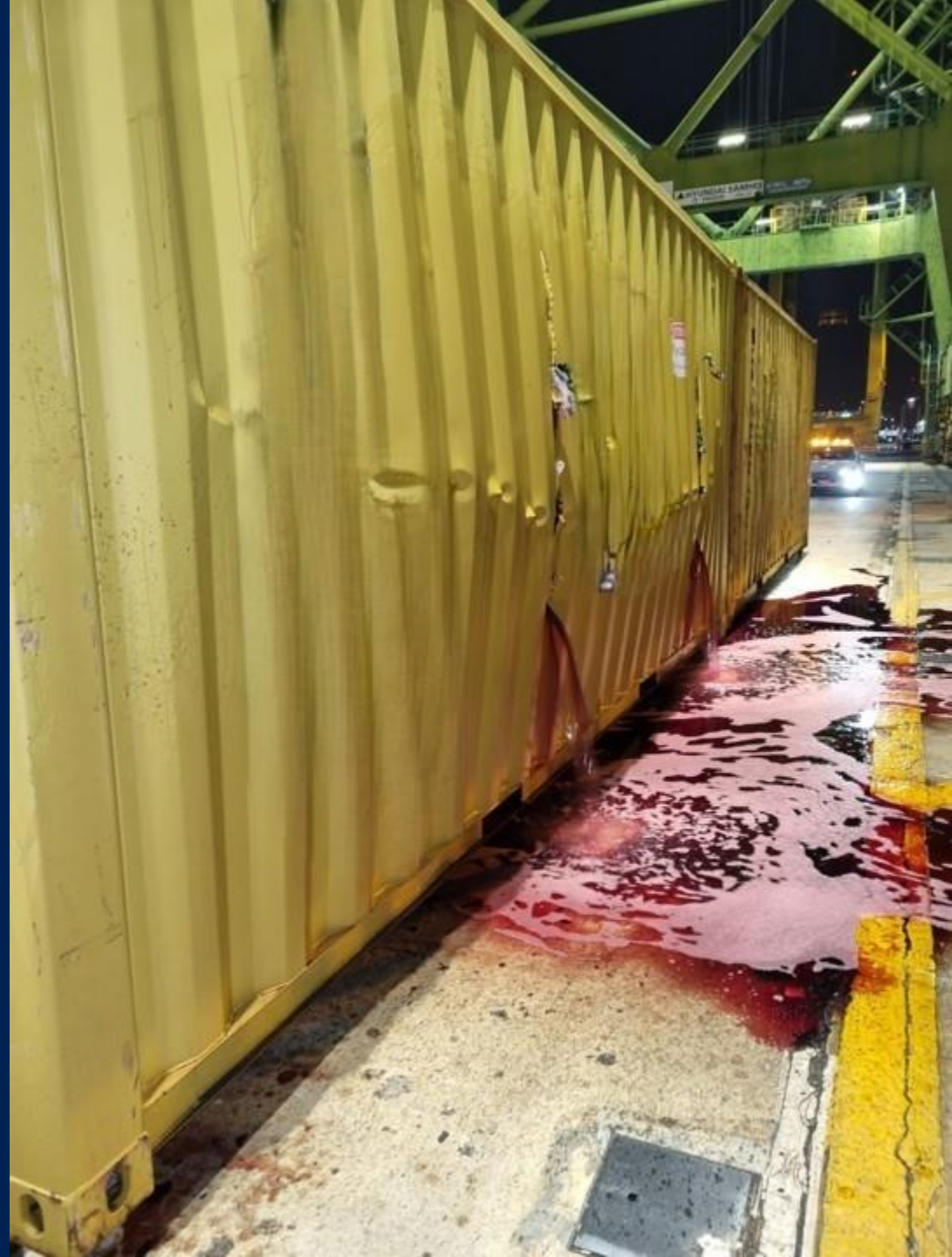
Tailor-made for all kinds of products, including harmless chemicals

Specific risks

Unsuitable containers	Various installation errors	Pre-existing damage	Material or production deficiencies	Extraordinary transport strains
Overfilling	Underfilling	Cargo-related risks	Contractual risks	Handling damage

Sudden discharge

Handling damage



Unsuitable container

Complex failures

Installation errors

Cargo-related risks

Combination of risks

The “normal” bulging container

Consequences

Product loss	Transloading costs	Drip trays	Storage, demurrage, detention	Container damage
Destruction costs	Environmental costs	Cleaning costs (vessel & superstructure)	Contractual penalties	Third-party liability

Contractual risks

Do you know your exposure?

- 22 flexi tanks from Europe to California
- Consignee refused acceptance and failed to provide any support (INCOTERMS: CFR)
- Container arrived in California: March 2021
- Transshipment of goods: April 2022
- Salvage sale of goods

- Total costs:
  - EUR 39,438.00 for goods
  - USD 258,591.51 for transshipment, storage and port
  - USD 144,390.00 for container demurrage

Root cause: CONDENSATION

Recommendations

Product suitability	Tank suitability	Container suitability	Handling symbols	Dedicated installation team
Documentation	Experienced service provider	Emergency response	Contractual diligence	Work safety

Due diligence

Due diligence

- Only skilled staff for flexitank installation
- Documentation of flexitank installation with photo material
- Documentation of filling and unloading with photo material
- Use of checklists to avoid errors

Experienced partners

One-Stop-Shop logistics service provider:

- Selects suitable destination ports which provide knowledge, experience and support (in case of problems)
- Ensures diligent implementation of the manufacturer’s installation instructions
- Uses trained staff only within the scope of the installation of flexible tanks as well as during loading and unloading
- Capable of handling worst-case scenarios and calls in flexitank experts (surveyors) to determine the root cause

Work safety

Marking of the container with appropriate labelling in the door area (work safety) as well as on the roof, as an indication for the van carrier/crane operator.

In case of a claim?

Root cause analysis by a professional

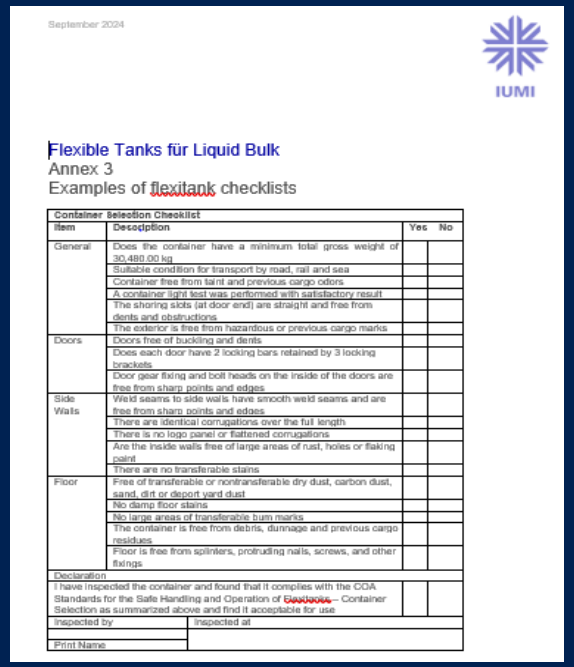
In case of a claim?

Root cause analysis by a professional

Flexible tanks for liquid bulk cargo

Recommended Best Practices by IUMI

Annex 1 - General risks
Annex 2 - Specific risks
Annex 3 - Checklists



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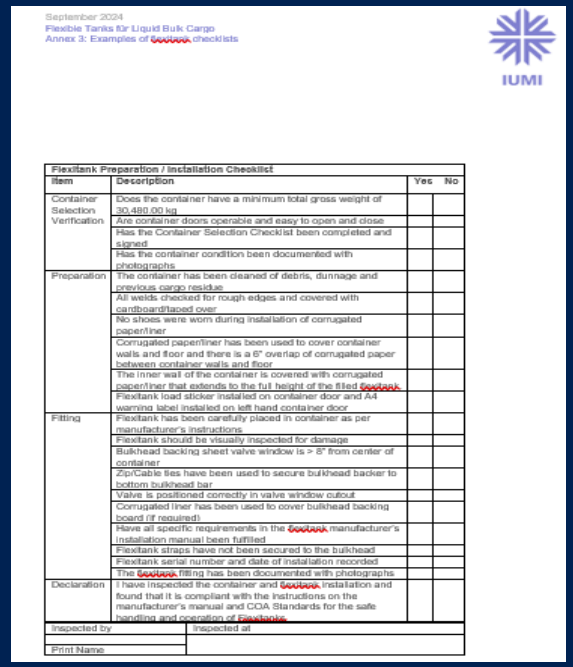
Flexible Tanks für Liquid Bulk
Annex 3
Examples of flexitank checklists

Container Selection Checklist			
Item	Description	Yes	No
General	Does the container have a minimum total gross weight of 30,480.00 kg		
	Suitable condition for transport by road, rail and sea		
	Container free from taint and previous cargo odors		
	A container light test was performed with satisfactory result		
	The shoring slots (at door end) are straight and free from dents and obstructions		
	The exterior is free from hazardous or previous cargo marks		
Doors	Doors free of buckling and dents		
	Does each door have 2 locking bars retained by 3 locking brackets		
	Door gear fixing and bolt heads on the inside of the doors are free from sharp points and edges		
Side Walls	Weld seams to side walls have smooth weld seams and are free from sharp points and edges		
	There are identical corrugations over the full length		
	There is no logo panel or flattened corrugations		
	Are the inside walls free of large areas of rust, holes or flaking paint		
	There are no transferable stains		
Floor	Free of transferable or nontransferable dry dust, carbon dust, sand, dirt or deport yard dust		
	No damp floor stains		
	No large areas of transferable burn marks		
	The container is free from debris, dunnage and previous cargo residues		
	Floor is free from splinters, protruding nails, screws, and other fixings		
Declaration			
I have inspected the container and found that it complies with the CQA Standards for the Safe Handling and Operation of Flexitanks – Container Selection as summarized above and find it acceptable for use			
Inspected by	Inspected at		
Print Name			



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Flexible Tanks für Liquid Bulk Cargo
Annex 3: Examples of flexitank checklists

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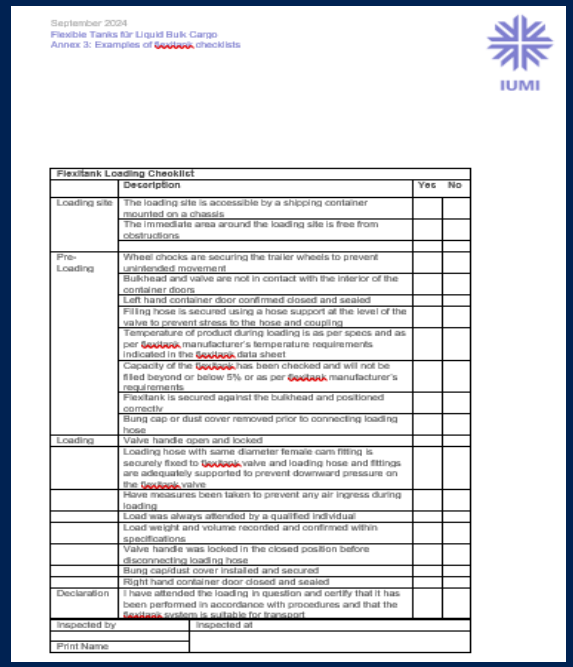
Flexitank Preparation / Installation Checklist			
Item	Description	Yes	No
Container Selection Verification	Does the container have a minimum total gross weight of 30,480.00 kg		
	Are container doors operable and easy to open and close		
	Has the Container Selection Checklist been completed and signed		
	Has the container condition been documented with photographs		
Preparation	The container has been cleaned of debris, dunnage and previous cargo residue		
	All welds checked for rough edges and covered with cardboard/taped over		
	No shoes were worn during installation of corrugated paper/liner		
	Corrugated paper/liner has been used to cover container walls and floor and there is a 6" overlap of corrugated paper between container walls and floor		
	The inner wall of the container is covered with corrugated paper/liner that extends to the full height of the filled flexitank		
	Flexitank load sticker installed on container door and A4 warning label installed on left hand container door		
Fitting	Flexitank has been carefully placed in container as per manufacturer's instructions		
	Flexitank should be visually inspected for damage		
	Bulkhead backing sheet valve window is > 8" from center of container		
	Zip/Cable ties have been used to secure bulkhead backer to bottom bulkhead bar		
	Valve is positioned correctly in valve window cutout		
	Corrugated liner has been used to cover bulkhead backing board (if required)		
	Have all specific requirements in the flexitank manufacturer's installation manual been fulfilled		
	Flexitank straps have not been secured to the bulkhead		
	Flexitank serial number and date of installation recorded		
	The flexitank fitting has been documented with photographs		
Declaration	I have inspected the container and flexitank installation and found that it is compliant with the instructions on the manufacturer's manual and CQA Standards for the safe handling and operation of Flexitanks		
Inspected by	Inspected at		
Print Name			



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Annex 3: Examples of flexitank checklists

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Flexitank Loading Checklist			
	Description	Yes	No
Loading site	The loading site is accessible by a shipping container mounted on a chassis		
	The immediate area around the loading site is free from obstructions		
Pre-Loading	Wheel chocks are securing the trailer wheels to prevent unintended movement		
	Bulkhead and valve are not in contact with the interior of the container doors		
	Left hand container door confirmed closed and sealed		
	Filling hose is secured using a hose support at the level of the valve to prevent stress to the hose and coupling		
	Temperature of product during loading is as per specs and as per flexitank manufacturer's temperature requirements indicated in the flexitank data sheet		
	Capacity of the flexitank has been checked and will not be filled beyond or below 5% or as per flexitank manufacturer's requirements		
	Flexitank is secured against the bulkhead and positioned correctly		
	Bung cap or dust cover removed prior to connecting loading hose		
Loading	Valve handle open and locked		
	Loading hose with same diameter female cam fitting is securely fixed to flexitank valve and loading hose and fittings are adequately supported to prevent downward pressure on the flexitank valve		
	Have measures been taken to prevent any air ingress during loading		
	Load was always attended by a qualified individual		
	Load weight and volume recorded and confirmed within specifications		
	Valve handle was locked in the closed position before disconnecting loading hose		
	Bung cap/dust cover installed and secured		
	Right hand container door closed and sealed		
Declaration	I have attended the loading in question and certify that it has been performed in accordance with procedures and that the flexitank system is suitable for transport		
Inspected by	Inspected at		
Print Name			

Thank you!

https://www.flexitankexperts.com