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North

Bulk Cargo Liquefaction
The Can Test

Delivery Guide

Delivery Guide

This delivery guide provides the background, instructions and content to support senior officers and superintendents delivering can test training to ship's officers and crew.

YOU WILL NEED

- 1 hour preparation time to familiarise yourself with this guide, the participant pack and the video.
- Audio-visual equipment to show The Can Test video with seating and table space for all your participants.
- One participant pack printed for each participant.
- A suitable space to carry out a can test.
- Enough cans of the correct dimensions for each of the participants to carry out a can test.
- Enough cargo to create an example of a high risk cargo and a lower risk cargo for each of the participants to carry out and compare can tests . In order to ensure a sample will show as high risk, weigh the material which will be used the high risk sample, calculate the weight of water which corresponds to the flow moisture point based on the information provided in the cargo declaration and thoroughly mix the water through the sample. See following simple example for determining required weight of water:
  weight of sample – 5kg
  flow moisture point as per cargo declaration – 20%
  5kg x 20% = 1kg of water
  If this does not produce ahigh risk sample it may take trial and error adding more water to produce a sample that fails.
- 20 minutes delivery time.

BEFORE YOU START

Before you deliver this training package it is important that you familiarise yourself with its content, even if you are confident in your own ability to carry out a can test.

This delivery guide supports the participant workbook and contains the answers to the short exercises in the participant workbook.

The video, participant workbook, and this delivery guide are all drawn from the **IMSBC Code Section 8** which states:

8.4 Complementary test procedure for determining the possibility of liquefaction

8.4.1 A ship's master may carry out a check test for approximately determining the possibility of flow on board ship or at the dockside by the following auxiliary method:
Half fill a cylindrical can or similar container (0.5 to 1 L capacity) with a sample of the material. Take the can in one hand and bring it down sharply to a hard surface such as a solid table from a height of about 0.2 m. Repeat the procedure 25 times at one – or – two second intervals. Examine the surface for free moisture or fluid conditions. If free moisture or a fluid condition appears, arrangements should be made to have additional laboratory tests conducted on the material before it is accepted for loading.

8.4.2 If samples remain dry following a can test, the moisture content of the material may still exceed the Transportable Moisture Limit (TML).

Note It is clear therefore in section 8.4 of the code that we cannot tell for sure that a cargo is safe of not for loading only by using the can test, we can only check if the cargo has a higher or lower risk of liquefaction or dynamic separation.

TOP TIPS

Present with passion! Be enthusiastic and supportive of the content, let the participants know you are there to help and support them.

Make eye contact with every participant and smile, it's OK to have fun while you learn!

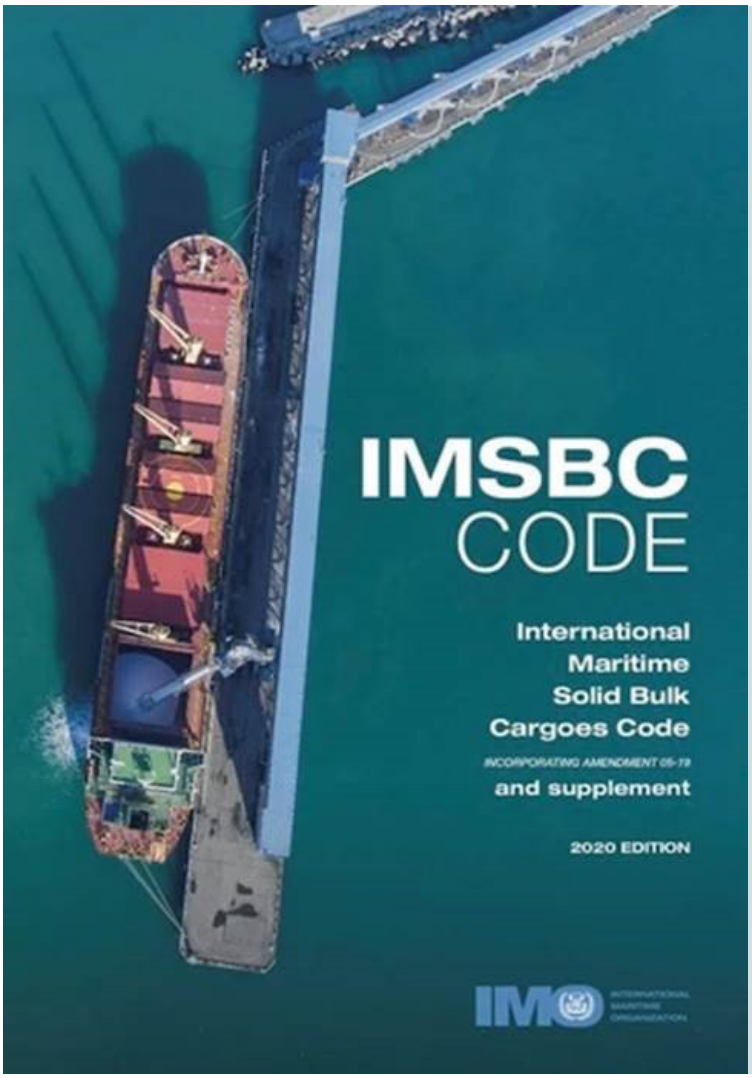
Respect the participants' experiences and encourage them to draw on them, use the knowledge in the room.

Treat all contributions from participants as confidential – let them know this is a safe place to learn from mistakes.

Training Schedule

Around **20 minutes** to deliver and complete this training.

Time	Section	Resource
2 minutes	INTRODUCTION	Workbook
4 minutes	THE CAN TEST	Video
2 minutes	CHOOSE YOUR CAN	Workbook
8 minutes	BANG THE CAN	Practical Exercise
2 minutes	THE RESULTS	Workbook
2 minutes	NEXT ACTIONS	Workbook



You will see key points of section 8 of the Code highlighted throughout the video and this delivery guide.

You should encourage the participants to recall and record these key points when prompted to do so by the 'notes' in their workbooks.

The final page of the participant workbook has a section containing these key points.

Encourage the participants to keep the pocket card, which lists the key points from the Code with them at all times when dealing with IMSBC Code group A cargoes.

Training (cont.)

1. INTRODUCTION

2 minutes

- Make sure all your expected participants are present and have a seat at a table where they can see the video screen.
- Introduce yourself and the training package.
- Tell them it will take no more than 20 minutes.
- Give each participant a participant workbook, make sure they have a pen.
- You can use this time to explain WHY this training is important – refer them to the infographic in their workbooks on page 3.

2. THE CAN TEST VIDEO

4 minutes

- Watch the video yourself before delivering the training
- Write down some notes in the notes section if you want to.
- Make sure all your participants can see the screen and show the video.

www.youtube.com/watch?v=jB2fSjrQLZ4

Notes

Training (cont.)

3. CHOOSE YOUR CAN

2 minutes

Familiarise yourself with the answers below and ask your participants how they categorised each container, suitable or unsuitable, and why. Emphasise the IMSBC Code criteria RIGID, CYLINDRICAL, and between 0.5 – 1 L CAPACITY

This can MAY be suitable. It is RIGID but what size is it? If it is between 0.5 and 1L capacity it can be used.

0.5ltr

This container is NOT suitable. It is NOT RIGID.

0.5ltr

This can is suitable. It is RIGID, CYLINDRICAL and clearly between 0.5 and 1L capacity.

10ltr

This container is NOT suitable. It is NOT CYLINDRICAL (straight sided) and 1L capacity it CAN NOT be used.

This can MAY be suitable. It is RIGID but what size is it? If it is between 0.5 and 1L capacity it can be used.

1ltr

This container is NOT suitable. It is NOT RIGID.

IMSBC CODE CRITERIA

Encourage the participants to make a note of the IMSBC Code criteria in this box in their workbooks.

Rigid, Cylindrical, between 0.5 – 1 L Capacity. Whilst it is best practice to use a 0.5L to 1L can, larger cans may be used if none of the correct size are available. But must be rigid and straight sided.

Training (cont.)

4. BANG THE CAN - PRACTICAL EXERCISE

8 minutes

- This is a key part of the training package and should take 8 -10 minutes.
- Move your participants to the area you have designated to carry out the can tests.
- Ideally issue every participant with a suitable can.
- Have a container full of suitable cargo samples ready with a scoop.
- Whenever possible have two containers of suitable cargo samples, one wetter than the other. Half of the delegates can test one sample, and the other half can test the wetter sample.
- Ideally let every participant conduct a can test.
- Walk amongst the participants to ensure they are conducting the test as per the IMSBC Code criteria.

NOTE

Ideally samples of the loaded cargo should be used, however if samples are not available then the exercise can be simulated.

THIS IS THE KEY PART OF THIS TRAINING PACKAGE!

5. BANG THE CAN – WORK BOOK

1 minute

- After the can tests encourage the participants to make a note of the criteria in the boxes.

NOTE

Encourage the participants to make a note of the IMSBC Code criteria in this box in their workbooks.

1-2 Seconds 25 Times Half Fill
Sharply 0.2m height

6. THE RESULTS

2 minutes

- Ask the participants to compare the results of their can tests with the pictures and statements in their workbooks.
- Participants should tick the pictures and statements that match their samples and make a decision on their can test results. They should categorise their sample as either high risk or lower risk
- Walk amongst the participants, look at their samples and assist where necessary.
- Encourage the participants to look at each other's samples and help each other with the decision making process.
- If you have used two different samples, one dry and one wet, encourage the participants to compare the results of each test.

LOWER RISK

Free particles
Not flattened out
No free water on surface

HIGH RISK

Completely flattened out
Looks like a liquid
Flows like a liquid
Moves in the can
Free water on surface

Training (cont.)

7. NEXT ACTONS

2 minutes

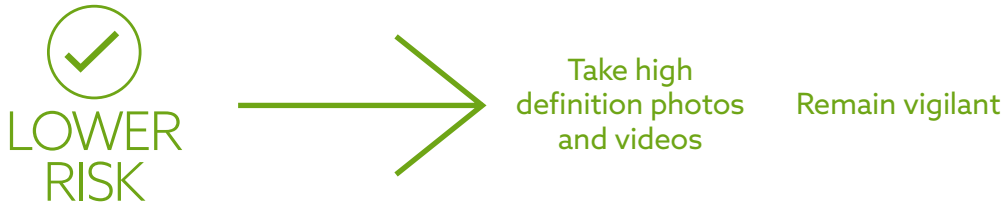
Use this time to go over the key points in the video and reinforce the key themes of **Choosing The Can, Banging The Can** and **the Results.**

Ask the participants to remember what actions were required in the **High Risk** scenario in the video and ask them to complete the flow table in their workbooks.

IF UNSURE

If the results of the can test are inconclusive, treat the cargo as a **High Risk** and seek advice from the company.

Discuss with participants their ideas on actions that can be taken even if the can test shows a lower risk cargo.



REMEMBER

A can test does not confirm that a cargo is safe to load - only that it is potentially **UNSAFE** to to load.

LOOK OUT FOR

Check for any other unusual signs when carrying out a can test. A good example is compaction; if the cargo compacts over 50% of its original volume during the test (see below/following image), it can be an indication that the cargo has characteristics that can make it potentially unsafe for carriage. **If in doubt seek expert help!**

Contact our Loss Prevention team on: loss.prevention@nepia.com

Connect

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