



भारत सरकार / GOVERNMENT OF INDIA

पोत परिवहन मंत्रालय / MINISTRY OF SHIPPING

नौवहन महानिदेशालय / DIRECTORATE GENERAL OF SHIPPING

"बिटा बिल्डिंग", 9 वी मंजिल / "BETA BUILDING", 9th FLOOR

आई-थिंक टेक्नो कैम्पस / I-THINK TECHNO CAMPUS

कांजुर गाँव रोड / KANJUR VILLAGE ROAD

कांजुर मार्ग (ईस्ट) / KANJUR MARG (EAST)

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No.75-NT (1)/2004

Date - 03.09.2014

MS NOTICE NO. 17 OF 2014

Subject:- Approval of Marine Laboratories engaged in testing of cargo for carriage on board merchant ships, as per IMSBC Code - reg.

1. The International Convention for the Safety of Life at Sea, 1974 [SOLAS Convention], at Chapter VI deals with provisions for carriage of cargoes. Regulation 2 of this Chapter requires shippers to provide the Master of the vessel with the appropriate information on the cargo sufficiently in advance of loading to enable precautions which may be necessary for proper stowage and safe carriage of the cargo to be put into effect.
2. The International Maritime Solid Bulk Cargoes Code [IMSBC Code] was adopted by International Maritime Organisation [IMO] on 4th December 2008 vide Resolution MSC.268 (85). Chapter VI of SOLAS Convention was also amended vide Resolution MSC.269 (85) requiring the carriage of Solid Bulk Cargo (other than grain) to be in compliance with the provision of the IMSBC Code. These provisions have come into force from 1st January 2011.
3. Section 4.2 of the IMSBC Code also requires the shipper to provide the Master with appropriate information on the cargo sufficiently in advance of loading to enable the precautions which may be necessary for proper stowage and safe carriage of the cargo to be put into effect. The information in respect of Bulk Cargo, amongst others, shall include information in the form of certificate on the Moisture Content [MC] and Transportable Moisture Limit [TML] of the cargo in the case of concentrates or other cargo that may liquefy.
4. Amendments have been made to the IMSBC Code vide Resolution MSC.354 (92) by IMO adopted on 21st June 2013. The amendments are deemed to have been accepted on 1st July 2014 and will enter into force on 1st January 2015. The amendments include, amongst others that when a concentrate or other cargo which may liquefy is carried, the shipper shall provide the ship's Master with a signed certificate of the TML and declaration of the Moisture Content issued by an entity recognized by the Competent Authority.
5. The Ministry of Shipping, Government of India, vide their letter No PT.11033/67/2010-PT dated 28.05.2010 addressed to Chairman of all major ports, inter-alia has required that the assessing organization (i.e. Marine Laboratories) be approved by the Directorate General of Shipping.

6. This Directorate vide letter No.75-NT(1)/2014 dated 25.03.2014 had issued instructions to all the Mercantile Marine Departments [MMD] with regard to the procedure for inspection and approval of Marine Laboratories engaged in testing of cargo for carriage on board Merchant Ships as per IMSBC Code. The scrutiny sheet for assessment and approval of laboratories as per IMSBC Code was also forwarded to the respective MMDs. Copy of the said inspection scrutiny sheet is enclosed at Annexure to this MS Notice for reference of all concerned.

7. All Marine Laboratories engaged in testing of cargo for carriage on board Merchant Ships as per IMSBC Code and desiring to be approved by this Directorate may follow the requirements stipulated in the inspection scrutiny sheet and approach the jurisdictional MMD for having their Marine Laboratories inspected for approval.

8. This is issued with the approval of the Competent Authority.



(Capt K P Jayakumar)

Dy. Nautical Adviser to the Govt. of India

Encl: Annexure

To
All concerned

Copy to –

1. The Principal Officer MMDs, Mumbai/Kandla/Kochi/ Chennai/Kolkata.
2. The Surveyor Incharge, MMDs, Jamnagar/Mormugao/New Mangalore/Tuticorin/
Vishakhapatnam/ Paradip/Haldia/Port Blair.
3. Computer Cell with a request to upload on the website
4. Guard File.

SCRUTINY SHEET FOR ASSESSMENT AND APPROVAL OF LABORATORIES AS PER IMSBC CODE

REQUIREMENTS		COMPLIANCE	REMARKS
AA BASIC REQUIREMENTS			
Name and Address of the Laboratory :			
a	The legal identity of the laboratory to be clearly established		Relevant legal documents are to be attached.
b	The laboratory premises to have the necessary permissions from the concerned local authorities		Shop and Establishment registration, Municipality license etc.,
c	Infrastructure:		Plans of premises to be attached
	1) The premises to have permanent construction with proper and permanent roofing and not be a temporary structure / temporary roof.		
	2) The walls of the premises are to be properly coated / painted		
	3) The premises to have modern flooring of ceramic tiles/ granite/ mosaic or similar material.		
	4) The premises to have adequate lighting.		
	5) The premises to be adequately ventilated.		

d	The laboratory to be accredited by the National Accreditation Board for Testing & Calibration Laboratories (NABL)		Certificate of Accreditation by NABL is to be attached
e	The laboratory to be in possession of quality certification under ISO 9001:2008		Certificate of Accreditation is to be attached
f	The laboratory to have all relevant and updated/amended publication/standards as required (i.e. IMSBC Code (latest Edition), ASTM C230, ASTM C109, SOLAS etc., are some of the publications required to be maintained.		Complete list of publication & standards to be attached
g	The laboratory to have necessary fire-fighting equipment (in view of the hot air ovens being used)		
BB	Requirements as per IMSBC Code Appendix 2 (Edition 2012)		
1.1	FLOW TABLE TEST		
1.1	Scope: The Flow Table is generally suitable for mineral concentrates or other fine material with a maximum grain size of 1mm. It may also be applicable to materials having a maximum grain size of upto 7mm. It may not give satisfactory results for materials coarser than this or for some materials with high clay content. If the flow table test is not suitable for a material in question, the procedures should be those approved by the authority of the port state.		
1.1.2	Apparatus		Photographs to be attached

1.1.2.1	Standard Flow Table & Frame		
	The frame of the flow table is to be made of apparent good quality cast iron consisting of three ribs extending the full height of the frame & 120 deg. apart.		
	The top of the frame as well as the bottom should be suitably ground to give complete contact with shaft the collar and the steel plate respectively.		
	The table-top to be made of finely machined brass or bronze.		
	The dimensions of the table-top should be 254 mm (+/- 2.5mm) X 8 mm		
	The table-top should be supported by six ribs at the bottom		
	The shaft should be attached to the table-top by means of a screw thread		
	The play between the shaft and the boring in the frame should be within 0.26mm		
	The shaft should make contact with the cam only after the cam has rotated by 120 deg. after falling of the shaft.		
	The Drop height should be as per ASTM Standard G230 - (12.7mm)		
	The Drop counter should operate at 25 drops/minute		
	There should be proper markings on the Flow table as described in the IMSBC Code		

	The Flow table rotating cam should be fitted tightly.		
1.1.2.2	Flow table Mounting.		
	The Flow table frame should be tightly bolted to a cast iron or steel plate atleast 25 mm thick and 250mm square.		
	The top surface of this plate should be machined to a smooth plane surface.		
	The plate should be apparently anchored to the top of a concrete pedestal & partly embedded in the concrete pedestal as required by the IMSCB Code		
	The pedestal should be cast inverted on the base plate.		
	A positive contact between the base plate and pedestal should be obtained at all times.		
	The flow tabled is leveled in perpendicular axis (No additional plates or nuts to be used)		
	The pedestal height, top square and the bottom square should be as per the ASTM Standard C230.		Actual height --- mm
	The pedestal height should be between 625 - 750 mm.		Actual height --- mm
	The pedestal square at the top should be between 250 - 275 mm		Actual height --- mm
	The square at the bottom should be between 375 - 400 mm		
	The construction of the pedestal should be of a monolithic structure, i.e. the pedestal should be made up of a cast		

	consisting of concrete.		
	A suitable and stable gasket cork pad should be inserted under each corner of the pedestal.		
	The flow table should be checked frequently for levelness of the table top, stability of the pedestal and tightness of the bolts and nuts in the table base and the pedestal plate.		
	The vertical shaft of the table should be kept clean and should be lightly lubricated with light oil.		
	There should be no oil present between the contact faces of the table top and the supporting frame.		
	The table should be raised and permitted to drop a dozen or more times just prior to use if it has not been operated for some time.		
	The rotating cam should be properly lubricated.		
	The Gear box should be properly lubricated.		
1.1.2.3	Mould		
	The mould for casting the flow specimen should be made of cast bronze or brass.		
	The measurements of the mould should be as per the standard, i.e. the diameter of the top should be 69.8 mm ± 0.5 mm		Actual diameter --- mm
	The surface of the base and top should be parallel and at a right angle to the vertical axis of the cone.		

	The mould should have a minimum wall thickness of 5 mm		Actual thickness --- mm
	The outside of the top edge of the mould should be shaped so as to provide an integral collar for convenient lifting of the mould		
	All the surfaces of the mould should be machined to a smooth finish.		
1.1.2.4	Tamper		
	The tamper should be designed and constructed as per the recommendations in the IMSBC Code.		
1.1.2.5	Scales and Weights		Calibration certificates to be attached.
	The scales should confirm to the following requirements: On scales in use, the permissible variation at a load of 2000 gms should be ± 2.0 gms.		
	The weighing balance should be placed in an appropriate position.		
	The weighing balance should be placed on a flat surface.		
	The weighing should be calibrated by an NABL accredited laboratory.		Calibration certificates to be attached
1.1.2.6	Glass graduated measuring cylinder and burette.		Calibration certificates to be attached
1.1.2.7	A hemispherical mixing bowl approx 30 cm diameter, rubber gloves and drying dishes or pans. Alternatively, an automatic mixer of similar capacity can be used for the		

	mixing operations. In this case, care should be exercised to ensure that the use of such a mechanical mixer does not reduce the particle size or consistency of the test material.		Calibration certificates to be attached
1.1.2.8	A drying oven with controlled temperature upto approx 110 degree Celsius. This oven should be without air circulation.		
1.1.3	Is the Procedure for carrying out the test as specified in the IMSBC Code.		
1.2	PENETRATION TEST		
1.2.1	Scope : The penetration test is generally suitable for mineral concentrates, similar materials, and coals upto a top size of 25 mm. In this procedure, the sample, in a cylindrical vessel, is subjected to vertical vibration of 2g rms \pm 10% (g = gravity acceleration) for 6 minutes. When the penetration depth of a bit put on the surface exceeds 50 mm, it is judged that the sample contains moisture content greater than the flow moisture point.		
1.2.2	Apparatus		Photographs to be attached
1.2.2.1	The test apparatus consists of: Vibrating table Cylindrical vessels Indicators (penetration bits and a holder) Tamper Ancillary equipment		
1.2.2.2	The Penetration machine should consist of a vibrator with a table on which a cylindrical vessel can be clamped. The vibrator should be capable of exciting a mass of 30 kg at a		The acceleration to be checked with a calibrated accelerometer upto 3 gms.

	frequency of either 50 Hz or 60 Hz with acceleration of 3g rms or more, and it can be controlled to adjust the acceleration level.		
1.2.2.3	The cylindrical vessel should be made of reasonable rigid, non-magnetic impermeable and lightweight material such as acrylics or vinyl chloride.		
1.2.2.4	Penetration bits are made of brass. The mass of the bit for concentrates should be adjusted to 177g. When the sample contains coarse particles, it is recommended that two bits of the same pressure are put on the surface to avoid misjudgment.		
1.2.2.5	A holder should be made to guide the rod with minimum friction to the centre of a cylindrical vessel. When two bits are used, they should be positioned suitable.		
1.2.2.6	A cylindrical vessel and penetration indicators should be selected in accordance with the nature and condition of the test sample, viz. size of particles and bulk density.		
1.2.3	Is the Procedure for carrying out the test as specified in the IMSBC Code.		
CC	PERSONNEL (qualification, training and practical experience)		
	Name & Designation	Qualification	Experience in testing
	Head of Laboratory - 1. Should at least be in possession of a Certificate of Competency as Second Mate of a foreign going ship and have served on foreign going ships handling cargo		

	<p>for at least 24 months after obtaining Certificate of Competency.</p> <p>2. Have conducted more than 25 tests with each apparatus (Flow Table & Penetration Test) at an NABL accredited laboratory.</p> <p>3. Should have preferably 1 year experience of handling samples in an NABL accredited laboratory pertaining to testing of FMP & Moisture.</p> <p>4. Training on Internal Quality Auditor for 9001:2008</p>		
	<p><u>Technical Head / Chemist –</u></p> <p>1. At least a graduate in Chemistry / Physics</p> <p>2. Trained in IMSBC Code.</p> <p>3. Trained in Laboratory Management (as per ISO 17025:2005)</p> <p>4. Trained on estimation of Measurement of Uncertainty</p> <p>5. Have conducted more than 25 tests with each apparatus (Flow table / Penetration test as applicable) at an NABL accredited laboratory.</p> <p>6. To have a minimum of 6 months experience of handling samples in an NABL accredited laboratory pertaining to testing of FMP & Moisture.</p>		

Recommendations / Comments of Nautical Surveyor:

Nautical Surveyor