

Industrial Guideline nr. 2

OFFSHORE CONTAINERS

Purpose

Provide guidance for the safe use of offshore containers in the Dutch mining industry taking in account Dutch legislation and European standards.

N.B. This Guideline does not implement the requirements on material, welding, design and strength calculations as mentioned in NEN-EN 12079-1:2006

Field of Application

This guideline is applicable for offshore containers with a maximum gross weight not exceeding 25.000 kgs, intended for repeated use to and from, and on mining installations in the Dutch sector of the Continental Shelf as well as on the Dutch territorial sea and inland waters.

Dutch legislation

For the transportation of goods by ship to and from an offshore mining installation often containers are being used. For loading and offloading of these containers including the used lifting equipment the Dutch ARBO legislation is applicable. On the containers itself no Dutch legislation applicable.

The definition of containers in the “Warenwetbesluit containers” is only applicable to the so-called CSC containers used for the international transportation of goods.

European standards

The European standard EN-12079 is since 1 April 1999 in place and per 1 September 2006 extended with part 2 (lifting sets) and part 3 (periodic inspection). This standard provides rules for design, construction, lifting sets, examination, testing and marking of offshore containers with a maximum gross weight of 25.000 kg.

EN-12079:2006 defines offshore containers as:

“Portable units for repeated use in the transport of goods or equipment, handled in open seas, to, from and between fixed and/or floating installations and ships”.

The unit incorporates permanently installed equipment¹ for lifting and handling and may include equipment for filling, emptying, cooling, heating etc.”

The containers used in Dutch waters (including the continental shelf) for the transportation of goods to and from offshore mining installations are under the definition of offshore containers as per EN-12079:2006².

¹ Permanent equipment: equipment that is attached to the container and which is not cargo. This may include e.g. lifting sets, refrigeration units, shelves, securing points, garbage compactors.

² Units for exceptional and incidental use on an offshore mining installation, like temporary living quarters (TLQ's), emergency power units, emergency sanitary units, emergency kitchen units are allowed to be fitted with so called “Cornerblock adaptors” to meet the criteria as mentioned in addendum 1 (this incorporates that the individual units have to face an initial loadtest at 200 % of the maximum gross weight.)

Application of EN-12079 in the Dutch offshore industry

With the first version, enforced 1 April 2000, the NOGEP A members adopted the EN-12079 as guidance for offshore containers with the following understanding:

1. Offshore containers built as from 1 April 2000 shall fulfill the requirements of EN-12079:2000;
2. Offshore containers built before 1 April 2000, shall be upgraded in 3 stages (timeframes) and modified in such a way that they meet a comparable level of safety as offshore containers designed and built according EN-12079:2000.

As from August 2006 the new version of the standard EN-12079:2006 is adopted by NOGEP A. Offshore containers built before 1 April 2000 as mentioned under (2) in the previous paragraph and modified and have the comparable level of safety as offshore containers designed and built according to EN-12079:2006, and followed the periodic examination and testing scheme, will be accepted. In addition offshore containers shall:

1. Have markings and requirements as mentioned in Attachment 1
2. Meet the specifications of lifting sets connected to offshore containers as mentioned in Attachment 3.

Periodical testing and inspection

Offshore containers shall be tested and inspected as mentioned in Attachment 2 by:

1. An inspection body meeting the requirements as per NEN-EN-ISO/IEC 17020 or;
2. An inspection body which is recognized by EKH and or TCVT and proofed to be qualified to carry out inspections on offshore containers in accordance with EN-12079

N.B. all paragraph numbers mentioned in Attachments 1 ,2 and 3 are referring to the paragraph numbers from EN-12079:2006.

ATACHMENT 1 - Markings

Safety markings (9.1)

The tops of closed containers and the top rails of open- and framed containers shall be marked with a band (solid or hatched) not less than 100 mm wide round the roof perimeter

Identification markings (9.2)

Each container shall be marked with a unique container number, issued by the owner, as a prime identifier for use as the common cross-reference on all in-service certification, shipping documentation

The container number shall be prominently and indelibly displayed on all sides of the container (as viewed from ground level) in characters of a contrasting colour, not less than 75mm high. If a container has a roof, the container number shall be displayed on the roof in characters 300mm high or more

Information markings (9.3)

Each container shall be clearly marked with;

- Maximum gross mass (in kg)
- Tare mass (in kg)
- Payload (in kg)
- Relevant dangerous goods placarding in accordance with the IMDG code.
- Relevant electrical hazard classification and zone marking according to ATEX directive.

NOTE: Placarding should be removed when container no longer contains dangerous goods.

Characters shall be displayed in a contrasting colour not less than 50 mm high

Other markings (9.4)

If the container is fitted with an intermediate deck the payload of the deck shall be displayed on the inside of the container in a position where it is clearly visible at all times, in characters of a contrasting color not less than 50 mm high.

Forklift pockets (5.4.5)

When fitted, forklift pockets shall be installed in the bottom structure and shall have a closed top, pass through the base and be provided with the means to prevent the container from tipping from the forks. The internal dimensions of the forklift pockets shall be 200 mm x 90 mm.

Forklift pockets shall be located such that the container is stable during handling and driving with forklift truck; container length, height, width and rating shall be taken into account.

Forklift pockets shall be located as far apart as practicable but need not be more than 2050 mm apart from the center of pocket to center of pocket

Protruding parts (5.1.3)

Protruding parts on the outside of the offshore container that may catch other containers or structures shall be avoided. Protruding parts (door handles, hatch, cleats , etc.) shall be so placed or so protected that they do not catch the lifting set.

Pad-eyes (5.4.7)

In order to prevent lateral bending moments on pad eyes, they shall be aligned with the sling to the center of lift, with a maximum manufacturing tolerance of approx. 2,5 degree.

The diameter of holes in pad-eyes shall match the shackle used, clearance between shackle pin and pad-eye hole shall not exceed 6% of the nominal shackle pin diameter.

The tolerance between pad-eye thickness and inside width of shackle shall not exceed 25% of the inside width of the shackle.

Pad-eyes shall be so designed as to permit free movement of the shackle and sling termination without fouling the pad-eye.

Pad-eyes shall not protrude outside the boundaries of the container other than vertically upward, and shall as far as possible be designed to avoid damage from other containers.

ISO corner fittings (5.4.8)

Where ISO corner fittings are mounted to offshore freight containers they shall conform to ISO-1161

NOTE: Lifting offshore with shackles in these corner fittings is not acceptable.

ATTACHMENT 2 – Testing and Inspection of Offshore Containers

Periodical testing- and inspection schedule offshore containers				
Time or Interval	Test / Inspection			
	Lifting test	NDE examination of pad eyes	Thoroughly visual inspection	Suffix to be marked on plate (paragraph 10)
Maximum period of 12 months	N.A. 2)	N.A. 2)	Yes	V
Maximum period of 48 months	N.A. 2)	Yes	Yes	VN
After substantial repair or alteration ¹⁾	Yes	Yes	Yes	T
1) A substantial repair or alteration means any repair and/or alteration carried out , which may, in the opinion of an inspection body, affect the primary elements of the offshore container, or elements which contribute directly to its structural integrity. 2) The inspection body may require other or additional inspections, examinations and or tests.				

N.B. Suffix T - indicating proof load test, non-destructive examination, and visual inspection
 Suffix VN - indicating non-destructive examination and visual inspection
 Suffix V - indicating visual inspection only.

Details of above mentioned periodical inspections and examinations as mentioned in EN-12079-3:2006

ATTACHMENT 3 - Testing and Inspection of Lifting sets

Lifting sets (3.1)

One or more single or multi leg slings (with or without a top leg) and shackles, assembly secured or not, intended to be connected to the pad-eyes of an offshore container for the purpose of lifting that container to, from or between fixed and floating installations and ships, in open seas

General requirements (5.1)

Slings shall be rated for their intended angle of use. In all cases four leg slings shall be rated as for three leg slings. In no case shall a sling be rated for an angle of the sling to the vertical in excess of 45 degrees.

Where two 2-legged slings are selected to function as a 4 –legged sling, they shall be calculated as for a 4-legged sling.

Length (5.2.4)

The lifting set shall be of sufficient length to allow easy handling by operators. The top link or master link shall be able to reach to a height of no more than 1.3m above the container bottom when the sling hangs over the long side of the container.

Chain slings (5.3)

Chain slings shall meet all requirements of EN-818-4

Chain having a diameter of less than 10 mm shall not be used under any circumstances.

Wire rope slings (5.4)

Wire rope slings shall meet all requirements of EN-13414-1

Wire rope having a diameter of less than 14 mm shall not be used under any circumstances.

Wire rope slings shall be 6-stranded and of one of type 6 x 19 or 6 x 36

The termination of wire rope shall be a ferrule secured timble

Shackles (5.5)

Shackles shall meet all requirements of EN-13889 or EN-1677-1 with the additional requirement that the tolerance on the nominal diameter of the shackle pin shall be $-0 +3\%$

Shackles shall be restricted to the following type; bolt type with hexagon head, hexagon nut and split pin.

NOTE: It is recommended that the master link to be attached to the crane hook shall have minimum dimensions 270 x 140 mm , internal

Tags

All sling sets shall be fitted with an identification tag as described in EN-12079-3

Periodic testing and inspection of lifting sets

Periodic inspection shall be carried out as described in the ARBO legislation, with the additional requirement that the examination will be carried out every 24 months.

Periodical testing- and inspection schedule of lifting sets					
Time or Interval	Applicable	Test / Inspection			
		Loadtest	NDE examination	Visual inspection	Suffix to be marked on tag
Interval not exceeding 12 months	Complete lifting set	N/A	N/A	Yes	V
Interval not exceeding 24 months	Sling components and joining links excluding legs	Either load test or NDE		Yes	T or VN
	Chain sling legs	Either load test or NDE		Yes	T or VN
	Shackles	N/A	N/A	Yes	N/A
After substantial repair or alteration ¹⁾	Complete lifting set	Yes	Yes	Yes	T
1. A substantial repair or alteration means any repair and/or alteration carried out , which may, in the opinion of an inspection body, affect the elements of the lifting set, or elements which contribute directly to its structural integrity. The inspection body may require other or additional inspections, examinations and or tests.					

Reccomendation

It is recommended to apply a dynamic amplification that will be experienced in offshore lifting in adverse weather and sea states , the working load limit of the lifting sets for offshore containers can be determined by using annex A ,mentioned in EN-12079-2:2006.