

# Technical eNewsletter

## New guidelines for the carriage of bio-fuel blends on board tankers approved

At its 62nd session on 11-15 July 2011, the IMO Marine Environment Protection Committee (MEPC) approved the “Guidelines for the carriage of blends of petroleum oil and bio-fuels” (MEPC.1/Circ.761, dated 4 August 2011). This is deemed to put an end to the confusion regarding multiple tripartite agreements for similar products with different trade names.

From 1 September 2011, bio-fuel/petro-

leum oil blends should only be shipped in accordance with the new guidelines, regardless of the product’s status under the current MEPC.2/Circular.

Bio-fuel blends containing 75% or more of petroleum oil will be subject to MARPOL Annex I. Unless the ODME (Oil Discharge Monitoring Equipment) is approved for the mixture being transported, all tank washings are required to

be delivered ashore. After 1 January 2016, only Annex I bio-fuel blends for which the ODME is certified may be carried.

Bio-fuel blends containing more than 1% but less than 75% of petroleum oil are from 1 September 2011 to be carried under MARPOL Annex II/IBC code requirements in accordance with one of the following new generic entries in the IBC code chapter 17:

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Bio-fuel blends of Diesel/gas oil and FAME (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	–	–	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and Vegetable oil (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	–	–	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Gasoline and Ethynol alcohol (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	F-T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and Alkanes (C10-C26), linear and branched with a flashpoint >60°C (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	–	–	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and Alkanes (C10-C26), linear and branched with a flashpoint ≤60°C (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	F-T	ABC	No	15.12, 15.17, 15.19.6

The new bio-fuel blend entries are now included in all new product lists issued by DNV for ships meeting the carriage requirements. This will normally be after completion of the renewal survey. DNV can issue addenda or complete new product lists that include the new entries on request.

We have recently learned that, as the demand for bio-fuel blend certification has risen, quite a few ships are failing to meet all the carriage requirements assigned. This relates particularly to requirement 15.12 under column (o), which stipulates separate piping systems and vent systems (15.12.3).

This non-compliance may include common

drain piping to slop tanks from the cargo manifold cross-overs, interconnected IG lines, stripping lines and tank cleaning lines. Separation can be facilitated by installing spool pieces or spectacle flanges as described in chapter 3.1.4 of the IBC code.

In addition to bio-fuel blends, similar issues relating to the carriage of Fatty Acid Methyl Esters (FAME), also subject to 15.12.3, are frequently being addressed.

When planning ahead, the vessel’s piping configuration should be carefully considered in order to take the necessary steps in due time to ensure compliance with the carriage requirements for the products intended for carriage.

**For more information, please contact**

**DNV Classification Support,  
Safety Systems**  
[GCSNO861@dnv.com](mailto:GCSNO861@dnv.com)

**More newsletters from DNV:**  
[www.dnv.com/newsletters](http://www.dnv.com/newsletters)

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MEPC.1/Circ.761  
4 August 2011

**2011 GUIDELINES FOR THE CARRIAGE OF BLENDS OF PETROLEUM OIL  
AND BIO-FUELS**

1 The Marine Environment Protection Committee, at its sixty-second session (11 to 15 July 2011), recognizing the need to clarify how bio-fuels subject to MARPOL Annex II, when blended with petroleum oils, subject to Annex I of MARPOL, can be shipped in bulk, approved the 2011 Guidelines for the carriage of blends of petroleum oil and bio-fuels, which are attached at annex.

2 In approving the 2011 Guidelines, the Committee agreed that these should become operative from 1 September 2011 and that until that time, the current interim guidance measures which have been in place should remain in effect.

3 Member Governments and international organizations are invited to bring the annexed Guidelines to the attention of Administrations, recognized organizations, port authorities, shipowners, ship operators and other parties concerned.

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## ANNEX

### 2011 GUIDELINES FOR THE CARRIAGE OF BLENDS OF PETROLEUM OIL AND BIO-FUELS

#### 1 APPLICATION

1.1 These guidelines apply to ships when carrying in bulk blends of Petroleum Oil and Bio-Fuels subject to Annex I and Annex II of MARPOL, respectively.

#### 2 SCOPE

2.1 These Guidelines have been developed to clarify how bio-fuels subject to Annex II of MARPOL, when blended with petroleum oils, subject to Annex I of MARPOL, can be shipped in bulk.

#### 3 DEFINITIONS

For the purpose of these guidelines:

3.1 *Bio-fuels* are ethyl alcohol, fatty acid methyl esters (FAME), vegetable oils (triglycerides) and alkanes (C10-C26), linear and branched with a flashpoint of either 60°C or less or more than 60°C, as identified in chapters 17 and 18 of the IBC Code or the MEPC.2/Circular/tripartite agreements. Following the distribution of these guidelines, further bio-fuels identified as falling under the scope of the guidelines, will be recorded in annex 11 of the MEPC.2/Circular which deals with bio-fuel/petroleum oil blends.

3.2 *Bio-fuel blends* are mixtures resulting from the blending of those products identified at 3.1 above with a petroleum oil.

#### 4 CARRIAGE OF BIO-FUEL BLENDS

The carriage provision for bio-fuel blends is based on the volumetric composition of the blends as follows:

##### 4.1 Bio-fuel blends containing 75% or more of petroleum oil

4.1.1 When containing 75% or more of petroleum oil, the bio-fuel blend is subject to Annex I of MARPOL.

4.1.2 When carrying such bio-fuel blends, Oil Discharge Monitoring Equipment (ODME – see resolution MEPC.108(49)) shall be in compliance with regulation 31 of Annex I of MARPOL and should be approved for the mixture being transported.

4.1.3 Until 1 January 2016 bio-fuel blends may be carried when the ship's ODME is not in compliance with paragraph 4.1.2 above provided that tank residues and all tank washings are pumped ashore.

4.1.4 When considering the deck fire-fighting system requirements of SOLAS chapter II-2, regulations 1.6.1 and 1.6.2, when carrying bio-fuel blends containing ethyl alcohol then alcohol resistant foams should be used.

## 4.2 Bio-fuel blends containing more than 1% but less than 75% of petroleum oil

4.2.1 When containing more than 1% but less than 75% of petroleum oil, the bio-fuel blends are subject to Annex II of MARPOL and should be carried under the following conditions:

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Bio-fuel blends of Diesel/gas oil and FAME (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and Vegetable oil (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Gasoline and Ethyl alcohol (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	F-T	AC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and Alkanes (C10-C26), linear and branched with a flashpoint > 60°C (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and Alkanes (C10-C26), linear and branched with a flashpoint ≤ 60°C (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	F-T	ABC	No	15.12, 15.17, 15.19.6

4.2.2 With respect to new bio-fuels identified as falling under the scope of these guidelines, carriage requirements for specific bio-fuel/petroleum oil blends to be shipped as MARPOL Annex II cargoes will be incorporated into List 1 of the MEPC.2/Circular, as appropriate.

## 4.3 Bio-fuel blends containing 1% or less petroleum oil

4.3.1 When containing 1% or less of petroleum oil, the bio-fuel blends are subject to Annex II of MARPOL.

## 5 BLENDING OF PETROLEUM OIL AND BIO-FUEL ON BOARD

5.1 Blending on board describes the mixing of two products resulting in one single product (a blended mixture) and reflects only physical mixing as distinct from any chemical processing. Such mixing operations should only be undertaken whilst the ship is within port limits.

5.2 The physical blending on board of petroleum oil and bio-fuels during a sea voyage to create new products is prohibited as indicated in MSC-MEPC.2/Circ.8 Prohibition of Blending MARPOL Cargoes on Board During the Sea Voyage.

## 6 CERTIFICATION REQUIREMENTS

6.1 The certification for the bio-fuel blend to be shipped should be in compliance with Annex I or Annex II of MARPOL, as appropriate.

**EC-TYPE EXAMINATION  
CERTIFICATE**

Certificate No:  
**MED-B-9860**  
Item No:  
**A.1/2.5**  
Job Id:  
**344.1-001318-10**

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2013/52/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

**This is to certify:****That the Oil discharge monitoring and control system for an oil tanker**

with type designation(s)  
**ODME S-3000**

Issued to

**KSB Seil Co., Ltd.**  
**Busan, Korea, Republic of Korea**

is found to comply with the requirements in the following Regulations/Standards:

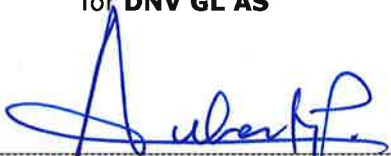
**Annex A.1, item No. A.1/2.5 and Annex B, Module B in the Directive. Marpol 73/78 as amended, Annex I Regulation 31, IMO Res. MEPC.108(49) and IMO Res. MEPC.240(65)**

Further details of the equipment and conditions for certification are given overleaf.

**Høvik, 2015-04-13**  
for **DNV GL AS**




This Certificate is valid until  
**2020-04-13**

*fa*  
  
**Marianne Strand Valderhaug**  
**Head of Department**

Notified Body No.: **0575**

DNV GL local office:  
**Pusan**

  
**Pål Evang Mundaal**  
**Surveyor**



The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.

Certificate No: **MED-B-9860**  
Item No: **A.1/2.5**  
Job Id: **344.1-001318-10**

## Product description

*Intended for installation onboard oil tankers for ballast water monitoring control and alarm of contents of oil at discharge overboard.*

## Application/Limitation

The oil content meter is tested and approved for crude oils, "black" and "white" products as per IMO Resolution MEPC.108(49).

The oil content meter is also tested and approved for the blends of petroleum oil and bio-fuels as given in IMO MEPC.240(65) and MEPC.1/Circ.761, to meet the requirements for testing bio-fuel blends containing 99% and 75% or more of petroleum oil.

Enclosure protection of electrical components in engine room and pump room to be minimum IP44.

Transmitters and other electrical components/ systems in pump room to be arranged 'intrinsically safe'.

## Type Examination documentation

*Drw. No.:*                      *Rev. :*    *Title :*

### *Technical drawings :*

MK-SV-3040	0-1	Principle Diagram
MK-SV-3151	0	Entire System Drawing
MK-SV-3151	1-4	Entire System Drawing
MK-SV-3151	1-5	Entire System Drawing
MK-SV-3151	2-1	Entire System Drawing
MK-SV-3151	2-2	Entire System Drawing
MK-SV-3151	3-4	Entire System Drawing
MK-SV-3151	3-5	Entire System Drawing
MK-SV-3151	4-3	Entire System Drawing
MK-SV-3151	4-4	Entire System Drawing
MK-SV-3151	5-3	Entire System Drawing
MK-SV-3151	5-4	Entire System Drawing
MK-SV-3151	6-2	Entire System Drawing
MK-SV-3151	6-3	Entire System Drawing
MK-SV-3151	7-3	Entire System Drawing
MK-SV-3151	7-4	Entire System Drawing
MK-SV-3151	8-2	Entire System Drawing
MK-SV-3151	8-3	Entire System Drawing
MK-SV-3151	9-2	Entire System Drawing
MK-SV-3151	9-3	Entire System Drawing
MK-SV-3151	10-2	Entire System Drawing
MK-SV-3151	10-3	Entire System Drawing



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MK-SV-3151	11-4	Entire System Drawing
MK-SV-3151	11-5	Entire System Drawing
MK-SV-3151	12-4	Entire System Drawing
MK-SV-3151	12-5	Entire System Drawing
MK-SV-3151	13-2	Entire System Drawing
MK-SV-3151	13-3	Entire System Drawing
MK-SV-3151	14-3	Entire System Drawing
MK-SV-3151	14-4	Entire System Drawing
MK-SV-3010	0-8	Controller Dimension Drawing
MK-SV-3010	0-9	Controller Dimension Drawing
MK-SV-3010	1-7	Controller Dimension Drawing
MK-SV-3020	0-1	Controller Installation
MK-SV-3020	0-2	Controller Installation
MK-SV-3030	0-7	Oil Content Meter Dimension Drawing
MK-SV-3030	1-1	Oil Content Meter Dimension Drawing
MK-SV-3130	0-7	Oil Content Meter Cabinet on Penetration Plate
MK-SV-3130	1-6	Oil Content Meter Cabinet on Penetration Plate
MK-SV-3130	2-6	Oil Content Meter Cabinet on Penetration Plate
MK-SV-3130	3-3	Oil Content Meter Cabinet on Penetration Plate
MK-SV-3120	1-3	Motor Starter Dimension Drawing
MK-SV-3120	2-2	Motor Starter Dimension Drawing
MK-SV-3120	3	Motor Starter Dimension Drawing
MK-SV-3110	0-6	Motor & Pump Assembly
MK-SV-3110	1-7	Motor & Pump Assembly
MK-SV-3101	0-2	Bulkhead Penetration for Motor/ Pump
MK-SV-3101	1-4	Bulkhead Penetration for Motor/ Pump
MK-SV-3141	0-1	Bulkhead Penetration for ppm Measurer
MK-SV-3141	1-1	Bulkhead Penetration for ppm Measurer
MK-SV-3141	2-1	Bulkhead Penetration for ppm Measurer
MK-SV-3090	0-3	Installation Drwg. for Oil Content Meter & Motor/Pump Ass'y
MK-SV-3090	1-2	Installation Drwg. for Oil Content Meter & Motor/Pump Ass'y
MK-SV-3090	2-2	Installation Drwg. for Oil Content Meter & Motor/Pump Ass'y
MK-SV-3081	2	Hydraulic Package
MK-SV-3160	0-1	Sampling Probe Installation
MK-SV-3160	1-1	Sampling Probe Installation
MK-SV-3160	2-1	Sampling Probe Installation
MK-SV-3160	3	Sampling Probe Installation
MK-SV-3160	4	Sampling Probe Installation
MK-SM-3090	1-1	Pressure Switch
MK-SM-3071	2-3	Transmitter for Flowmeter
MK-SM-3071	3-3	Transmitter for Flowmeter
MK-SM-3080	3	Dimension for Installation Pitot Tube
MK-SM-3080	4	Dimension for Installation Pitot Tube
MK-SM-3080	5	Dimension for Installation Pitot Tube

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Certificate No: **MED-B-9860**  
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 Job Id: **344.1-001318-10**

MK-SM-3081	1-2	Installation/ Precaution for Pitot Tube
MK-SM-3040	0	Globe Check Valve
MK-SM-3040	1	Globe Check Valve
MK-SM-3010	0-2	Ball Valve
MK-SM-3010	1	Ball Valve
MK-SM-3010	2	Ball Valve
MK-SM-3060	0-3	Non-Return Valve
MK-SE-3040	0-13	Electric Connections Single-Line Diagram
MK-SE-3040	0-14	Electric Connections Single-Line Diagram
MK-SE-3040	1-10	Electric Connections Single-Line Diagram
MK-SE-3040	1-11	Electric Connections Single-Line Diagram
MK-SE-3040	2-11	Electric Connections Single-Line Diagram
MK-SE-3040	2-12	Electric Connections Single-Line Diagram
MK-SE-3040	3-10	Electric Connections Single-Line Diagram
MK-SE-3040	3-11	Electric Connections Single-Line Diagram
MK-SE-3040	4-5	Electric Connections Single-Line Diagram
MK-SE-3040	4-6	Electric Connections Single-Line Diagram
MK-SE-3040	5-5	Electric Connections Single-Line Diagram
MK-SE-3040	5-6	Electric Connections Single-Line Diagram
MK-SE-3040	6-5	Electric Connections Single-Line Diagram
MK-SE-3040	6-6	Electric Connections Single-Line Diagram
MK-SE-3040	7-5	Electric Connections Single-Line Diagram
MK-SE-3040	7-6	Electric Connections Single-Line Diagram
MK-SE-3040	8-6	Electric Connections Single-Line Diagram
MK-SE-3040	8-7	Electric Connections Single-Line Diagram
MK-SE-3040	9-3	Electric Connections Single-Line Diagram
MK-SE-3040	9-4	Electric Connections Single-Line Diagram
MK-SE-3040	10-2	Electric Connections Single-Line Diagram
MK-SE-3040	10-3	Electric Connections Single-Line Diagram
MK-SE-3020	0-2	Electric Drawing for Motor Starter
MK-SE-3020	1-2	Electric Drawing for Motor Starter
MK-SE-3020	2-2	Electric Drawing for Motor Starter
MK-SE-3020	3-2	Electric Drawing for Motor Starter
MK-SE-3020	4-1	Electric Drawing for Motor Starter
MK-SX-3050	0-1	Dimension for Name Plate
MK-SC-3010	2	Layout for Controller Electronic Parts
MK-SC-3020	1	Schematic Drawing for Controller (1)
MK-SC-3030	2	Schematic Drawing for Controller (2)
MK-SC-3040	2	Schematic Drawing for Controller (3)
MK-SC-3050	1	Schematic Drawing for Controller (4)
MK-SC-3060	2	Schematic Drawing for Controller (5)
MK-SC-3070	2	Schematic Drawing for Controller (6)
MK-SC-3110	2	Layout for Oil Content Meter Electronic Parts

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Certificate No: **MED-B-9860**  
Item No: **A.1/2.5**  
Job Id: **344.1-001318-10**

MK-SC-3120	1	Schematic Drawing for Oil Content Meter (1)
MK-SC-3130	0	Schematic Drawing for Oil Content Meter (2)
MK-SC-3140	0	Schematic Drawing for Oil Content Meter (3)
MK-SC-3150	0	Schematic Drawing for Oil Content Meter (4)
MK-SC-3160	0	Schematic Drawing for Oil Content Meter (5)
MK-SC-3170	1	Schematic Drawing for Oil Content Meter (6)

*Operational Manual:*

*S-3000 MEPC 108(49) & MEPC 240(65), Oil Discharge Monitoring Equipmment, Operation Manual*

### Tests carried out

*Test Reports:*

- Tested in accordance with the requirements of the specification contained in Part 1 of the Annex to the Guidelines and Specification contained in IMO Resolution MEPC.108(49), for oil content meter, witnessed and signed by Det Norske Veritas, Pusan, July 2004.
- Tested in accordance with the requirements of the specification contained in Part 2 of the Annex to the Guidelines and Specification contained in IMO Resolution MEPC.108(49), for environmental testing oil content meter and control section, witnessed and signed by Det Norske Veritas, Pusan, July 2004.
- Korea Marine Equipment Research Institute, *Environmental test for controller: Vibration test report with evidence*, dated 26.02.2015.
- Korea Marine Equipment Research Institute, *Environmental test for controller: Low temperature, high temperature, humidity report with evidence*, dated 15.09.2014.
- KSB Seil Co., Ltd., *Environmental test for controller: Fluctuation in power supply test, inclination test, report and evidence*, dated 10.11.2014, witnessed by DNV GL.
- KSB Seil Co., Ltd., *Type approval test report for bio-fuel blends*, dated 10.11.2014, witnessed by DNV GL.

### Marking of product

For traceability to this type approval, each unit is to be marked with:

- Manufacturers name or trade mark
- Type designation
- Serial No.



Certificate No: **MED-B-9860**  
Item No: **A.1/2.5**  
Job Id: **344.1-001318-10**

## Mark of Conformity

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

Module D: The quality system for production and testing shall be approved by the Notified Body.

Module E: The quality system for inspection and testing shall be approved by the Notified Body.

Module F: Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity.

*This certificate is replacing previous EC Type-Examination Certificate No. MED-B-7195.*

FENU



# QS - CERTIFICATE OF ASSESSMENT - EC

Certificate No:  
**MED-D-2071**  
Item No:  
**A.1/2.5**  
Job Id:  
**344.1-001318-11**

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2013/52/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

## This is to certify:

**That the Quality System for the Oil discharge monitoring and control system for an oil tanker**

with type designation(s) as specified in the Appendix to this Certificate

Issued to

**KSB Seil Co., Ltd.**  
**Busan, Korea, Republic of Korea**


is found to comply with the requirements applicable to it.

The quality system for the product, defined in Annex A.1, Item No. A.1/2.5, has been assessed with respect to the procedure of conformity assessment described in Annex B, Module D in the directive.

Limitations:

Modifications made to the Quality System shall immediately be reported to DNV GL AS in order to examine whether this Certificate remains valid. Annual periodical audits will be held to verify the validity of the Certificate.

**Høvik, 2015-04-14**  
for **DNV GL AS**

  
**Marianne Strand Valderhaug**  
Head of Department



Notified Body No.: **0575**

DNV GL local office:  
**Pusan**

This Certificate is valid until  
**2020-04-13**

  
**Pål Evang Nundal**  
Surveyor



The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended.

Certificate No: **MED-D-2071**  
Item No: **A.1/2.5**  
Job Id: **344.1-001318-11**

**APPENDIX, REV. NO. 1**

**QS - Certificate of Assessment – EC, Certificate no. MED-D-2071**

Type designation	EC Type-Examination Certificate No.	Expiry date
Oil discharge monitoring and control system for an oil tanker, Type ODME S-3000	MED-B-9860	2020-04-13

The manufacturer complies with the Council Directive 96/98/EC on Marine Equipment and is allowed to affix the Mark of Conformity followed by the DNV GL AS identification number 0575 and the two last digits of the number of the year in which the product is produced.

Example:  0575/15

The manufacturer shall issue a Declaration of Conformity for each product with reference to the EC Type-Examination Certificate and this QS – Certificate of Assessment – EC.

Place: **Høvik** Date: **2015-04-10**

for **DNV GL AS**



**Surveyor**  
**Pål Evang Nundal**

