

GENERAL INFORMATION

DESCRIPTION :

1st CARCASS : Flexible rubber structure composed of smooth oil resistant extruded NBR main lining, adequate number of wire cords and steel wire helix, textile reinforcements & cover bonded together. For suction and discharge of crude oil and liquid petroleum products for Offshore Mooring.

2nd CARCASS : Additional carcass with oil retention channel, smooth oil and fuel resistant NBR lining, adequate number of textile reinforcements & abrasion resistant chloroprene rubber cover bonded together and vulcanized in a uniform manner. The 2nd carcass is designed to contain any product which may escape from the 1st carcass

Floation medium: Closed cell expanded Polyethylene foam

FITTING : Built-in during hose construction

ELECTRICALLY : Continuous

FAD : Failure Alert Device "Mechanical System"

MATERIAL :

LINING : Smooth, oil resistant extruded (NBR)

COVER : Black rubber, high resistant to abrasion, oil, sunlight and seawater with longitudinal orange spiral.

WIRE HELIX : One helical wire embedded in syntetic rubber

REINFORCED CORD : Wire cord skimmed with rubber

REFERENCE :

NORM : Manufactured and tested according to GMPHOM 2009

PROTOTYPE : ABS report No: NP2087595 dated 22-May-2012

MARKING :

MARKING "A" ON EACH END AT 180 ° :

MANUFACTURER: ANCHOR + "Manuli"

SPECIFICATION: GMPHOM 2009

DIAMETER: ID 600 mm

WORKING PRESSURE: RWP 19 bar

SERIAL NUMBER: mmyy ____

MONTH / YEAR: ____

CARCASS TYPE: DOUBLE CARCASS HOSE

HOSE TYPE: H3006 HF DASH

HOSE NAME: POSEIDON

TEMPORANEY ELONGATION : T.E. _____%

ELECTRICALLY: ELECTRICALLY CONTINUOUS

MARKING "B" ON EACH END AT 180 ° :

Serial number "mm-YY-Progressive nr. "welded on the rim of the flange

MARKING "C" ON EACH END AT 180 ° :

On the hose center : MANULI logo

FITTINGS DATA

NIPPLES :

1)The nipple body to be fabricated from:

Alternative A: seamless steel pipe conforming to ASTM A-106 A or B or API-5L Grade A or B.

Alternative B: steel plate conforming to ASTM A-285 C or equivalent.

In both cases killed or semi-killed steel, with a maximum carbon content of 0.23 per cent.

2) All weld procedures and welders are to be qualified in accordance with ASME IX.

3) All welds, excluding band material welds, to be 100 per cent radiographed in accordance with EN 1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators. Interpretation of seam welds to be according to ASME VIII UW 51B

4) Band material to be equivalent to ASTM A-285 C, killed or semi-killed steel, with a maximum carbon content of 0.23 per cent. Band welds to be wet Magnetic Particle Inspected in accordance with ASME VIII, Appendix 6.

5) Nipple reference number to be stamped in zone 'X' at two places at 180°.

FLANGES :

6) The flange material to be in accordance with ASTM A-105 or equivalent normalised and with a maximum carbon content of 0.25 per cent. The flange rating to be in accordance with ASME B16.5. The class to be specified by the purchaser.

7) The flange face to have a finish equivalent to that specified in EN 1759-1 over its complete area after galvanisation.

8) The flanges to be identifiable by a mill number stamped on the flange edge.

RATING :

"A" END : ASME 300 FF

"B" END : ASME 150 FF

FITTINGS :

9) The circumferential welds between nipple and flange to be 100 per cent radiographed. All weld procedures and welders to be qualified in accordance with ASME IX. The quality and definition of radiographs to be in accordance with EN1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators.

10) Interpretation of butt welds to be according to API 1104.

11) Fitting manufacturer serial number to be stamped on the back of the flange, zone 'Y' at two places at 180°.

COATING :

12)The exposed internal and external surfaces of the end fittings and flanges (including flange faces) to be protected by hot dip galvanisation in accordance with EN ISO 1461.

Surface Preparation: Grit blasting to SA 2½, followed by pickling in acid. Coating: Minimum average coating weight 610 g/m² (equivalent to 85 µm thickness).

Zinc Composition: Bath impurities to comply with the limits specified in EN ISO 1461. Appearance: Coating shall be visually free from nodules, blisters, roughness, sharp points and uncoated areas.

HOSE PERFORMANCE DATA

RATED WORKING PRESSURE	19 bar	MAXIMUM PERMANENT ELONGATION	0,70%
TEST PRESSURE	28,5 bar	MAXIMUM AROMATICS CONTENT	UP TO 60%
MINIMUM BURST PRESSURE - 1st CARCASS	95 bar	MAXIMUM FLOW VELOCITY	UP TO 21 m/s
MINIMUM BURST PRESSURE - 2nd CARCASS	38 bar	FLUID TEMPERATURE RANGE	-20 °C +82 °C
MINIMUM BENDING RADIUS	1,8 m	AMBIENT TEMPERATURE RANGE	-29 °C +52 °C
MAXIMUM TEMPORARY ELONGATION	2,50%	MINIMUM RESERVE BUOYANCY	20%

ALL DATA ARE NOMINALLY CORRECT AND MAY VARY WITHOUT NOTICE

WEIGHT :

600mm (24") x 9,1m (30') = 5115 Kg

OUT DIAMETER :

Float.End=1294mm Float.Body=1193mm Body=856mm
Reinf.End=957mm

REV	DATE	REVISION	PREPARED	REVIEWED
A	03/10/2012	MODIFIED FROM OCIMF'91 TO GMPHOM2009	L.Fortuna	A.Siliquini
0	03/08/2011	FIRST ISSUE	L.Fortuna	A.Siliquini

SCALE
NOT TO SCALE
A3

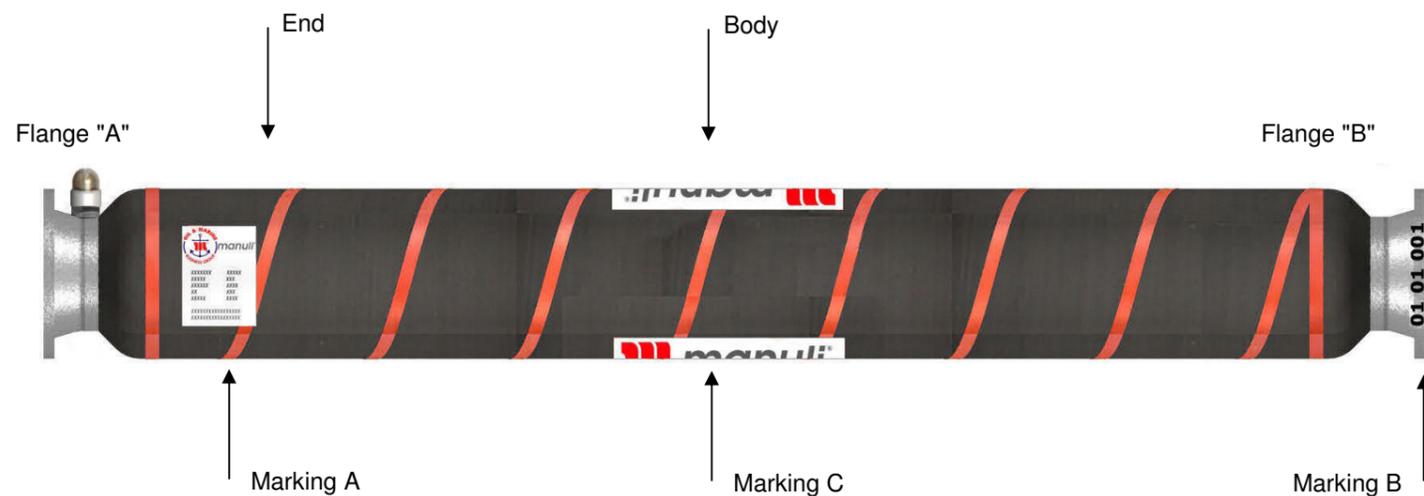
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**H3006 HF DASH 600mm (24") RWP 19bar
Double Carcass One end Reinforced Half
Floating Hose to GMPHOM 2009 spec
for Caspian Pipeline Consortium**



TD. 01.0011/54



GENERAL INFORMATION

DESCRIPTION :

1st CARCASS : Flexible rubber structure composed of smooth oil resistant extruded NBR main lining, adequate number of wire cords and steel wire helix, textile reinforcements & cover bonded together. For suction and discharge of crude oil and liquid petroleum products for Offshore Mooring.

2nd CARCASS : Additional carcass with oil retention channel, smooth oil and fuel resistant NBR lining, adequate number of textile reinforcements & abrasion resistant chloroprene rubber cover bonded together and vulcanized in a uniform manner. The 2nd carcass is designed to contain any product which may escape from the 1st carcass

Floatation medium: Closed cell expanded Polyethylene foam
 FITTING : Built-in during hose construction
 ELECTRICALLY : Continuous
 FAD : Failure Alert Device "Mechanical System"

MATERIAL :

LINING : Smooth, oil resistant extruded (NBR)
 COVER : Black rubber, high resistant to abrasion, oil, sunlight and seawater with longitudinal orange spiral.
 WIRE HELIX : One helical wire embedded in syntetic rubber

REINFORCED CORD : Wire cord skimmed with rubber

REFERENCE :

NORM : Manufactured and tested according to GMPHOM 2009

PROTOTYPE : ABS report No: NP2087595 dated 22-May-2012

MARKING :

MARKING "A" ON EACH END AT 180 ° :

MANUFACTURER: ANCHOR + "Manuli"
 SPECIFICATION: GMPHOM 2009
 DIAMETER: ID 600 mm
 WORKING PRESSURE: RWP 19 bar
 SERIAL NUMBER: mmyy ____
 MONTH / YEAR: ____
 CARCASS TYPE: DOUBLE CARCASS HOSE
 HOSE TYPE: H3030 SD3 FF DASH
 HOSE NAME: POSEIDON
 TEMPORANEY ELONGATION : T.E. _____ %
 ELECTRICALLY: ELECTRICALLY CONTINUOUS

MARKING "B" ON EACH END AT 180 ° :

Serial number "mm-YY-Progressive nr. "welded on the rim of the flange

MARKING "C" ON EACH END AT 180 ° :

On the hose center : MANULI logo

FITTINGS DATA

NIPPLES :

1)The nipple body to be fabricated from:

Alternative A: seamless steel pipe conforming to ASTM A-106 A or B or API-5L Grade A or B.

Alternative B: steel plate conforming to ASTM A-285 C or equivalent.

In both cases killed or semi-killed steel, with a maximum carbon content of 0.23 per cent.

2) All weld procedures and welders are to be qualified in accordance with ASME IX.

3) All welds, excluding band material welds, to be 100 per cent radiographed in accordance with EN 1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators. Interpretation of seam welds to be according to ASME VIII UW 51B

4) Band material to be equivalent to ASTM A-285 C, killed or semi-killed steel, with a maximum carbon content of 0.23 per cent. Band welds to be wet Magnetic Particle Inspected in accordance with ASME VIII, Appendix 6.

5) Nipple reference number to be stamped in zone 'X' at two places at 180°.

FLANGES :

6) The flange material to be in accordance with ASTM A-105 or equivalent normalised and with a maximum carbon content of 0.25 per cent. The flange rating to be in accordance with ASME B16.5. The class to be specified by the purchaser.

7) The flange face to have a finish equivalent to that specified in EN 1759-1 over its complete area after galvanisation.

8) The flanges to be identifiable by a mill number stamped on the flange edge.

RATING :

"A" END : ASME 150 FF

"B" END : ASME 150 FF

FITTINGS :

9) The circumferential welds between nipple and flange to be 100 per cent radiographed. All weld procedures and welders to be qualified in accordance with ASME IX. The quality and definition of radiographs to be in accordance with EN1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators.

10) Interpretation of butt welds to be according to API 1104.

11) Fitting manufacturer serial number to be stamped on the back of the flange, zone 'Y' at two places at 180°.

COATING :

12) The exposed internal and external surfaces of the end fittings and flanges (including flange faces) to be protected by hot dip galvanisation in accordance with EN ISO 1461.

Surface Preparation: Grit blasting to SA 2½, followed by pickling in acid. Coating: Minimum average coating weight 610 g/m² (equivalent to 85 µm thickness).

Zinc Composition: Bath impurities to comply with the limits specified in EN ISO 1461. Appearance: Coating shall be visually free from nodules, blisters, roughness, sharp points and uncoated areas.

HOSE PERFORMANCE DATA

RATED WORKING PRESSURE	19 bar	MAXIMUM PERMANENT ELONGATION	0,70%
TEST PRESSURE	28,5 bar	MAXIMUM AROMATICS CONTENT	UP TO 60%
MINIMUM BURST PRESSURE - 1st CARCASS	95 bar	MAXIMUM FLOW VELOCITY	UP TO 21 m/s
MINIMUM BURST PRESSURE - 2nd CARCASS	38 bar	FLUID TEMPERATURE RANGE	-20 °C +82 °C
MINIMUM BENDING RADIUS	3,0 m	AMBIENT TEMPERATURE RANGE	-29 °C +52 °C
MAXIMUM TEMPORARY ELONGATION	2,50%	MINIMUM RESERVE BUOYANCY	20%

ALL DATA ARE NOMINALLY CORRECT AND MAY VARY WITHOUT NOTICE

WEIGHT :

600mm (24") x 10,7m (35') = 4500 Kg

OUT DIAMETER :

Body=1057mm End=1158mm

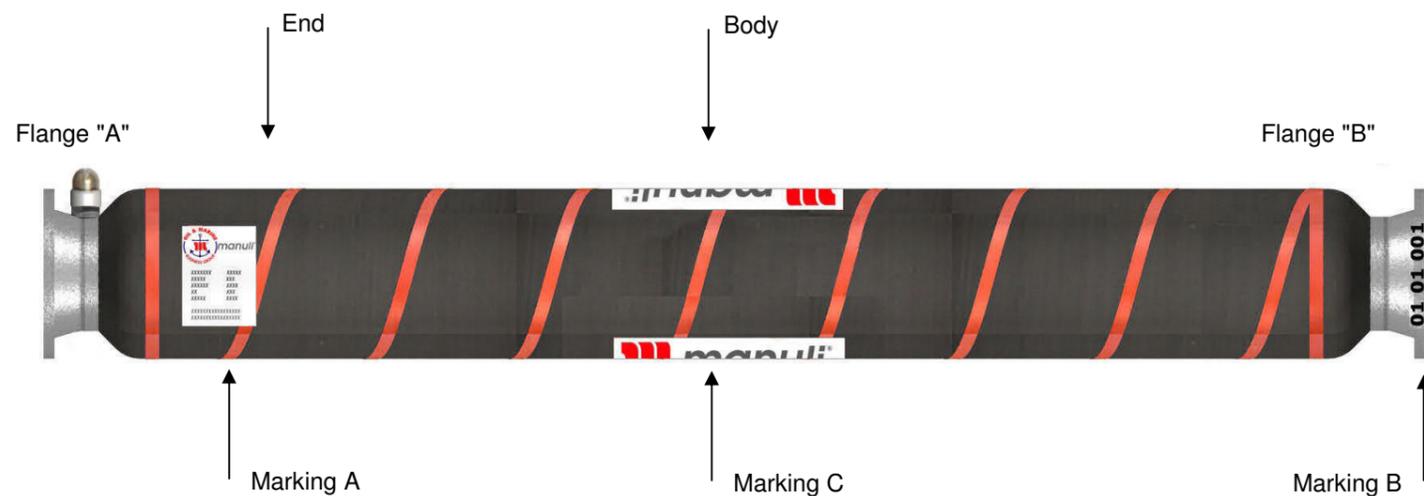
REV	DATE	REVISION	PREPARED	REVIEWED
A	03/10/2012	MODIFIED FROM OCIMF'91 TO GMPHOM2009	L.Fortuna	A.Siliquini
0	03/08/2011	FIRST ISSUE	L.Fortuna	A.Siliquini

SCALE : NOT TO SCALE A3
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H3030 SD3 FF DASH POSEIDON 600mm (24") RWP 19bar
 Double Carcass Specially Designed Mainline
 Full Floating Hose (3th off the buoy)
 to GMPHOM 2009 spec
 for Caspian Pipeline Consortium



TD. 01.0011/56



FITTINGS DATA

NIPPLES :

1)The nipple body to be fabricated from:

Alternative A: seamless steel pipe conforming to ASTM A-106 A or B or API-5L Grade A or B.

Alternative B: steel plate conforming to ASTM A-285 C or equivalent.

In both cases killed or semi-killed steel, with a maximum carbon content of 0.23 per cent.

2) All weld procedures and welders are to be qualified in accordance with ASME IX.

3) All welds, excluding band material welds, to be 100 per cent radiographed in accordance with EN 1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators. Interpretation of seam welds to be according to ASME VIII UW 51B

4) Band material to be equivalent to ASTM A-285 C, killed or semi-killed steel, with a maximum carbon content of 0.23 per cent. Band welds to be wet Magnetic Particle Inspected in accordance with ASME VIII, Appendix 6.

5) Nipple reference number to be stamped in zone 'X' at two places at 180°.

FLANGES :

6) The flange material to be in accordance with ASTM A-105 or equivalent normalised and with a maximum carbon content of 0.25 per cent. The flange rating to be in accordance with ASME B16.5. The class to be specified by the purchaser.

7) The flange face to have a finish equivalent to that specified in EN 1759-1 over its complete area after galvanisation.

8) The flanges to be identifiable by a mill number stamped on the flange edge.

RATING :

"A" END : ASME 150 FF

"B" END : ASME 150 FF

FITTINGS :

9) The circumferential welds between nipple and flange to be 100 per cent radiographed. All weld procedures and welders to be qualified in accordance with ASME IX. The quality and definition of radiographs to be in accordance with EN1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators.

10) Interpretation of butt welds to be according to API 1104.

11) Fitting manufacturer serial number to be stamped on the back of the flange, zone 'Y' at two places at 180°.

COATING :

12) The exposed internal and external surfaces of the end fittings and flanges (including flange faces) to be protected by hot dip galvanisation in accordance with EN ISO 1461.

Surface Preparation: Grit blasting to SA 2½, followed by pickling in acid. Coating: Minimum average coating weight 610 g/m² (equivalent to 85 µm thickness).

Zinc Composition: Bath impurities to comply with the limits specified in EN ISO 1461. Appearance: Coating shall be visually free from nodules, blisters, roughness, sharp points and uncoated areas.

GENERAL INFORMATION

DESCRIPTION :

1st CARCASS : Flexible rubber structure composed of smooth oil resistant extruded NBR main lining, adequate number of wire cords and steel wire helix, textile reinforcements & cover bonded together. For suction and discharge of crude oil and liquid petroleum products for Offshore Mooring.

2nd CARCASS : Additional carcass with oil retention channel, smooth oil and fuel resistant NBR lining, adequate number of textile reinforcements & abrasion resistant chloroprene rubber cover bonded together and vulcanized in a uniform manner. The 2nd carcass is designed to contain any product which may escape from the 1st carcass

Floatation medium: Closed cell expanded Polyethylene foam

FITTING : Built-in during hose construction

ELECTRICALLY : Continuous

FAD : Failure Alert Device "Mechanical System"

REFERENCE :

NORM : Manufactured and tested according to GMPHOM 2009

PROTOTYPE : ABS report No: NP2087595 dated 22-May-2012

MARKING :

MARKING "A" ON EACH END AT 180 ° :

MANUFACTURER: ANCHOR + "Manuli"

SPECIFICATION: GMPHOM 2009

DIAMETER: ID 600 mm

WORKING PRESSURE: RWP 19 bar

SERIAL NUMBER: mmyy ____

MONTH / YEAR: ____

CARCASS TYPE: DOUBLE CARCASS HOSE

HOSE TYPE: H3030 SD4 FF DASH

HOSE NAME: POSEIDON

TEMPORANEY ELONGATION : T.E. _____ %

ELECTRICALLY: ELECTRICALLY CONTINUOUS

MARKING "B" ON EACH END AT 180 ° :

Serial number "mm-YY-Progressive nr. "welded on the rim of the flange

MARKING "C" ON EACH END AT 180 ° :

On the hose center : MANULI logo

MATERIAL :

LINING : Smooth, oil resistant extruded (NBR)

COVER : Black rubber, high resistant to abrasion, oil, sunlight and seawater with longitudinal orange spiral.

WIRE HELIX : One helical wire embedded in syntetic rubber

REINFORCED CORD : Wire cord skimmed with rubber

HOSE PERFORMANCE DATA

RATED WORKING PRESSURE	19 bar	MAXIMUM PERMANENT ELONGATION	0,70%
TEST PRESSURE	28,5 bar	MAXIMUM AROMATICS CONTENT	UP TO 60%
MINIMUM BURST PRESSURE - 1st CARCASS	95 bar	MAXIMUM FLOW VELOCITY	UP TO 21 m/s
MINIMUM BURST PRESSURE - 2nd CARCASS	38 bar	FLUID TEMPERATURE RANGE	-20 °C +82 °C
MINIMUM BENDING RADIUS	3,0 m	AMBIENT TEMPERATURE RANGE	-29 °C +52 °C
MAXIMUM TEMPORARY ELONGATION	2,50%	MINIMUM RESERVE BUOYANCY	20%

ALL DATA ARE NOMINALLY CORRECT AND MAY VARY WITHOUT NOTICE

WEIGHT :

600mm (24") x 10,7m (35') = 4500 Kg

OUT DIAMETER :

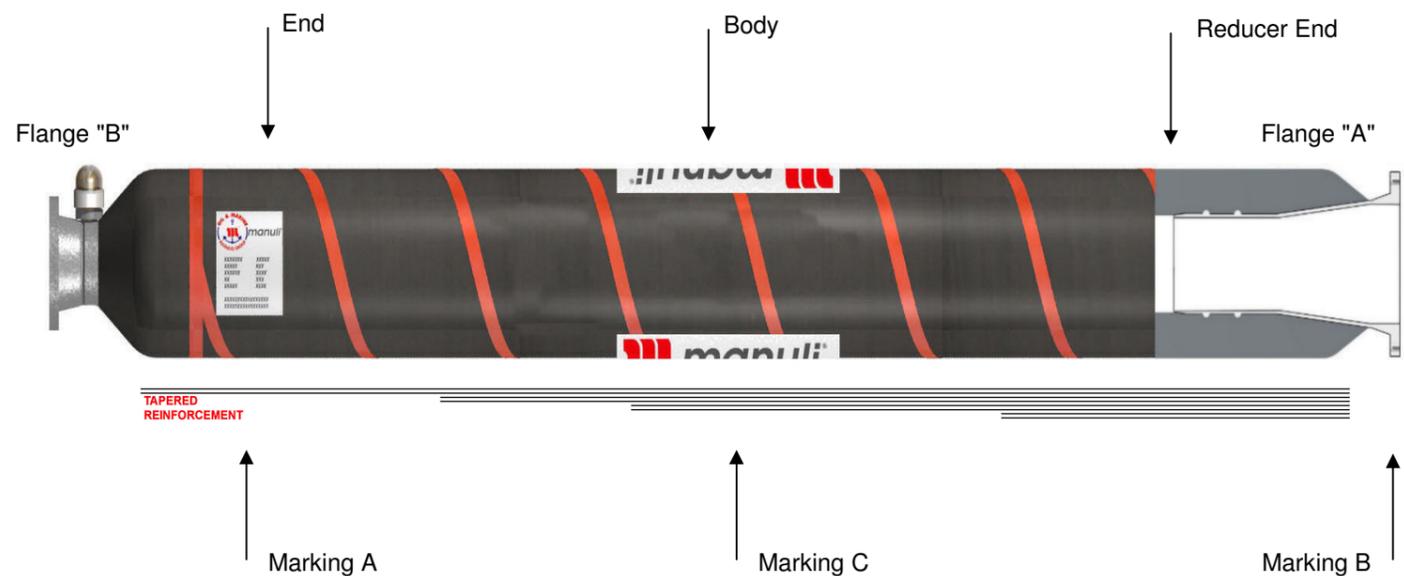
Body=1057 mm End=1158 mm

REV	DATE	REVISION	PREPARED	REVIEWED
A	03/10/2012	MODIFIED FROM OCIMF'91 TO GMPHOM2009	L.Fortuna	A.Siliquini
0	03/08/2011	FIRST ISSUE	L.Fortuna	A.Siliquini
SCALE	PROPERTY INFORMATION :			
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A3	WHOLE OR IN PART TO ANYONE WITHOUT PERMISSION OF MANULI RUBBER INDUSTRIES spa			

H3030 SD4 FF DASH POSEIDON 600mm (24") RWP 19bar
Double Carcass Specially Designed Mainline
Full Floating Hose (4th off the buoy)
to GMPHOM spec
for Caspian Pipeline Consortium



TD. 01.0011/57



FITTINGS DATA

NIPPLES :

- The nipple body to be fabricated from:
Alternative A: seamless steel pipe conforming to ASTM A-106 A or B or API-5L Grade A or B.
Alternative B: steel plate conforming to ASTM A-285 C or equivalent.
In both cases killed or semi-killed steel, with a maximum carbon content of 0.23 per cent.
- All weld procedures and welders are to be qualified in accordance with ASME IX.
- All welds, excluding band material welds, to be 100 per cent radiographed in accordance with EN 1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators. Interpretation of seam welds to be according to ASME VIII UW 51B
- Band material to be equivalent to ASTM A-285 C, killed or semi-killed steel, with a maximum carbon content of 0.23 per cent. Band welds to be wet Magnetic Particle Inspected in accordance with ASME VIII, Appendix 6.
- Nipple reference number to be stamped in zone 'X' at two places at 180°.

FLANGES :

- The flange material to be in accordance with ASTM A-105 or equivalent normalised and with a maximum carbon content of 0.25 per cent. The flange rating to be in accordance with ASME B16.5. The class to be specified by the purchaser.
- The flange face to have a finish equivalent to that specified in EN 1759-1 over its complete area after galvanisation.
- The flanges to be identifiable by a mill number stamped on the flange edge.

RATING :

"A" END : ASME 150 FF
"B" END : ASME 150 FF

FITTINGS :

- The circumferential welds between nipple and flange to be 100 per cent radiographed. All weld procedures and welders to be qualified in accordance with ASME IX. The quality and definition of radiographs to be in accordance with EN1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators.
- Interpretation of butt welds to be according to API 1104.
- Fitting manufacturer serial number to be stamped on the back of the flange, zone 'Y' at two places at 180°.

COATING :

- The exposed internal and external surfaces of the end fittings and flanges (including flange faces) to be protected by hot dip galvanisation in accordance with EN ISO 1461.
Surface Preparation: Grit blasting to SA 2½, followed by pickling in acid. Coating: Minimum average coating weight 610 g/m² (equivalent to 85 µm thickness).
Zinc Composition: Bath impurities to comply with the limits specified in EN ISO 1461. Appearance: Coating shall be visually free from nodules, blisters, roughness, sharp points and uncoated areas.

GENERAL INFORMATION

DESCRIPTION :

1st CARCASS : Flexible rubber structure composed of smooth oil resistant extruded NBR main lining, adequate number of wire cords and steel wire helix, textile reinforcements & cover bonded together. For suction and discharge of crude oil and liquid petroleum products for Offshore Mooring.

2nd CARCASS : Additional carcass with oil retention channel, smooth oil and fuel resistant NBR lining, adequate number of textile reinforcements & abrasion resistant chloroprene rubber cover bonded together and vulcanized in a uniform manner. The 2nd carcass is designed to contain any product which may escape from the 1st carcass

Floatation medium: Closed cell expanded Polyethylene foam
FITTING : Built-in during hose construction
ELECTRICALLY : Continuous
FAD : Failure Alert Device "Mechanical System"

MATERIAL :

LINING : Smooth, oil resistant extruded (NBR)
COVER : Black rubber, high resistant to abrasion, oil, sunlight and seawater with longitudinal orange spiral.
WIRE HELIX : One helical wire embedded in syntetic rubber
REINFORCED CORD : Wire cord skimmed with rubber

REFERENCE :

NORM : Manufactured and tested according to GMPHOM 2009
PROTOTYPE : ABS report No: NP2087595 dated 22-May-2012

MARKING :

MARKING "A" ON EACH END AT 180 ° :

MANUFACTURER: ANCHOR + "Manuli"
SPECIFICATION: GMPHOM 2009
DIAMETER: ID 600/400 mm
WORKING PRESSURE: RWP 19 bar
SERIAL NUMBER: mmyy ____
MONTH / YEAR: ____
CARCASS TYPE: DOUBLE CARCASS HOSE
HOSE TYPE: H3232 FF DASH
HOSE NAME: POSEIDON
TEMPORANEY ELONGATION : T.E. _____ %
ELECTRICALLY: ELECTRICALLY CONTINUOUS

MARKING "B" ON EACH END AT 180 ° :

Serial number "mm-YY-Progressive nr. "welded on the rim of the flange

MARKING "C" ON EACH END AT 180 ° :

On the hose center : MANULI logo

HOSE PERFORMANCE DATA

RATED WORKING PRESSURE	19 bar	MAXIMUM PERMANENT ELONGATION	0,70%
TEST PRESSURE	28,5 bar	MAXIMUM AROMATICS CONTENT	UP TO 60%
MINIMUM BURST PRESSURE - 1st CARCASS	95 bar	MAXIMUM FLOW VELOCITY	UP TO 21 m/s
MINIMUM BURST PRESSURE - 2nd CARCASS	38 bar	FLUID TEMPERATURE RANGE	-20 °c +82 °c
MINIMUM BENDING RADIUS	2,4 m	AMBIENT TEMPERATURE RANGE	-29 °c +52 °c
MAXIMUM TEMPORARY ELONGATION	2,50%	MINIMUM RESERVE BUOYANCY	20%

ALL DATA ARE NOMINALLY CORRECT AND MAY VARY WITHOUT NOTICE

WEIGHT :

600mm/400mm(24"/16") x 10,7m (35') = 3005 Kg

OUT DIAMETER :

Body=798mm End=879mm

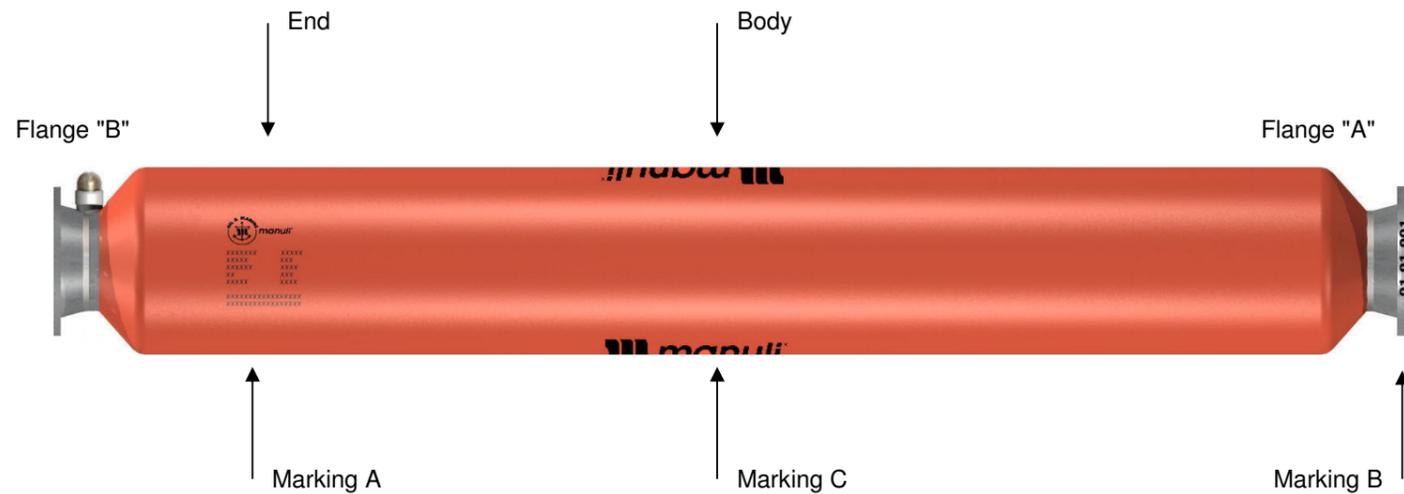
A	03/10/2012	MODIFIED FROM OCIMF'91 TO GMPHOM2009		L.Fortuna	A.Siliquini
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**H3232 FF DASH POSEIDON 600/400mm (24"/16") RWP19bar
Double Carcass Reducer Full Floating Hose
to GMPHOM spec
for Caspian Pipeline Consortium**

manuli
RUBBER INDUSTRIES

TD. 01.0011/59



FITTINGS DATA

NIPPLES :

1)The nipple body to be fabricated from:

Alternative A: seamless steel pipe conforming to ASTM A-106 A or B or API-5L Grade A or B.

Alternative B: steel plate conforming to ASTM A-285 C or equivalent.

In both cases killed or semi-killed steel, with a maximum carbon content of 0.23 per cent.

2) All weld procedures and welders are to be qualified in accordance with ASME IX.

3) All welds, excluding band material welds, to be 100 per cent radiographed in accordance with EN 1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators. Interpretation of seam welds to be according to ASME VIII UW 51B

4) Band material to be equivalent to ASTM A-285 C, killed or semi-killed steel, with a maximum carbon content of 0.23 per cent. Band welds to be wet Magnetic Particle Inspected in accordance with ASME VIII, Appendix 6.

5) Nipple reference number to be stamped in zone 'X' at two places at 180°.

FLANGES :

6) The flange material to be in accordance with ASTM A-105 or equivalent normalised and with a maximum carbon content of 0.25 per cent. The flange rating to be in accordance with ASME B16.5. The class to be specified by the purchaser.

7) The flange face to have a finish equivalent to that specified in EN 1759-1 over its complete area after galvanisation.

8) The flanges to be identifiable by a mill number stamped on the flange edge.

RATING :

"A" END : ASME 150 FF

"B" END : ASME 150 FF

FITTINGS :

9) The circumferential welds between nipple and flange to be 100 per cent radiographed. All weld procedures and welders to be qualified in accordance with ASME IX. The quality and definition of radiographs to be in accordance with EN1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators.

10) Interpretation of butt welds to be according to API 1104.

11) Fitting manufacturer serial number to be stamped on the back of the flange, zone 'Y' at two places at 180°.

COATING :

12) The exposed internal and external surfaces of the end fittings and flanges (including flange faces) to be protected by hot dip galvanisation in accordance with EN ISO 1461.

Surface Preparation: Grit blasting to SA 2½, followed by pickling in acid. Coating: Minimum average coating weight 610 g/m² (equivalent to 85 µm thickness).

Zinc Composition: Bath impurities to comply with the limits specified in EN ISO 1461. Appearance: Coating shall be visually free from nodules, blisters, roughness, sharp points and uncoated areas.

GENERAL INFORMATION

DESCRIPTION :

1st CARCASS : Flexible rubber structure composed of smooth oil resistant extruded NBR main lining, adequate number of wire cords and steel wire helix, textile reinforcements & cover bonded together. For suction and discharge of crude oil and liquid petroleum products for Offshore Mooring.

2nd CARCASS : Additional carcass with oil retention channel, smooth oil and fuel resistant NBR lining, adequate number of textile reinforcements & abrasion resistant chloroprene rubber cover bonded together and vulcanized in a uniform manner. The 2nd carcass is designed to contain any product which may escape from the 1st carcass

Floating medium: Closed cell expanded Polyethylene foam

FITTING : Built-in during hose construction

ELECTRICALLY : Discontinuous

FAD : Failure Alert Device "Mechanical System"

MATERIAL :

LINING : Smooth, oil resistant extruded (NBR)

COVER : Polyurethane cover, orange in color, high resistant to abrasion, oil, sunlight and seawater.

WIRE HELIX : One helical wire embedded in syntetic rubber

REINFORCED CORD : Wire cord skimmed with rubber

REFERENCE :

NORM : Manufactured and tested according to GMPHOM 2009

PROTOTYPE : ABS report No: NP2087595 dated 22-May-2012

MARKING :

MARKING "A" ON EACH END AT 180 ° :

MANUFACTURER: ANCHOR + "Manuli"

SPECIFICATION: GMPHOM 2009

DIAMETER: ID 400 mm

WORKING PRESSURE: RWP 19 bar

SERIAL NUMBER: mmyy ____

MONTH / YEAR: ____

CARCASS TYPE: DOUBLE CARCASS HOSE

HOSE TYPE: H3030T FF DASH PU

HOSE NAME: POSEIDON

TEMPORANEY ELONGATION : T.E. _____ %

ELECTRICALLY: ELECTRICALLY DISCONTINUOUS

MARKING "B" ON EACH END AT 180 ° :

Serial number "mm-YY-Progressive nr. "welded on the rim of the flange

MARKING "C" ON EACH END AT 180 ° :

On the hose center : MANULI logo

HOSE PERFORMANCE DATA

RATED WORKING PRESSURE	19 bar	MAXIMUM PERMANENT ELONGATION	0,70%
TEST PRESSURE	28,5 bar	MAXIMUM AROMATICS CONTENT	UP TO 60%
MINIMUM BURST PRESSURE - 1st CARCASS	95 bar	MAXIMUM FLOW VELOCITY	UP TO 21 m/s
MINIMUM BURST PRESSURE - 2nd CARCASS	38 bar	FLUID TEMPERATURE RANGE	-20 °C +82 °C
MINIMUM BENDING RADIUS	2,4 m	AMBIENT TEMPERATURE RANGE	-29 °C +52 °C
MAXIMUM TEMPORARY ELONGATION	2,50%	MINIMUM RESERVE BUOYANCY	20%

ALL DATA ARE NOMINALLY CORRECT AND MAY VARY WITHOUT NOTICE

WEIGHT :

400mm (16") x 10,7m (35') = 3073Kg

OUT DIAMETER :

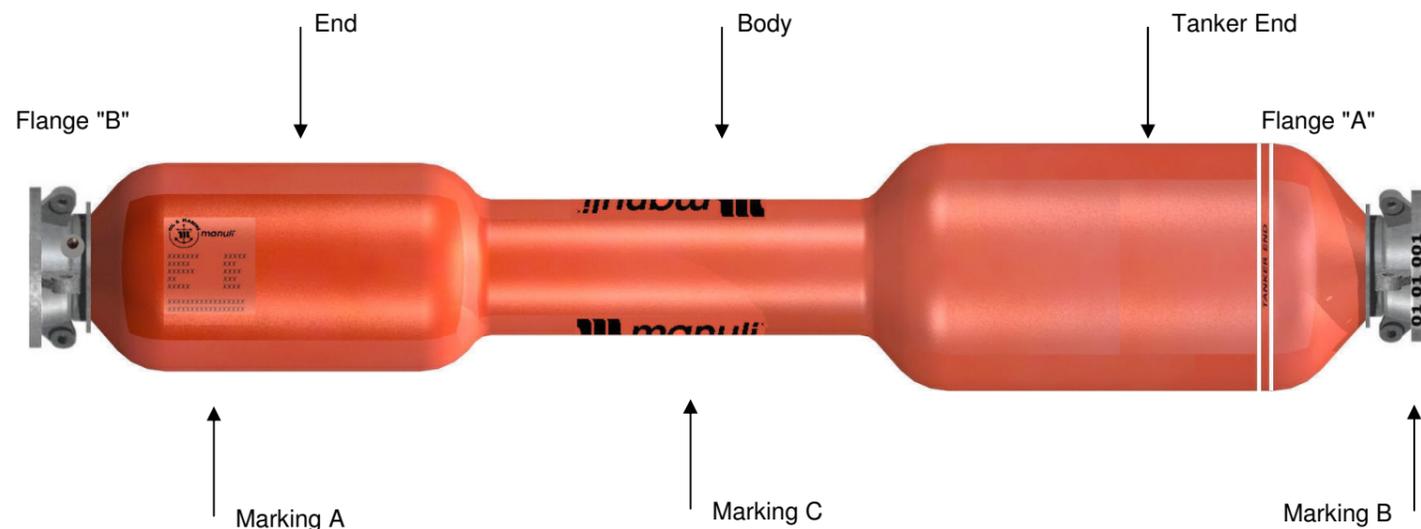
Body= 813 mm End= 894mm

REV	DATE	REVISION	PREPARED	REVIEWED
A	03/10/2012	MODIFIED FROM OCIMF'91 TO GMPHOM2009	L.Fortuna	A.Siliquini
0	03/08/2011	FIRST ISSUE	L.Fortuna	A.Siliquini
SCALE	PROPERTY INFORMATION :			
NOT TO SCALE	THIS DOCUMENT AND DATA DISCLOSED HEREIN OR HERewith IS NOT TO BE REPRODUCED, USED, OR DISCLOSED			
A3	WHOLE OR IN PART TO ANYONE WITHOUT PERMISSION OF MANULI RUBBER INDUSTRIES spa			

H3030T FF PU DASH POSEIDON 400mm (16") RWP 19bar
Double Carcass Tail Full Floating
Polyurethane Covered Hose
to GMPHOM spec
for Caspian Pipeline Consortium



TD. 01.0011/60



GENERAL INFORMATION

DESCRIPTION :

1st CARCASS : Flexible rubber structure composed of smooth oil resistant extruded NBR main lining, adequate number of wire cords and steel wire helix, textile reinforcements & cover bonded together. For suction and discharge of crude oil and liquid petroleum products for Offshore Mooring.

2nd CARCASS : Additional carcass with oil retention channel, smooth oil and fuel resistant NBR lining, adequate number of textile reinforcements & abrasion resistant chloroprene rubber cover bonded together and vulcanized in a uniform manner. The 2nd carcass is designed to contain any product which may escape from the 1st carcass

Floatation medium: Closed cell expanded Polyethylene foam

FITTING : Built-in during hose construction

ELECTRICALLY : Discontinuous

FAD : Failure Alert Device "Mechanical System"

MATERIAL :

LINING : Smooth, oil resistant extruded (NBR)

COVER : Polyurethane cover, orange in color, high resistant to abrasion, oil, sunlight and seawater

WIRE HELIX : One helical wire embedded in syntetic rubber

REINFORCED CORD : Wire cord skimmed with rubber

REFERENCE :

NORM : Manufactured and tested according to GMPHOM 2009

PROTOTYPE : ABS report No: NP2087595 dated 22-May-2012

MARKING :

MARKING "A" ON EACH END AT 180 ° :

MANUFACTURER: ANCHOR + "Manuli"

SPECIFICATION: GMPHOM 2009

DIAMETER: ID 400 mm

WORKING PRESSURE: RWP 19 bar

SERIAL NUMBER: mmyy ____

MONTH / YEAR: _____

CARCASS TYPE: DOUBLE CARCASS HOSE

HOSE TYPE: H3838 DF EB DASH PU

HOSE NAME : POSEIDON

TEMPORARY ELONGATION : T.E. _____ %

ELECTRICALLY : ELECTRICALLY DISCONTINUOUS

LENGTH : O.L. _____ mm

WEIGHT EMPTY: WEIGHT EMPTY ____ Kg

WEIGHT FULL OF SEA WATER: W. Full of sea water ____ Kg

MARKING "B" ON EACH END AT 180 ° :

Serial number "mm-YY-Progressive nr. "welded on the rim of the flange

MARKING "C" ON EACH END AT 180 ° :

On the hose center : MANULI logo

FITTINGS DATA

NIPPLES :

1)The nipple body to be fabricated from:

Alternative A: seamless steel pipe conforming to ASTM A-106 A or B or API-5L Grade A or B.

Alternative B: steel plate conforming to ASTM A-285 C or equivalent.

In both cases killed or semi-killed steel, with a maximum carbon content of 0.23 per cent.

2) All weld procedures and welders are to be qualified in accordance with ASME IX.

3) All welds, excluding band material welds, to be 100 per cent radiographed in accordance with EN 1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators. Interpretation of seam welds to be according to ASME VIII UW 51B

4) Band material to be equivalent to ASTM A-285 C, killed or semi-killed steel, with a maximum carbon content of 0.23 per cent. Band welds to be wet Magnetic Particle Inspected in accordance with ASME VIII, Appendix 6.

5) Nipple reference number to be stamped in zone 'X' at two places at 180°.

FLANGES :

6) The flange material to be in accordance with ASTM A-105 or equivalent normalised and with a maximum carbon content of 0.25 per cent. The flange rating to be in accordance with ASME B16.5. The class to be specified by the purchaser.

7) The flange face to have a finish equivalent to that specified in EN 1759-1 over its complete area after galvanisation.

8) The flanges to be identifiable by a mill number stamped on the flange edge.

RATING :

"A" END : ASME 150 FF + 4 LIFTING LUGS

"B" END : ASME 150 FF + 4 LIFTING LUGS

FITTINGS :

9) The circumferential welds between nipple and flange to be 100 per cent radiographed. All weld procedures and welders to be qualified in accordance with ASME IX. The quality and definition of radiographs to be in accordance with EN1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators.

10) Interpretation of butt welds to be according to API 1104.

11) Fitting manufacturer serial number to be stamped on the back of the flange, zone 'Y' at two places at 180°.

COATING :

12) The exposed internal and external surfaces of the end fittings and flanges (including flange faces) to be protected by hot dip galvanisation in accordance with EN ISO 1461.

Surface Preparation: Grit blasting to SA 2½, followed by pickling in acid. Coating: Minimum average coating weight 610 g/m² (equivalent to 85 µm thickness).

Zinc Composition: Bath impurities to comply with the limits specified in EN ISO 1461. Appearance: Coating shall be visually free from nodules, blisters, roughness, sharp points and uncoated areas.

HOSE PERFORMANCE DATA

RATED WORKING PRESSURE	19 bar	MAXIMUM PERMANENT ELONGATION	0,70%
TEST PRESSURE	28,5 bar	MAXIMUM AROMATICS CONTENT	UP TO 60%
MINIMUM BURST PRESSURE - 1st CARCASS	95 bar	MAXIMUM FLOW VELOCITY	UP TO 21 m/s
MINIMUM BURST PRESSURE - 2nd CARCASS	38 bar	FLUID TEMPERATURE RANGE	-20 °c +82 °c
MINIMUM BENDING RADIUS	1,6 m	AMBIENT TEMPERATURE RANGE	-29 °c +52 °c
MAXIMUM TEMPORARY ELONGATION	2,50%	MINIMUM RESERVE BUOYANCY	25% with accessories (MAX 700Kg)

ALL DATA ARE NOMINALLY CORRECT AND MAY VARY WITHOUT NOTICE

WEIGHT :

400mm (16") x 9,1m (30') = 2996 Kg

OUT DIAMETER :

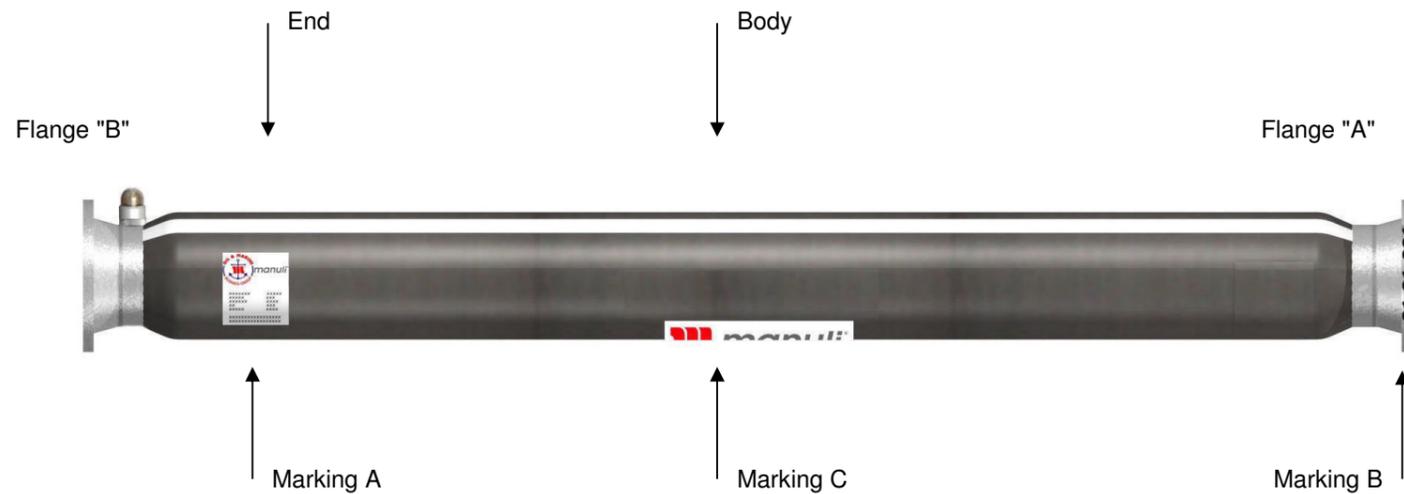
Body= 745 mm End= 1111 mm Tanker End=1184 mm

ALL DATA ARE NOMINALLY CORRECT AND MAY VARY WITHOUT NOTICE				
SCALE	NOT TO SCALE	A3	PROPERTY INFORMATION :	
			THIS DOCUMENT AND DATA DISCLOSED HEREIN OR HERewith IS NOT TO BE REPRODUCED, USED, OR DISCLOSED WHOLE OR IN PART TO ANYONE WITHOUT PERMISSION OF MANULI RUBBER INDUSTRIES spa	
REV	DATE		REVISION	
A	03/10/2012	MODIFIED FROM OCIMF'91 TO GMPHOM2009	L.Fortuna	A.Siliquini
0	03/08/2011	FIRST ISSUE	L.Fortuna	A.Siliquini
			PREPARED	REVIEWED

H3838 DF PU EB DASH POSEIDON 400mm (16") RWP 19bar
Double Carcass Tanker Rail Dumbel Floating
Extra Buoyancy Polyurethane Covered Hose
to GMPHOM spec
for Caspian Pipeline Consortium



TD. 01.0011/61



GENERAL INFORMATION

DESCRIPTION :

1st CARCASS : Flexible rubber structure composed of smooth oil resistant extruded NBR main lining, adequate number of wire cords and steel wire helix, textile reinforcements & cover bonded together. For suction and discharge of crude oil and liquid petroleum products for Offshore Mooring.

2nd CARCASS : Additional carcass with oil retention channel, smooth oil and fuel resistant NBR lining, adequate number of textile reinforcements & abrasion resistant chloroprene rubber cover bonded together and vulcanized in a uniform manner. The 2nd carcass is designed to contain any product which may escape from the 1st carcass

FITTING : Built-in during hose construction
ELECTRICALLY : Discontinuous
FAD : Failure Alert Device "Mechanical System"

MATERIAL :

LINING : Smooth, oil resistant extruded (NBR)
COVER : Black rubber, high resistant to abrasion, oil, sunlight and seawater with longitudinal white stripe.
WIRE HELIX : One helical wire embedded in syntetic rubber

REINFORCED CORD : Wire cord skimmed with rubber

REFERENCE :

NORM : Manufactured and tested according to GMPHOM 2009
PROTOTYPE : ABS report No: NP2087595 dated 22-May-2012

MARKING :

MARKING "A" ON EACH END AT 180 ° :

MANUFACTURER: ANCHOR + "Manuli"
SPECIFICATION: GMPHOM 2009
DIAMETER: ID 600 mm
WORKING PRESSURE: RWP 19 bar
SERIAL NUMBER: mmyy ____
MONTH / YEAR: ____-____
CARCASS TYPE: DOUBLE CARCASS HOSE
HOSE TYPE: H3030 UF DASH
HOSE NAME: POSEIDON
TEMPORANEY ELONGATION : T.E. _____ %
ELECTRICALLY: ELECTRICALLY DISCONTINUOUS

MARKING "B" ON EACH END AT 180 ° :

Serial number "mm-YY-Progressive nr. "welded on the rim of the flange

MARKING "C" ON EACH END AT 180 ° :

On the hose center : MANULI logo

FITTINGS DATA

NIPPLES :

- The nipple body to be fabricated from:
Alternative A: seamless steel pipe conforming to ASTM A-106 A or B or API-5L Grade A or B.
Alternative B: steel plate conforming to ASTM A-285 C or equivalent.
In both cases killed or semi-killed steel, with a maximum carbon content of 0.23 per cent.
- All weld procedures and welders are to be qualified in accordance with ASME IX.
- All welds, excluding band material welds, to be 100 per cent radiographed in accordance with EN 1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators. Interpretation of seam welds to be according to ASME VIII UW 51B
- Band material to be equivalent to ASTM A-285 C, killed or semi-killed steel, with a maximum carbon content of 0.23 per cent. Band welds to be wet Magnetic Particle Inspected in accordance with ASME VIII, Appendix 6.
- Nipple reference number to be stamped in zone 'X' at two places at 180°.

FLANGES :

- The flange material to be in accordance with ASTM A-105 or equivalent normalised and with a maximum carbon content of 0.25 per cent. The flange rating to be in accordance with ASME B16.5. The class to be specified by the purchaser.
- The flange face to have a finish equivalent to that specified in EN 1759-1 over its complete area after galvanisation.
- The flanges to be identifiable by a mill number stamped on the flange edge.

RATING :

"A" END : ASME 300 FF
"B" END : ASME 300 FF

FITTINGS :

- The circumferential welds between nipple and flange to be 100 per cent radiographed. All weld procedures and welders to be qualified in accordance with ASME IX. The quality and definition of radiographs to be in accordance with EN1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators.
- Interpretation of butt welds to be according to API 1104.
- Fitting manufacturer serial number to be stamped on the back of the flange, zone 'Y' at two places at 180°.

COATING :

- The exposed internal and external surfaces of the end fittings and flanges (including flange faces) to be protected by hot dip galvanisation in accordance with EN ISO 1461.
Surface Preparation: Grit blasting to SA 2½, followed by pickling in acid. Coating: Minimum average coating weight 610 g/m² (equivalent to 85 µm thickness).
Zinc Composition: Bath impurities to comply with the limits specified in EN ISO 1461. Appearance: Coating shall be visually free from nodules, blisters, roughness, sharp points and uncoated areas.

HOSE PERFORMANCE DATA

RATED WORKING PRESSURE	19 bar	MAXIMUM PERMANENT ELONGATION	0,70%
TEST PRESSURE	28,5 bar	MAXIMUM AROMATICS CONTENT	UP TO 60%
MINIMUM BURST PRESSURE - 1st CARCASS	95 bar	MAXIMUM FLOW VELOCITY	UP TO 21 m/s
MINIMUM BURST PRESSURE - 2nd CARCASS	38 bar	FLUID TEMPERATURE RANGE	-20 °C +82 °C
MINIMUM BENDING RADIUS	2,4 m	AMBIENT TEMPERATURE RANGE	-29 °C +52 °C
MAXIMUM TEMPORARY ELONGATION	2,50%	MINIMUM RESERVE BUOYANCY	N.A.

ALL DATA ARE NOMINALLY CORRECT AND MAY VARY WITHOUT NOTICE

WEIGHT :

600mm (24") x 10,7m (35') = 4748 Kg

OUT DIAMETER :

Body=812mm End=913mm

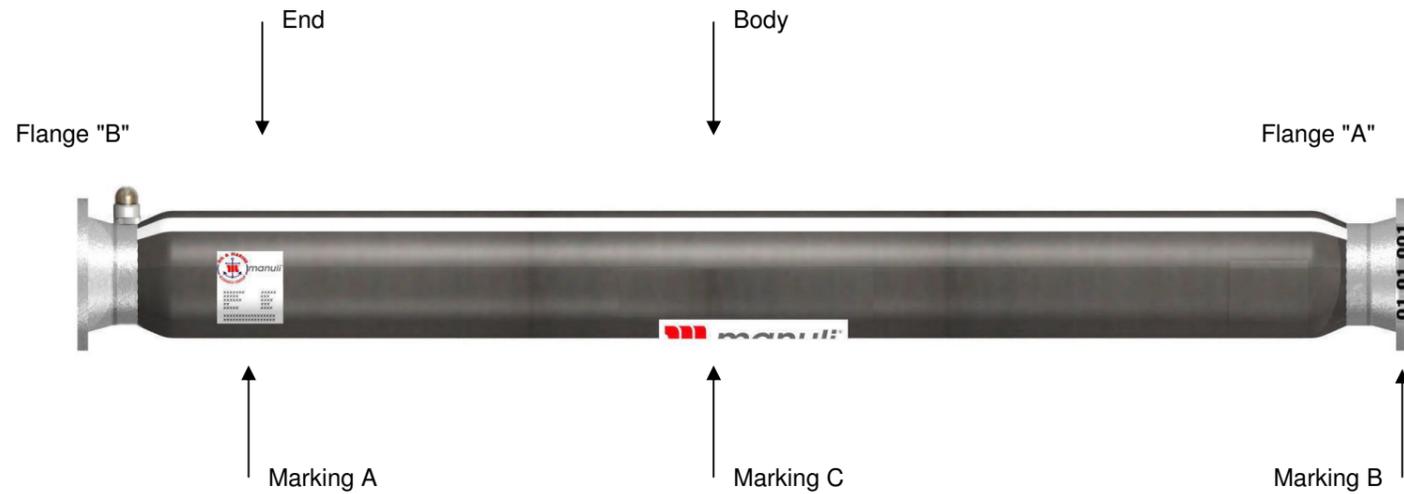
REV	DATE	REVISION	PREPARED	REVIEWED
A	03/10/2012	MODIFIED FROM OCIMF'91 TO GMPHOM2009	L.Fortuna	A.Siliquini
0	03/08/2011	FIRST ISSUE	L.Fortuna	A.Siliquini

SCALE : NOT TO SCALE A3
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H3030 UF DASH POSEIDON 600mm (24") RWP 19bar
Double Carcass Mainline Submarine Hose
to GMPHOM spec
for Caspian Pipeline Consortium



TD. 01.0011/64



FOR CUSTOMER 'S APPROVAL

GENERAL INFORMATION

DESCRIPTION :

1st CARCASS : *Flexible rubber structure composed of smooth oil resistant extruded NBR main lining, adequate number of steel wire cords and steel wire helix, textile reinforcements & cover bonded together. For suction and discharge of crude oil and liquid petroleum products for Offshore Mooring.*

2nd CARCASS : *Additional carcass with oil retention channel, smooth oil and fuel resistant NBR lining, adequate number of reinforcements & abrasion resistant chloroprene rubber cover bonded together and vulcanized in a uniform manner. The 2nd carcass is designed to contain any product which may escape from the 1st carcass*

FITTING : *Built-in during hose construction*
 ELECTRICALLY : *Discontinuous*
 FAD : *Failure Alert Device "Mechanical System"*

MATERIAL :

LINING : *Smooth, oil resistant extruded (NBR)*

COVER : *Black rubber, high resistant to abrasion, oil, sunlight and seawater with longitudinal white stripe.*

WIRE HELIX : *One helical wire embedded in syntetic rubber*

REINFORCED CORD : *Steel and textile cords skimmed with rubber*

REFERENCE :

NORM : *Tested according to GMPHOM 2009*

MARKING :

MARKING "A" ON EACH END AT 180 ° :

MANUFACTURER: ANCHOR + "Manuli"
 SPECIFICATION: GMPHOM 2009
 DIAMETER: ID 600 mm
 WORKING PRESSURE: RWP 19 bar
 SERIAL NUMBER: mmyy ____
 MONTH / YEAR: ____
 CARCASS TYPE: DOUBLE CARCASS HOSE
 HOSE TYPE: **H3030 UF DASH**
 HOSE NAME: **POSEIDON**
 TEMPORANEY ELONGATION : T.E. _____ %
 ELECTRICALLY: ELECTRICALLY DISCONTINUOUS

MARKING "B" ON EACH END AT 180 ° :

Serial number "mm-YY-Progressive nr. "welded on the rim of the flange

MARKING "C" ON EACH END AT 180 ° :

On the hose center : MANULI logo

FITTINGS DATA

NIPPLES :

- 1)The nipple body to be fabricated from:
 Alternative A: seamless steel pipe conforming to ASTM A-106 A or B or API-5L Grade A or B.
 Alternative B: steel plate conforming to ASTM A-285 C or equivalent.
 In both cases killed or semi-killed steel, with a maximum carbon content of 0.23 per cent.
- 2) All weld procedures and welders are to be qualified in accordance with ASME IX.
- 3) All welds, excluding band material welds, to be 100 per cent radiographed in accordance with EN 1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators. Interpretation of seam welds to be according to ASME VIII UW 51B
- 4) Band material to be equivalent to ASTM A-285 C, killed or semi-killed steel, with a maximum carbon content of 0.23 per cent. Band welds to be wet Magnetic Particle Inspected in accordance with ASME VIII, Appendix 6.
- 5) Nipple reference number to be stamped in zone 'X' at two places at 180°.

FLANGES :

- 6) The flange material to be in accordance with ASTM A-105 or equivalent normalised and with a maximum carbon content of 0.25 per cent. The flange rating to be in accordance with ASME B16.5. The class to be specified by the purchaser.
- 7) The flange face to have a finish equivalent to that specified in EN 1759-1 over its complete area after galvanisation.
- 8) The flanges to be identifiable by a mill number stamped on the flange edge.

RATING :

"A" END : ASME 300 FF
 "B" END : ASME 300 FF

FITTINGS :

- 9) The circumferential welds between nipple and flange to be 100 per cent radiographed. All weld procedures and welders to be qualified in accordance with ASME IX. The quality and definition of radiographs to be in accordance with EN1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators.
- 10) Interpretation of butt welds to be according to API 1104.
- 11) Fitting manufacturer serial number to be stamped on the back of the flange, zone 'Y' at two places at 180°.

COATING :

- 12) The exposed internal and external surfaces of the end fittings and flanges (including flange faces) to be protected by hot dip galvanisation in accordance with EN ISO 1461.
 Surface Preparation: Grit blasting to SA 2½, followed by pickling in acid. Coating: Minimum average coating weight 610 g/m² (equivalent to 85 µm thickness).
 Zinc Composition: Bath impurities to comply with the limits specified in EN ISO 1461. Appearance: Coating shall be visually free from nodules, blisters, roughness, sharp points and uncoated areas.

HOSE PERFORMANCE DATA

RATED WORKING PRESSURE	19 bar	MAXIMUM PERMANENT ELONGATION	0,70%
TEST PRESSURE	28,5 bar	MAXIMUM AROMATICS CONTENT	UP TO 60%
MINIMUM BURST PRESSURE - 1st CARCASS	95 bar	MAXIMUM FLOW VELOCITY	UP TO 21 m/s
MINIMUM BURST PRESSURE - 2nd CARCASS	38 bar	FLUID TEMPERATURE RANGE	-20°C +82°C
MINIMUM BENDING RADIUS	2,4 m	AMBIENT TEMPERATURE RANGE	-29°C +52°C
MAXIMUM TEMPORARY ELONGATION	2,50%	MINIMUM RESERVE BUOYANCY	N.A.
SUBMERGED WEIGHT FULL OF WATER	2317 Kg	SUBMERGED WEIGHT FULL OF OIL	2002 Kg

ALL DATA ARE NOMINALLY CORRECT AND MAY VARY WITHOUT NOTICE

WEIGHT :

600mm (24") x 9,1m (30') = 4235 Kg

OUT DIAMETER :

Body=773mm End=866mm

B	05/12/2012	GENERAL UPDATE	L.Fortuna	A.Siliquini	G.Marucci
A	03/10/2012	MODIFIED FROM OCIMF'91 TO GMPHOM2009	L.Fortuna	A.Siliquini	
0	03/08/2011	FIRST ISSUE	L.Fortuna	A.Siliquini	
REV	DATE	REVISION	PREPARED	REVIEWED	APPROVED

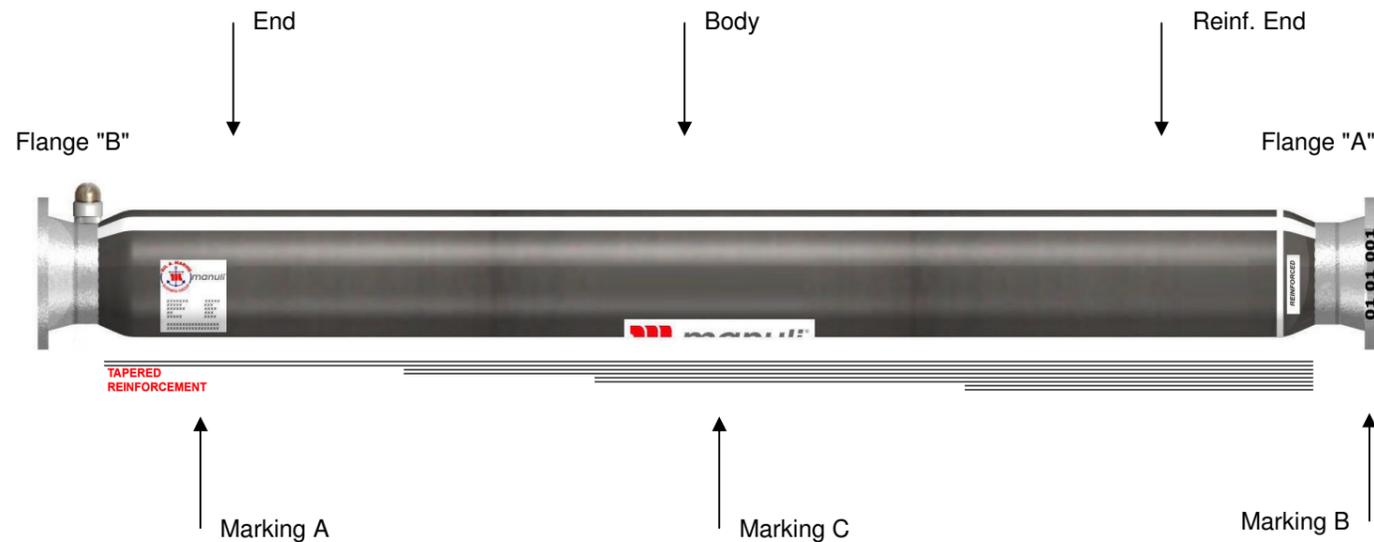
SCALE
 NOT TO SCALE
 A3

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**H3030 UF DASH POSEIDON 600mm (24") RWP 19bar
 Double Carcass Mainline Submarine Hose
 to GMPHOM 2009 spec
 for Caspian Pipeline Consortium**



TD. 01.0011/63



FOR CUSTOMER'S APPROVAL

GENERAL INFORMATION

DESCRIPTION :

1st CARCASS : *Flexible rubber structure composed of smooth oil resistant extruded NBR main lining, adequate number of steel wire cords and steel wire helix, textile reinforcements & cover bonded together. For suction and discharge of crude oil and liquid petroleum products for Offshore Mooring.*

2nd CARCASS : *Additional carcass with oil retention channel, smooth oil and fuel resistant NBR lining, adequate number of reinforcements & abrasion resistant chloroprene rubber cover bonded together and vulcanized in a uniform manner. The 2nd carcass is designed to contain any product which may escape from the 1st carcass*

FITTING : *Built-in during hose construction*
 ELECTRICALLY : *Discontinuous*
 FAD : *Failure Alert Device "Mechanical System"*

REFERENCE :

NORM : *Tested according to GMPHOM 2009*

MARKING :

MARKING "A" ON EACH END AT 180 ° :

MANUFACTURER: ANCHOR + "Manuli"
 SPECIFICATION: GMPHOM 2009
 DIAMETER: ID 600 mm
 WORKING PRESSURE: RWP 19 bar
 SERIAL NUMBER: mmyy ____
 MONTH / YEAR: ____
 CARCASS TYPE: DOUBLE CARCASS HOSE
 HOSE TYPE: **H3006 UF DASH**
 HOSE NAME: **POSEIDON**
 TEMPORANEY ELONGATION : T.E. _____ %
 ELECTRICALLY: ELECTRICALLY DISCONTINUOUS

MARKING "B" ON EACH END AT 180 ° :

Serial number "mm-YY-Progressive nr. "welded on the rim of the flange

MARKING "C" ON EACH END AT 180 ° :

On the hose center : MANULI logo

MATERIAL :

LINING : *Smooth, oil resistant extruded (NBR)*

COVER : *Black rubber, high resistant to abrasion, oil, sunlight and seawater with longitudinal white stripe.*

WIRE HELIX : *One helical wire embedded in syntetic rubber*

REINFORCED CORD : *Steel and textile cords skimmed with rubber*

FITTINGS DATA

NIPPLES :

- The nipple body to be fabricated from:
 Alternative A: seamless steel pipe conforming to ASTM A-106 A or B or API-5L Grade A or B.
 Alternative B: steel plate conforming to ASTM A-285 C or equivalent.
 In both cases killed or semi-killed steel, with a maximum carbon content of 0.23 per cent.
- All weld procedures and welders are to be qualified in accordance with ASME IX.
- All welds, excluding band material welds, to be 100 per cent radiographed in accordance with EN 1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators. Interpretation of seam welds to be according to ASME VIII UW 51B
- Band material to be equivalent to ASTM A-285 C, killed or semi-killed steel, with a maximum carbon content of 0.23 per cent. Band welds to be wet Magnetic Particle Inspected in accordance with ASME VIII, Appendix 6.
- Nipple reference number to be stamped in zone 'X' at two places at 180°.

FLANGES :

- The flange material to be in accordance with ASTM A-105 or equivalent normalised and with a maximum carbon content of 0.25 per cent. The flange rating to be in accordance with ASME B16.5. The class to be specified by the purchaser.
- The flange face to have a finish equivalent to that specified in EN 1759-1 over its complete area after galvanisation.
- The flanges to be identifiable by a mill number stamped on the flange edge.

RATING :

"A" END : ASME 300 FF
 "B" END : ASME 300 FF

FITTINGS :

- The circumferential welds between nipple and flange to be 100 per cent radiographed. All weld procedures and welders to be qualified in accordance with ASME IX. The quality and definition of radiographs to be in accordance with EN1435, with the exception that radiographs will show a density of 2 to 3, geometric unsharpness not more than 0.4mm and a sensitivity of 1.5 per cent of wall thickness using EN 462-1 wire type image quality indicators.
- Interpretation of butt welds to be according to API 1104.
- Fitting manufacturer serial number to be stamped on the back of the flange, zone 'Y' at two places at 180°.

COATING :

- The exposed internal and external surfaces of the end fittings and flanges (including flange faces) to be protected by hot dip galvanisation in accordance with EN ISO 1461.
 Surface Preparation: Grit blasting to SA 2½, followed by pickling in acid. Coating: Minimum average coating weight 610 g/m² (equivalent to 85 µm thickness).
 Zinc Composition: Bath impurities to comply with the limits specified in EN ISO 1461. Appearance: Coating shall be visually free from nodules, blisters, roughness, sharp points and uncoated areas.

HOSE PERFORMANCE DATA

RATED WORKING PRESSURE	19 bar	MAXIMUM PERMANENT ELONGATION	0,70%
TEST PRESSURE	28,5 bar	MAXIMUM AROMATICS CONTENT	UP TO 60%
MINIMUM BURST PRESSURE - 1st CARCASS	95 bar	MAXIMUM FLOW VELOCITY	UP TO 21 m/s
MINIMUM BURST PRESSURE - 2nd CARCASS	38 bar	FLUID TEMPERATURE RANGE	-20 °C +82 °C
MINIMUM BENDING RADIUS	2,4 m	AMBIENT TEMPERATURE RANGE	-29 °C +52 °C
MAXIMUM TEMPORARY ELONGATION	2,50%	MINIMUM RESERVE BUOYANCY	N.A.
SUBMERGED WEIGHT FULL OF WATER	2555 Kg	SUBMERGED WEIGHT FULL OF OIL	2188 Kg

ALL DATA ARE NOMINALLY CORRECT AND MAY VARY WITHOUT NOTICE

WEIGHT : **600mm (24") x 10,7m (35') =4774 Kg** OUT DIAMETER : **Body=838mm End=860mm Reinf.End=860mm**

B	05/12/2012	GENERAL UPDATED	L.Fortuna	A.Siliquini	G. Marucci
A	03/10/2012	MODIFIED FROM OCIMF'91 TO GMPHOM2009	L.Fortuna	A.Siliquini	
0	03/08/2011	FIRST ISSUE	L.Fortuna	A.Siliquini	
REV	DATE	REVISION	PREPARED	REVIEWED	APPROVED

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H3006 UF DASH POSEIDON 600mm (24") RWP 19bar
Double Carcass One End Reinforced
Submarine Hose
to GMPHOM 2009 spec
for Caspian Pipeline Consortium