

Inspection Report

LIMITED

SGS Report No.		IN-NB-5301-11095-002	
SGS Order No.		IN-NB-5301-11095	
SGS Contact Information (Coordinator Information)		Contact Person	
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		Email	
Client		Macmahon	
Client Contact Information		Contact Person	
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Primary Supplier			
Primary Supplier Contact Information		Contact Person	
		Telephone	
		Email	
Manufacturer			
Manufacturer Contact Information		Contact Person	
		Telephone	
		Email	
Equipment/Material Inspected		1. 32pcs - 18m long 900mm OD x 20mm wall thickness, grade S355JR steel pile casings, including 900mm OD x 50mm wt x 1000mm driving shoe 2. 38pcs - 10m long 900mm OD x 20mm wall thickness grade S355JR steel pile casings, with one end beveled 3. 40pcs - Splicing backing rings	
Technical Specification		API 5L , EN10025 and ANNEXURE A – SCOPE OF WORKS	
Project Name			
Inspection Location			
Client Ref. No.	N/A	Manufacturer Order No.	N/A
Date of inspection	3 Dec.~11, 15~19 and 22~23 Dec., 2011	Inspector	Isaac Li & Todd Guo & Kim Xu & Arvin Wang & Junquan Liu & Ivan Pan
Inspection Items	Criteria	Results (Acceptable /Unacceptable/Pending)	

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Documents review	EN10025 and ASME Section IX	Acceptable
Raw material receiving inspection	EN 10025	Acceptable
Witness Test	API 5L	Acceptable
10% UT inspection	API 5L	Acceptable
Dimension check	API 5L	Acceptable
Internal and external, visual inspection of welding seam, repair welding	API 5L	Acceptable
Loading	/	Acceptable

Abnormal items issue

N/A

Equipment/Material inspected

During this visit, the ordered goods in below table were provided for SGS inspection, detail as follows:

No.	Model & Type of commodity	Order Qty.	Finished and Inspected Qty.
1	20No. 18m long 900mm OD x 20mm wall thickness, grade S355JR steel pile casings, including 900mm OD x 50mm wt x 1000mm driving shoe	32pcs	32pcs and 32pcs passed
2	20No. 10m long 900mm OD x 20mm wall thickness grade S355JR steel pile casings, with one end beveled	38pcs	38pcs and 38pcs passed
3	Splicing backing rings OD860*6	40pcs	40pcs and 40pcs passed
	Total	110pcs	110pcs and 110pcs passed

Reference Documents

- API 5L 2007 Specification for Line Pipe
- EN10025:2004 European structural steel standard

Instruments Used

During the inspection, the following instrument calibration status has been checked for inspection:

No.	INSTRUMENT DESCRIPTION	CALIBRATION STATUS	CERTIFICATE NO. (OPTIONAL)
1	Impact testing machine	Effective	XJ11000264-0058
2	Electronic digital caliper	Effective	3XJ11000266-0008
3	Ultrasonic thickness meter	Effective	3XJ11000266-0030
4	Portable Ultrasonoscope	Effective	NT-2011012
5	Spectrometer	Effective	CO3-2010026

6	Welding inspection ruler	Effective	3XJ11000266-0007
7	Universal test machine	Effective	3XJ11000264-0056
8	Tape	Effective	3XJ11000266-0003 &3XJ11000266-0001

Remark: All instruments were on the valid period.

Inspection Narrative Summation

1. Documents Review

1.1 When SGS inspector arrived at the factory, following documents were prepared for SGS inspector review:

- WPS/PQR,
- Welder qualification,
- NDE operator qualification,
- Raw material inspection report
- And Instrument calibration certificates.

1.2 When the pipes were finished; below documents were submitted to SGS inspector for reviewed, which was acceptable.

- The weld joint tensile test report,
- Mechanical performance testing report,
- Chemical analysis for raw material,
- Inspection record of pipes
- And quality certificate for pipes.

Remark: WPS/PQR was prepared as per ASME Section IX and compliance with this standard, which were accepted by client.

2. Material Receiving Inspection

Materials receiving inspection was performed by SGS inspection. Details are as follows:

Item	Heat No.	Coil No	Steel Grade	Thickness (mm)	Flaw
1	112A06950	A111121A039R, 043R, 031R, 042R, 036R, 037R, 029R, 032R, 030R	S355JR	19.4~19.6	No
2	111A06951	A111121A041R,040R, 034R, 035R, 033R, 038R	S355JR	19.4~19.6	No

Remark: The result was acceptable.

3. Witness Test

The following tests were witnessed by SGS inspector during the inspection, details are as below.

3.1 Mechanical properties & chemical composition retest for raw material

- One sample of each heat No. was cut from raw material for tensile test, chemical composition test and impact test, the result was acceptable.

- 1pc welding bead sample was cut from pile casing for tensile test and bending test, the result was acceptable. The detail is as below:

3.1.1 Physics retest for raw material

Heat No.	Grade	Specimen No.	Y.P (Mpa)	T.P (Mpa)	EL (%)	Bending test	Impact AkV(J) 20°C	Result
111A06951	S355JR	11205-1	438	560	28.2	No crack	165,173,167/168	Pass
112A06950	S355JR	11205-2	432	548	28.9	No crack	230,240,236/235	Pass

3.1.2 Chemical composition retest for raw material

Heat No.	Grade	Specimen No.	C%	Si%	Mn%	P%	S%	Cu%	Result
111A06951	S355JR	11203-6	0.15	0.32	1.48	0.014	0.006	0.016	Pass
112A06950	S355JR	11203-7	0.15	0.34	1.48	0.013	0.003	0.017	Pass

Remark: 1. The result was acceptable according to EN 10025:2004 and API 5L PSL1 2007.

2. The below table was corresponding heat No. and products size.

Heat No	Products size
111A06951	OD900*20
112A06950	OD900*20

3.2 Physical for weld bead

Pipe size	Pipe No.	Specimen No.	Y.P (Mpa)	T.P (Mpa)	Bending test	Result
OD900*20	01	11210-1	273	549	N/A	Pass
		11210-2	N/A	N/A	No crack	Pass
		11210-3	N/A	N/A	No crack	Pass

3.3 UT and MT test

Sample size: 10% UT and MT

7pcs pipes were selected randomly for UT and MT test witness, the result was acceptable as per API 5L PSL 1 2007.

3.3.1 MT test

During this visit, 7 pipes (No.28-3221, No.03-3167, No.07-3175, No.08-3177, No.11-3185, No.02-3170 and No.03-3175) were carried out MT test which was witnessed by SGS inspector, the result is as follow, Before carried out testing, NDT operator had calibrated the equipment, then done the testing according to process and no defect which go beyond the limit of the standard of level II has been found, the result was acceptable.

3.3.2 UT test

During this visit, 7 pipes (No.28-3221, No.03-3167, No.07-3175, No.08-3177, No.11-3185, No.02-3170 and No.03-3175) were carried out UT test which was witnessed by SGS inspector, the result is as follow, Before carried out testing, NDT operator had calibrated the equipment, then done the testing according to process and no defect which go beyond the limit of the standard of level II has been found, the result was acceptable.

4. Dimension Check

During manufacturing, all finished products were selected for dimension check. The OD, Length and roundness was acceptable according to API 5L PSL1 2007

5. Internal and external, visual inspection of welding bead, welding repair

During this inspection, visual inspection of welding bead was carried out after repaired welding bead were finished. Undercut \leq 0.8mm, internal weld reinforcement \leq 3.5mm and external weld reinforcement \leq 4.5mm, no obvious defect was found.

No porosity, crack, spatter, weld flash and weld defect were found on pile casings. The internal concavity was found and not lower than the base metal. The detail is as below,



Remark: The result was acceptable.

6. Loading Supervision

- Pre-loading and loading supervision survey

We report the following:

6.1. The loading to the port from factory

Several pipes were loaded onto a truck and tightened with nylon rope, total 13 trucks, and delivered to Shanghai port on 19 Dec., 2011.



Loading onto the truck at the factory



Loading onto the truck at the factory

6.2. Pre-loading inspection

Pre-loading inspection was carried out on 22nd, December 2011 at Shanghai port.

Weather condition at the time of survey: Cloudy.

6.2.1 Storage:

Total 70 pieces of the pile casings (declared to be SSAW Pipe LSAW Pipe) were stored on open yard of LUOJING terminal of Shanghai port, China. The storage ground was noted cement ground and to be in clean condition and free from chemical job and nearby river.

Cargo were found stored on yards up to 3 tiers high without covering protection. And without dunnage supported to separation ground and bottom tubes.

Total 40 pieces of the cargo (LSAW PIPE, SIZE: 860X6) were found stored in warehouse of LUOJING terminal of Shanghai port, China. The storage ground was noted cement ground and to be in clean condition and free from chemical job.

6.2.2 Packing:

Tubes were found packed in bare condition.

6.2.3 Marking:

Each tube was supplied on pipe's inner surface of both ends, which read in English, for example:

API5L PSL1

Φ900X20X10000

S355JR

HEAT NO. 112A06950

HEAT NO. 111A06951

06 3173

6.3. Loading supervision at port:

A cargo loading supervision had been carried out at pier side of vessel M.V."ALEXANDERGRACHT" during loading on 22nd, December 2011

Weather Condition during Loading: Overcast

6.3.1 Time log

Vessel Arrived, Shanghai Port : 2100, 21 December 2011
Berthed at Pier : 1230, 22 December 2011
Commenced Loading : 1620, 22 December 2011
Commenced lashing : 2230, 22 December 2011
Completed loading : 2230, 22 December 2011
Completed Securing : 2320, 22 December 2011
ETD : 0100, 23 December 2011

6.3.2 Brief Description of Vessel

M.V." ALEXANDERGRACHT" was found to be a bulk carrier with three single cargos holds all forward of accommodation and machinery space.

The vessel laid securely moored starboard side to LUOJING port terminal, Shanghai, China.

6.3.3 Shifting from yard

Pieces were shifted onto port trailers from the port yard using vehicle cranes, and then transferred to loading berth. On port yards, pieces were lifted using nylon straps with hooks. Each trailer carried up to 4 pieces.

6.3.4 Loading alongside the vessel

Alongside the vessel, the consignment was loaded directly from port trailers to vessel's and using one shore crane, the pipes were lifted by steel hooks, up to 2 pieces per sling.

6.3.5 Storage

Before loading, the hold No.2 of the vessel was visual inspected by SGS surveyor and noted to be in dry and clean condition. Our cargo was loaded and stowed in hold No.2 and deck.

6.3.6 Dunnage and lashing/securing

During loading, wooden timbers were used between the deck and pipe to avoid cargo touch the ship directly. After the loading completion, our cargos (Steel pipes) were lashed by up to 6 pieces of steel wire on deck. The entire lashing and securing checked by Chief Mate and SGS surveyor found in sound condition.

6.3.7 Tally

A tally survey to determine the quantity of the goods loaded on board was carried out during loading, as per our tally, found total 40 pieces were loaded into hold No.2, and total 70 pieces of the pipe were stowed on deck of the vessel MV "ALEXANDERGRACHT", the detail as follow:

Item	ID (mm)	WT (mm)	Length (m)	Quantity (pcs)	Weight(MT)	Hold
1a、SSAW Pipe	900	20	18	20	156.255	On deck
1b、LSAW Pipe	900	50	1		20.962	

2、LSAW Pipe	900	20	10	20	86.808	On deck
3a、SSAW Pipe	900	20	18	12	93.753	On deck
3b、LSAW Pipe	900	50	1		12.577	
4、SSAW Pipe	900	20	10	12	52.085	On deck
5、SSAW Pipe	900	20	10	6	26.043	On deck
6、LSAW Pipe	860	6	0	40	0.253	In hold No.2
Total:				110	448.736	

6.3.8 Visual cargo condition inspection during loading

A visual cargo condition inspection was carried out during preloading and loading operation.

As far as visible and accessible, all of the steel pipes were found slight scrape and rust stained on the surface.

Document Review

The SGS inspectors reviewed the following documents:

- WPS/PQR
- Welder Qualification
- NDE Operator Qualification
- Raw material inspection report except Splicing backing rings
- Material certificate
- Finished inspection report
- Steel mill MTC
- Instrument calibration

Photo



Forming	Steel pipe on the product line
 <p data-bbox="363 658 571 689">Dimension check</p>	 <p data-bbox="1018 658 1257 689">Repairing weld bead</p>
 <p data-bbox="419 1160 515 1191">Welding</p>	 <p data-bbox="1010 1160 1265 1191">Cutting the pile casing</p>
 <p data-bbox="339 1751 595 1783">The end of pile casing</p>	 <p data-bbox="1034 1662 1249 1693">Finished products</p>

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Check the thickness of raw material



The label on the raw material



Chemical composition test



Impact test



Tensile test



The bending test specimens of raw material



The sample of welding bead



Material tensile test for welding bead



Bending test for welding bead



UT test



White marking



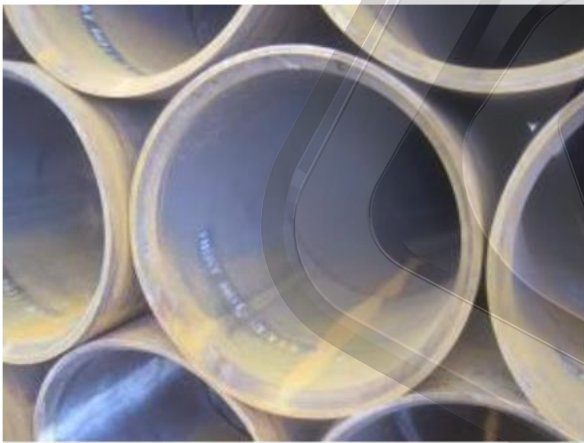
White marking



Storage cargo condition on open yard
Size:900 x20x19000mm



Storage cargo condition on open yard
Size:900x20x10000mm



Shoes: 900x50x1000mm



Splicing backing rings: 860x6mm



Rust stained on surface



Rust stained on surface



Carrying vessel



During loading



Stowed on deck



Stowed on deck



Lashing



Blank

Blank

Remarks

1. This report only reflects our findings at time and place indicated above only and does not refer to any other matters.

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2. This inspection has been carried out to the best of our knowledge and ability and our responsibility is limited to the exercise of reasonable care.
 3. All orders are accepted and all reports and certificates issued subject to the General Conditions of Service. (copy available upon request)

Issued by
Isaac Li
Inspector
Industrial Services
SGS-CSTC Nanjing office
23 Dec., 2011

Reviewed by
Mailer Mao
Inspection Supervisor
Industrial Services
SGS-CSTC Nanjing office
26 Dec., 2011



GRAND STEEL PILING CO., LTD
Grand Piling