

11 JTS 198M LOT # 180987-1

INSPECTION CERTIFICATE

STANTEC DOCUMENT PROCESSING STAMP	
☒ A - PROCEED	☐ I/O - DATA ACCEPTED FOR INFORMATION ONLY
☐ B - PROCEED, CHANGE AS NOTED AND RESUBMIT BY:	☐ C - DO NOT PROCEED, CHANGE AS NOTED AND RESUBMIT BY:
RESUBMITTAL DATE FOR STATUS B	RESUBMITTAL DATE FOR STATUS C
SIGN: <u>Tamara</u> DATE SIGNED: <u>12 Oct. 2018</u>	
VDDR CODE(S): <u>RM13</u>	
AUTHORIZATION TO PROCEED DOES NOT WAIVE SUPPLIER'S RESPONSIBILITY OR LIABILITY UNDER THE CONTRACT/PURCHASE ORDER FOR COMPLIANCE WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS	

Date : 05. Sep. 2018
CERTIFICATE No. : 180905 - 021
Specification : CSA Z245.1 Gr.359 CAT II M18C

 **HUSTEEL Co., Ltd.**

P/O No. : C 726 518895 3B1
L/C No. : HU20180601001

ISSUED DATE : 2018. 09. 05

COMMODITY : E.R.W STEEL PIPE

SPECIFICATION : CSA Z245.1 Gr.359 CAT II M18C

INSPECTION CERTIFICATE



주식회사 휴스틸

HUSTEEL Co., Ltd.

HEAD OFFICE SHINAN B/D 15F, 943-19, DAECHE-DONG,
KANGNAM-GU, SEOUL, KOREA
DAEBUL PLANT 3RO, DAEBUL INDUSTRIAL COMPLEX, SAMHO-EUP,
YEONGAM-GUN, JEOLLANAM-DO, KOREA

CERTIFICATE : 1800905 - 021

MANUFACTUR : 18-09-201

SUPPLIER : HUSTEEL CO., LTD.

CUSTOMER : HUSTEL CANADA CO.LTD.

NO.	HEAT_NO Pipe_No	QUAN- TITY	TYPE	NOMINAL SIZE	ORDER SIZE			WEIGHT	TENSILE TEST *3				CHEMICAL COMPOSITION																					
					O.D mm	W.T mm	LENGTH mm		TPA (*5)				TWA TS	DIV	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	N	Al	Sn	CE			
									TS	YS	EL	YR																				MPa	%	MPa
01	SF02785 136	57	BPEB	16	406.4	12.7	18,000	123.30	522	437	43	84	546	H	0.07	0.20	1.16	0.009	0.002	0.021	0.014	0.037	0.0050	0.0010	0.0240	0.0017	0.0001	0.0041	0.0350		0.0005	0.213		
													P	0.08	0.23	1.19	0.007	0.002	0.018	0.009	0.044	0.0013	0.0010	0.0271	0.0011	0.0001	0.0083	0.0426	0.0005	0.213				
													P	0.07	0.23	1.18	0.008	0.002	0.019	0.010	0.044	0.0017	0.0012	0.0281	0.0011	0.0001	0.0089	0.0424	0.0005	0.200				

NO.	HYDROSTATIC TEST			HEAT TREATMENT	DROP WEIGHT TEAR TEST (Shear Area)	HARDNESS TEST		IMPACT TEST (-18)°C				*8 N-D-T (U T)	FLATTENING OR BEND TEST	VISUAL & DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM					
	T.P	H.T	RESULT			DIV	Energy (Ind, J)	Shear area	SIZE	GOOD	GOOD	GOOD	GOOD	GOOD							
															MPa	sec	°C	HRC	HV 500gf	*5	*6
01	21.3	10	GOOD	950		8.5	197	TPA TWA	132/147/152 121/111/127	99.0	B										

* Sour service means that pipes meet CSA clause 16 except for HIC test
 * 17.7.b Charpy Test specimen are nonflattened.
 * CE = C+F(Mn/6+Si/24+Cu/15+Ni/20+(Cr+Mo+V+Nb)/5+5B)
 Latest edition per CSA Z245.1 (2018)

N O T E	*1. Type of Pipe Ends				*2. O.D : Outside Diameter, W.T : Wall Thickness				*3. Tensile Test - TS : Tensile Strength, YS : Yield Strength, EL : Elongation, YR : Yield Ratio, Gauge Length : 2 inch, Y.P method : 0.5% Underload							
	BPE	Black Plain Ends	GPE	Galvanized Plain Ends	BPEB	BPE Bevelled	GPEB	GPE Bevelled	BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends	BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled
									*4. H : Heat analysis, P : Product analysis							
					*5. TPA : Transverse pipe axis, LPA : Longitudinal pipe axis, TWA : Transverse weld axis				*6. Specimen Size - A : 10x10mm, B : 10x7.5mm, C : 10x6.7mm, D : 10x5.0mm, E : 10x3.3mm							
				*7. T.P : Testing Pressure, H.T : Holding Time				*8. NDT : UT, 1/8" Drilled Hole And 8x35mm FBN(Flat bottom notch)								

WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE ORDER AND ABOVE SPECIFICATION
THIS CERTIFICATE IS ISSUED ACCORDING TO EN 10204 3.2(ISO 10474 3.2)

L.G. Lee

MANAGER OF Q.A TEAM

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Diameter : 406.4 mm				Gage : 12.7 mm				Grade : Gr.359 CAT II M18C												
Specification : CSA Z245.1 GR.359 CAT II M18C																				
Heat No	Pipe No	Product ID	Test Type			Orientation				Width(mm)		YS(MPa)		TS(MPa)		Elong%(50mm)		Y/T		
			Wgt(%)	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	N	Al	Sn	CEQ
SF02785	VI04B0136	HBH087810	MILL CONTROL			PIPE TPA				38.0		437		522		42.9		0.84		
			MILL CONTROL			PIPE TWA				38.0				546						
			Heat	0.0667	0.197	1.157	0.009	0.0023	0.021	0.014	0.037	0.005	0.001	0.024	0.0017	0.0001	0.0041	0.0350		
			Product	0.08	0.23	1.19	0.007	0.002	0.018	0.009	0.044	0.0013	0.0010	0.0271	0.0011	0.0001	0.0083	0.0426	0.0005	0.213
			Product	0.07	0.23	1.18	0.008	0.002	0.019	0.010	0.044	0.0017	0.0012	0.0281	0.0011	0.0001	0.0089	0.0424	0.0005	0.200

* TPA : Transverse pipe axis

* LPA : Longitudinal pipe axis

* TWA : Transverse weld axis

* HAZ : Heat Affected Zone

* OD : Outside Diameter

* MD : Mid Diameter

* ID : Inside Diameter

* Electric Resistance Welded (Type E)

* Flattening Test Acceptable

* 406.4 X 12.7t : 21,300 Kpa for 10 secs

* Minimum Weld Seam Heat Treatment Temperature : 620(℃)

* UT Cal. To 1/8" Drilled Hole and 8x35mm FBN(Flat bottom notch)

* Sour service means that pipes meet CSA clause 16 except for HIC test

* 17.7.b Charpy Test specimen are nonflattened.

* CE = $C + F(Mn/6 + Si/24 + Cu/15 + Ni/20 + (Cr + Mo + V + Nb)/5 + 5B)$

* Latest edition per CSA Z245.1 (2018)

We certify that the product described above has been manufactured, sampled, inspected, and tested in accordance to the referenced specification. The product has been found to be in compliance with all requirements.

Diameter : 406.4 mm			Gage : 12.7 mm		Grade : Gr.359 CAT II M18C											
Specification : CSA Z245.1 GR.359 CAT II M18C																
Heat No	Pipe No	Product ID	Test Type	Orientation	Temp C	Energy (Joules)					Shear area (%)				Test Position	Size
					℃	#1	#2	#3	Avg	#1	#2	#3	Avg			
SF02785	VI04B0136	HBH087810	Transverse pipe axis	PIPE TPA	-18	132	147	152	144	100	100	98	99	90	3/4	
			Transverse Weld axis	PIPE TWA	-18	121	111	127	120	-	-	-	-	0	3/4	

* TPA : Transverse pipe axis

* LPA : Longitudinal pipe axis

* TWA : Transverse weld axis

* HAZ : Heat Affected Zone

* OD : Outside Diameter

* MD : Mid Diameter

* ID : Inside Diameter

* Electric Resistance Welded (Type E)

* Flattening Test Acceptable

* 406.4 X 12.7t : 21,300 Kpa for 10 secs

* Minimum Weld Seam Heat Treatment Temperature : 620(℃)

* UT Cal. To 1/8" Drilled Hole and 8x35mm FBN(Flat bottom notch)

* Sour service means that pipes meet CSA clause 16 except for HIC test

* 17.7.b Charpy Test specimen are nonflattened.

* CE = $C + F(Mn/6 + Si/24 + Cu/15 + Ni/20 + (Cr + Mo + V + Nb)/5 + 5B)$

* Latest edition per CSA Z245.1 (2018)

We certify that the product described above has been manufactured, sampled, inspected, and tested in accordance to the referenced specification. The product has been found to be in compliance with all requirements.

Diameter : 406.4 mm
Specification : CSA Z245.1 GR.359 CAT II M18C

Gage : 12.7 mm

Grade : Gr.359 CAT II M18C

Heat No	Pipe No	Product ID	Scale	Location	PM	HAZ			WMZ			HAZ	PM	AVERAGES				Total Avg
SF02785	V10480136	HBH087810	RockwellC	OD	9.6	9.5	11.2	10.5	10.7	12.1	10.7	11.3	8.6	8.8	9.1	10.9	11.4	8.5
			RockwellC	ID	5.1	4.8	7.1	7.2	10.0	7.4	4.7	4.8	4.7	5.1	5.0	6.0	8.7	

- * TPA : Transverse pipe axis
- * LPA : Longitudinal pipe axis
- * TWA : Transverse weld axis
- * IIAZ : Heat Affected Zone
- * OD : Outside Diameter
- * ID : Mid Diameter
- * ID : Inside Diameter
- * Electric Resistance Welded (Type E)
- * Flattening Test Acceptable
- * 406.4 X 12.7 : 21,300 Kpa for 10 secs
- * Minimum Weld Seam Heat Treatment Temperature : 620(°C)
- * UT Cal. To 1/8" Drilled Hole and 0x35mm FBN(Flat bottom notch)
- * Sour service means that pipes meet CSA clause 16 except for HIC test
- * 17.7b Charpy Test specimens are non flattened.
- * CE = $C \cdot F(\text{Min}/6 + S/24 + Cu/15 + N/20 + (Cr + Mo + V + Nb)/5 + SD)$
- * Latest edition per CSA Z245.1 (2018)

We certify that the product described above has been manufactured, sampled, inspected, and tested in accordance to the referenced specification. The product has been found to be in compliance with all requirements.

Diameter : 406.4 mm		Gage : 12.7 mm		Grade : Gr.359 CAT II M18C	
Specification : CSA Z245.1 GR.359 CAT II M18C					

Heat No	Pipe No	Product ID	Scale	Location	PM	HAZ	WMZ			HAZ	PM			AVERAGES			Total Avg
SF02785	V10480136	HBH087810	Vickers HV 500gf	OD	194	0	0	0	0	0	195	0	0	196	0	0	197
			Vickers HV 500gf	MD	200	0	0	0	0	0	195	0	0	206	0	0	199
			Vickers HV 500gf	ID	199	0	0	0	0	0	193	0	0	198	0	0	198

- * TPA : Transverse pipe axis
- * LPA : Longitudinal pipe axis
- * TWA : Transverse weld axis
- * IAZ : Heat Affected Zone
- * OD : Outside Diameter
- * MD : Mid Diameter
- * ID : Inside Diameter
- * Electric Resistance Welded (Type E)
- * Flattening Test Acceptable
- * 406.4 X 12.71 : 21,300 Kpa for 10 secs
- * Minimum Weld Seam Heat Treatment Temperature : 620(°C)
- * UT Cal. To 1/8" Drilled Hole and 8x35mm FBN(Flat bottom notch)
- * Sour service means that pipes meet CSA clause 16 except for HIC test
- * 17.7.b Charpy Test specimen are nonflattened.
- * CE = $C \cdot F(Mn/6 \cdot Si/24 \cdot Cu/15 \cdot Ni/20 \cdot (Cr+Mo+V+Nb)/5 \cdot S \cdot B)$
- * Latest edition per CSA Z245.1 (2018)

We certify that the product described above has been manufactured, sampled, inspected, and tested in accordance to the referenced specification. The product has been found to be in compliance with all requirements.

**NON NEGOTIABLE
BILL OF LADING**
PROOF COPY
**WESTWOOD
SHIPPING LINES**


Shipper/Exporter (Complete Name and Address) HUSTEEL CO., LTD. SHINAN B/D 14F, 15F, 943-19, DAECHE-DONG, KANGNAM-KU, SEOUL 135-845, KOREA TEL: 02-828-9000		Booking No./Job Ref. K18KAN00107	SCAC WWSU	Bill of Lading No. VT099BSNV003
Consignee (Complete Name and Address) HUSTEEL CANADA CO. LTD. #657-409 GRANVILLE STREET VANCOUVER, BC V6C 1T2, CANADA TEL: +1 (778) 737-6833 FAX: +1 (778) 737-6834		Export References 1. Freight Forwarder Ref. 2. Shipper Reference 3. Customer Ref. Forwarding Agent - FMC No.		
Notify Party (Complete Name and Address) HUSTEEL CANADA CO. LTD. #657-409 GRANVILLE STREET VANCOUVER, BC V6C 1T2, CANADA TEL: +1 (778) 737-6833 FAX: +1 (778) 737-6834		Also Notify HYUNDAI GLOVIS CANADA, INC 90 BURNHAMTHORPE RD W STE 1005 MISSISSAUGA, ON L5B 3C3 SONIC NA T +1 905 361 1642 (EXT 279) F +1 905 361 1645		
Point and Country of Origin of Goods				

Pre-Carriage*		Place of Receipt*		All invoices are subject to late payment charges of .052% daily, yield on effective annual rate of 19% for all overdue amounts not paid within terms	
Vessel WESTWOOD VICTORIA	Voy No. 099E	Port of Loading* BUSAN		Loading Pier/Terminal GAMCHEON CENTRAL PIER	
Port of Discharge* N. VANCOUVER, BC		Place of Delivery*		Type of Move HK-HK	Shipment Rec'd

CARRIER'S RECEIPT		PARTICULARS FURNISHED BY SHIPPER							
Marks & Nos./Container Nos	Quantity	Description of Packages and Goods	No. of Units			Gross Weight	Measurement		
PO NO.: C 726 518895 3B1 VANCOUVER BC SPEC TYPE/SIZE PCS/LIFT HUSTEEL CO., LTD MADE IN KOREA	57	SAID TO BE				126,506.000 KGS			
		E.R.W STEEL PIPE							
		SIZE	LIFT	LIFT NO.	PCS/LIFT	PCS		METER	WEIGHT (MT)

		API 5L X52 (CSA Z245.1 GR.359)							
		BPE30							
		406.4MM*12.7MM*18M	48	1-48	1	48		864.	106.531
		406.4MM*12.7MM*18M	9	49-57	1	9		162.	19.975

		TOTAL :	57		57	1,026.		126.506	

9 - 201									
FREIGHT COLLECT									
						Shipped On Board Date 9/22/2018			

HS Code	Contract#	Shipper's Declared	IF NO VALUE DECLARED, LIABILITY LIMITED PURSUANT TO CARRIER'S TERMS AND CONDITIONS OF CARRIAGE.			Freight Payable At/By PUYALLUP, WA	
Freight & Charges		Weight/Measurement	Rate	Per	Prepaid	Collect	

*Received in apparent external good order and condition, except as otherwise described herein, the number of packages listed in the Carrier's Receipt, said to contain the goods described in the Particulars Furnished by Shipper (contents, weight and measurement are unknown to Carrier) to be transported to the port of discharge, or to such other place authorized or permitted herein, or so near thereto as the vessel can get, tie and leave, always in safety and afloat and without delay, and there to be delivered to consignee or authorized receiver, or on-carrier on payment of all charges due thereon. Carrier shall have right to carry containers on deck per Carrier's Terms and Conditions of Carriage. A copy of Carrier's Terms and Conditions of Carriage is available for review at www.wsl.com.

IN ACCEPTING THIS BILL OF LADING, the shipper, consignee and owner of the goods acknowledge receipt of and agree to be bound by Carrier's Terms and Conditions and all stipulations, exceptions, and conditions whether written, printed or stamped on the front or back hereof, any local customs or privileges to the contrary notwithstanding.

IN WITNESS WHEREOF the carrier by its agents has signed _____ bill(s) of lading, all of this tenor and date, one of which being accomplished, the others to stand null and void.

Dated at SEOUL
 For Westwood Shipping Lines, INC
 as Carrier
 HYOP WOON INTERNATIONAL CO., LTD.
 by _____
 Date 9/22/2018