



CERTIFICATE OF QUALIFICATION MANUFACTURERS OF SPECIAL MATERIALS

Certificate No:
COQ0000016

This is to certify:

That

SeAH Changwon Integrated Special Steel Corporation
Changwon-si, Gyeongsangnam-do, Korea, Republic of

has undergone a qualification exercise as per:

NORSOK M-650 Edition 4, ISO 17782 (2018) and DNV-SE-0079¹⁾

and the requirements stated in the standards above have been fulfilled for the following:

Product:	Seamless hot and cold finished pipes and tubes
Grade:	NORSOK M-630, MDS D51, rev.6 – UNS S32750 and S32760
	NORSOK M-630, MDS D58, rev.6 – UNS S32750 and S32760
Manufacturing process:	Extrusion/drawing/pilgering
Maximum qualified thickness:	Hot finished: 13.13 mm
	Cold finished: 13.05 mm
Maximum qualified weight:	All

¹⁾ The qualification exercise was carried out to verify compliance with all the requirements in NORSOK M-650/ISO 17082 without a defined order and without authorization from Company or Main Contractors.

QTR Reference No: **SeAHCSS-QTR-202102, rev.0**
MPCR Reference No: **SeAHCSS-MPCR-202102, rev.0**

Issued at **Høvik** on **2021-11-19**

This Certificate is valid until **2026-11-11**.

DNV local station: **Oslo Materials Advisory**

Technical Authority: **Vebjørn Andresen**

for **DNV**



Digitally Signed By: Løken, Sondre
Location: DNV, Høvik, Norway
Signing Date: 24.11.2021

Sondre Løken
Head of Section – Materials Advisory

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.


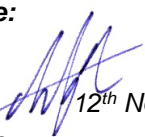
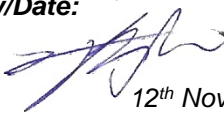





Form code: MSM 301


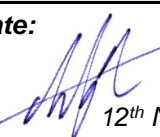

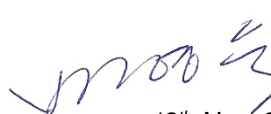
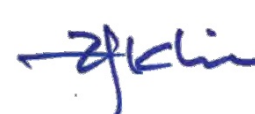

Revision: 2021-03

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	Qualification Test Record (QTR) NORSOK M-650		QTR. No.: SeAHCSS-QTR-202102		
			Rev. No.: 0		
Manufacturer name /address /Web page:	SeAH CSS (SeAH Changwon Integrated Special Steel Corporation) 147, Jeokhyeon-ro, Seongsan-gu, Changwon, Gyeongnam, Korea www.seahss.co.kr				
Reference standard	NORSOK M-650 Edition 4 DNV-SE-0079 Edition 2021				
Material designation and MDS No.:	Seamless pipes; NORSOK M-630:2020, MDS D51, Rev. 6 S32750 and S32760 Seamless tubes; NORSOK M-630:2020, MDS D58, Rev. 6 S32750 and S32760				
Manufacturing Summary doc. No.:	MS-P21-01		Rev. No. 2		
Products and Manufacturing process(es):	Raw materials are melted(EAF) and refined(VOD) using SeAH CSS own facility. Seamless pipes and tubes which are produced by extrusion/drawing/pilgering processes. All manufacturing is progressed using SeAH CSS's own facility.				
Mandatory conditions and sub-contractors:	<ul style="list-style-type: none"> • The steel making and refining shall be carried out according to MQ-P10-02,R0. • The pipes and tubes shall be solution annealed followed by water quenching using heat treatment furnace I.D no. 1 according to MQ-P30-03 R6. • All material test shall be carried out at ISO 17025 certified lab. • Chemical analysis is carried out at SeAH CSS own lab. • Non-destructive inspection shall be carried out by a certified person according to ISO 9712. 				
Other information:	Furnace temperature uniformity test is carried out according to MQ-P30-04, R2.				
Qualification expires:	Valid 5 years (from 12 th Nov. 2021 to 11 th Nov. 2026)				
Tested and qualified thickness and weight					
Products and manufacturing process(es):	Test record No.	Tested thickness mm	Qualified thickness mm	Test piece weight kg	Qualified weight kg
Hot finished pipes and tubes	MQ-P4005-01	11.07	13.13	N/A	N/A
Cold finished pipes and tubes		10.5	13.05	N/A	N/A
Qualification/acceptance signatures					
Manufacturer:	Prepared by/Date: Yeongeun Lee  12 th Nov. 2021 Prepared by/Date: Joongul Lee  12 th Nov. 2021		Checked by/Date:  Youngsook Bae 12 th Nov. 2021		
	<p>The manufacturer and this QTR are evaluated and found to be in compliance with the requirements of NORSOK M-650 and DNV-SE-0079 for supply of the above listed products and materials. This acceptance does not exempt any purchaser from his responsibility to ensure that this qualification is valid for his products within the essential variables of NORSOK M-650 and DNV-SE-0079.</p>				
Qualified/Accepted by (company name /address): Young Ki Lim, Material/Welding DNV, 48120 Busan, South Korea Verified by: Vebjørn Andresen, Principal Engineer - Materials DNV, 1363 Høvik, Norway			Signature/Date:  12 th Nov. 2021  19 th Nov. 2021 Digitally Signed By: Andresen, Vebjørn Location: DNV Høvik, Norway Signing Date: 19.11.2021		



	Manufacturing Procedure Conformity Record (MPCR) ISO 17782		MPCR. No.: SeAHCSS-MPCR-202102		
			Rev. No.: 0		
Manufacturer name /address /Web page:	SeAH CSS (SeAH Changwon Integrated Special Steel Corporation) 147, Jeokhyeon-ro, Seongsan-gu, Changwon, Gyeongnam, Korea www.seahss.co.kr				
Reference standard	ISO 17782 Edition 2018 DNV-SE-0079 Edition 2021				
Material designation and MDS No.:	Seamless pipes; NORSOK M-630:2020, MDS D51, Rev. 6 S32750 and S32760 Seamless tubes; NORSOK M-630:2020, MDS D58, Rev. 6 S32750 and S32760				
Manufacturing Procedure Summary doc. No.:	MS-P21-01		Rev. No. 2		
Products and manufacturing process(es):	Raw materials are melted(EAF) and refined(VOD) using SeAH CSS own facility. Seamless pipes and tubes which are produced by extrusion/drawing/pilgering processes. All manufacturing is progressed using SeAH CSS's own facility.				
Mandatory conditions and sub-contractors:	<ul style="list-style-type: none"> • The steel making and refining shall be carried out according to MQ-P10-02,R0. • The pipes and tubes shall be solution annealed followed by water quenching using heat treatment furnace I.D no. 1 according to MQ-P30-03 R6. • All material test shall be carried out at ISO 17025 certified lab. • Chemical analysis is carried out at SeAH CSS own lab. • Non-destructive inspection shall be carried out by a certified person according to ISO 9712. 				
Other information:	Furnace temperature uniformity test is carried out according to MQ-P30-04, R2.				
Qualification expires:	Valid 5 years (from 12 th Nov. 2021 to 11 th Nov. 2026)				
Tested and qualified thickness and mass					
Products and manufacturing process(es):	Test record No.	Tested thickness mm	Qualified thickness mm	Test piece mass kg	Qualified mass kg
Hot finished pipes and tubes	MQ-P4005-01	11.07	13.13	N/A	N/A
Cold finished pipes and tubes		10.5	13.05	N/A	N/A
Qualification/acceptance signatures					
Manufacturer:	Prepared by/Date: Yeonnggeun Lee  12 th Nov. 2021		Checked by/Date:		
	Prepared by/Date: Joongul Lee  12 th Nov. 2021		 Youngsook Bae 12 th Nov. 2021		
<p>The manufacturer and this MPCR are evaluated and found to be in compliance with the requirements of ISO 17782 and DNV-SE-0079 for supply of the above listed products and materials.</p> <p>This acceptance does not exempt any purchaser from his responsibility to ensure that this qualification is valid for his products within the essential variables of ISO 17782 and DNV-SE-0079.</p>					
Qualified/Accepted by (company name /address): Young Ki Lim, Material/Welding DNV, 48120 Busan, South Korea Verified by: Vebjørn Andresen, Principal Engineer - Materials DNV, 1363 Høvik, Norway			Signature/Date:  12 th Nov. 2021  19 th Nov. 2021 Digitally Signed By: Andresen, Vebjørn Location: DNV Høvik, Norway Signing Date: 19.11.2021		

