



Plant Location: 425 McCartney Street, Arnprior, ON, CA, K7S 3P3
 Sold To: 87000005 SANDVIK MATERIALS TECH. NAFTA
 CLARKS SUMMIT PA
 Customer Order No: 00090743
 Sandvik Order No: 359190/1

Ship To: GRAND PRAIRIE V F ALBERTA
 GRAND PRAIRIE AB
 Certification Date: 20181207

Work Order/Lot: 289985

Quantity: 2040 FT
 Location Number D2SIO0062
 Distributor Assigned Order Num
 Order Number FC1834

 ASTM A213-17, ASTM A269-15a, ASTM A511-16, Mechanical Tubing
 ASME SA-213, ASME Section II, 2017 Edition, NACE MR0175/ISO 15156
 3rd Edition 2015-11-23, (Austenitic), NACE MR0103/ISO 17495:2016
 SWAGELOK SMS-00333 Rev. D

Cold Finished BRIGHT ANNEALED Seamless Tube
 Type MT 316/MT 316L/TP316/TP316L

Size: .500" X .083"
 Heat: 553481

Material Manufacturer: Sandvik MT, Canada

ANALYSIS %

	C	Si	Mn	P	S	Cr	Ni
Heat	.022	.41	1.49	.026	.009	16.91	12.47
Prod	.021	.40	1.46	.026	.007	16.75	12.33
	Fe	Mo					
Heat		2.05					
Prod		2.01					

Mechanical Tests:

Yield Strength				Tensile Strength		Elongation in %				Reduction Of Area %
0.2%		1.0%								
psi	MPa	psi	MPa	psi	MPa	E2"	E10"	E4d	E5d	
44000	303.4	N/A		86000	593.1	60	N/A	N/A	N/A	N/A

Hardness Test Results: 80HRBW, 80HRBW

Flare Test per ASTM A450/A1016 and ASME SA450/SA1016,
 No. samples: 2 Result: Acceptable
 Flattening Test per ASTM A450/A1016 and ASME SA450/SA1016:
 Acceptable

Country Of Origin: Canada

Material Does Qualify for NAFTA

Eddy Curent Examination - Acceptable

Positive Material Identification(PMI) - Acceptable

Visual Surface Condition - Acceptable

Dimensional Check - Acceptable

Material is capable of passing the ASTM A262 Practice "E".

Seamless, Cold Finished, Bright(Solution)Annealed &

Atmospheric Quenched

No weld repair has been performed on this material.

Material is free from radioactive contamination.

Traceability is through Work Order number linemarked on tube

The material has not come in contact with Mercury or Mercury containing compounds.

MATERIAL CERTIFICATE

Cert#: 180037012

Page 2

This certification affirms that the contents of the report are correct and accurate and that all test results and operations performed by Sandvik Materials Technology Canada or our subcontractors are in compliance with the material specification.

Inspection certificate produced in accordance with EN 10204 3.1

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of Sandvik Materials Technology Canada. Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious, or fraudulent statements or entries, may be punishable by fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in Section 6 of EN 10204:2004. Contravention of this notice will be prosecuted to the fullest extent of applicable law.

Melt Source: SMT SANDVIKEN, SWEDEN

Melt Method: Electric Arc Furnace-AOD Refining

The material is manufactured according to a quality system, approved and registered to ISO 9001:2015 certificate number GBG0000511 which expires November 30, 2019

Electronically Generated Certificate-Valid without signature
Jakub Sauer, Quality Mgr,
10 (SWINST316 R34) (15) CF (BH9061)



Plant Location: 425 McCartney Street, Arnprior, ON, CA, K7S 3P3
 Sold To: 87000005 SANDVIK MATERIALS TECH. NAFTA
 CLARKS SUMMIT PA Ship To: GRAND PRAIRIE V F ALBERTA
 GRAND PRAIRIE AB
 Customer Order No: 00090743 Certification Date: 20181207
 Sandvik Order No: 359190/1

Work Order/Lot: 289986

Quantity: 2080 FT
 Location Number D2SIO0062
 Distributor Assigned Order Num
 Order Number FC1834

 ASTM A213-17, ASTM A269-15a, ASTM A511-16, Mechanical Tubing
 ASME SA-213, ASME Section II, 2017 Edition, NACE MR0175/ISO 15156
 3rd Edition 2015-11-23, (Austenitic), NACE MR0103/ISO 17495:2016
 SWAGELOK SMS-00333 Rev. D

Cold Finished BRIGHT ANNEALED Seamless Tube
 Type MT 316/MT 316L/TP316/TP316L

Size: .500" X .083"
 Heat: 553481

Material Manufacturer: Sandvik MT, Canada

ANALYSIS %

	C	Si	Mn	P	S	Cr	Ni
Heat	.022	.41	1.49	.026	.009	16.91	12.47
Prod	.021	.40	1.46	.026	.007	16.75	12.33
	Fe	Mo					
Heat		2.05					
Prod		2.01					

Mechanical Tests:

Yield Strength		Tensile Strength		Elongation				Reduction Of Area %	
0.2%	1.0%			in %					
psi	MPa	psi	MPa	E2"	E10"	E4d	E5d		
39000	269.0	N/A		84000	579.3	58	N/A	N/A	N/A

Hardness Test Results: 78HRBW, 78HRBW

Flare Test per ASTM A450/A1016 and ASME SA450/SA1016,
 No. samples: 2 Result: Acceptable
 Flattening Test per ASTM A450/A1016 and ASME SA450/SA1016:
 Acceptable

Country Of Origin: Canada

Material Does Qualify for NAFTA

Eddy Curent Examination - Acceptable

Positive Material Identification(PMI) - Acceptable

Visual Surface Condition - Acceptable

Dimensional Check - Acceptable

Material is capable of passing the ASTM A262 Practice "E".

Seamless, Cold Finished, Bright(Solution)Anealed &

Atmospheric Quenched

No weld repair has been performed on this material.

Material is free from radioactive contamination.

Traceability is through Work Order number linemarked on tube

The material has not come in contact with Mercury or Mercury containing compounds.

MATERIAL CERTIFICATE

Cert#: 180037013

Page 2

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Melt Source: SMT SANDVIKEN, SWEDEN

Melt Method: Electric Arc Furnace-AOD Refining

The material is manufactured according to a quality system, approved and registered to ISO 9001:2015 certificate number GBG0000511 which expires November 30, 2019

Electronically Generated Certificate-Valid without signature
Jakub Sauer, Quality Mgr,
10 (SWINST316 R34) (15) CF (BH9061)



Plant Location: 425 McCartney Street, Arnprior, ON, CA, K7S 3P3
 Sold To: 87000005 SANDVIK MATERIALS TECH. NAFTA
 CLARKS SUMMIT PA
 Customer Order No: 00090743
 Sandvik Order No: 359190/1

Ship To: GRAND PRAIRIE V F ALBERTA
 GRAND PRAIRIE AB
 Certification Date: 20181207

Work Order/Lot: 289987

Quantity: 2120 FT
 Location Number D2SIO0062
 Distributor Assigned Order Num
 Order Number FC1834

 ASTM A213-17, ASTM A269-15a, ASTM A511-16, Mechanical Tubing
 ASME SA-213, ASME Section II, 2017 Edition, NACE MR0175/ISO 15156
 3rd Edition 2015-11-23, (Austenitic), NACE MR0103/ISO 17495:2016
 SWAGELOK SMS-00333 Rev. D

Cold Finished BRIGHT ANNEALED Seamless Tube
 Type MT 316/MT 316L/TP316/TP316L

Size: .500" X .083"
 Heat: 553481

Material Manufacturer: Sandvik MT, Canada
 ANALYSIS %

	C	Si	Mn	P	S	Cr	Ni
Heat	.022	.41	1.49	.026	.009	16.91	12.47
Prod	.021	.40	1.46	.026	.007	16.75	12.33
	Fe	Mo					
Heat		2.05					
Prod		2.01					

Mechanical Tests:

Yield Strength		Tensile Strength		Elongation in %				Reduction Of Area %	
0.2%	1.0%	1.0%	1.0%	E2"	E10"	E4d	E5d		
psi	MPa	psi	MPa	psi	MPa				
39000	269.0	N/A		83000	572.4	60	N/A	N/A	N/A

Hardness Test Results: 78HRBW, 80HRBW

Flare Test per ASTM A450/A1016 and ASME SA450/SA1016,
 No. samples: 2 Result: Acceptable
 Flattening Test per ASTM A450/A1016 and ASME SA450/SA1016:
 Acceptable

Country Of Origin: Canada
 Material Does Qualify for NAFTA
 Eddy Curent Examination - Acceptable
 Positive Material Identification(PMI) - Acceptable
 Visual Surface Condition - Acceptable
 Dimensional Check - Acceptable
 Material is capable of passing the ASTM A262 Practice "E".
 Seamless, Cold Finished, Bright(Solution)Anealed &
 Atmospheric Quenched
 No weld repair has been performed on this material.
 Material is free from radioactive contamination.
 Traceability is through Work Order number linemarked on tube
 The material has not come in contact with Mercury or Mercury
 containing compounds.

MATERIAL CERTIFICATE

Cert#: 180037014

Page 2

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Melt Source: SMT SANDVIKEN, SWEDEN

Melt Method: Electric Arc Furnace-AOD Refining

The material is manufactured according to a quality system, approved and registered to ISO 9001:2015 certificate number GBG0000511 which expires November 30, 2019

Electronically Generated Certificate-Valid without signature
Jakub Sauer, Quality Mgr,
10 (SWINST316 R34) (15) CF (BH9061)



Plant Location: 425 McCartney Street, Arnprior, ON, CA, K7S 3P3
 Sold To: 87000005 SANDVIK MATERIALS TECH. NAFTA
 CLARKS SUMMIT PA
 Customer Order No: 00090743
 Sandvik Order No: 359190/1

Ship To: GRAND PRAIRIE V F ALBERTA
 GRAND PRAIRIE AB
 Certification Date: 20181207

Quantity: 1980 FT
 Location Number D2SIO0062
 Distributor Assigned Order Num
 Order Number FC1834

 ASTM A213-17, ASTM A269-15a, ASTM A511-16, Mechanical Tubing
 ASME SA-213, ASME Section II, 2017 Edition, NACE MR0175/ISO 15156
 3rd Edition 2015-11-23, (Austenitic), NACE MR0103/ISO 17495:2016
 SWAGelok SMS-00333 Rev. D

Cold Finished BRIGHT ANNEALED Seamless Tube
 Type MT 316/MT 316L/TP316/TP316L

Size: .500" X .083"
 Heat: 553481

Material Manufacturer: Sandvik MT, Canada

ANALYSIS %

	C	Si	Mn	P	S	Cr	Ni
Heat	.022	.41	1.49	.026	.009	16.91	12.47
Prod	.021	.40	1.46	.026	.007	16.75	12.33
	Fe	Mo					
Heat		2.05					
Prod		2.01					

Mechanical Tests:

Yield Strength				Tensile Strength		Elongation in %				Reduction Of Area %
0.2%		1.0%		psi	MPa	E2"	E10"	E4d	E5d	
psi	MPa	psi	MPa							
39000	269.0	N/A	N/A	83000	572.4	56	N/A	N/A	N/A	N/A

Hardness Test Results: 78HRBW, 78HRBW

Flare Test per ASTM A450/A1016 and ASME SA450/SA1016,

No. samples: 2 Result: Acceptable

Flattening Test per ASTM A450/A1016 and ASME SA450/SA1016:
 Acceptable

Country Of Origin: Canada

Material Does Qualify for NAFTA

Eddy Curent Examination - Acceptable

Positive Material Identification(PMI) - Acceptable

Visual Surface Condition - Acceptable

Dimensional Check - Acceptable

Material is capable of passing the ASTM A262 Practice "E".

Seamless, Cold Finished, Bright(Solution)Anealed &

Atmospheric Quenched

No weld repair has been performed on this material.

Material is free from radioactive contamination.

Traceability is through Work Order number linemarked on tube

The material has not come in contact with Mercury or Mercury containing compounds.

MATERIAL CERTIFICATE

Cert#: 180037011

Page 2

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Melt Source: SMT SANDVIKEN, SWEDEN

Melt Method: Electric Arc Furnace-AOD Refining

The material is manufactured according to a quality system, approved and registered to ISO 9001:2015 certificate number GBG0000511 which expires November 30, 2019

Electronically Generated Certificate-Valid without signature
Jakub Sauer, Quality Mgr,
10 (SWINST316 R34) (15) CF (BH9061)



Plant Location: 425 McCartney Street, Arnprior, ON, CA, K7S 3P3
 Sold To: 87000005
 SANDVIK MATERIALS TECH. NAFTA
 CLARKS SUMMIT PA
 Customer Order No: 00090743
 Sandvik Order No: 359190/1

Ship To:
 GRAND PRAIRIE V F ALBERTA
 GRAND PRAIRIE AB
 Certification Date: 20181207

Work Order/Lot: 289988

Quantity: 2120 FT
 Location Number D2SI00062
 Distributor Assigned Order Num
 Order Number FC1834

 ASTM A213-17, ASTM A269-15a, ASTM A511-16, Mechanical Tubing
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 Type MT 316/MT 316L/TP316/TP316L

Size: .500" X .083"
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Material Manufacturer: Sandvik MT, Canada

ANALYSIS %

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Prod	.021	.40	1.46	.026	.007	16.75	12.33
	Fe	Mo					
Heat		2.05					
Prod		2.01					

Mechanical Tests:

Yield Strength				Tensile Strength		Elongation				Reduction Of Area %
0.2%		1.0%				in %				
psi	MPa	psi	MPa	psi	MPa	E2"	E10"	E4d	E5d	
46000	317.2	N/A		90000	620.7	60	N/A	N/A	N/A	N/A

Hardness Test Results: 78HRBW, 78HRBW

Flare Test per ASTM A450/A1016 and ASME SA450/SA1016,
 No. samples: 2 Result: Acceptable
 Flattening Test per ASTM A450/A1016 and ASME SA450/SA1016:
 Acceptable

Country Of Origin: Canada

Material Does Qualify for NAFTA

Eddy Curent Examination - Acceptable

Positive Material Identification(PMI) - Acceptable

Visual Surface Condition - Acceptable

Dimensional Check - Acceptable

Material is capable of passing the ASTM A262 Practice "E".

Seamless, Cold Finished, Bright(Solution)Anealed &

Atmospheric Quenched

No weld repair has been performed on this material.

Material is free from radioactive contamination.

Traceability is through Work Order number linemarked on tube

The material has not come in contact with Mercury or Mercury containing compounds.

MATERIAL CERTIFICATE

Cert#: 180037015

Page 2

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Melt Source: SMT SANDVIKEN, SWEDEN

Melt Method: Electric Arc Furnace-AOD Refining

The material is manufactured according to a quality system, approved and registered to ISO 9001:2015 certificate number GBG0000511 which expires November 30, 2019

Electronically Generated Certificate-Valid without signature
Jakub Sauer, Quality Mgr,
10 (SWINST316 R34) (15) CF (BH9061)